

# + Control your risks, control your outcomes

Is your primary total joint arthroplasty patient at risk  
of developing a surgical site complication?



## Smith+Nephew

PICO<sup>◇</sup>

Single Use Negative Pressure  
Wound Therapy System

Helping you get **CLOSER TO ZERO<sup>◇</sup>**  
surgical site complications<sup>9</sup>

[possiblewithpico.com](http://possiblewithpico.com)

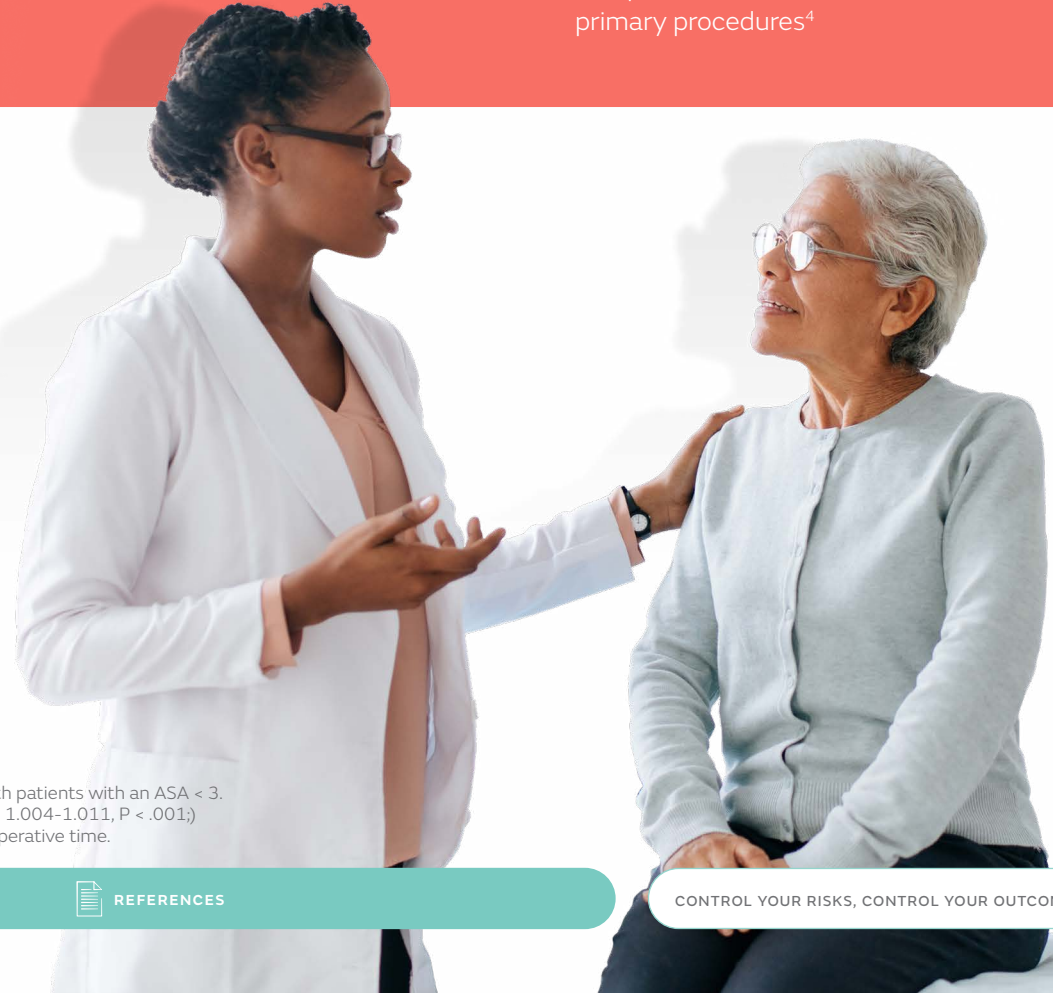


# Is your patient high risk?

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



**ASA  $\geq 3$**   
**8x**  
 times more likely to suffer an SSC following TKA or THA surgery<sup>‡1</sup>



\*Compared with normal weight; p = 0.001. <sup>†</sup>Compared with patients with a BMI < 35. <sup>‡</sup>Compared with patients with an ASA < 3. <sup>§</sup>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<sup>7</sup>.  
Pre-operative identification can determine the probability of an SSI developing post-operatively<sup>7</sup>.

