Preventive of Surgical Site Infections (SSIs) with Antimicrobial Prophylaxis

Note: For appropriate antimicrobial selection, see the Preoperative Antibiotic Order Search Grid on the Pharmacy website.

**Educate Patients Preoperative**

- Discontinue all forms of tobacco at least 30 days pre-op.
- Bathe with 4% CHG soap the day before and day of surgery (i.e., at least twice).
- After showering with 4% CHG soap, do not use any lotions, moisturizer, make-up, deodorant, or other products on the skin near the part of the body that will be cut for surgery.
- For at least 48 hours before surgery, do not shave near the part of the body that will be cut for surgery.
- Notify your surgeon if you develop any illness or infection before surgery.
- Health Care Worker (HCW) must document education provided in IHIS.

**Preoperative Clinical Processes**

- Identify and treat all nonsurgical site infections prior to surgery. Postpone elective operations until infection resolved.
- Assess nutritional status of patient and address before surgery, as feasible.
- Check HbA1c in the preoperative setting and address abnormal levels before surgery, as feasible.
- Activate pre-op order sets.
- Collect nasal screenings as indicated for high-risk surgical procedures; monitor results. Administer mupirocin nasal ointment twice a day for five days if MSSA or MRSA positive. If pending, administer mupirocin until results finalized; discontinue if negative.
- Select appropriate antimicrobial(s) from the Preoperative Antibiotic Order Search Grid. Adjust dosage as needed for obesity.
- Start prophylactic antibiotics within 1 hour of surgery; cipro at 1 hour, vancomycin at 2 hours, fluconazole at 1 hour.
- For high-risk surgeries and gross removal of debris from the surgical site in other procedures, provide targeted bathing of surgical site and surrounding skin folds using disposable SAGE cloth(s).
- Remove hair only if it interferes with the operative site using clippers or depilatory, no razors. If necessary, hair should be removed immediately prior to the procedure, but not in the OR.
- HCWs must keep nails short. Artificial nails are not permitted.
- Clean underneath fingernails prior to first surgical scrub.
- Complete 3-minute preoperative scrub using antiseptic soap, or use alcohol-based surgical antiseptic, according to manufacturer’s directions.
- Keep patients warm in the immediate preoperative period.

**Intraoperative Clinical Processes**

- Comply with Association of periOperative Registered Nurses (AORN) standards for OR asepsis.
- Avoid immediate-use sterilization of instruments and implants.
- Check sterility of instruments during setup/before use.
- Avoid unnecessary traffic in and out of OR to ensure positive pressure is maintained throughout the case.
- Comply with the perioperative attire policy.
- Do not bring personal belongings into the OR suite.
- Wear a cap / hood to fully cover hair / beard and secure surgical mask to completely cover the nose/ mouth when entering the suite, from the time sterile supplies are opened until sterile dressing is applied to incision.
- Wear a mask and sterile gloves when inserting A-lines, spinal or epidural catheters; skin prep and sterile drape required.
- HCWs within 3 feet of the patient are required to wear a mask with face shield during intubation.
- Use sterile technique when placing central intravascular devices, (i.e., large sterile drape, cap, mask with face shield, sterile gown, sterile gloves)
- Wear sterile gloves if working as a scrubbed surgical team member.
- Protect against blood and body fluid exposures; double glove, wear masks with protective eyewear whenever splashes are anticipated, fluid resistant sterile surgical gown and drape; use a hands free passing technique.
- Sterile gloves should be changed immediately following the procedure, when a visible defect is noted, when suspected or actual contamination or perforation occur, and whenever gloves begin to swell, expand, or become loose on the wearer’s hands.
- **ChloraPrep® is the preferred skin prep.** Prepare initial and anticipated surgical fields with ChloraPrep®.

