Preventing
CLABSI & CAUTI

Preventive Measures for Central Line Associated Bloodstream Infection & Catheter Associated UTI
By the end of this lesson, you will be able to:

• Explain the importance of infection-prevention protocols in reducing the instances of central line-associated bloodstream (CLABSI) and catheter-associated infections (CAUTI).

• List the 5 elements of the central-line infection-prevention bundle.

• List at least 5 elements of the CAUTI prevention bundle

• Apply infection-prevention protocols to help reduce instances of central line-associated infections and catheter-associated UTI in your facility.
Central Lines

- **Central lines**, including PICCs (peripherally inserted central catheters), provide access to a patient's bloodstream for injectable medications/solutions, dialysis and hyper-alimentation and can pose a safety risk to patients.

- If an infection occurs through a central line, the infection may spread through the patient's bloodstream, possibly leading to organ dysfunction and even death.

- The Centers for Disease Control and Prevention (CDC) and The Joint Commission recommend a bundle of infection-prevention techniques that help reduce the risk for central line associated infections (CLABSI).

- Adherence to these techniques has been shown to reduce the central-line infection rate.

* **Kaiser Permanente’s target for central-line infections is zero.**
The Central Line Infection Prevention Bundle provides a group of evidence-based best practices that result in substantially better outcomes when performed together.

When your patient has a central line, follow these best practices to avoid infection:

• Proper hand hygiene
• Use of maximal barrier precautions when inserting the central line
• Chlorhexidine skin antisepsis
• Ideal central-line site selection, avoiding the femoral vein (in adult patients)
• Daily review of line necessity with removal of unnecessary lines
Maximal Barrier Precautions

Use maximal barrier precautions when inserting a central line reduces the risk of infection. Use the following barriers during insertion:

- Sterile gown, gloves, cap, and mask
- Large sterile drape

Note: Biopatch placed around catheter site is an additional best practice.

Patient Skin Prep

- Be sure to use chlorhexidine antiseptic wipes/prep when preparing the patient's skin for central-line insertion.
- To reduce the risk of infection use a back and forth friction motion when disinfecting skin.
- Allow skin to dry completely following manufacturer's instructions before inserting the central line.
Central Line Site Selection

- Selecting the site for the patient's central line also plays a role in reducing risk of bloodstream infection.
- For adult patients, avoid inserting a central line in the patient's femoral vein.
- Subclavian is preferred site, if clinically feasible.

Daily Review of Line Necessity

- Unnecessary central lines leave the patient exposed to unnecessary infection risk.
- Review the necessity of a patient's central line daily, and as soon as the line is no longer needed, remove it.
- Nurses document the need daily in the Doc Flowsheet.
- Physicians document in the Progress Notes.
Ongoing Central Line Care

- Observe appropriate hand hygiene, don gloves, and scrub the hub before drawing blood or giving medication through central catheters.
- Change transparent dressing and Biopatch™ every 7 days, and PRN if loose, or if there is moisture under the dressing.
- TPN:
  - Use new line or lumen.
  - Do not use line for medications.

There are neonatal intensive-care exceptions to the TPN protocols listed above.

Scrubbing the Hub

- It is important to disinfect the injection port of the central line prior to any medication administration. This is called "scrubbing the hub."
- "Scrub the hub" for 15 seconds using an alcohol wipe.
- Disinfecting the injection port prevents bacteria from entering the central line when medications are administered.

  - Some facilities may use alcohol impregnated caps to protect the injection ports; you must follow manufacturer instructions to use the caps properly.
• Prior to insertion of a central venous catheter, educate patients, and/or their legal custodian when indicated their families as needed, about central line-associated bloodstream infection prevention.

• Document the education you provided as well as the patient's understanding.

  Some items you want to cover include the following:

  » Reason why central line is needed
  » Proper hand hygiene
  » Importance and care of the dressing
  » Signs and symptoms of infection to report
• Urinary tract infection (UTI) is one of the most common hospital–acquired infections (HAI)

• 70-80% of hospital acquired UTI’s are attributable to urinary catheters.

• Each day the catheter remains in place, the risk of CAUTI increases by 3-7%
Adhere to the Catheter Associated Urinary Tract Infection Prevention (CAUTION) Bundle

• Closed System
  • Use only continuously closed system and do NOT break green seal
  • Obtain specimens only from the sample port

• Aseptic Technique
  • Use aseptic technique and sterile equipment for insertion
  • Do not let tubing or collection bag touch the floor
  • Use container designated only for emptying or measuring output

• Universal/Standard Precautions
  • Hand hygiene before and after applying gloves, touching catheter, tubing or collection bag
  • Use appropriate personal protective equipment (PPE) when handling catheter or tubing and when emptying collection bag
Infection Control
CAUTI Prevention Bundle

• Tie/Secure Catheter to Body
  • Secure catheter with tubing securement device to patient thigh
  • Secure tubing to bed with clip

• Indications for Use
  • Avoid unnecessary catheter use
  • Review catheter necessity daily and discontinue if no longer indicated
  • Immobility, incontinence and patient request alone are not indications for urinary catheter use
  • Document reason for necessity in doc flow sheet in HealthConnect
Infection Control

CAUTI Prevention Bundle

• **Obstruction Free**
  - Keep patient from sitting or lying on tubing
  - When repositioning patient, keep tubing obstruction free

• **No Dependent Loops**
  - Never allow tubing to loop, kink or hang dependently below collection bag
  - Position collection bag below the bladder and at the foot of bed
Indications for Catheter Necessity

- Frequent urine output monitoring for critically ill (is: CHF, Shock, Sepsis)
- Chemically paralyzed, sedated, or comatose patient
- Chronic retention or neurogenic bladder in patients in whom intermittent catheterization is not warranted (ie: spinal cord injury, children with myelomeningocele)
- To assist in healing of open sacral or perineal wounds in incontinent patients
- Acute urinary retention/obstruction (PVR on scanner >250 ml.)
- Peri-operative use for selected surgical procedures (renal/urology, colorectal, abdominal/pelvic, major orthopedic surgery)
- Trauma: spinal or pelvic surgeries
- End of life care or comfort measures per family request
- Continuous bladder irrigation
- Regional anesthesia
- Diagnostic procedures if indicated
CAUTI Prevention

• A physician order is required for inserting, irrigating and discontinuing urinary catheters

• Ensure bathing with peri-care is done daily and as needed

• Consider alternatives to indwelling urinary catheters such as In/Out catheterization or condom catheters

• Document compliance with the CAUTI Bundle in the Lines/Drains/Airways group in HealthConnect every shift
Prevention of Device-Related Infections: CLABSI & CAUTI

1. True or False
   For adult patients, avoid inserting a central line in the patient’s femoral vein.

2. Multiple Choice: Maximal barrier precautions include which of the following? Select all that apply.
   A. Wearing a sterile gown
   B. Wearing gloves
   C. Wearing a mask
   D. Wearing a cap
   E. Using a large, sterile drape
   F. All of the above.

3. Multiple choice: It is important to review central-line necessity on what basis?
   A. Daily
   B. Weekly
   C. Every other day
   D. Bi-weekly

4. Urinary catheter necessity should be review how often?
   A. On insertion
   B. Every shift
   C. Daily
   D. Upon discharge
   E. A & C

5. Immobility is an appropriate indication for urinary catheter.
   A. True
   B. False

6. Which are elements of the CAUTI Prevention Bundle (select all that apply):
   A. No dependent loops
   B. Use securement device
C. Keep collection bag off the floor
D. All of the above