Preventing Central Line-Associated Bloodstream Infection (CLABSI)

What You Need to Know

CLABSI Prevention

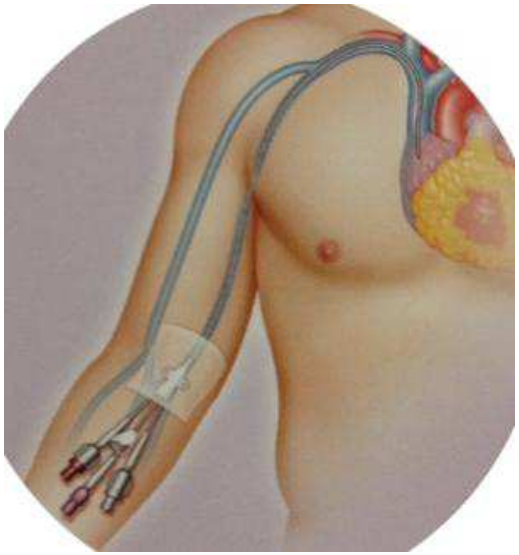
Central line-associated blood stream infections (CLABSI) are a type of hospital acquired infection (HAI)

- CLABSIs may add to length of stay (LOS) and can increase morbidity and mortality risk for patients.
- CLABSIs are publicly reportable and may have a negative effect on reimbursement for hospital care.

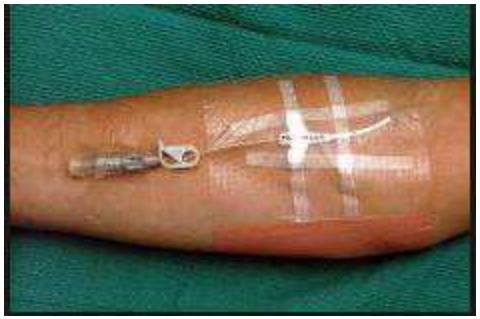
CLABSI Prevention

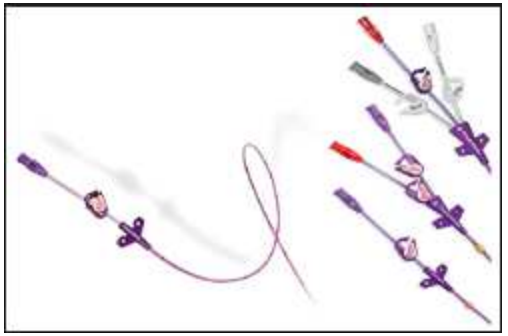
What is considered a CVC?

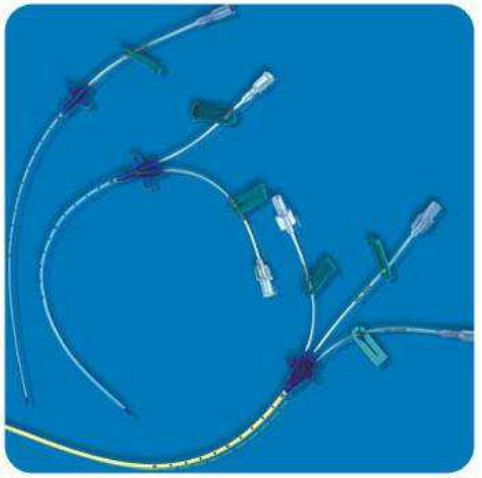
- Any venous catheter that has its distal tip in the right atrium or the superior/inferior vena cava.
- Examples are: right/left peripherally inserted central catheter (PICC) lines - usually inserted at the antecubital fossa (ACF), right/left subclavian (SC) lines, right/left internal jugular (IJ) lines, and right/left femoral lines.
- CVCs may include: single/double/triple lumen catheters, Swan-Ganz catheters, venous introducers, tunneled catheters, implanted venous access devices, Hickman catheters, etc..
- These are **not** CVCs: temporary dialysis catheters (like Quinton or Marhukar).