| 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  |

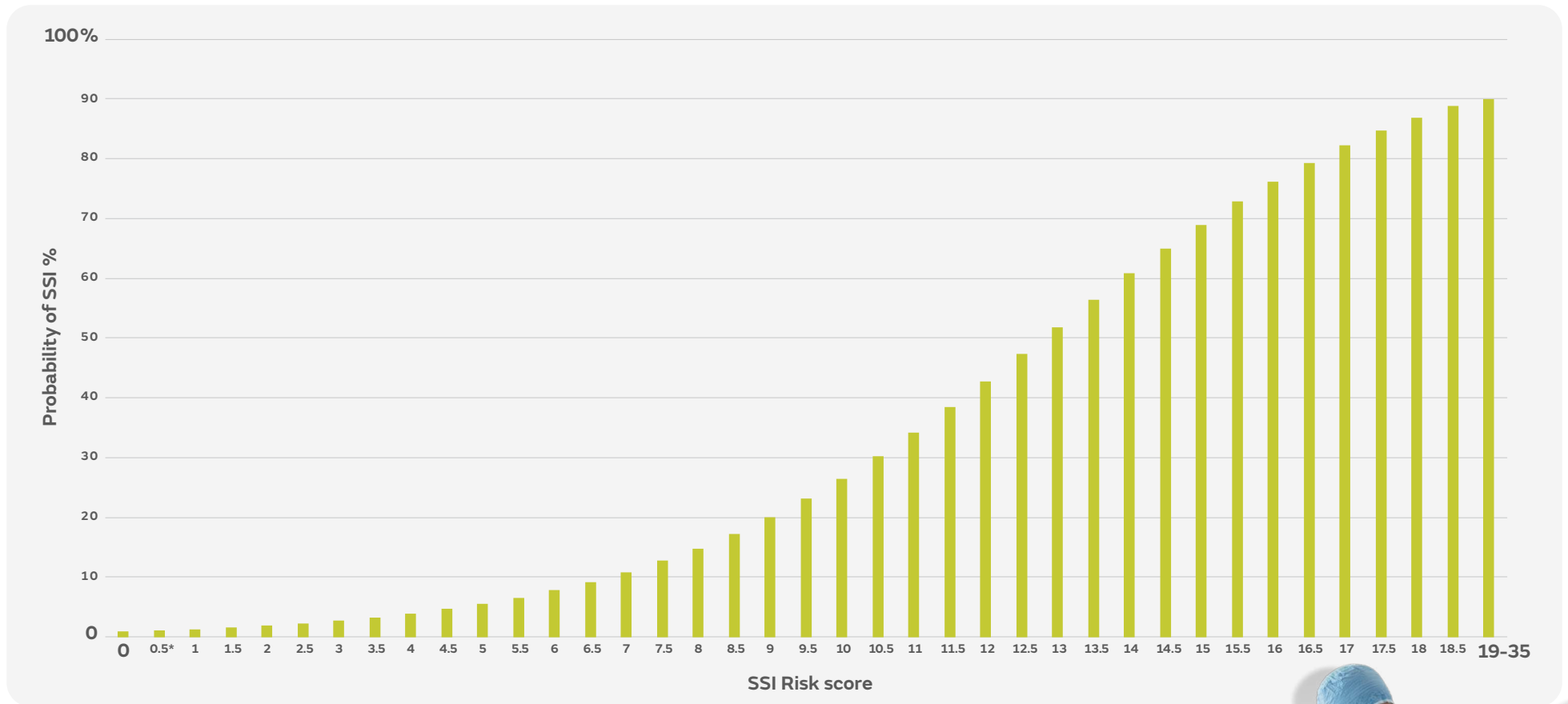
| Primary bone cancer |     |    |
|---------------------|-----|----|
| Presence            | Yes | No |
| Score               | 4   | 0  |

