4.4: Sterile Fields

A sterile field is established whenever a patient’s skin is intentionally punctured or incised, during procedures involving entry into a body cavity, or when contact with nonintact skin is possible (e.g., surgery or trauma). Surgical asepsis requires adherence to strict principles and intentional actions to prevent contamination and to maintain the sterility of specific parts of a sterile field during invasive procedures. Creating and maintaining a sterile field is foundational to aseptic technique and encompasses practice standards that are performed immediately prior to and during a procedure to reduce the risk of infection, including the following:

- Handwashing
- Using sterile barriers, including drapes and appropriate personal protective equipment
- Preparing the patient using an approved antimicrobial product
- Maintaining a sterile field
- Using aseptically safe techniques

There are basic principles of asepsis that are critical to understand and follow when creating and maintaining a sterile field. The most basic principle is to allow only sterile supplies within the sterile field once it is established. This means that prior to using any supplies, exterior packaging must be checked for any signs of damage, such as previous exposure to moisture, holes, or tears. Packages should not be used if they are expired or if sterilization indicators are not the appropriate color. Sterile contents inside packages are dispensed onto the sterile field using the methods outlined below. See Figure \(\PageIndex{1}\) for an image of a nurse dispensing sterile supplies from packaging onto an established sterile field.
When establishing and maintaining a sterile field, there are other important principles to strictly follow:

- Disinfect any work surfaces and allow them thoroughly dry before placing any sterile supplies on the surface.
- Be aware of areas of sterile fields that are considered contaminated:
  - Any part of the field within 1 inch from the edge.
  - Any part of the field that extends below the planar surface (i.e., a drape hanging down below the tray tabletop).
  - Any part of the field below waist level or above shoulder level.
  - Any supplies or field that you have not directly monitored (i.e., turned away from the sterile field or walked out of the room).
  - Within 1 inch of any visible holes, tears, or moisture wicked from an unsterile area.
- When handling sterile kits and trays:
  - Sterile kits and trays generally have an outer protective wrapper and four inner flaps that must be opened aseptically.
  - Open sterile kits away from your body first, touching only the very edge of the opening flap.
  - Using the same technique, open each of the side flaps one at a time using only one hand, being careful not to allow your body or arms to be directly above the opened drape. Take care not to allow already-opened corners to flip back into the sterile area again.
  - Open the final flap toward you, being careful not to allow any part of your body to be directly over the field. See Figure \(\PageIndex{2}\) for images of opening the flaps of a sterile kit.
  - If you must remove parts of the sterile kit (i.e., sterile gloves), reach into the sterile field with the elbow raised, using only the tips of the fingers before extracting. Pay close attention to where your body and clothing are in relationship to the sterile field to avoid inadvertent contamination.
When dispensing sterile supplies onto a sterile field:

- Before dispensing sterile supplies to a sterile field, do not allow sterile items to touch any part of the outer packaging once it is opened, including the former package seal.
- Heavy or irregular items should be opened and held, allowing a second person with sterile gloves to transfer them to the sterile field.
- Wrapped sterile items should be opened similarly to a sterile kit. Tuck each flap securely within your palm, and then open the flap away from your body first. Then open each side flap; secure the flap in the palm one at a time and open. Finally, open the flap (closest to you) toward you, while also protecting the other opened flaps from springing back onto the wrapped item.
- Peel pouches (i.e., gloves, gauze, syringes, etc.) can be opened by firmly grasping each side of the sealed edge with the thumb side of each hand parallel to the seal and pulling carefully apart.
- Drop items from six inches away from the sterile field.
- Sterile solutions should be poured into a sterile bowl or tray from the side of the sterile field and not directly over it. Use only sealed, sterile, unexpired solutions when pouring onto a sterile field. Solution should be held six inches away from the field as it is being poured. Avoid splashing solutions because this allows wicking and transfer of microbes. After pouring of solution stops, it should not be restarted because the edge is considered contaminated. See Figure 4 of an image of a nurse pouring sterile solution into a receptacle in a sterile field before the procedure begins.
- Don sterile gloves away from the sterile field to avoid contaminating the sterile field.
Figure \(\PageIndex{3}\): Pouring Sterile Solution

1. “DSC_0319-1024x678.jpg” by British Columbia Institute of Technology is licensed under CC BY 4.0. Access for free at https://opentextbc.ca/clinicalskills/chapter/sterile-gloving/.
