Providing a Safe Surgical Environment

Asepsis
Prepared a safe surgical environment for the patient includes practices that will eliminate or greatly reduce the potential for contamination of the surgical site (including any perforation of patient skin, surgical incision, or insertion of devices or instrumentation into sterile body cavities) with any microorganisms, including spores and pathogens. This practice is called surgical asepsis. Aseptic technique identifies an environment that is clean but not free of microorganisms. The term sterile technique refers to a controlled environment where special decontamination and autoclaving processes have eliminated microorganisms. Failure to practice these principles with vigilance may place the patient at increased risk of a surgical site infection (SSI).

Possible sources of contamination are skin, hair, the nasopharynx, fomites (contaminated particles present on inanimate objects), air, and human error or breaks in aseptic technique. By following the Universal Precautions for safe handling of blood and body fluid as defined by the Occupational Safety and Health Administration (OSHA) and the Center for Disease Control (CDC), the patient is protected from many infections.

The appropriate management of the surgical environment is crucial in the prevention of infection. Environmental controls include reducing the entering and exiting of personnel within the surgical suite; utilization of aseptic barriers such as hand washing; the wearing of caps, gloves, and masks; terminal cleaning; and control of ventilation systems within the surgical suite.

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<tr>
<th>Action</th>
<th>Rationale</th>
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<tr>
<td>1. Only sterile items may be placed in the sterile field. Instruments should be properly cleaned, decontaminated, and sterilized before using. This process will eliminate all microorganisms, including spores and pathogens.</td>
<td>1. Sterile items should only touch sterile items. Sterile items touching unsterile, soiled, or questionable items are considered contaminated. Microorganisms from non-sterile items may migrate to sterile items through contact. Maintaining sterility of all items will prevent infections or toxic anterior segment syndrome (TASS).</td>
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<td>2. All packages that are considered sterile should be inspected for tears and punctures, wetness, sterile indicators/integrators, and expiration dates prior to placing item on the sterile field.</td>
<td>2. All packages that are torn, punctured, wet, or out of date are contaminated.</td>
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<td>3. The sterile field must be maintained, continuously monitored within the range of vision, and never left unattended. Never turn your back to the sterile field. Sterile items below waist level and above the nipple line are considered to be questionable sterile areas.</td>
<td>3. The sterile field is only considered sterile if it can be viewed at all times for any possible contamination. Areas out of the direct field of vision can be unknowingly contaminated.</td>
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<td>4. The scrub nurse should set up the sterile field immediately prior to beginning the procedure. Avoid activities that may create air currents, such as excessive movement and human traffic; talking, laughing, sneezing, and coughing should be kept to a minimum within the proximity of the sterile field. Surgical masks should be worn when working in close proximity to the sterile field.</td>
<td>4. Prolonged exposure to air may contaminate the sterile field. Air currents may carry microorganisms that can become airborne and contaminate the sterile field.</td>
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5. Drapes should be maintained on a surface that cannot be penetrated by moisture (impervious).

5. Sterile items that come in contact with wet surfaces will contaminate those items and must be discarded. Packages that are moist are considered to be contaminated. Proper drying cycles should be used during the sterilization process.

6. When performing a surgical hand scrub, the hands should be held above the elbows. Hands should be dried from the fingers to the elbows; keep fingers pointing upward.

6. Special attention should be given to the hands; water from the elbow should not travel toward them.

7. One inch from the edges of the wrappers and containers are the no touch zone. Always maintain 1 inch between the scrub nurse and the person opening the package.

7. The one inch no touch zone is the safe area that prevents the scrub nurse from contaminating herself, supplies or instrumentation while receiving items from the non-sterile team member.

8. A sterile barrier is created around the surgical site with drapes.

8. The sterile field provides a sterile work area, which allows sterile objects to be handled with minimal risk of contamination. This area is considered to be free of microorganisms.

9. The surgical team is responsible for monitoring the field for any contamination possibilities. If there is a question about the sterility of anything, discard the item and open a new one.

9. Monitoring for any possible sources of contamination requires the vigilance of all team members. The sterile field should never be left unattended.

10. Prior to starting surgery, counts of sponges, sharps, needles, iris retractors, antimetabolite patties, instruments, cottonoids, and neuro-patties are performed. Subsequent counts should be done before the initial closure of the incision and before the closure of the skin. All counts must be correct and reconciled before the patient leaves the OR.

10. This is necessary to prevent the retention of foreign objects in the patient's wound.