

Reducing Surgical Site Infections Through Implementation of an Evidence-Based SSI Prevention Bundle

Reality

Background

Surgical site infections (SSI) are one of the most common healthcare-associated infections (Lohsiriwat, 2021). SSIs are infections that occur within 30 days of a procedure. Commonly seen in abdominal and colorectal surgery and can increase risk for patient safety and recovery. Contributing factors include inconsistent practices, surgeon preferences, and staff education.

Importance of Issue

Patients:

- Increased pain
- Delayed wound healing
- Longer hospital stays
- Emotional stress
- Financial burden

Community:

- Affects limited resources in rural communities

Nursing Profession:

- National annual impact of \$3.5 and \$10 billion (Edmiston, 2018)
- Patient advocacy

Framework

The Iowa Model Revised: Evidence-Based Practice to Promote Quality Care

- **Identify issue:** Increase in SSI in open abdominal surgery
- **Form a team:** Surgical unit, leadership
- **Assemble evidence:** Research on SSI bundles
- **Design practice change:** SSI bundle (CHG baths, proper skin prep, timely antibiotics, clean closure)
- **Evaluate outcome:** SSI rates, compliance, policy

Iowa Model Collaborative (2017)

Theoretical

Key Concepts & Outcomes

Research has shown that by implementing a SSI prevention bundle, infection rates can be decreased (Cima et al, 2013).

SSI Prevention Bundle includes using multiple EBP interventions consistently and together compared to independently.

Overall Outcome

Reduce SSI in patients undergoing open abdominal surgery.

SMART Goal

Within **3 months** of implementation, surgical services leadership will approve a policy requiring the use of SSI prevention bundle for all open abdominal surgeries.

Interventions & Solutions

Individual intervention(s)

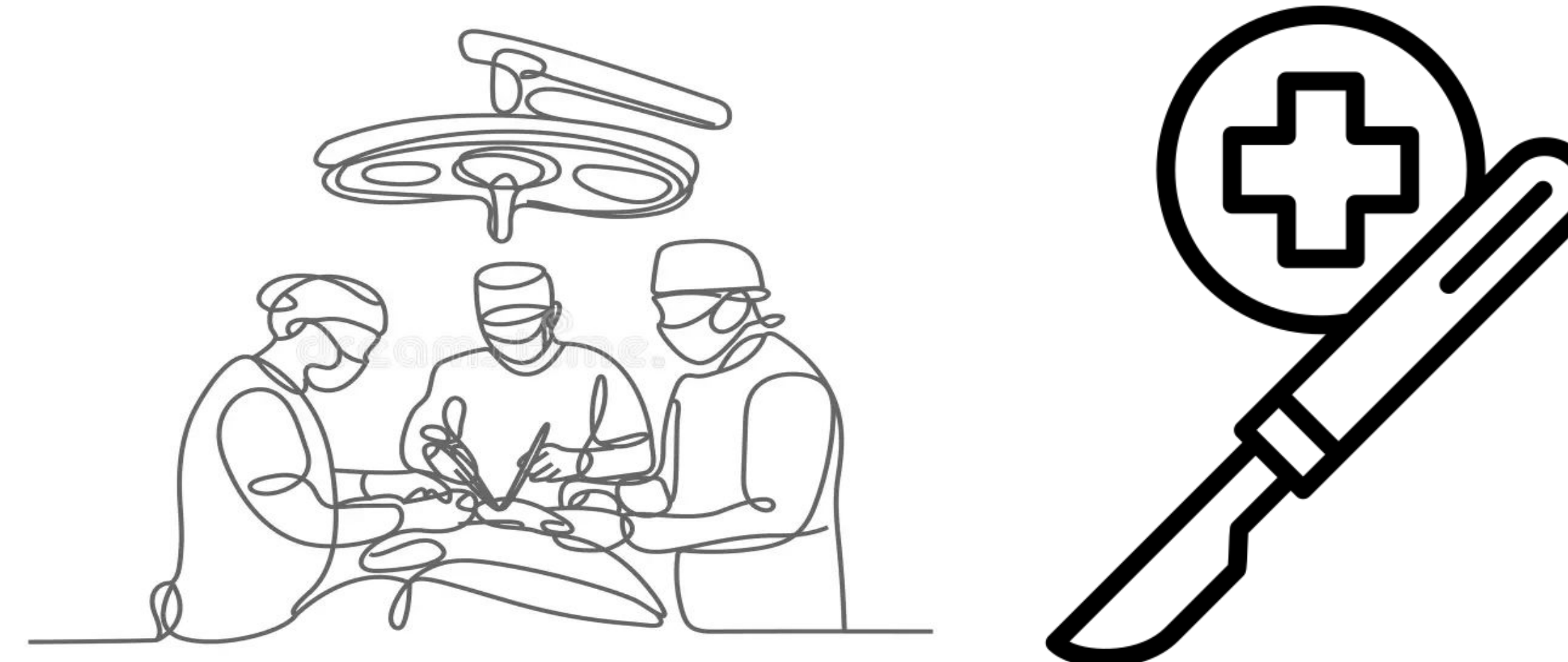
- Educate patients on the importance of proper chlorhexidine gluconate (CHG) baths to reduce the risk of infection.
- This will improve compliance with CHG baths.

