



HEALTHTRUST®

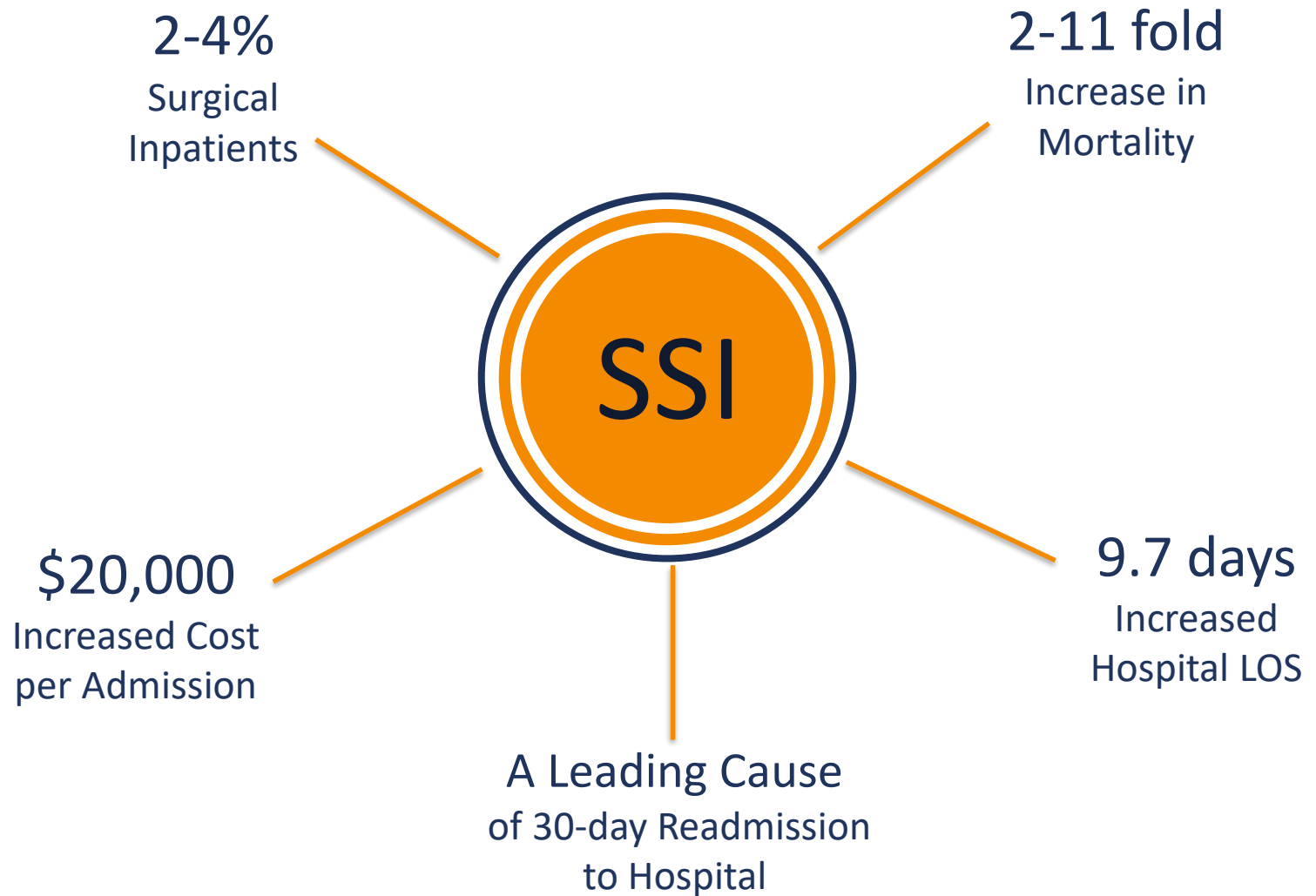
8/20/2020

Use of Iodophor-Impregnated Incise Drapes for Surgical Site Infection Prevention

| Surgical Site Infection (SSI) - The Current State

"SSI is among the most common preventable complication after surgery."

AHRQ, 2019



Iodophor-Impregnated Plastic Surgical Drapes

- Contains iodine impregnated adhesive that adheres to the patient's skin.
- Provides continuous broad spectrum antimicrobial activity to the incision edge.
- Goal is to prevent migration of organisms from the patient's skin into the open surgical wound.
- Evidence is conflicting regarding efficacy in preventing surgical site infection (SSI).



Recent Population Specific Evidence and Meta-analysis

Cardiac Surgery

- Propensity-matched analysis of **5100 consecutive cardiac surgery patients** between January 2008 – March 2015.
- Group A = standard plastic adhesive drape. SSI = 6.5%
- Group B = iodine-impregnated adhesive drape. SSI = 1.9%
- Findings: **patients using standard drape were significantly more likely to develop SSI ($p=0.001$)**. Use of iodine-impregnated drape resulted in €773,495 total cost savings, or about €957 per patient.

