Purpose
To act as reference material for ECPs when they encounter a Swan Ganz, Central Line, or an Access Port. If at any point you feel uncomfortable with specific lines, contact the Supervisor or ask sending facility staff for assistance prior to departure.

All Lines
Possible Complications:
1. Infections
2. Occlusion
3. Thrombus formation

Contraindications:
1. Inability to flush or withdraw blood from the site
2. Inexperience or uncomfortable utilizing lines

Procedure:
1. Prepare equipment.
2. Don appropriate BSI.
3. Prep site using aseptic technique. Clean site utilizing alcohol prep or chloroprep for at a minimum 15 seconds
   a. If cap is in place, be sure that line is clamped. Remove cap then wipe port as detailed above.
   b. If luer lock is in place, wipe luer lock as detailed above
4. Attach solution to port
5. Unclamp line
6. Start infusion

Important Keys
• Observe site for any signs of subcutaneous infiltration, swelling, or pain. If noted, immediately discontinue infusion and look for an alternate site.
• Always flush between medications or after medication is finished infusing
• Never leave lines open to air
• Clamp lines while flushing with saline when finished
• When receiving report ask if each line is patent, be sure to add this to hand off information at receiving facility
Arterial Line

Uses:

- Advanced hemodynamic monitoring
- Need for frequent blood pressure checks
- Need for close control of blood pressure
- Vasopressors being administered

Parts

1. Arterial Cannula
2. Hard Rigid Non-Compressible line
3. Transducer
4. Soft tubing (Normal tubing) to flush solution
5. Flush Solution to 300 mmHg

Procedure

1. Connect transducing cable to Zoll X series (right side of screen in zipper pocket)
2. Connect transducing cable to transducer connection of arterial line setup
3. Place the transducer at the phlebotatic axis
4. On the Zoll X Series select he “IBP” button along the left side.
5. Find the stopcock that is attached to the transducer
6. Turn the patient off at the stopcock
7. Remove the cap that is on the open port of the stopcock
   a. Be sure to avoid contaminating this port or cap
   b. Do not set the cap down
8. Select “Zero” on the Zoll X Series
9. Once “Zeroed” has appeared on the Zoll X Series you may replace the cap
10. Turn the stopcock to the off position for the open port
G33. Line Maintenance

   a. On to the patient

11. Values and a waveform should appear.
   a. If not, repeat the process

Special Considerations

- Accuracy of the system depends upon:
  1. Patent line (confirm prior to leaving facility)
  2. Level of transducer
  3. Zeroing of the transducer
  4. Pressure bag at 300 mmHg

- Waveforms
  1. Peak systolic pressure – maximum left ventricular systolic pressure
  2. Dicrotic notch – aortic valve closure
  3. Diastolic pressure – pressure during diastole
  4. Anacrotic notch – 1st phase of ventricular systole

**At no time should any medication or fluids be administered through the arterial line, other than the flush solution.**
**PA Catheter (Swan Ganz)**

**Uses:**
- Cardiac output monitoring
- Pulmonary artery pressure monitoring
- Mixed venous saturations
- Catheter will sit in the pulmonary artery

**Common Lumens:**
- Blue – Can be used for fluids/medications
- White – Can be used for fluids/medications
- Red and Yellow – Do not use
- Edwards/Abbott connection – can be hooked to Zoll X Series to be monitored

**Important Information:**
- Anytime a Swan Ganz is present, EKG and pressure monitoring **must** be performed
- Swan Ganz should be monitored, if able, via the Zoll X Series
- Be prepared for lethal arrythmias if the catheter becomes misplaced. This can take place if catheter migrates out into the right ventricle or into a wedged position. If you think this has occurred contact Medical Control immediately.
- Take great care in not dislodging the catheter, as it is not sutured in place
- As mentioned earlier, lines may be utilized for medication administration. These should be treated as a central line.
- The introducer may be used as a rapid infuser port
Uses:
- Multiple medications needing to be administered
- Caustic medications to be administered
- Inability to gain PIV access

Important Information:
- Incompatible medications can be infused through two different ports on the same central line
  a. Treat each port as its own line.
- Vasopressors should be administered through central lines, when available
- Each port will usually have a number on them reporting the max fluid administration rate for that lumen
- Each lumen will also tell you which port it is, such as distal, medial, or proximal
- May be single, dual, or triple lumen
PICC (Peripherally Inserted Central Line)

Uses:
- Long term medication administration
- Inability to gain PIV access
- Home medication infusions

Important Information:
- Line should be flushed with 10 ml Normal Saline prior to use
- Prior to departing sending facility – make sure there is no heparin in the PICC line
- If at home, ask patient or caregiver if line has heparin in it
- If heparinized PICC, waste 10 ml of blood prior to use
- Anytime you are done using the port, flush with 10 ml Normal Saline and clamp
- May be single, dual, or triple lumen
- Each lumen should be labeled as to their position
**Implanted Vascular Access Device (Infusa Port)**

If access is needed see G27. Implanted Vascular Access Device

### Uses

- Long term medication administration
- Oncology medications
- Difficult PIV access

### Important Information

- This is a central line – extreme care should be taken to prevent infection
- The fluid administration rate is dependent on the type of port
- Ask about heparin prior to use, if the port is accessed prior to your arrival