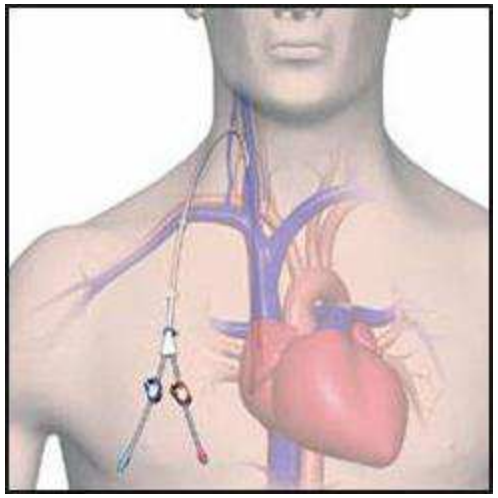


PICC Line

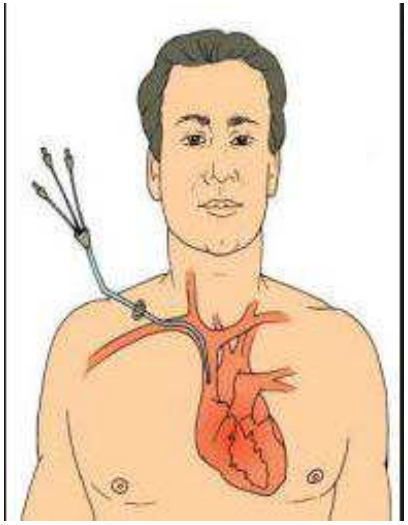


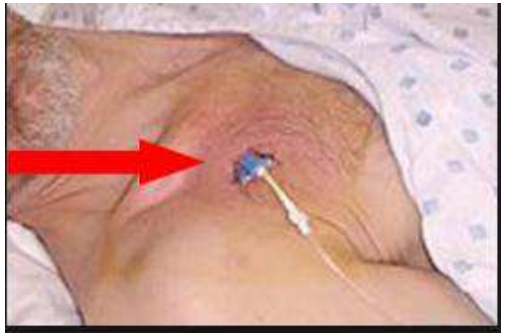




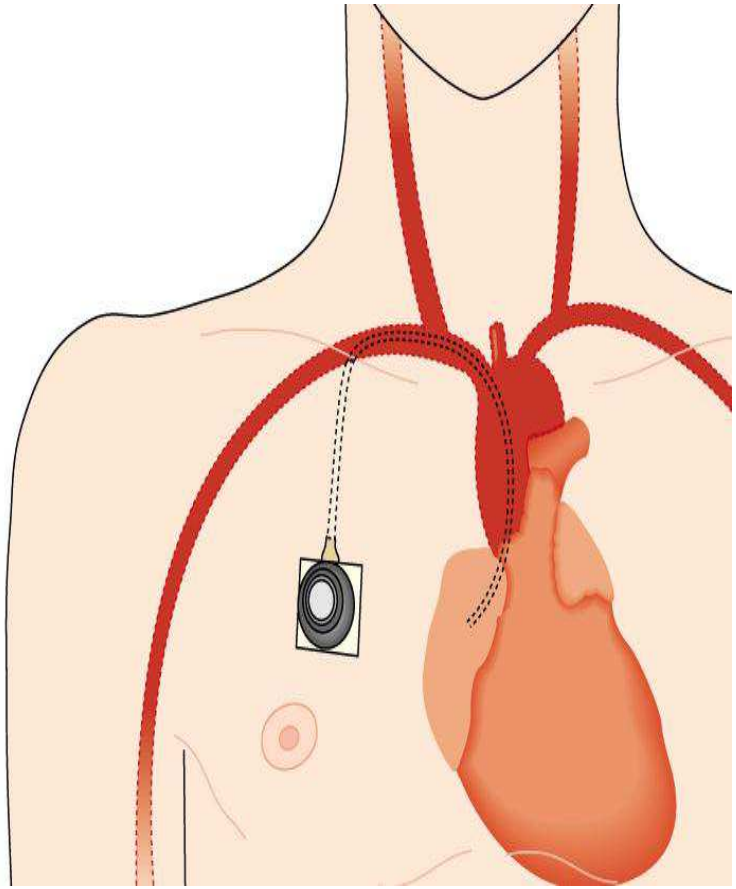


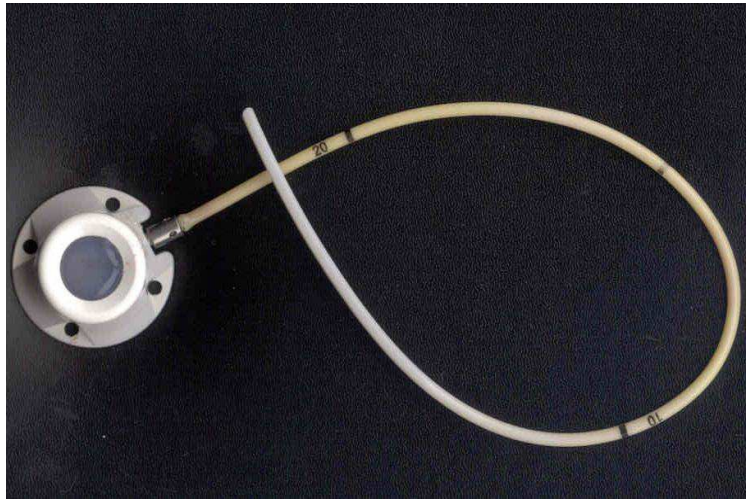
IJ / SC Line



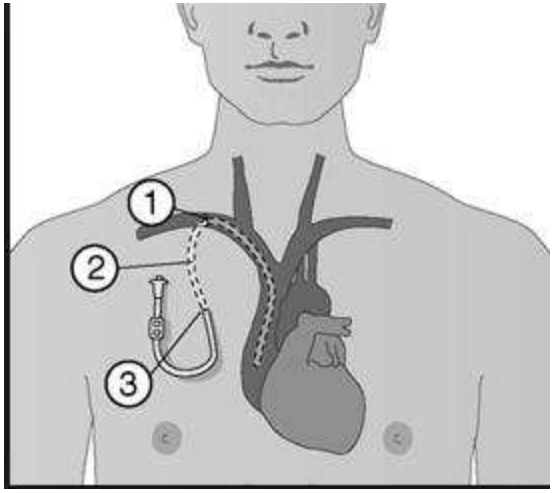


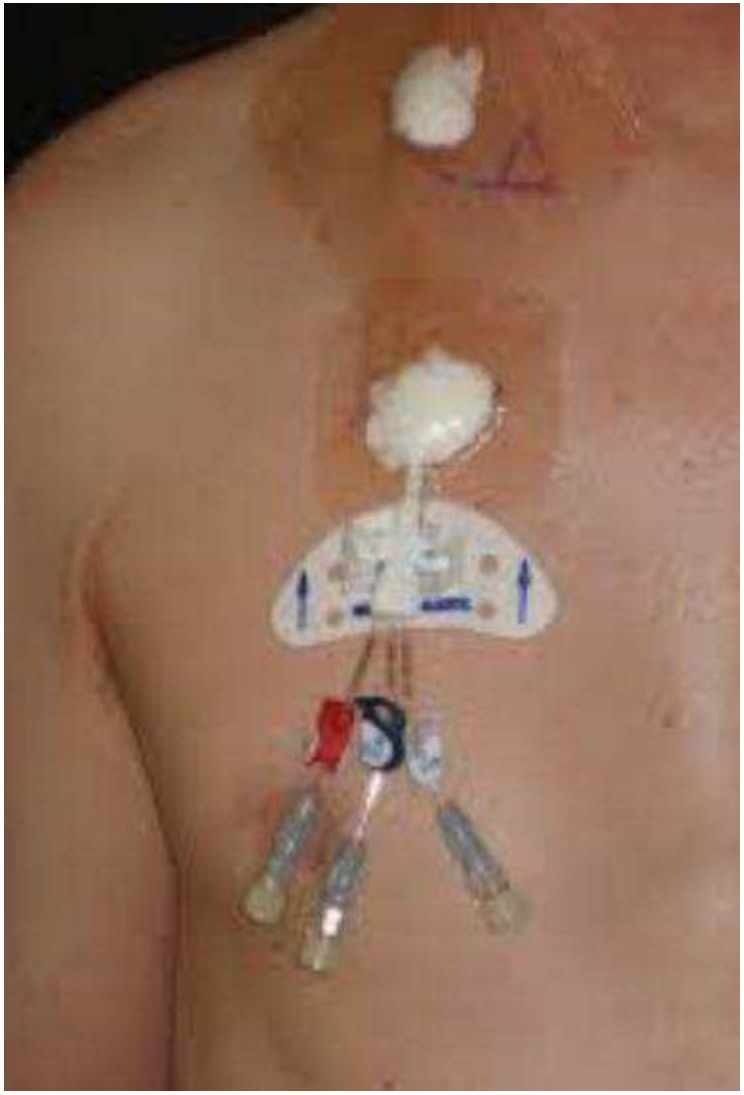
Implantable Venous Access Device



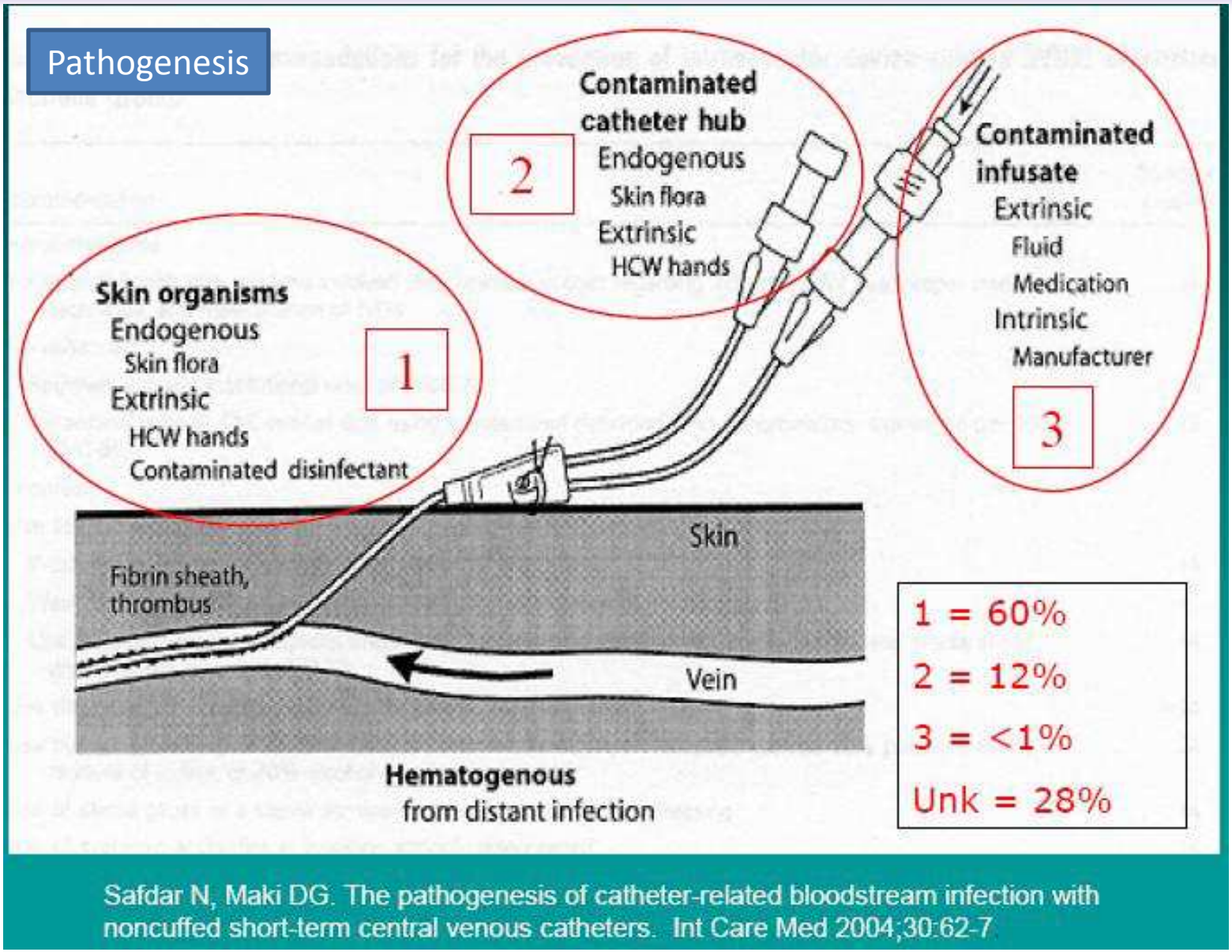


Tunneled Catheter





CLABSI Prevention



Safdar N, Maki DG. The pathogenesis of catheter-related bloodstream infection with noncuffed short-term central venous catheters. Int Care Med 2004;30:62-7