<https://pubmed.ncbi.nlm.nih.gov/26374143/>

Abdominal Surgery

- Prospective single center 2-arm randomized controlled trial of **62 patients undergoing elective or emergent laparotomy** between July 2016 and June 2017.
- Group 1 = iodine-impregnated drape
- Group 2 = without iodine-impregnated drape
- Findings: **no statistically significant difference in the incidence of SSI between the two groups overall; for surgeries lasting longer than 3 hours, a significant reduction in SSI was noted.**

<https://www.iosrjournals.org/iosr-jdms/papers/Vol17-issue8/Version-2/B1708020523.pdf>

Hip Surgery

- Prospective single center 2-arm randomized controlled trial of **101 patients undergoing hip surgery** from 2015 to 2016.
- Group 1 = iodophor-impregnated adhesive drapes
- Group 2 = no adhesive drapes
- Findings: **Patients without iodophor-impregnated adhesive drape more likely to demonstrate a positive incisional culture – odds ratio 2.38 ($P=0.31$), however, no differences in rates of SSI or wound complications were noted.**

<https://pubmed.ncbi.nlm.nih.gov/29525345/>

Cochrane Systemic Review

- **Database reviews:** Cochrane, Ovid MEDLINE, Ovid EMBASE, EBSCO CINAHL from 2012 to 2015.
- Randomized controlled trials comparing any plastic adhesive drape with no plastic adhesive drape, used alone or in combination with material or paper drapes in patients undergoing any type of surgery.
- Findings: **Iodine-impregnated adhesive drapes have no effect on the surgical site infection rate.**

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006353.pub4/full>

Centers for Disease Prevention and Control 2017 Guidelines for SSI Prevention

Preoperative Recommendations

Perioperative Recommendations

Postoperative Recommendations

Intraoperative Recommendations

- In clean and clean-contaminated procedures, do not administer additional prophylactic antimicrobial agent doses after the incision is closed in the operating room, even in the presence of a drain.
- Do not apply antimicrobial agents (i.e., ointments, solutions, powders) to the surgical incision.
- Application of autologous platelet-rich plasma is not necessary for prevention of SSI.
- Consider use of triclosan-coated sutures for prevention of SSI.
- For patients with normal PFTs undergoing general anesthesia with endotracheal intubation, provide increased FiO₂.
- Perform skin preparation with an alcohol-based antiseptic agent, unless contraindicated.
- Application of microbial sealant immediately following skin preparation is not necessary.
- ***Use of plastic adhesive drapes with or without antimicrobial properties is not necessary.***
- Consider irrigation of deep or subcutaneous tissues with aqueous iodophor solution. Intra-peritoneal lavage with aqueous iodophor solution in contaminated or dirty abdominal procedures is not necessary.
- Maintain appropriate operating room ventilation.
- Utilize appropriate surgical attire and drapes.
- Reprocess/sterilize all surgical instruments according to guidelines and manufacturer's recommendations.
- Do not perform special cleaning or closing of OR after contaminated/dirty operations.

<https://www.cdc.gov/infectioncontrol/guidelines/ssi/index.html>

World Health Organization 2018 Guidelines for SSI Prevention

Preoperative Recommendations

Postoperative Recommendations

Intraoperative Recommendations

- Provide 80% FiO₂ to patients undergoing tracheal intubation.
- Maintain normothermia.
- Use protocols for intensive perioperative glucose control.
- Use goal-directed fluid therapy to maintain adequate circulating volume.
- Use either sterile, disposable non-woven or sterile, reusable woven drapes and gowns.
- ***Do Not use plastic adhesive incise drapes with or without antimicrobial properties for the purpose of preventing SSI.***
- Consider use of wound protector devices in clean-contaminated, contaminated, and dirty abdominal surgical procedures.
- Consider use of aqueous PVP-I solution of incisional wound irrigation.
- *Do Not* use antibiotic incisional wound irrigation.
- Suggests use of prophylactic negative pressure wound therapy for closed, high risk incisions.
- Suggests the use of triclosan-coated sutures
- Suggest *NOT* using laminar airflow ventilation systems for patients undergoing total arthroplasty surgery.

