

Results of the institutional surgical site infection surveillance program: a retrospective analysis in high complexity referral center in Latin America (2005-2021)

Roosevelt Fajardo, MD FACS. Luis Felipe Cabrera MD FACS, José Antonio de la Hoz, Gerardo Ardila, Maria Díaz, Juan M. Calero *, Santiago Melo, Mariana Amaya, Pablo Romero, María Valentina García

Introduction

SSIs remain one of the most frequent healthcare-associated infections.

- Global incidence: 1.6–3.7%, higher in LMICs.
- Surveillance programs are a key prevention strategy.

Objective

To describe long-term trends in surgical site infection incidence and to identify independent predictors of infection in a large surgical cohort.

Methods

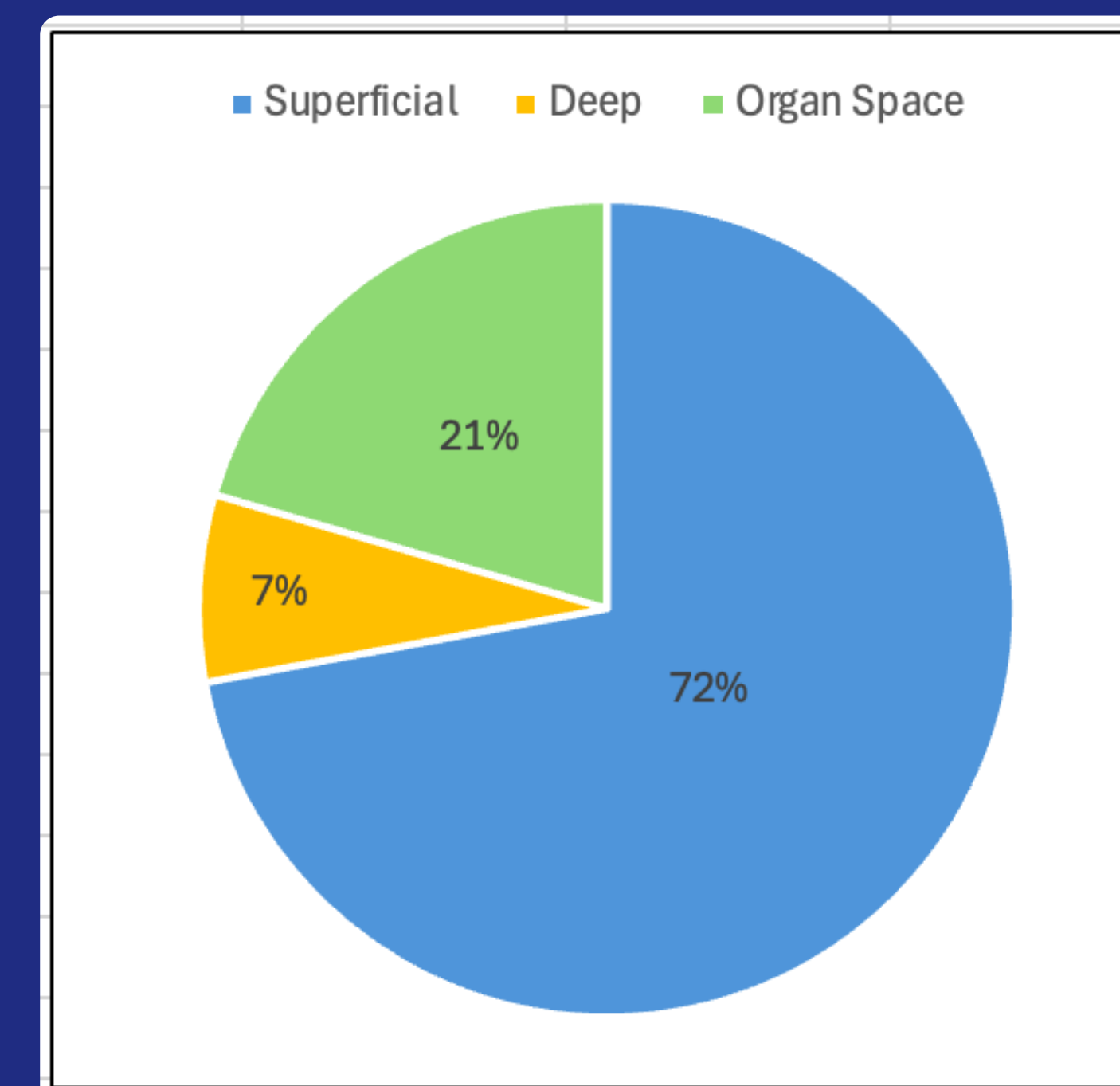
- Definition of SSIs: CDC/NHSN 2023 criteria
- Design: Retrospective cohort
- Poblacion: 130,219 surgeries, between 2005–2021. Excluded OB/GYN
- Variables: Age, Sex, ASA, Wound class, Surgical specialty
- Analysis: Multivariable logistic regression and adjusted OR with 95% CI

Data Collection

Data were obtained from the institutional SSI surveillance system at Fundación Santa Fe de Bogotá, including demographic, surgical, and clinical variables. With a database of 130,219 patients, SSIs were identified and classified according to CDC/NHSN criteria.