**Exceptions:**

- **DO NOT** use ChloraPrep® internally; on open wounds; in contact with meninges; in or around eyes, nose, or mouth
- **Chlorhexidine gluconate soap 4%** is acceptable for prepping external genitalia.
- **Povidone-iodine** is acceptable for the face, mucous membranes, or perineal areas.
- Sterile saline is to be used as skin prep for open wounds.
• Actively warm patients intraoperatively for all major surgeries (temperature > 36°C or 96.8°F.)
• Control serum blood glucose to 140-180 mg/dL in patients with diabetes.
• Re-dose prophylactic antibiotics, if indicated, to maintain adequate concentrations through the case.
• Handle tissue gently to minimize tissue damage, maintain effective hemostasis, minimize devitalized tissue, and eradicate dead space.
• If infection is suspected, obtain cultures, aerobic and anaerobic intraoperatively; place specimens, tissue, and foreign material in appropriate containers, avoid formalin.
• If drainage is indicated, use a closed-suction drain placed at a separate incision.
• Apply a sterile dressing to cover the incision.
• Remove surgical drains as soon as possible.
• Do not continue prophylactic antibiotics simply because drains are in place. If clinical condition warrants extending antibiotic use, document indications in IHIS.
• Remove urinary catheter between PODs 0 to 2, with day of surgery as day zero.
• Keep primarily closed incisions covered with a sterile dressing until POD 2, per “OSUWMC Post-operative Incision and Wound Care” policy.

Educate Patients Postoperative

• Clean your hands frequently.
• Read and follow instructions for post-op incision care.
• Notify health care providers if signs or symptoms of an SSI develop.
• HCW must document education provided in IHIS.

Postoperative Clinical Processes

• Post procedure: HCWs are to remove and discard all PPE, change surgical scrubs, if soiled.
• Clean and disinfect visibly soiled environmental surfaces with a hospital approved disinfectant before the next operation.
• Control serum glucose in diabetics and non-diabetics.
• Remove surgical drains as soon as possible following the procedure.
• Clean hands with alcohol hand-rub before and after any contact with the surgical site and before donning gloves.
• Discontinue prophylactic antibiotics within 24 hours of surgery, except for ECMO, VAD and transplant recipients within 48 hrs.
• Do not continue prophylactic antibiotics simply because drains are in place. If clinical condition warrants extending antibiotic use, document indications in IHIS.
• Remove urinary catheter between PODs 0 to 2, with day of surgery as day zero.
• Keep primarily closed incisions covered with a sterile dressing until POD 2, per “OSUWMC Post-operative Incision and Wound Care” policy.

Order Sets

• Preoperative antibiotic orders for specific surgeries can be found in individual surgical order sets.

Quality Measures

• Prophylactic antibiotics:
  - Timing. Start prophylactic antibiotics within 60 minutes prior to incision, vancomycin, cipro, and fluconazole 60-120 min. prior to incision.
  - Selection (by procedure) of appropriate antibiotic administered; follow most recent OSUWMC Pre-operative Antibiotic Order Grid.
  - Discontinue prophylactic antibiotics within 24 hr. of Anesthesia End Time (48 hr. for ECMO, VAD and transplants). Contraindications to discontinuation must be documented in the IHIS by MD/APN/PA (SCIP).
• Cardiac surgery patients must have controlled 6 a.m. blood glucose (≤ 200 mg/dL) on POD 1 and POD 2 with Anesthesia End being POD 0.
• Appropriate hair removal for all surgical patients with clippers, depilatory, or no hair removal.
• Urinary catheter removal on POD 0 - POD 2 with day of surgery = day zero. Contraindications to removal must be documented in IHIS by MD/APN/PA (SCIP).
• Perioperative temperature management:
  - Patients should have had at least one body temperature ≥ 96.8°F / 36°C recorded within 30 minutes immediately prior to or 15 min. immediately after anesthesia end time.
  - Patients are kept warm preoperatively and actively warmed intraoperatively.
• Active warming limited to: (1) forced air warmers/garments/devices, (2) warm water garments/devices, and (3) conductive over-the-body active warming, such as over-the-patient blanket.

References

• Specifications Manual for National Hospital Quality Measures (SCIP), version 3.1.

Guideline Authors

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Guideline Approved


Disclaimer: Clinical practice guidelines and algorithms at The Ohio State University Wexner Medical Center (OSUWMC) are standards that are intended to provide general guidance to clinicians. Patient choice and clinician judgment must remain central to the selection of diagnostic tests and therapy. OSUWMC’s guidelines and algorithms are reviewed periodically for consistency with new evidence; however, new developments may not be represented.

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