<https://www.who.int/infection-prevention/publications/ssi-guidelines/en/>

Additional Guidelines

2019 NICE Guidelines: SSI Prevention and Treatment

- Do not use non-iodophor-impregnated incise drapes routinely for surgery as they may increase the risk of surgical site infection.
- ***If an incise drape is required, use an iodophor-impregnated drape unless the patient has an iodine allergy.***

<https://www.nice.org.uk/guidance/ng125/resources/surgical-site-infections-prevention-and-treatment-pdf-66141660564421>

AAOS Guidelines for Knee Surgery

- Do not address/include recommendations regarding the use of iodophor-impregnated incise drapes

https://www.aaos.org/globalassets/quality-and-practice-resources/surgical-management-knee/smoak-cpg_4.22.2016.pdf

AORN Guidelines for Preoperative Skin

- Do not address/include recommendations regarding the use of iodophor-impregnated incise drapes

<https://pdfs.semanticscholar.org/ab7e/e4d1472be36334c24d506bb8eb19d1645366.pdf>

AAOS Guidelines for Hip Surgery

- Do not address/include recommendations regarding the use of iodophor-impregnated incise drapes

https://www.aaos.org/globalassets/quality-and-practice-resources/osteoarthritis-of-the-hip/oa-hip-cpg_6-11-19.pdf

Iodophor-Impregnated Plastic Surgical Drapes: Considerations

When is it necessary to use and why?

- Some evidence supports the use of iodophor-impregnated incise drapes for longer surgical procedures (greater than 3 hours).
- Operative time is independently associated with culture positivity; for every increase in operative time of 15 minutes there is a 9% increase in rate of SSI.

Namba, 2013. <https://pubmed.ncbi.nlm.nih.gov/23636183/>

Is it necessary to have this drape in a custom pack or might this be an opportunity to substitute with another drape to reduce cost?

- Consider avoiding placement in a standard surgical pack as evidence doesn't support standard use of this product.
- ***If iodophor-impregnated incise drape is requested (physician preference), the iodophor-impregnated drape should not be substituted with a non-iodophor-impregnated incise drape.***



References

- Fields AC, Pradarelli JC, Itani KMF. Preventing surgical site infections: Looking beyond the current guidelines. *JAMA*. 2020;323(11):1087-1088. Accessed 8-5-2020 at <https://jamanetwork.com/journals/jama/fullarticle/2761780>
- Rezapoor M, Tan TL, Maltenfort MG, Parvizi J. Incise draping reduces the rate of contamination of the surgical site during hip surgery: a prospective, randomized trial. *The Journal of Arthroplasty*. 2018;33:1891-1895. Accessed 8-4-2020 at <https://pubmed.ncbi.nlm.nih.gov/29525345/>
- World Health Organization. Global guidelines for the prevention of surgical site infection. 2018. Accessed 8-4-2020 at <https://www.who.int/infection-prevention/publications/ssi-guidelines/en/>
- Berrios-Torres SI, Umscheid CA, Bratzler DW, et al. Healthcare Infection Control Practices Advisory Committee. Centers for Disease Control and Prevention guideline for the prevention of surgical site infection. *JAMA Surg*. 2017. Access 8-4-2020 at <https://www.cdc.gov/infectioncontrol/guidelines/ssi/index.html>
- Moores N, Rosenblatt S, Prabhu A, Rosen M. Do iodine-Impregnated adhesive surgical drapes reduce surgical site infections during open ventral hernia repair? A comparative analysis. *The American Surgeon*. 2017;83(6):617-622. <https://pubmed.ncbi.nlm.nih.gov/28637564/>
- Bejko J, Tarzia V, Carrozzini M, Gallo M, Bortolussi G, Comisso M, et al. Comparison of efficacy and cost of iodine impregnated drape vs. standard drape in cardiac surgery: Study in 5100 patients. *J of Cardiovasc Trans Res*. 2015. Accessed 8-4-2020 at <https://pubmed.ncbi.nlm.nih.gov/26374143/>
- Webster J, Alghamdi A. Use of plastic adhesive drapes during surgery for preventing surgical site infection. *Cochrane Database of Systemic Reviews*. 2015. Accessed 8-5-2020 at <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006353.pub4/full>
- National Institute for Health and Care Excellence. Surgical site infections: Prevention and treatment. 2019. <https://www.nice.org.uk/guidance/ng125/resources/surgical-site-infections-prevention-and-treatment-pdf-66141660564421>
- American Academy of Orthopaedic Surgeons. Surgical management of osteoarthritis of the knee. 2015. https://www.aaos.org/globalassets/quality-and-practice-resources/surgical-management-knee/smoak-cpg_4.22.2016.pdf
- American Academy of Orthopaedic Surgeons. Clinical practice guideline on the management of osteoarthritis of the hip. 2017. https://www.aaos.org/globalassets/quality-and-practice-resources/osteoarthritis-of-the-hip/oa-hip-cpg_6-11-19.pdf
- Namba RS, Inacio MCS, Paxton EW. Risk factors associated with deep surgical site infections after primary total knee arthroplasty: an analysis of 56,216 knees. *J Bone Joint Surg Am*. 2013;95(9):775-782. <https://pubmed.ncbi.nlm.nih.gov/23636183/>