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

| Staphylococcal septicemia |     |    |
|---------------------------|-----|----|
| Presence                  | Yes | No |
| Score                     | 4.5 | 0  |

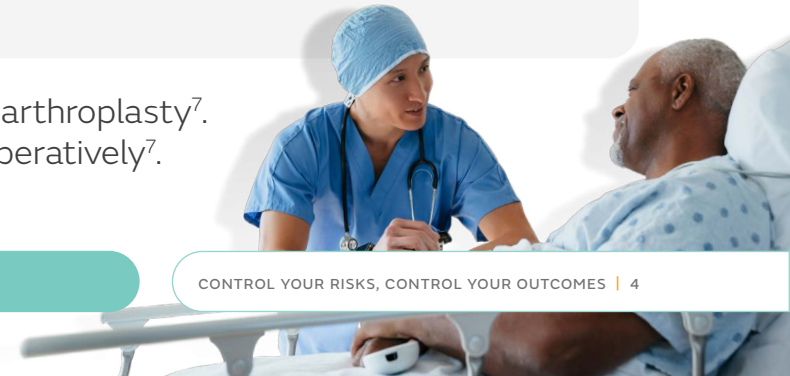
**TOTAL PATIENT SCORE:**

# SSI risk score and corresponding probability of SSI



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

\*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**<sup>1</sup>, **length of stay (LoS)**<sup>1</sup> and overall **cost** of care<sup>8</sup> following primary THA and TKA\*

## Total joint arthroplasty (TJA)

Primary hip arthroplasty  
(THA)

☐ ≥ BMI 35

☐ ≥ ASA 3

☐ Diabetes

Primary knee arthroplasty  
(TKA)

☐ ≥ BMI 35

☐ ≥ ASA 3

☐ Diabetes



These specific patient groups who received **PICO** sNPWT prophylactically following primary THA or TKA had **fewer SSCs**<sup>\*1</sup> and **reduced LoS**<sup>\*1</sup> which resulted in up to **\$11,296 per patient savings** the cost of

\*Compared with standard surgical dressings.



# + Surgical incision

**Dr Frank Wein**, Clinique Louis Pasteur, Essey les Nancy (France)  
**PICO<sup>o</sup>** sNPWT on a surgical incision after a primary TKA

## Patient

**A 76 year-old female**

**Patient living independently at home, alone.**

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

## Wound history

The patient was hospitalized 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 immobilized and she was able to wear her compression stocking
- At D1, 25% saturation of the dressing was observed.



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

## 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<sup>o</sup> Post-Op Visible dressing
- The patient 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<sup>o</sup>** sNPWT on a surgical incision after a primary TKA



Evolution of closed surgical incision with PICO<sup>o</sup> sNPWT

Day 0



Day 1



Day 7



Day 22



Day 55



REFERENCES

CONTROL YOUR RISKS, CONTROL YOUR OUTCOMES | 7

Advanced Wound Management  
Smith & Nephew Inc  
Fort Worth, TX 76109  
USA

Customer Care  
800-876-1261  
F 727-392-6914

[www.smith-nephew.com](http://www.smith-nephew.com)  
[www.possiblewithpico.com](http://www.possiblewithpico.com)

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#### Important Safety Information

**The PICO pumps contain a MAGNET. Keep the PICO pumps at least 4 inches (10 cm) away from other medical devices at all times. As with all electrical medical equipment, failure to maintain appropriate distance may disrupt the operation of nearby medical devices. For detailed product information, including indications for use, contraindications, effects, precautions, warnings, and important safety information, please always consult product's 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. 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.