Results

SSI Type Distribution



Specialties

- General Surgery (17.2%)
- Orthopedics (16.4%)
- Hepatobiliary (9.9%)
- Neurosurgery (9.3%)

Overall Incidence

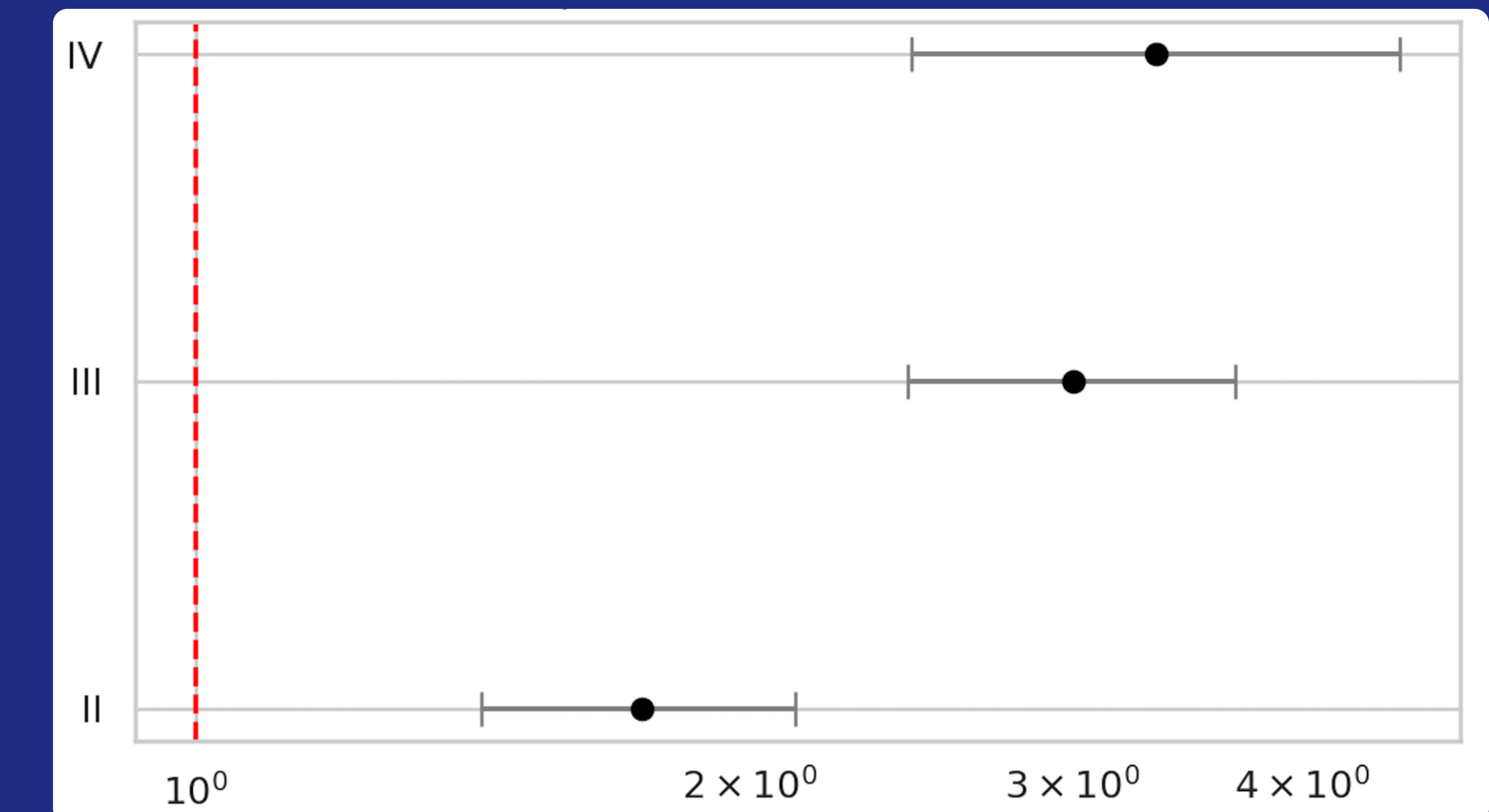
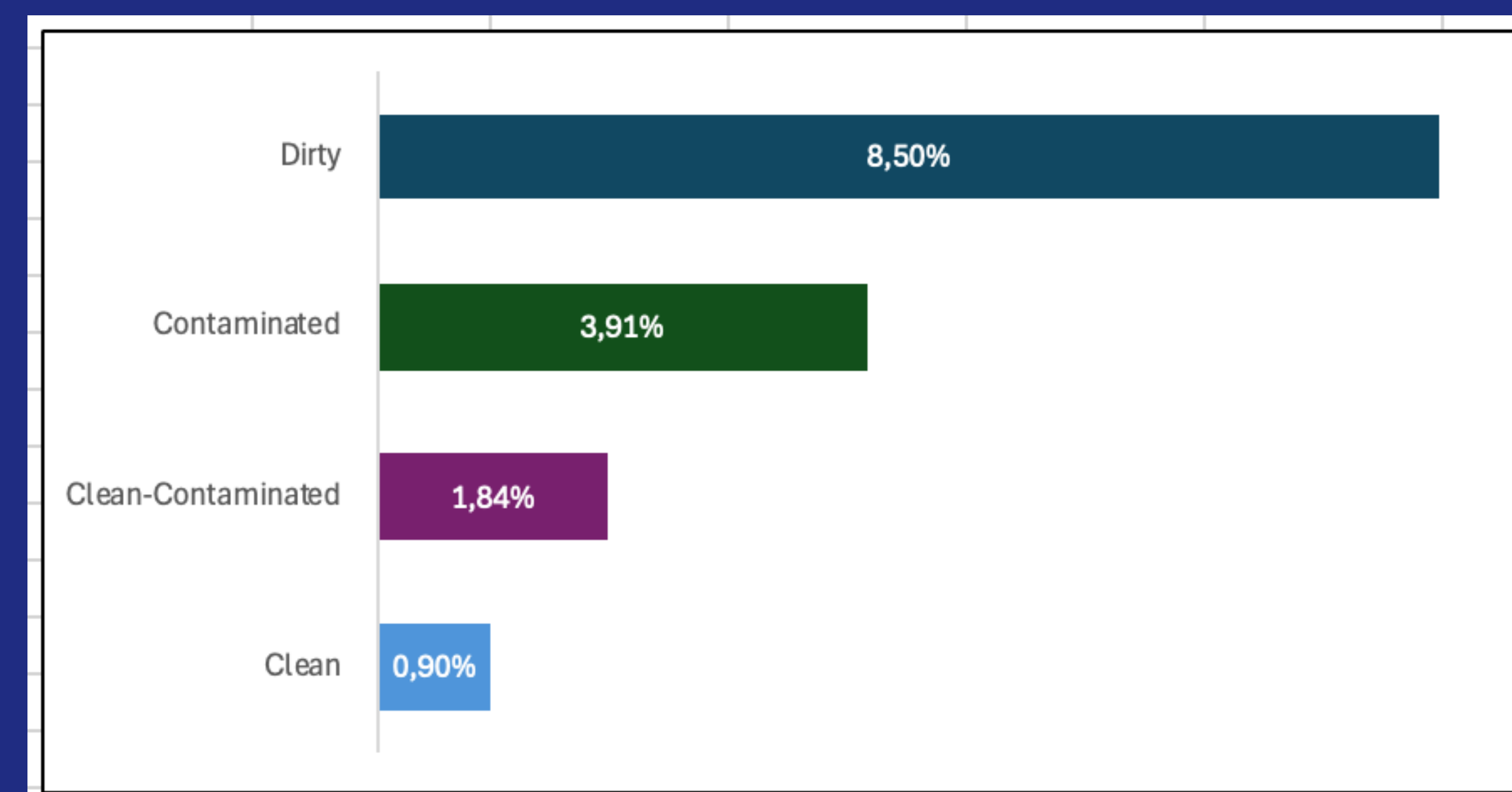
- 2,040 SSIs
- Overall incidence: 1.57%
- Annual rates consistently < 1.6%

Microbiology

- Cultures available in 5.3%
- Predominance of Escherichia coli

Wound Class

SSI incidence increased progressively with wound contamination severity, ranging from 0.9% in clean wounds to 8.5% in dirty wounds.



ASA Class

Increasing ASA class was independently associated with higher odds of SSI, with a stepwise risk escalation from ASA II (aOR 1.75) to ASA IV (aOR 3.33), all $p < 0.001$.

Discussion

SSI incidence remained low over time despite increasing surgical volume. Higher wound class and ASA status were the strongest predictors, highlighting the value of sustained surveillance and targeted prevention strategies.

Conclusion:

Structured surveillance combined with systematic follow-up and feedback allows sustained low SSI rates despite increasing surgical complexity. Wound contamination and ASA status remain the primary drivers of infection risk.