Preparing Arterial Line Tubing

You will need:
- Blood conservation arterial line tubing
- 500ml bag of normal saline
- Pressure bag
- IV pole

Procedure:
- Remove pressure tubing from package and tighten all connections.
- Connect tubing to 500ml bag of normal saline.
- Place the pressure bag over the IV bag and hang it on the IV pole, but do not inflate it.
- Label the tubing with: date, time, and RN signature.
- Slide the transducer into the mounting bracket.
- Slide the inline syringe into the mounting bracket.
- Fill the drip chamber halfway.
- Flush the tubing, including the stopcock ports, using the squeeze valve.
- Change vented caps to non-vented caps using aseptic technique.
- Inflate pressure bag to 300mmHg.

Zero Balancing and Calibration

You will need:
- Level
- Deadender for zeroing port (M/F luer lock plug)

Procedure:
- Connect the monitor cable to the transducer and the bedside monitor.
- Level the mounting bracket so that the zeroing point is level with the patient’s phlebostatic axis.
- The phlebostatic axis is the reference point for zeroing the arterial line. It is located midway between the posterior chest and the sternum at the 4th intercostal space.
- Close the stopcock to the patient.
- Remove the non-vented cap from the zeroing port of the transducer.
- Zero balance and calibrate by selecting “art-line” then “zero” on the monitor.
- Replace the non-vented cap to the transducer port.
- Reopen the stopcock to the patient and assess the arterial wave form.
- Set the alarms.
Assessment and Monitoring

- Monitor insertion side at the start of the shift and q4h for bleeding, hematoma, pain, and infection.
- Monitor cannulated extremity at the start of the shift and q4h for pulse, CSM, temperature, capillary refill, and change in size.
- Check the flush system at the start of the shift and q4h that:
  - the pressure bag is inflated to 300mmHg.
  - there is adequate fluid in the bag.
  - all connections are tight.
- Zero monitor at the start of each shift and whenever the patient has been moved or whenever the level of the bed is changed.
- Ensure that the arterial line is connected to a transducer and attached to a waveform monitor.
- Monitor for dampened waveform.
- Ensure that the monitor alarms are on.

Drawing a Blood Sample from Blood Conservation Tubing

You will need:

- Requisitions and blood tubes
- Labels
- Non-sterile gloves
- Vacutainer and needleless luer lock adaptor
- Puncture device (shielded blunt cannula)
- Blood gas syringe (if doing blood gas)
- Ice (if doing blood gas)

Procedure:

- This is a time-limited procedure and should be completed in 2 mins. or less.
- Verify the identity of the patient according to policy.
- Prepare the vacutainer and the blood gas syringe separately as follows:
  - Attach the vacutainer and needleless luer lock to puncture device.
  - Attach blood gas syringe to puncture device.
  - Keep the puncture device inside the packaging to maintain sterility.
- Suspend monitor alarms.
- Gently aspirate 10ml of blood into the inline syringe at a rate of 1ml per second.
- Turn off the stopcock to the inline syringe.
- Cleanse the sampling port closest to the patient with an alcohol swab.
- Using prepared ABG syringe and/or vacutainer to obtain samples:
  - Push puncture device into safest port and obtain samples as needed.
  - Remove ABG syringe/vacutainer together with the puncture device, not just the syringe or vacutainer. If the puncture device is left in, blood will continue to spurt out of the puncture device.
- Open the inline syringe stopcock to the patient.
- Return blood from the syringe back to the patient at a rate of 1ml per second.
• Flush the line until clear using the squeeze valve, but for no more than 3 seconds continuously.
• Observe arterial wave form and turn the alarm back on.

Tips

• Always adhere to the principles of aseptic technique and perform hand hygiene when caring for an arterial line.
• Upon receiving a patient from the OR, check the bag to see if it is heparinized saline; if so, change the bag to normal saline.
• The inline flush device delivers 3ml an hour when the pressure bag is inflated to 300mmHg.
• Document 5ml as hourly intake to account for accessing of the squeeze valve.
• Change the dressing and pressure tubing q96 hours.