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# Infection Prevention in the Surgery Setting - Identifying Risks and Improving Compliance

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# Learning Objectives

- Share infection prevention "best practices" as they relate to the perioperative setting
- Identify current and potential future challenges in the perioperative setting
- Create a plan for improving processes and compliance with nationally recognized guidelines and standards

# General Facts - Surgical Site Infections

- Surgical Site Infections (SSIs) account for approximately 20% of all Healthcare Associated Infections (HAIs) in hospitalized patients
- Approximately 60% of SSIs are preventable, particularly with use of evidence-based guidelines (bundle practices)
- SSI surveillance is important to establish baseline data
- Use of the National Health Safety Network (NHSN) patient safety component manual (inpatient and outpatient) to determine infections
- NHSN is the tracking system developed by the Centers for Disease Control and prevention (CDC)



# Perioperative Best Practices

# Skin Prep

## Patient

- Preop preparation including bathing or showering with an antiseptic agent per surgeon/MD orders
- Refrain from using skin products (e.g., lotion) after antiseptic bathing/showering
- Refrain from hair removal prior to surgery/procedure
- Patient supervision on day of surgery if antiseptic wipes/cloths are ordered

# Skin Prep

## Staff

- Follow facility and surgeon/MD specific skin prep policies
- Refer to surgeon/MD orders pertaining to hair removal
- Perform hand hygiene prior to beginning skin prep
- Use sterile technique including gloves
- Follow antimicrobial product IFUs
- Utilize the assistance of the product manufacturers for education
- Observe for breaches

# Safe Injection Practices

- Use aseptic technique
- Pre-drawn medications to be labeled with the date and time of draw, initials of person drawing, medication name, strength and *beyond-use date* and time.
- Initiate/administer IV solutions within 1-hour of preparation
- Scrub the rubber diaphragm of vial with alcohol swab
- “Scrub the hub” (IV port) for 10 - 15 seconds prior to entering the line

# Safe Injection Practices

- Preferably use multi-dose vials for one patient
- Multi-dose vials used for more than one patient to be handled and stored away from immediate patient care areas (e.g., OR, anesthesia carts) and appropriately labeled
- Refrain from transporting/holding medications in clothing or pockets
- Discard properly stored multidose vials 28 days after opening, or per manufacturer, or if sterility compromised



# Point of Care Devices

- Perform hand-hygiene and don gloves
- Single-use device (retractable) to puncture the finger should never be used for more than one patient
- Dispose of sharps at the point of use in an approved sharps disposal container
- Device (e.g., blood glucose meter, INR monitor) is cleaned and disinfected after every use according to the manufacturer's instructions
- Use an EPA-registered disinfectant effective against blood-borne pathogens including Hepatitis B, Hepatitis C and HIV
- Remove gloves, discard and perform hand-hygiene

# Environment of Care

- Follow nationally recognized guidelines and standards for environmental cleaning including the Association of Operating Room Nurses (AORN)
- Damp dust OR/procedure room horizontal surfaces before the first case each day
- Perform room turnover between each patient per facility policy and guidelines after patient has left the room
- Monitor for equipment issues including torn mattresses, table pads, rust, tape residue for challenges related to effective cleaning and disinfection

# Environment of Care

- Refrain from storing supplies in corrugated cardboard boxes in the facility
- Perform terminal cleaning at the end of each day (facility staff or contracted company) and monitor for compliance
- Ensure room temperatures and pressures are monitored daily, documented and address issues
- Ensure vents are dust free and walls/doors are intact
- Monitor medication refrigerator temperatures preferably with ongoing documentation and alerts when out of range

# Cleaning, Disinfection and Sterilization

- Develop and implement policies – facility specific as per nationally recognized guidelines and standards including AORN, ANSI/AAMI and specialty organizations (e.g., SGNA/ASGE, ASORN)
- Certified central sterilization technicians (CST) are required by some States
- Follow manufacturer instructions for reprocessing instruments and medical devices. Includes chemical products, instruments/devices and reprocessing equipment (ultrasonic, washer/dryer, autoclaves)

# Cleaning, Disinfection and Sterilization

- Develop a system for addressing issues and action if problems arise (acute situations may require immediate action)
- Provide ongoing education opportunities, in-time feedback and staff support (e.g., appropriate equipment for the services rendered)
- Reach out to manufacturers for support and guidance
- Evaluate effectiveness of processes including cleaning verification
- Monitor all sterilization steps as per guidelines, standards and IFUs (e.g., physical, chemical and biological monitoring)



# Perioperative Challenges

# Present and Future Challenges

- Space at a premium - lack of storage space
- Space at a premium – overcrowded operating rooms
- Budget constraints
- Low inventory and restocking issues
- Supply chain issues
- Product recall
- Improper maintenance of equipment