CLABSI Prevention

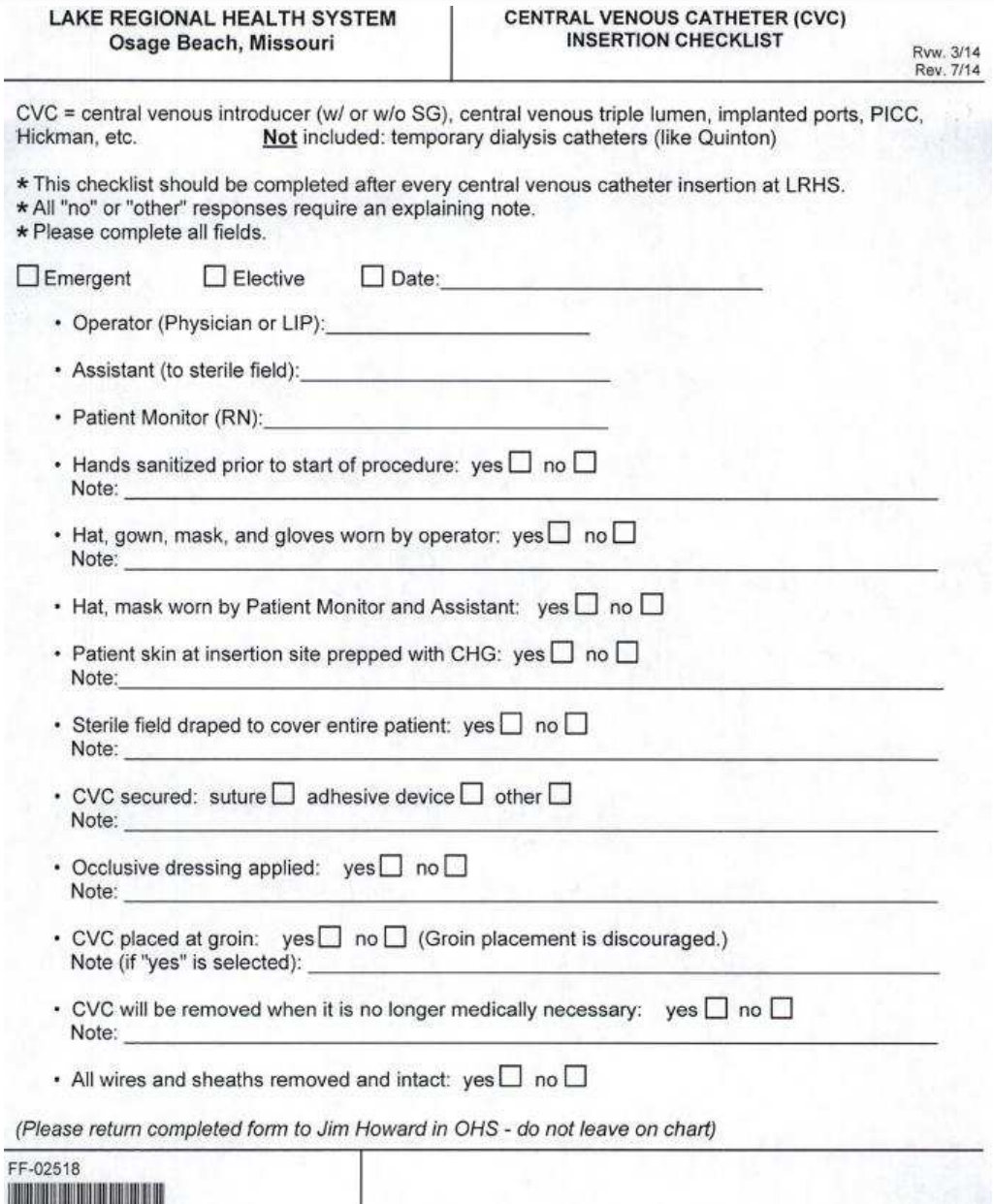
Strategies to reduce risk for CLABSI.

- Careful adherence to the Central Venous Catheter (CVC) Insertion Bundle. Use CVC Insertion Checklist (FormFast #:FF-02518).
- Remove CVCs as soon as they are no longer needed medically.
- Change CVC dressings (using aseptic technique) when they are damaged, soiled, or have timed out.
- "Scrub the Hub" every time the CVC is accessed.
- Provide ample patient education to assure understanding of all CLABSI risk reduction activities.

