Control your risks, control your outcomes

Is your primary total joint 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[9]

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PICO◊ ORTHOPAEDIC RISK QUESTIONNAIRE PRIMARY

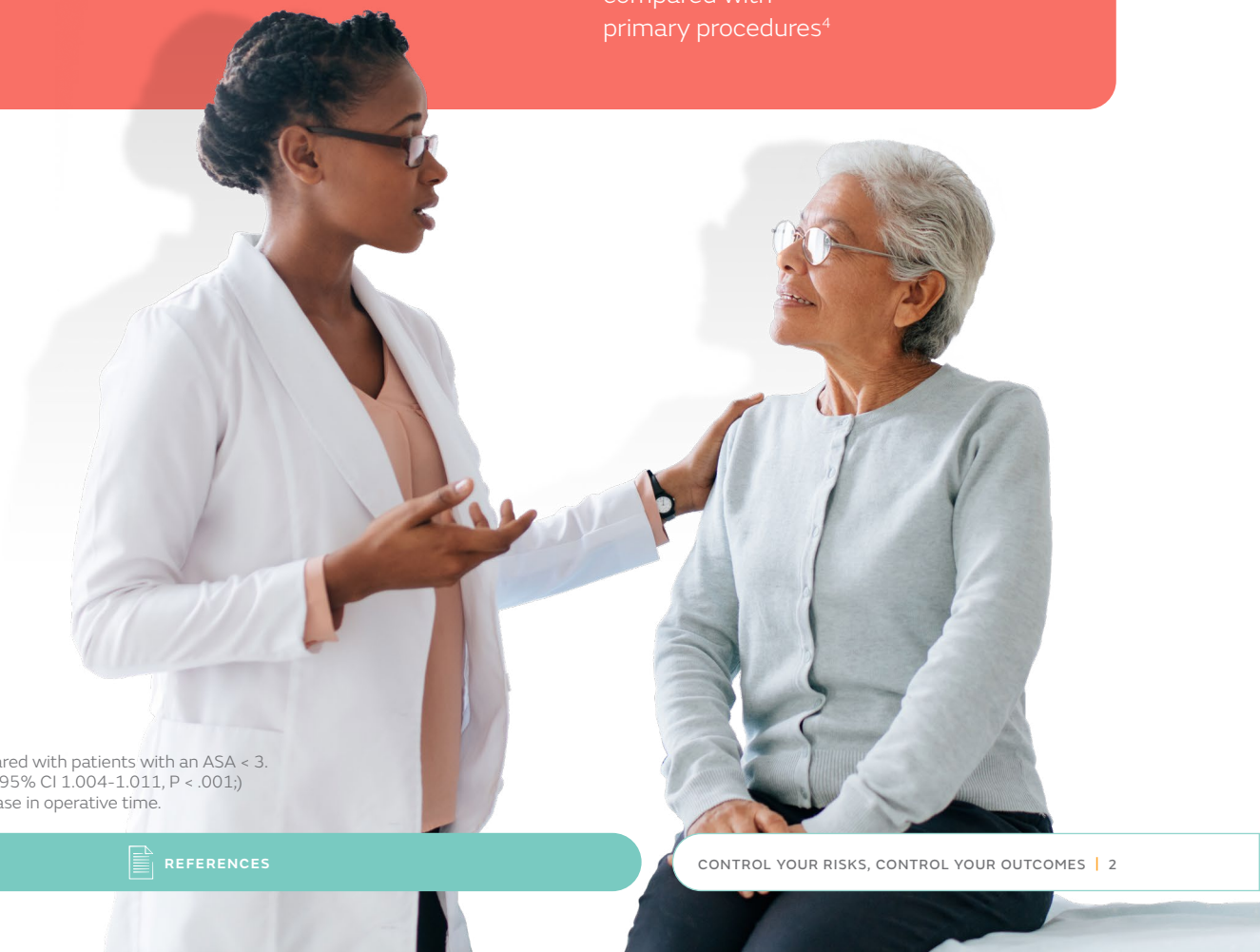
Is your patient high risk?

BMI ≥ 40	BMI ≥ 35	ASA ≥ 3	Operative time	Revision		Emergency
Significantly more likely to suffer prolonged drainage following total hip arthroplasty (THA)*[2]	4.5x times more likely to suffer an surgical site complication (SSC) following total knee arthroplasty (TKA) or THA surgery†[1]	8x times more likely to suffer an SSC following TKA or THA surgery‡[1]	Surgical site infection (SSI) risk increases by 11% every 15 minutes during TKA§[3]	SSI risk can double with revision hip arthroplasty compared with primary procedures[4]	Deep or organ space SSI can nearly quadruple with revision hip arthroplasty compared with primary procedures[4]	Up to 16% SSI rate following peri-prosthetic hip fracture[5,6]

ASA ≥ 3

8x

times more likely to suffer an SSC following TKA or THA surgery‡[1]



*Compared with normal weight; p = 0.001. †Compared with patients with a BMI < 35. ‡Compared with patients with an ASA < 3. §Where operative times had a significant independent effect on SSI rates (adjusted OR 1.007, 95% CI 1.004-1.011, P < .001;) which corresponded to an 11% (95% CI 6-17) increase in SSI risk with every 15-minute increase in operative time.