Unit intervention(s)

- Required annual in-service on the benefits of a standardized SSI prevention bundle.
- Staff will be educated on SSI prevention bundle and it will be used consistently.

Policy intervention(s)

- Develop and approve a policy requiring the use of a standardized SSI prevention bundle



Diana Meraz, RN

Cal Poly Humboldt
H. Nursing

Key Players

Patient population: Surgical patients undergoing open abdominal surgery.

Patients and family:

- Active participants in care
- Family provides support and recognize signs of infection

Surgical Unit:

- Nurses, surgical tech, surgeon, anesthesiologist. This team must collaborate to consistently use this bundle to prevent SSI
- Nurse leaders help track SSI rates, monitor compliance, staff education, QI efforts.

Evaluation

Process evaluations:

- Monitor bundle compliance
 - Use EMR to track components of SSI prevention bundle
- Staff education
 - Track attendance and sign off staff that are trained.

Impact evaluations:

- Use teach-back method to evaluate patients understanding of CHG bath.
- Staff education- Pre and post quiz to evaluate change in knowledge

References

- Cima, R., Dankbar, E., Lovely, J., Pendlimari, R., Aronhalt, K., Nehring, S., Hyke, R., Tyndale, D., Rogers, J., Quast, L., & Colorectal Surgical Site Infection Reduction Team (2013). Colorectal surgery surgical site infection reduction program: a national surgical quality improvement program--driven multidisciplinary single-institution experience. *Journal of the American College of Surgeons*, 216(1), 23-33. <https://doi.org/10.1016/j.jamcollsurg.2012.09.009>
- Edmiston, C. E., Leaper, D. J., Barnes, S., Jarvis, W., Barnden, M., Spencer, M., Graham, D., & Johnson, H. B. (2018). An Incision Closure Bundle for Colorectal Surgery. *AORN Journal*, 107(5), 552-568. <https://doi.org/10.1002/aorn.12120>
- Iowa Model Collaborative. (2017). The Iowa model-revised: Development and validation. *Worldviews on Evidence-Based Nursing*, 14(3), 175-182. <https://doi.org/10.1111/wvn.12223>
- Lohsiriwat V. (2021). High Compliance With Surgical Site Infection (SSI) Prevention Bundle Reduces Incisional SSI After Colorectal Surgery. *Annals of Coloproctology*, 37(3), 146-152. <https://doi.org/10.3393/ac.2020.04.10.2>
- Surgery icon images - free download on ... (n.d.-f). <https://www.freepik.com/free-photos-vectors/surgery-icon>
- Single Continuous Single Line Drawing Group of Team Surgeon doctor doing surgery operation to the patient with critical condition stock vector - illustration of lines, hand: 180381688. (n.d.-e). <https://www.dreamstime.com/single-continuous-line-drawing-group-team-surgeon-doctor-doing-surgery-operation-to-patient-critical-condition-image180381688>