

# Expert Tibial Nail (ETN) PROtect™ Coating:

Intended to be used for the surgical treatment and stabilization of fractures of the tibia.

## Value Summary

This value summary highlights key findings on the clinical and economic burden of tibial fracture infections and addresses the cost-effectiveness of ETN PROtect vs. uncoated nails in patients with tibial fractures.

## Key Takeaways



**Tibial Fracture Infections**  
Are a significant **clinical problem** for patients and providers.<sup>1</sup>



Impose a substantial **economic burden** on hospital resources.<sup>2-7</sup>

Standard (uncoated) intramedullary nails for internal fixation are recommended by guidelines for the management of tibial fractures.<sup>8,9</sup>



**Solution: ETN PROtect**  
for the management of open tibial fractures is associated with a **lower rate of infections** and **fewer healthcare resource use allocations**.<sup>7</sup>

Up to **15%** cost savings<sup>7</sup>      ↓ **75%** fewer infections<sup>7</sup>

A multi-center economic study reports ETN PROtect implant costs can be offset by savings from fewer infections, inpatient days, and re-operations for high risk patients.<sup>7</sup>

## Clinical & Economic Burden of Tibial Fracture Infections



Tibial shaft fractures account for approx. **26 fractures per 100,000** & **569,000 hospital days per year**.<sup>13</sup>



**23.5%** of tibial fractures are open fractures<sup>14</sup>



**57.3%** are complex GAIIB open fractures<sup>10</sup>

## Infections continue to be a unresolved problem in open tibia fractures

### Economic Drivers of Hospital Expenditure due to Infections

Wound infections are a serious and complex consequence of open tibial fractures that lead to an enormous increase in healthcare costs including, but not limited to: **inpatient costs**,<sup>2,6</sup> **re-operations**,<sup>2,6</sup> **re-admissions**,<sup>2,6</sup> **length of stay**,<sup>2,6</sup> and **prolonged medications**.<sup>2,6,12</sup>

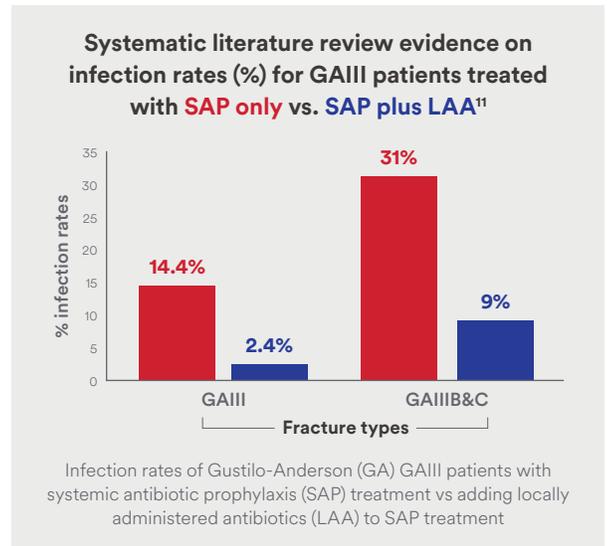
A retrospective cohort study from England<sup>2</sup>, with patient information from primary care practices was linked to National Health Service hospital data and reported the **economic burden of surgical site infections (SSI) vs no SSI following intramedullary nailing** of tibial shaft fractures.

 **805 total adult patients**

 **11.7% infection risk at one year**

Main outcomes measured include **total inpatient costs and hospital resource utilization** from patient admission through one-year follow-up.

**2.47x** higher odds for re-operation      **80%** higher costs (inpatient)      **5.18x** higher odds for readmission      **10.5 to 21.9** days added to length of stay due to infection



# Solution:

## Cost effectiveness analysis of using gentamicin-coated nail vs standard nails

Epidemiological data<sup>10</sup> on GA fracture risk and infection rates<sup>11</sup> are published. Real-world hospital **resource data from four European centers** was modeled to understand the cost-effectiveness of gentamicin-coated nails (ETN PROtect/UTN PROtect) vs standard (uncoated) nails.

**400 total patients**

The model assumed that only patients with GAIII fractures, who were at highest risk of infection, received gentamicin-coated nails and all other patients received standard of care with uncoated nails.

**Gentamicin-coated nails offer greater clinical benefits with fewer hospital resource use allocations.**

**43** 

avoided infections<sup>7</sup>

**128** 

avoided operations<sup>7</sup>

**2,500**

inpatient days saved<sup>7</sup>

At all centers, the increase in **implant costs were offset by a shorter length of stay & lower theatre costs** for patients with a GAIII fracture.



**75%**  
fewer infections<sup>7</sup>



**10%**  
fewer reoperations<sup>7</sup>



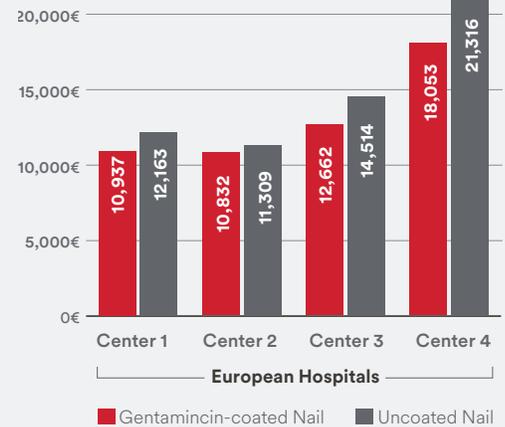
**26%**  
fewer inpatient days<sup>7</sup>



**11%**  
avg. cost savings<sup>7</sup>

Guidelines highlight the importance of infections and state standard (uncoated) intramedullary nailing is valuable and appropriate for the majority of tibial fractures<sup>8,9</sup>

**Lower per patient costs with a gentamicin-coated nail in all Europe centers vs standard nails<sup>7</sup>**



**Average cost savings per center**

| Center     | Center 1  | Center 2   | Center 3   | Center 4 |
|------------|-----------|------------|------------|----------|
| <b>10%</b> | <b>4%</b> | <b>13%</b> | <b>15%</b> |          |

Cost data included initial admission, re-admissions, all antibiotics and medications, laboratory, radiology and diagnostic tests, and theatre or day case procedural costs associated with initial open tibial fracture.

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