Is your patient high risk?

Certain patient factors correlate with SSI development following primary and revision arthroplasty[7].
Pre-operative identification can determine the probability of an SSI developing post-operatively[7].

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

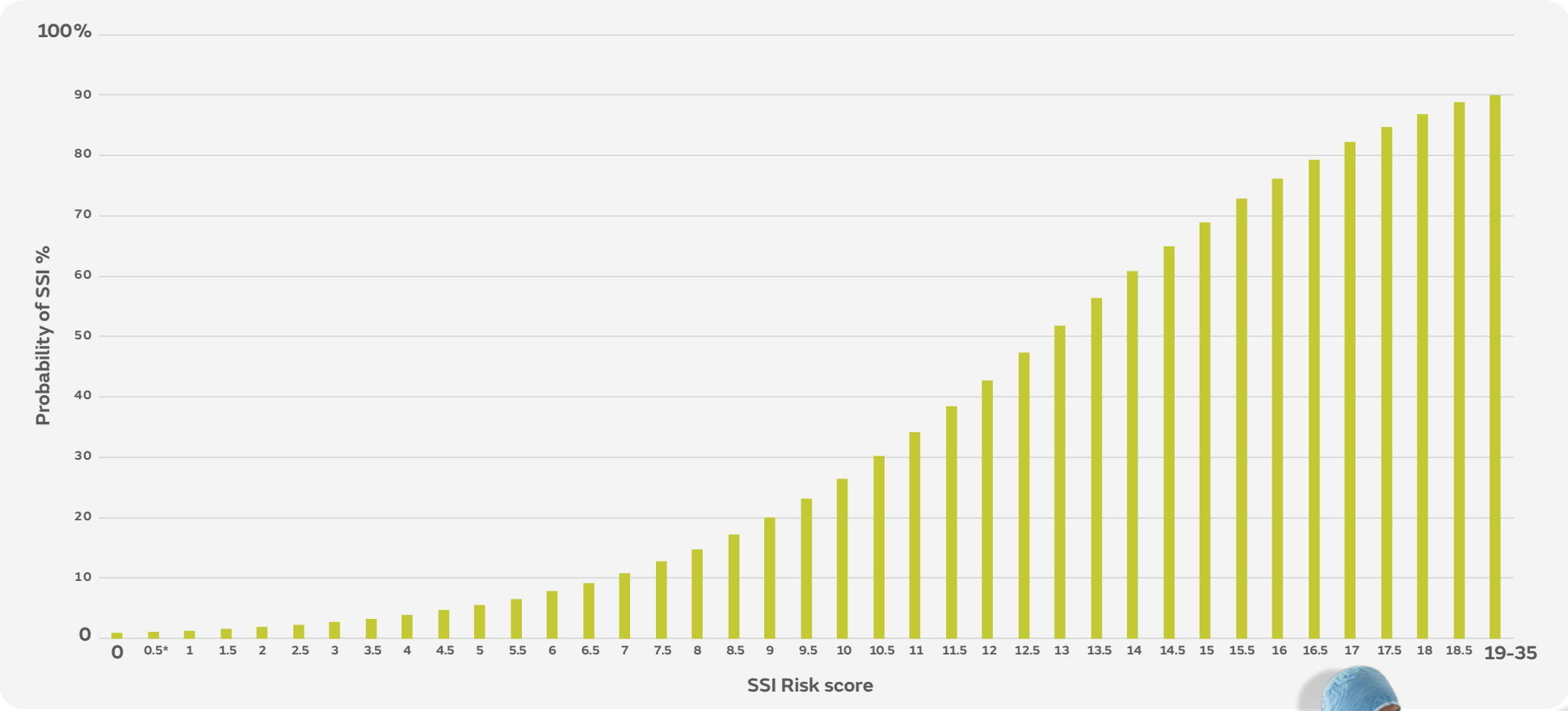
Primary bone cancer		
Presence	Yes	No
Score	4	0

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[7]. Pre-operative identification can determine the probability of an SSI developing post-operatively[7].