CVC Insertion Bundle

1. Obtain consent for the CVC insertion.
2. Identify insertion site(s). Order of preference: peripherally inserted central catheter (PICC), subclavian (SC) vein, internal jugular (IJ) vein, femoral vein - used only in emergencies or as last option.
3. Perform "Time-out."
4. Prepare patient for procedure (education, postioning, hygiene, etc.).
5. Everyone who will touch the patient during the CVC insertion should sanitize hands.
6. The operator should don hat, mask, sterile gown, and sterile gloves.
7. The monitoring nurse and assistant to the operator should don hat and mask.
8. The skin at the intended insertion site should be widely prepped using chlorhexidene gluconate (CHG).
9. A sterile field should be established using a drape that covers the entire patient.
10. The CVC should be secured at the point of insertion with sutures or an adhesive device.
11. An occlussive dressing should be applied and dated. A transparent dressing is preferred.

CVC Insertion Bundle



LAKE REGIONAL HEALTH SYSTEM
Osage Beach, Missouri

CENTRAL VENOUS CATHETER (CVC) INSERTION CHECKLIST

Rvw. 3/14
Rev. 7/14

CVC = central venous introducer (w/ or w/o SG), central venous triple lumen, implanted ports, PICC, Hickman, etc. **Not** included: temporary dialysis catheters (like Quinton)

* This checklist should be completed after every central venous catheter insertion at LRHS.
* All "no" or "other" responses require an explaining note.
* Please complete all fields.

☐ Emergent ☐ Elective ☐ Date:_____

- Operator (Physician or LIP):_____
- Assistant (to sterile field):_____
- Patient Monitor (RN):_____
- Hands sanitized prior to start of procedure: yes ☐ no ☐
  Note: _____
- Hat, gown, mask, and gloves worn by operator: yes ☐ no ☐
  Note: _____
- Hat, mask worn by Patient Monitor and Assistant: yes ☐ no ☐
- Patient skin at insertion site prepped with CHG: yes ☐ no ☐
  Note:_____
- Sterile field draped to cover entire patient: yes ☐ no ☐
  Note: _____
- CVC secured: suture ☐ adhesive device ☐ other ☐
  Note: _____
- Occlusive dressing applied: yes ☐ no ☐
  Note: _____
- CVC placed at groin: yes ☐ no ☐ (Groin placement is discouraged.)
  Note (if "yes" is selected): _____
- CVC will be removed when it is no longer medically necessary: yes ☐ no ☐
  Note: _____
- All wires and sheaths removed and intact: yes ☐ no ☐

(Please return completed form to Jim Howard in OHS - do not leave on chart)

FF-02518

The CVC Insertion Checklist will print with the CVC consent form and can also be printed individually from FormFast.

This form should be filled out by the monitoring nurse for **every** CVC insertion and returned to the OHS office.

Do not leave this form on the patient's chart or scan it into the EMR. Send it to the OHS office.

CVC Insertion Bundle

Policy NS-196 states that the nurse MUST be present during the insertion of central lines.

- The **nurse** is responsible for monitoring the patient's physiologic condition and response during the procedure (the anesthesia tech is not trained to do this).
- The nurse is responsible for completing the CVC Insertion Checklist.
- The nurse is responsible to make sure that these forms are then submitted to the OHS office. (Check with your HUC to see where these forms should be placed on your unit.)

CVC Insertion Bundle

Nursing Service Policy and Procedure NS-196 (excerpt)

Procedure:

1. Wash hands and don gloves
2. Prepare IV solution or flush solution
3. Assist physician/CRNA with applying sterile gown
4. Place moisture-proof pad under patient
5. Ensure that all individuals in the immediate area of the bedside wear a mask.
6. Turn or instruct patient to turn head away from insertion site.
7. While the physician/CRNA cleanses & drapes the site, comfort patient by explaining what is happening throughout the procedure.
8. Assist physician/CRNA with flushing of catheter ports.
9. When instructed by physician/CRNA, place patient in 15-25 degree Trendelenburg position.
10. **Monitor heart rate & rhythm, respiratory rate & patient response throughout the procedure. Watch cardiac monitor closely as guidewire & catheter are inserted & notify physician/CRNA immediately if dysrhythmia occurs.**

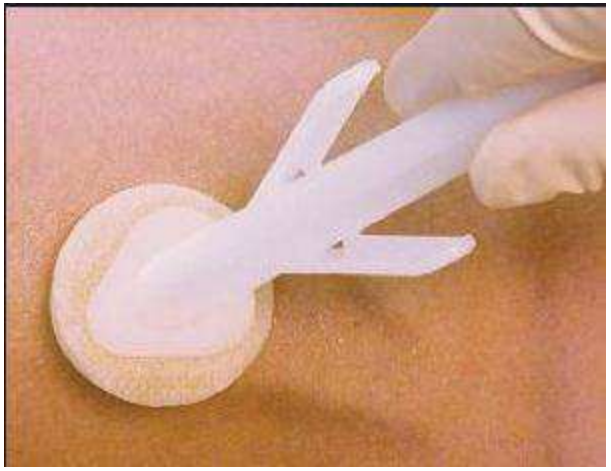
Slightly Head-down Position for CVC Insertion

Prior to Insertion

Strict Hand Hygiene

Prep the intended insertion site with ChloraPrep.

Be sure to prep a wide margin surrounding the insertion site.



How to use ChloraPrep

1 Pinch

Hold the applicator as shown, being careful not to touch the sponge Pinch the wings together. You will hear a 'pop' as the ampoule breaks

2 Apply

Gently press the applicator against the skin and apply the antiseptic using up and down, back and forth strokes for about 30 seconds

3 Dry

Leave for approximately 30 seconds, allowing the area to air dry completely before applying sterile drape.

