

Postoperative Sepsis After Elective Surgery Prevention (PSI-13*)

Description	
Numerator	Discharges with secondary diagnosis code(s) for sepsis.
Denominator	Elective surgical discharges for operating room (OR) procedures for patients ages 18 years and older.
Denominator Exclusions	Exclude cases with any of the following from the denominator: <ol style="list-style-type: none"> 1. Principal diagnosis of sepsis (or secondary diagnosis of sepsis present on admission [POA]), or 2. Principal diagnosis of infection (or secondary diagnosis of infection POA), or 3. Major diagnosis category (MDC) 14 (pregnancy, childbirth, puerperium).

Pre-hospital Postoperative Sepsis Prevention Strategies

General Infection Prevention for the Patient	
<ul style="list-style-type: none"> Practice good hand hygiene: before food, after bathroom, after blowing nose or coughing, after touching pets, when returning home. 	<ul style="list-style-type: none"> Practice physical distancing, use a mask, cover mouth and nose when coughing or sneezing. Stay up-to-date with vaccines.

Preoperative Recommendations for Elective Procedures	
<ul style="list-style-type: none"> Perform methicillin-resistant <i>Staphylococcus aureus</i> (MRSA) screening/decolonization for high-risk procedures, such as spine, hip, or knee. Instruct patient to stop smoking for 30 days preop, if possible (may require support such as nicotine gum or patches). Have patient maintain blood glucose ≤ 200 for 30 days preop, if possible. 	<ul style="list-style-type: none"> Teach incentive spirometry (IS) preop so patient knows what it feels like. Instruct patient to: <ul style="list-style-type: none"> – Not shave the surgical area. – Bathe the day before surgery with soap or antiseptic agent. – Use clean towels, bed linens, and clothing. – Not sleep with pets.

In-Hospital Postoperative Sepsis Prevention Strategies

Pre and Perioperative Patient Care	
<ul style="list-style-type: none"> Perform preop bathing (e.g., chlorhexidine gluconate [CHG]). Perform hair clipping outside of OR. Administer weight-based antibiotics within 60 minutes of incision time, if needed at all. 	<ul style="list-style-type: none"> Maintain normothermia in the OR. Limit OR traffic. Maintain perioperative blood glucose ≤ 200. Use a new tray or closure tray with new gloves.

Postoperative Patient Care	
<ul style="list-style-type: none"> Encourage early mobility: avoid oversedation and ensure adequate pain control; teach turn-cough deep breath and IS; and promote ambulation. Discontinue central lines as soon as possible. Perform surgical site care per surgeon orders. 	<ul style="list-style-type: none"> Discontinue foley in post anesthesia care unit (PACU), if possible (common exceptions include pelvic fracture, magnesium drips, some genitourinary surgeries). Strive to have nurses care for as few patients as possible.

Recognize Sepsis Early

Screen patients for sepsis at least every shift (every six hours for patients with fluctuation of vital signs, such as temperature and respiratory rate).

Monitor PSI-13 data

Review PSI-13 records and track and trend data.

*PSI = Patient Safety Indicator

References

- Berrios-Torres SI, Umscheid CA, Bratzler DW. Centers for Disease Control and Prevention (CDC). Guideline for the Prevention of Surgical Site Infection 2017. *JAMA Surg.* 2017. <https://jamanetwork.com/journals/jamasurgery/fullarticle/2623725>
- Flanagan J, Read C, Shindul-Rothschild J. Factors associated with the rate of sepsis after surgery. *Crit Care Nurse* 2020. <https://aacnjournals.org/ccnonline/article/40/5/e1/31183/Factors-Associated-With-the-Rate-of-Sepsis-After>
- Kong L, Liu Z, Fei M, Shen Y. 2017. Smoking and Risk of Surgical Site Infection after Spinal Surgery: A Systematic Review and Meta-Analysis. <https://www.liebertpub.com/doi/full/10.1089/sur.2016.209>
- Pertsch N, Yang O, Seicean A, Toms S, Weil R. Sepsis after elective neurosurgery: Incidence, outcomes, and predictive factors. *J Clin Neuroscience* 2020. <https://www.sciencedirect.com/science/article/abs/pii/S0967586820313266>
- Sepsis Alliance. *Sepsis Prevention*. 2022. <https://www.sepsis.org/sepsis-basics/prevention/>
- Society of Critical Care Medicine ICU Liberation Bundle. *E Element: Early Mobility and Exercise*. <https://www.sccm.org/iculiberation/abcdef-bundles>
- Stefanou A, Gardner CW, and Rubinfeld IS. Comparison of Common Minimally Invasive Operations Using Patient Safety Indicators (PSI). *J Am Coll Surg* 2021; 233(5):e98. https://scholarlycommons.henryford.com/surgery_mtgabstracts/219/