*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

PICO◊ sNPWT has shown to **help reduce** the incidence of **SSCs**[1], **length of stay** (LoS)[1] and overall **cost** of care[8] following primary THA and TKA*

Total joint arthroplasty (TJA)	
Primary hip arthroplasty (THA)	Primary knee arthroplasty (TKA)
☐ ≥ BMI 35	☐ ≥ BMI 35
☐ ≥ ASA 3	☐ ≥ ASA 3
☐ Diabetes	☐ Diabetes

These specific patient groups who received **PICO◊** sNPWT prophylatically following primary THA or TKA had **fewer SSCs***[1] and **reduced LoS***[1] which resulted in up to **£7995 per patient savings** the cost of care*[8]

*Compared with standard surgical dressings.

Surgical incision

Dr Frank Wein, Clinique Louis Pasteur, Essey les Nancy (France)
PICO◊ sNPWT on a surgical incision after a primary TKA

The patient received physiotherapy throughout treatment with **PICO** sNPWT

Patient

A 76 year-old female

Patient living independently at home, alone.

- **Hypertension**
- **Class 2 obesity**
- **Treated for leukaemia**

Wound history

The patient was hospitalised for a right primary TKA. She remained on anticoagulation therapy until one week before the procedure. She was also prescribed antibiotics.

PICO sNPWT treatment methodology

- In view of the patient's history, the surgeon decided to apply a PICO dressing. At the surgeon's request, the dressing was applied two days after the intervention
- The chosen PICO dressing size was 10 x 30 cm
- At the time, the incision line measured 15.5 cm L and staples were present
- The surgeon decided to leave the PICO system in place for 7 days

Course of PICO sNPWT

- The patient remained in hospital for 7 days due to lack of beds in the post-acute care and rehabilitation ward
- 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 D1, 25% saturation of the dressing was observed.

Treatment outcome

- PICO therapy was discontinued at D7. The PICO dressing showed 50% saturation, with no sign of inflammation or dehiscence underneath
- The patient was transferred to post-acute care and rehabilitation at D7. The patient received physiotherapy throughout treatment with PICO sNPWT
- The total duration of treatment was 7 days. PICO sNPWT was then replaced with a OPSITE◊ Post-Op Visible dressing
- The patient was was re-examined at D22, the incision line was slightly crusted
- Antibiotic therapy was also discontinued
- By D55, the incision was fully healed without any complications
- The patient was pleased with the outcome and the use of the device, which allowed her to retain her daily independence
- The surgeon was also pleased with the device

Surgical incision (continued)

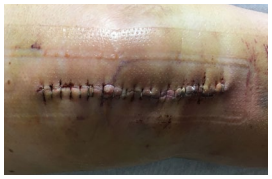
Dr Frank Wein, Clinique Louis Pasteur, Essey les Nancy (France)
PICO◊ sNPWT on a surgical incision after a primary TKA

Evolution of closed surgical incision with PICO◊ sNPWT

Day 0

Day 1

Day 7



Day 22

Day 55

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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. Karlakki SL, Hamad AK, Whittall C, Graham NM, Banerjee RD, Kuiper JH. Incisional negative pressure wound therapy dressings (iNPWTd) in routine primary hip and knee arthroplasties: a randomised controlled trial. *Bone & joint research.* 2016;5(8):328-37. **2.** Patel VP, Walsh M, Sehgal B, Preston C, DeWal H, Di Cesare PE. Factors associated with prolonged wound drainage after primary total hip and knee arthroplasty. *JBJS.* 2007 Jan 1;89(1):33-8. **3.** Anis HK, Sodhi N, Klika AK, Mont MA, Barsoum WK, Higuera CA, Molloy RM. Is operative time a predictor for post-operative infection in primary total knee arthroplasty? *The Journal of arthroplasty.* 2019 Jul 1;34(7):S331-6. **4.** 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 **5.** Drew JM, Griffin WL, Odum SM, Van Doren B, Weston BT, Stryker LS. Survivorship after periprosthetic femur fracture: factors affecting outcome. *The Journal of arthroplasty.* 2016 Jun 1;31(6):1283-8. **6.** Matharu GS, Pynsent PB, Dunlop DJ, Revell MP. Clinical outcome following surgical intervention for periprosthetic hip fractures at a tertiary referral centre. *Hip International.* 2012 Sep;22(5):494-9. **7.** 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. **8.** Nherera LM, Trueman P, Karlakki SL. Cost-effectiveness analysis of single-use negative pressure wound therapy dressings (sNPWT) to reduce surgical site complications (SSC) in routine primary hip and knee replacements. *Wound Repair and Regeneration.* 2017;25(3):474-82. **9.** 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 annual meeting, June 5-7, 2019, Gothenburg, Sweden.