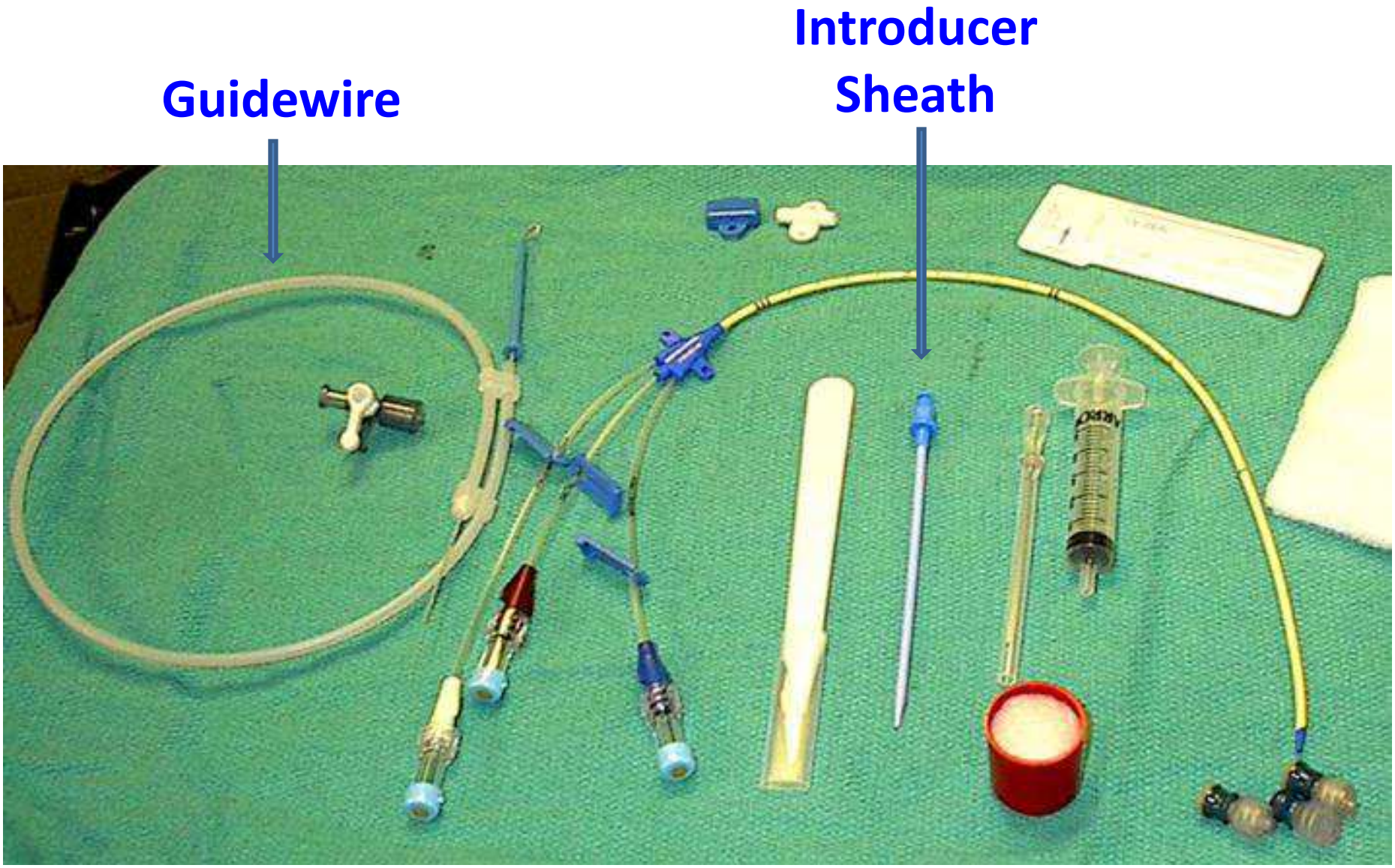
Discard the applicator after a single use

Maximal Patient Barrier:

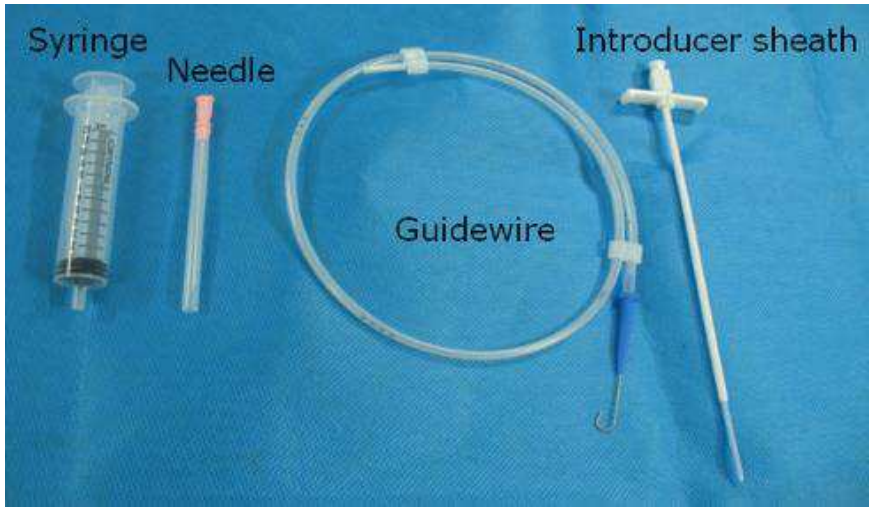
The operator should wear:
hat, mask, sterile gloves,
and sterile gown.

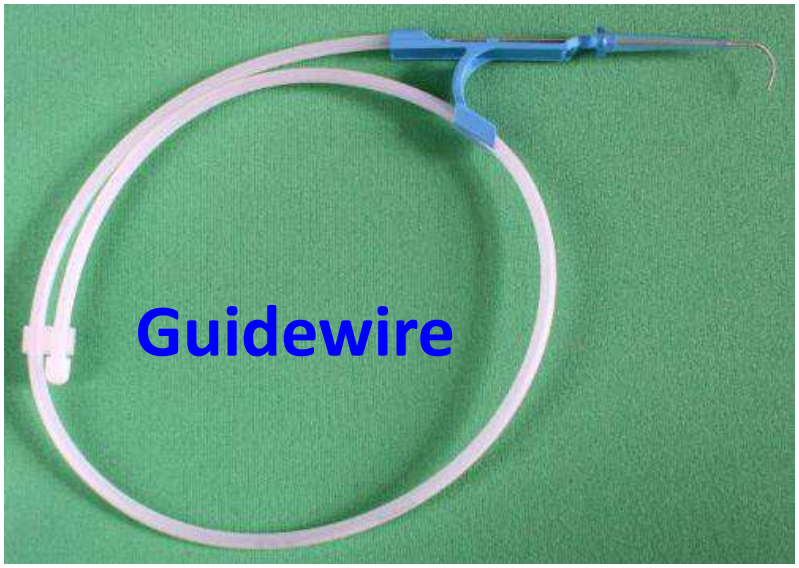
Drape the patient:
full body drape
(head-to-toe).

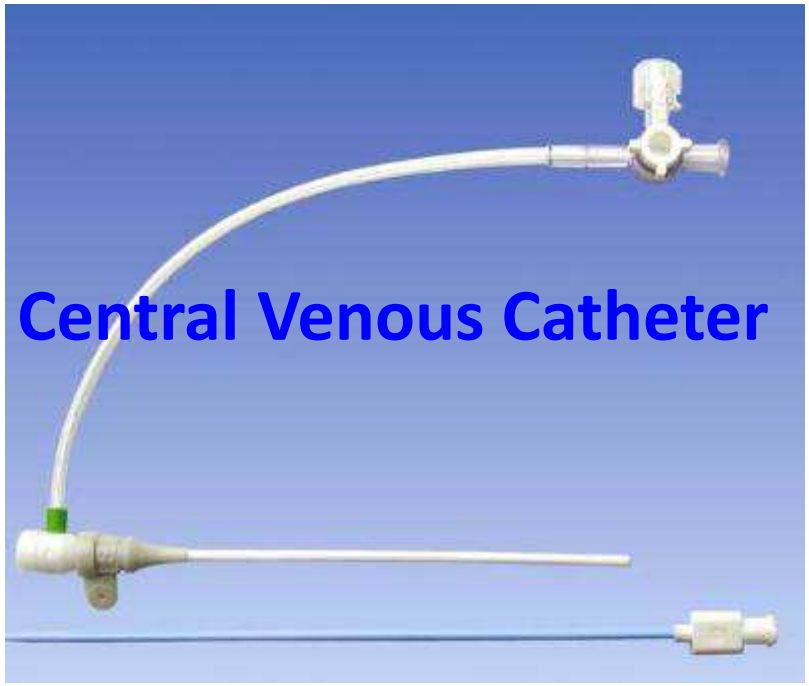
Typical sterile field set-up for a CVC insertion

