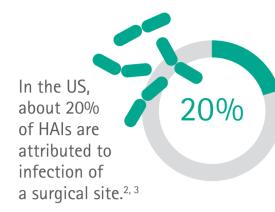
ECONOMIC CONSEQUENCES OF SURGICAL SITE INFECTION (SSI)



Health care-associated infections (HAIs), especially surgical site infections (SSIs), represent a serious public health problem due to the high rates of morbidity and mortality that occur in conjunction with them. SSIs are among the most common preventable health adverse events and produce direct and indirect costs and prolonged hospital stays.¹

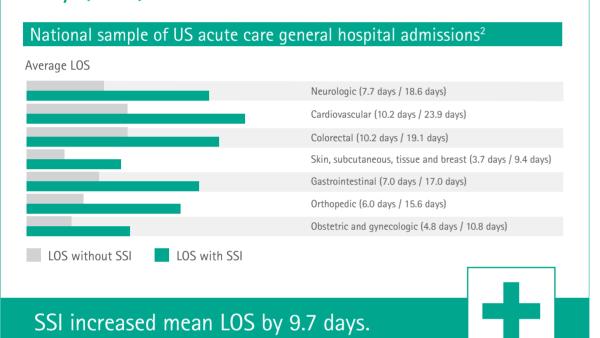
15.5%



In Brazil, the Sao Paulo Nosocomial Infection Studies and Control Association observed SSIs being the second most frequent type of hospital infections (15.5%).⁴

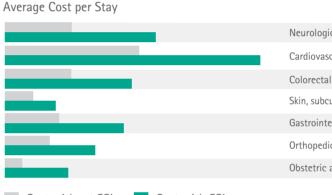
SSI is one of the most common complications associated with surgery and affects approximately 10% of the patients in low- and middle-income countries.⁵ (12.3% of patients worldwide after gastrointestinal surgery⁶.)

SSIs are significantly and independently associated with an increased length of stay (LOS)



Additional costs per patient due to SSIs





Neurologic (US\$ 20,090 / US\$ 45,987)
Cardiovascular (US\$ 41,066 / US\$ 78,579)
Colorectal (US\$ 20,441 / US\$ 38,396)
Skin, subcutaneous, tissue and breast (US 8658 / US $15,389$)
Gastrointestinal (US\$ 16,239 / US\$ 37,068)
Orthopedic (US\$ 13,373 / US\$ 28,502)
Obstetric and gynecologic (US\$ 5457 / US\$ 19,425)

Cost without SSI Cost with SSI

SSI increased mean cost treatment by about US\$ 21,000.^{2, 7}

SSI also adds costs in the healthcare setting in Latin America⁴



1 Umscheid CA, Mitchell MD, Doshi JA, Agarwal R, Williams K, Brennan PJ. Infect Control Hosp Epidemiol. Estimating the proportion of healthcare-associated infections that are reasonably preventable and the related mortality and costs. 2011 Feb;32(2):101-14. doi: 10.1086/657912.

2 De Lissovoy G, Fraeman K, Hutchins V, Murphy D, Song D, Vaughn BB. Surgical site infection: Incidence and impact on hospital utilization and treatment costs Am J Infect Control. 2009 Jun;37(5):387-397.

3 Klevens RM, Edwards JR, Richards CL Jr, Horan TC, Gaynes RP, Pollock DA et al. Estimating health care-associated infections and deaths in U.S. hospitals, 2002. Public Health Rep. 2007 Mar-Apr; 122(2):160-166.

4 Dal-Paz K, Oliveira P, de Paula A, Emerick MC, Pecora JR, Lima AL, Economic impact of treatment for surgical site infections in cases of total knee arthroplasty in a tertiary public hospital in Brazil. The Brazilian Journal of Infectious Diseases.2010, v.14, n.4, p.356-359. 5 WHO Protocol for surgical site infection surveillance with a focus on settings with limited resources, 2018; www.who.int/infection-prevention/en

6 GlobalSurg Collaborative. Surgical site infection after gastrointestinal surgery in high-income, middle-income, and low-income countries: a prospective, international, multicentre cohort study Lancet Infect Dis. 2018 May; 18(5):516-525.
7 J Zimlichman E, Henderson D, Tamir O, Franz C, Song P, Yamin CK et al. Health care-asso-

ciated infections: a meta-analysis of costs and financial impact on the US health care system. JAMA Intern Med. 2013 Dec 9-23;173(22):2039-46. 8 Zamudio J, Surgical wound irrigation: strategy for prevention of surgical site infection. Nurse Care Open Acces J. 2017;3(1):201-202.

9 Ministry of Health México. Measurement of the prevalence of nosocomial infections in general hospitals of the main public health institutions; 2011.

10 S1-Leitlinie: Strategien zur Prävention postoperativer Wundinfektionen 11 Badia JM, Casey AL, Petrosillo N, Hudson PM, Mitchell SA, Crosby C. Impact of surgical site infection on healthcare costs and patient outcomes: a systematic review in six European countries. J Hosp Infect. 2017 May;96(1):1-15.

12 Graf K, Ott E, Vonberg RP, Kuehn C, Schilling T, Haverich A, Chaberny IF. Surgical site infections-economic consequences for the health care system. Langenbecks Arch Surg. 2011;396:453-9.