# Present and Future Challenges

- Staff shortages and high turnover
- Clinical staff “wear many hats”
- Lack of time for education and “in-time” in-services
- Infection Prevention designee often dedicated to other tasks
- Room turnover delays due to inadequate number of trays/instruments
- Shortcuts in reprocessing due to tight procedure schedules





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# Process Improvement and Compliance

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# Process Improvement and Compliance

- Develop and implement policies and procedures
- Monitor outcomes (impact of care) for example, SSI surveillance
- Monitor processes (care that is given) for example, hand-hygiene
- Report monitoring results to infection prevention and supporting committees
- Provide feedback of monitoring to relevant parties
- Act upon identified issues as soon as possible



# Annual Plan and Risk Assessment

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# Annual Plan

- Develop and implement a facility specific plan based on CMS and State requirements as well as Accreditation Organization standards
- Plan to be reviewed/updated and approved annually by infection prevention and supporting committees
- Plan is an ongoing working document and may need updating or editing more frequently if changes occur in the facility (e.g., new services are introduced)
- Integration of IC plan into the Quality Assessment Performance Improvement (QAPI) program

# Risk Assessment

- Develop a facility specific infection prevention risk assessment (RA) based on geographic location, population served, and services provided
- Prioritize and score identified risks
- Develop goals and objectives based on identified risks
- RA to be reviewed and approved annually by infection prevention and supporting committees
- RA may need updating or editing more frequently if changes occur in the facility (e.g., new services are introduced, population changes)

# Questions?



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# Thank you

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# Resources

- NHSN Surgical Site Infection Event (SSI). 2024. Available online at: <https://www.cdc.gov/nhsn/pdfs/pscmanual/9pscasicurrent.pdf>
- Centers for Disease Control and Prevention Guideline for the Prevention of Surgical Site Infection, 2017. Available online at: <https://jamanetwork.com/journals/jamasurgery/fullarticle/2623725>
- Infectious Disease News. Feb 2024. Available online at: The best treatment of surgical site infections is prevention. <https://www.healio.com/news/infectious-disease/20240206/the-best-treatment-of-surgical-site-infections-is-prevention#:~:text=However%2C%2060%25%20of%20SSIs%20are,from%20the%20patient's%20endogenous%20flo>ra.
- OR Manager Magazine. SSI prevention in ASCs. May 2023. Available online at: <https://www.ormanager.com/ssi-prevention-in-ascs/>
- National Healthcare Safety Network (NHSN) Patient Safety Component Manual. 2024. Available online at: [https://www.cdc.gov/nhsn/pdfs/pscmanual/pcsmanual\\_current.pdf](https://www.cdc.gov/nhsn/pdfs/pscmanual/pcsmanual_current.pdf)
- National Healthcare Safety Network (NHSN) Outpatient Procedure Component Manual. 2024. Available online at: <https://www.cdc.gov/nhsn/pdfs/opc/opc-manual-508.pdf>



# Resources

- Association of Surgical Technologies (AST). Available online at: AST Standards of Practice for Skin Prep of the Surgical Patient. [https://www.ast.org/uploadedfiles/main\\_site/content/about\\_us/standard\\_skin\\_prep.pdf](https://www.ast.org/uploadedfiles/main_site/content/about_us/standard_skin_prep.pdf)
- APIC Position Paper: Safe Injection, Infusion, And Medication Vial Practices In Health Care (2016). Available online at: [https://apic.org/Resource\\_/TinyMceFileManager/Position\\_Statements/2016APICSIPPositionPaper.pdf](https://apic.org/Resource_/TinyMceFileManager/Position_Statements/2016APICSIPPositionPaper.pdf)
- AORN *Guidelines for Perioperative Practice*. 2024. Available online at: <https://www.aorn.org/guidelines-resources/guidelines-for-perioperative-practice/eguidelines-plus>
- Healthcare Purchasing News Magazine. What are the top challenges vexing the OR and Surgical Suites? Nov. 22, 2022. Available online at: <https://www.hponline.com/sourcing-logistics/article/21286570/what-are-the-top-challenges-vexing-the-or-and-surgical-suites>
- CMS State Operations Manual Appendix A – Surveyor Protocol, Regulations and Interpretive Guidelines for Hospitals. Rev. 220; Issued:04-19-24. Available online at: [https://www.cms.gov/regulations-and-guidance/guidance/manuals/downloads/som107ap\\_a\\_hospitals.pdf](https://www.cms.gov/regulations-and-guidance/guidance/manuals/downloads/som107ap_a_hospitals.pdf)
- CMS State Operations Manual Appendix L - Guidance for Surveyors: Ambulatory Surgical Centers. Rev. 215, 07-21-23). Available online at: [https://www.cms.gov/regulations-and-guidance/guidance/manuals/downloads/som107ap\\_l\\_ambulatory.pdf](https://www.cms.gov/regulations-and-guidance/guidance/manuals/downloads/som107ap_l_ambulatory.pdf)