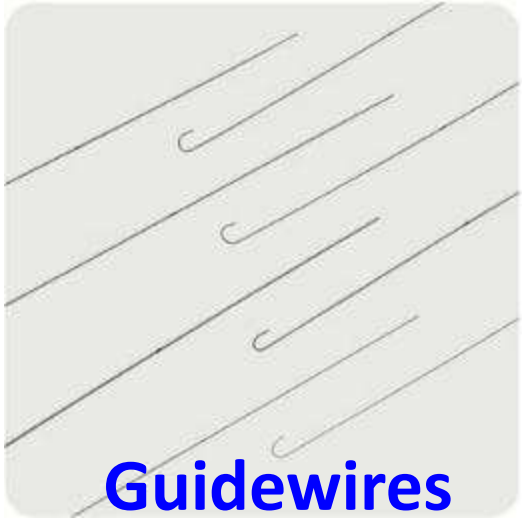


The Items we monitor during a CVC insertion.

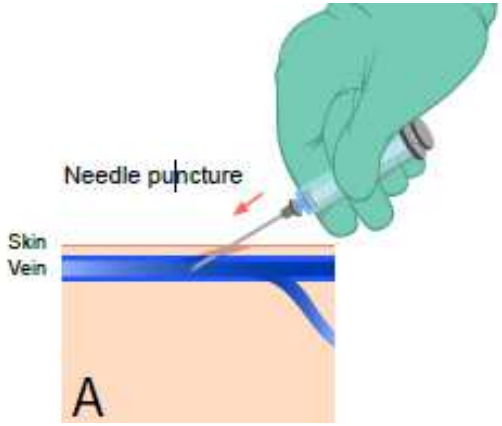


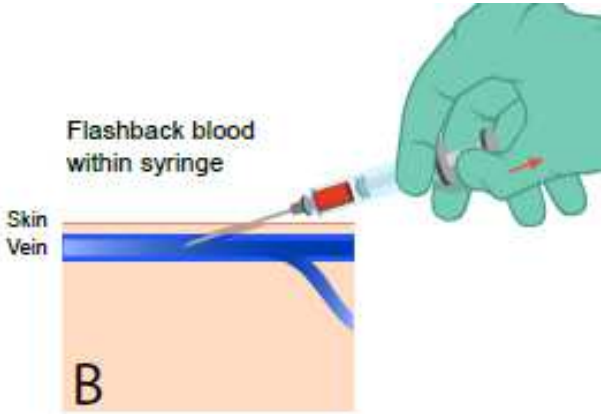


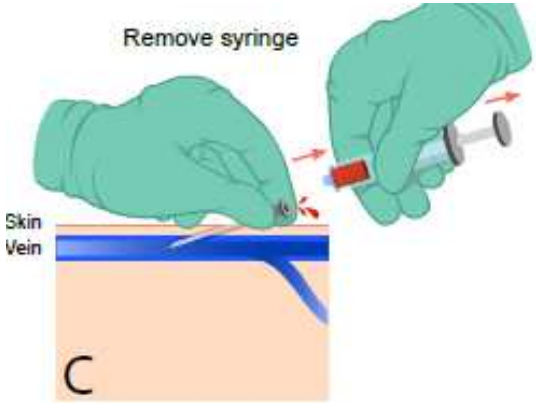


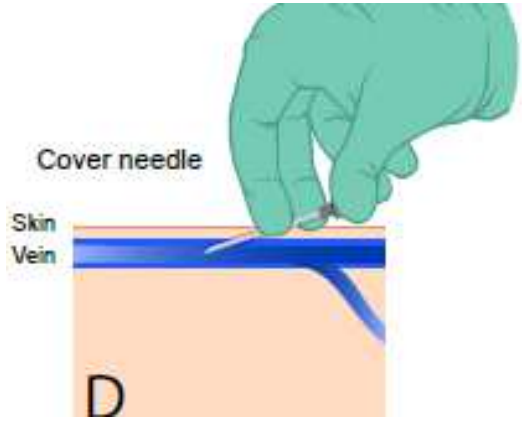


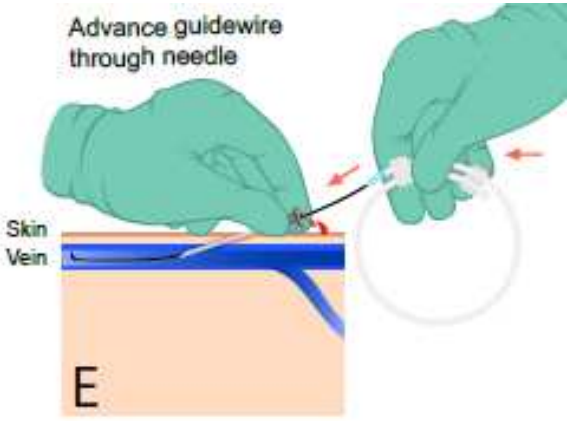
The CVC Insertion Procedure (Seldinger):

