

Surgical Site Infection: CDC Guideline for the Prevention of Surgical Site Infection (2017)

About the Guideline

- The guideline was created after an extensive literature search through MEDLINE, EMBASE, CINAHL, and Cochrane Library from 1998 through April 2014. After screening 5,759 titles and abstracts and reviewing 896 articles, 170 evidence-based studies were utilized to formulate this guideline. Clinical experts from the Healthcare Infection Control Practices Advisory Committee (HICPAC), an advisory committee of the Centers for Disease Control (CDC), provided feedback. Further research is recommended as noted by the numerous unresolved issues and areas in which no recommendations were made.
- The evidence was categorized using a modified Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) approach to establish the strength of recommendations.
- Surgical procedures are on the rise along with the cost of complications, which includes surgical site infections (SSI).
 - 2006: approximately 80 million surgical procedures were performed in the United States.
 - 2011: 1.2 million are approximated for prosthetic joint arthroplasty.
 - By 2030 the number of prosthetic joint arthroplasties performed is expected to rise to 3.8 million per year.
 - Arthroplasty infection is expected to rise from 2.18% to 6.5% for hip procedures and 6.8% for knee arthroplasty by the same year, with a cost greater than \$1.62 billion.

Key Clinical Considerations

Become familiar with the recommendations and best-practice statements provided in this guideline, especially if you work in an acute care setting.

Parenteral antimicrobial prophylaxis

- Preoperative antimicrobial agents should only be administered according to clinical practice guidelines and coordinated so that the serum bactericidal concentration is adequate with the first incision.
- After the incision is closed, additional prophylactic antimicrobial agents are not recommended, even in the presence of a drain.
- Administer appropriate antimicrobial agents before skin incision in all cesarean procedures.
- No recommendations were made regarding additional doses of antimicrobial agents intraoperatively or concerning weight-based dosing of antimicrobial agents specifically as prophylaxis for SSI.

Non-parenteral antimicrobial prophylaxis

- It is not recommended to Application of antimicrobial agents, such as ointments, solutions, or powder to the incision site.
- Application of autologous platelet-rich plasma is not needed to prevent SSI.
- Triclosan-coated sutures may be considered.

- No recommendations were made regarding intraoperative antimicrobial irrigation or antimicrobial solutions for soaking prosthetics as prophylaxis for SSI.

Glycemic control

- Perioperatively, all patients—including diabetics—should have blood glucose levels below 200 mg/dL.
- No recommendations have been made for optimal A1C levels or for tighter control of blood glucose levels below 200 mg/dL.

Normothermia

- Maintain normal temperature perioperatively. No recommendations have been made for ways to obtain/maintain normothermia, the lower limit of normal temperature, or the optimal timing or duration of normothermia.

Oxygenation

- For patients who have normal pulmonary function, increased FiO₂ should be provided to those intubated for general anesthesia while in surgery and immediately post-extubation after surgery.
 - Optimal tissue oxygenation can be attained when normothermia and normovolemia are achieved.

Antiseptic prophylaxis

- The night before surgery, patients should bathe or shower with an antiseptic agent or antimicrobial soap over their entire body.
- No recommendation is made for the number of agents to use, for the use of chlorhexidine gluconate washcloths, or the best time for the shower or bath.
- Unless contraindicated, an alcohol-based antiseptic agent should be used for intraoperative skin preparation.
- There is no need for a microbial sealant after the intraoperative skin preparation, nor for the use of antimicrobial plastic adhesive drapes for SSI prophylaxis.
- Aqueous iodophor solution is not needed for lavage in contaminated or dirty abdominal procedures, but it may be considered for irrigation of deep tissue or subcutaneous tissue lavage.
- Before implanting a prosthetic device, there is no recommendation for soaking the device in antiseptic solution.
- No recommendation is made for the reapplication of the antiseptic agent before closing the surgical incision.

Prosthetic joint arthroplasty

Blood transfusion

- Blood transfusions should be given when needed; there is no reason to withhold a transfusion for prevention of SSI.

Systemic immunosuppressive therapy

- There is no need for additional antimicrobial prophylaxis doses after the incision is closed *even if* the patient is receiving systemic corticosteroids or immunosuppressive medications.

There are no recommendations for SSI prophylaxis concerning the following:

- Preoperative intra-articular corticosteroid injection
- Anticoagulation
- Orthopedic space suits
- Prevention of biofilm formation

Reference

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