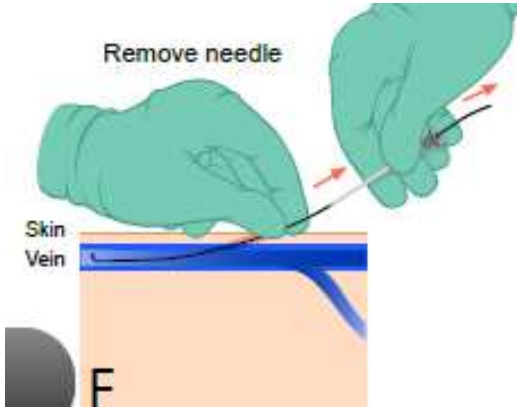






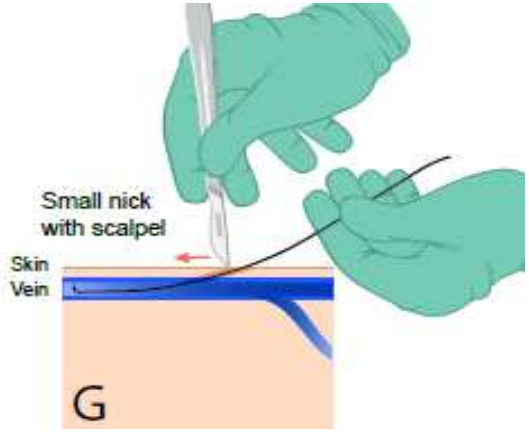


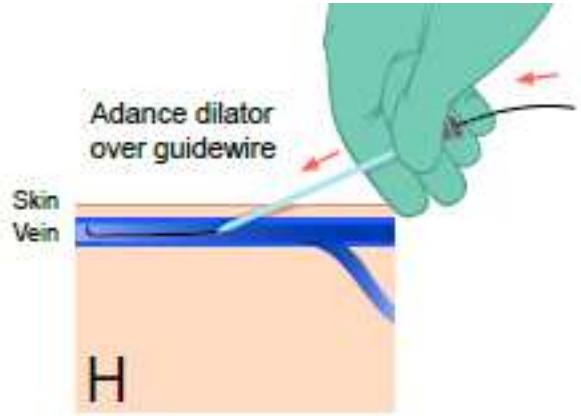


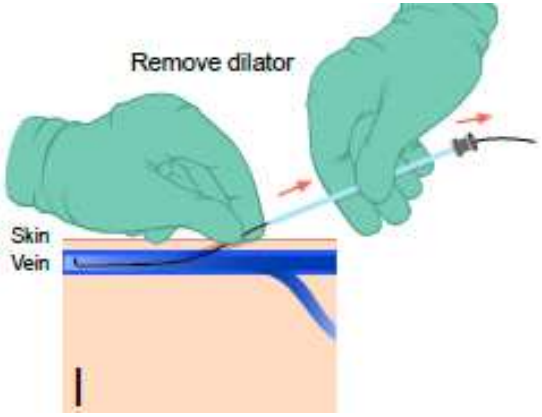


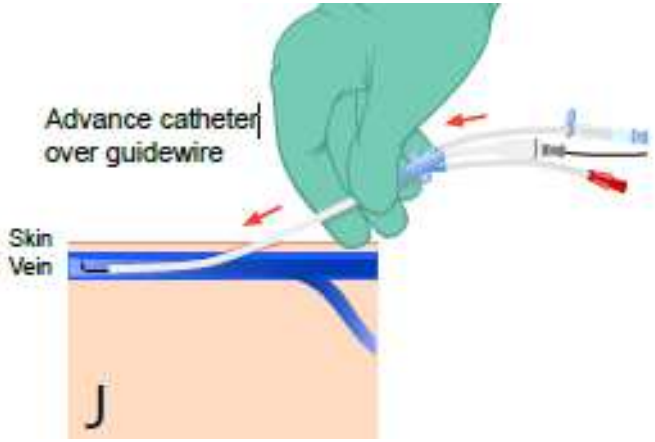
The CVC Insertion Procedure (Seldinger):

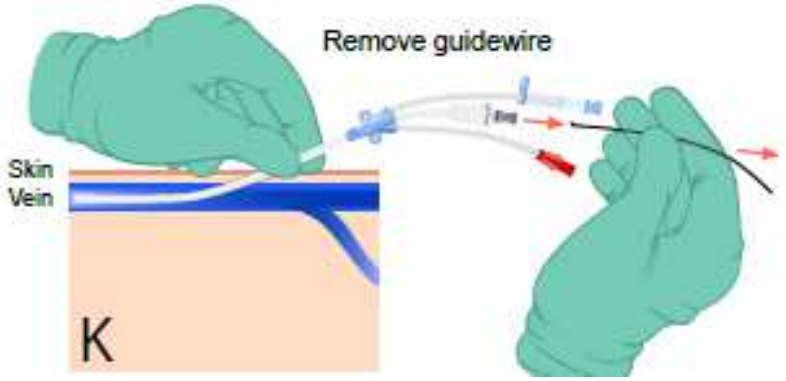
Continued



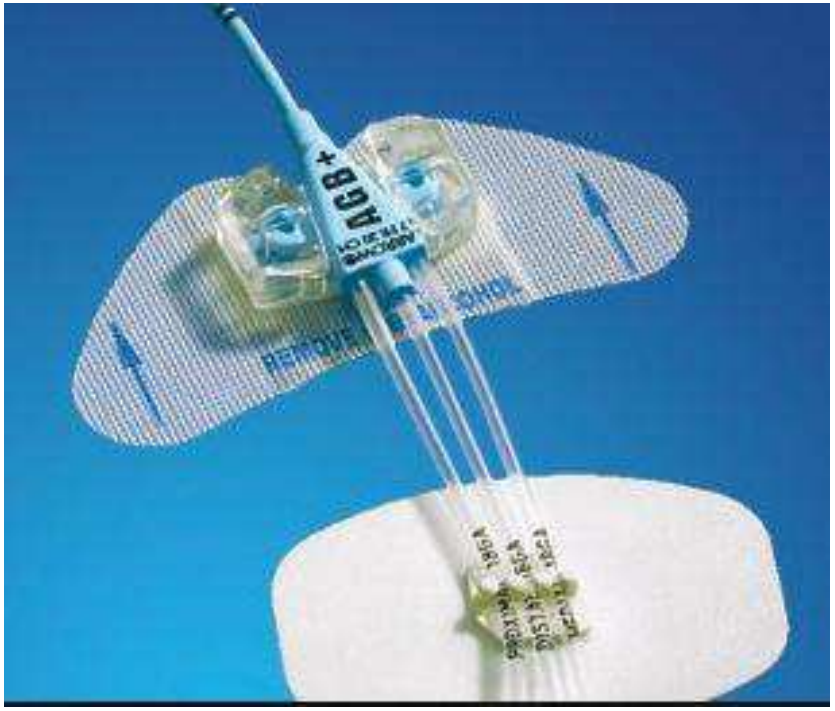








Secure catheter.



Cover catheter insertion site with a transparent, occlusive dressing.

After the insertion procedure is complete:

- Chest x-ray to verify central line catheter tip placement.
- No fluids/medications should be administered via the line until verification of placement is done unless in an emergent situation.
- After placement has been verified:
  - ✯ connect **NEW** administration sets and fluids to ports.
  - ✯ **NEVER** connect previously used IV tubing to the new central venous access line.

CLABSI Prevention

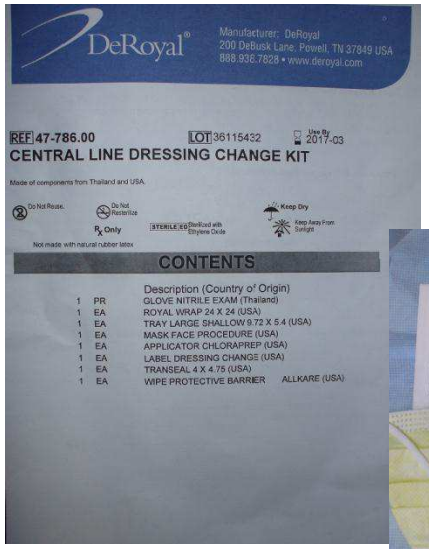
Strategies to reduce risk for CLABSI.

- Remove CVCs as soon as they are no longer needed medically.
  - During shift physical assessment, consider why the CVC is needed for the patient.
  - If no valid medical necessity for the CVC is noted, discuss with the attending physician.
  - Once a CVC removal order is received, proceed as soon as possible to remove it.

CLABSI Prevention

Strategies to reduce risk for CLABSI.

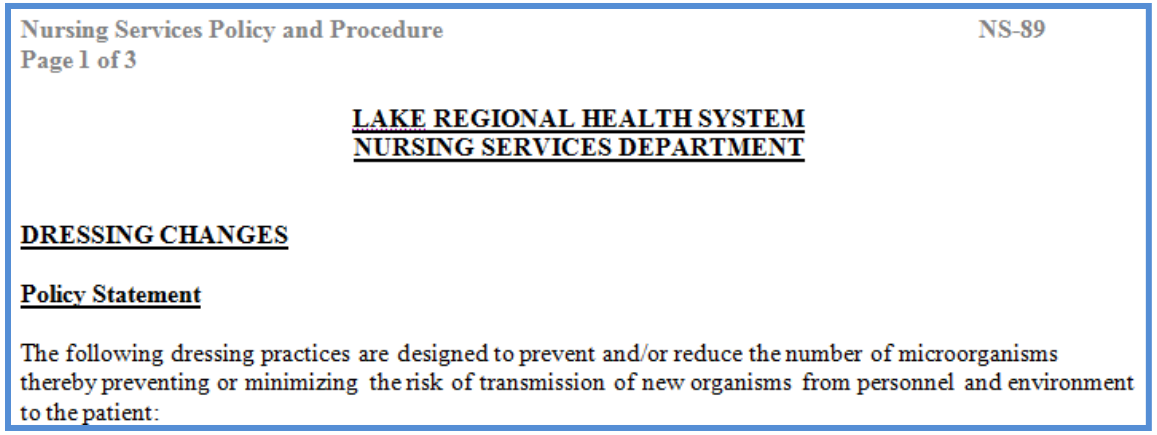
- Change CVC dressings (using aseptic technique) when they are damaged, soiled, or have timed out.



CLABSI Prevention

Strategies to reduce risk for CLABSI.

- CVC dressing change guidance can be found in Nursing Service policy NS-89 and NS-197.



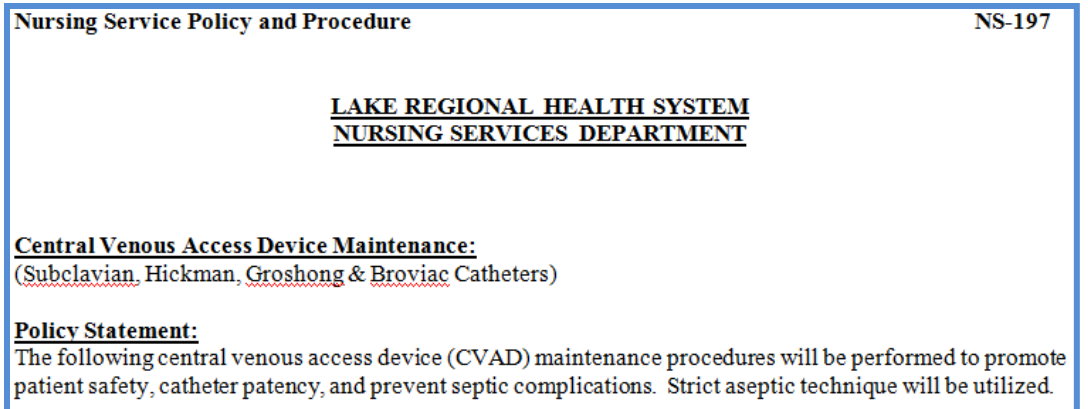
Nursing Services Policy and Procedure NS-89
Page 1 of 3

LAKE REGIONAL HEALTH SYSTEM
NURSING SERVICES DEPARTMENT

DRESSING CHANGES

Policy Statement

The following dressing practices are designed to prevent and/or reduce the number of microorganisms thereby preventing or minimizing the risk of transmission of new organisms from personnel and environment to the patient:



Nursing Service Policy and Procedure **NS-197**

LAKE REGIONAL HEALTH SYSTEM
NURSING SERVICES DEPARTMENT

Central Venous Access Device Maintenance:
(Subclavian, Hickman, Groshong & Broviac Catheters)

Policy Statement:
The following central venous access device (CVAD) maintenance procedures will be performed to promote patient safety, catheter patency, and prevent septic complications. Strict aseptic technique will be utilized.

CLABSI Prevention

Strategies to reduce risk for CLABSI.

- "Scrub the Hub" every time the CVC is accessed.
  - Sanitize your hands just before accessing the CVC port.
  - Use an alcohol saturated prep pad to scrub the CVC port for 15 seconds every time the port is accessed.

  - Let the alcohol on the CVC port evaporate completely before accessing the port.

CLABSI Prevention

Strategies to reduce risk for CLABSI.

- Provide ample patient education to assure understanding of all CLABSI risk reduction activities.
  - Hand hygiene.
  - The importance of dressing integrity.
  - Handling the CVC line, ports, IV tubing, etc.
  - Directing cough/sneeze away from CVC site.

CLABSI Prevention

Strategies to reduce risk for CLABSI.

Preventing Central Line-Associated Bloodstream Infection (CLABSI)

What You Need to Know

Please take the quiz now

Quiz for:

Preventing CLABSI

What You Need to Know

Please Circle the correct answer

T F CLABSIs are one type of hospital acquired infection (HAI).

T F CLABSIs may increase mortality risk for patients.

T F CLABSIs are not publicly reported.

T F Skin organisms are the predominant cause of CLABSIs.

T F The subclavian vein is a more preferred site for a CVC that the femoral vein.

T F Everyone who will touch the patient during a CVC insertion should sanitize their hands first.

T F A CVC is any venous catheter that has its distal tip in the right atrium or superior/inferior vena cava, except temporary dialysis catheters.

T F The CVC Insertion Checklist should be left on the patient's chart.

T F Only new IV administration sets should be connected to a new CVC.

T F A CVC should be removed as soon as no medical necessity for it exists.

T F Taking shortcuts when inserting or caring for CVCs may increase risk of CLABSI for the patient.

T F It is OK to access a CVC port before the alcohol has completely evaporated.

T F Patient education is an important strategy for preventing CLABSIs.

T F CVC dressings should be changed using aseptic technique.

T F The CVC Insertion Checklist can be printed from FormFast.

Your Name:_____ Badge #: _____

Date: _____

Slide left blank intentionally

Key to Quiz for:

Preventing CLABSI

What You Need to Know

Please Circle the correct answer

T	F.	CLABSIs are one type of hospital acquired infection (HAI).
T	F	CLABSIs may increase mortality risk for patients.
T	**F**	CLABSIs are not publicly reported.
T	F	Skin organisms are the predominant cause of CLABSIs.
T	F	The subclavian vein is a more preferred site for a CVC that the femoral vein.
T	F	Everyone who will touch the patient during a CVC insertion should sanitize their hands first.
T	F	A CVC is any venous catheter that has its distal tip in the right atrium or superior/inferior vena cava, except temporary dialysis catheters.
T	**F**	The CVC Insertion Checklist should be left on the patient's chart.
T	F	Only new IV administration sets should be connected to a new CVC.
T	F	A CVC should be removed as soon as no medical necessity for it exists.
T	F	Taking shortcuts when inserting or caring for CVCs may increase risk of CLABSI for the patient.
T	**F**	It is OK to access a CVC port before the alcohol has completely evaporated.
T	F	Patient education is an important strategy for preventing CLABSIs.
T	F	CVC dressings should be changed using aseptic technique.
T	F	The CVC Insertion Checklist can be printed from FormFast.

Your Name:_____ Badge #: _____

Date: _____