Intravenous Access Using Saline Lock

### Conditions
The candidate should perform this skill on a simulated patient under existing indoor, ambulance, or outdoor lighting, temperature, and weather conditions. Establish patent intravenous line within 6 minutes.

### Indications
A patient who requires or may potentially require administration of fluids or intravenous medications.

### Red Flags
Prep the site with as much aseptic technique as possible under field conditions. Do not start an IV on the same arm as a dialysis shunt. IV infiltration, especially when medications are being administered, can cause serious and irreversible tissue damage. Do not use areas of burned skin or heavy vein scarring.

### Prepare Equipment – Saline Lock
- Prepare saline lock
  - Draw approximately 10 ml of normal saline into syringe
  - Check date, clarity
- Select saline lock/extension set
- Connect syringe to saline lock, flush out air
- Disconnect syringe and refill with saline to 10 ml
- Reconnect syringe to saline lock
- Prepare cannulation equipment
  - Select proper size angiocath
  - Consider intended use (e.g., fluid therapy, medication line)
  - Consider size, fragility of vein
  - Gather tourniquet, gauze pad, alcohol prep, tape/commercial securing device

### Prepare Equipment – IV Fluids
- Proper fluid (1)  Clarity (1)  Expiration (1)
- Select appropriate administration set
- Connects IV tubing to the IV bag
- Prepares administration set (fills drip chamber and flushes tubing)

### Prepare Cannulation Site
- Apply tourniquet or blood pressure cuff (inflated to just below diastolic BP)
  - Proximal to wrist for hand veins
  - Proximal to elbow for forearm veins
- Select site
  - Between knuckles, dorsal thumb, back of hands, ventral forearms, ventral elbow
  - Palpate and look for veins that are straight and do not bifurcate nearby
- Cleanse site
Wipe visible dirt from site with alcohol prep pad
Repeat with fresh alcohol prep pads until they are visibly clean after wiping
Use fresh alcohol/iodine prep pad to wipe site outward, in a spiral motion
Do not palpate after wiping
Control site
Use nondominant hand to hold patient’s hand/arm, pulling skin taut
Ensure fingers are not in the potential path of needle

Perform Procedure
Position angiocath correctly in hand
Bevel on needle facing upward
Flashback chamber visible

Index finger of alternate hand able to slide catheter over needle easily
Along path of vein at a <45° angle to skin surface
Attempt to advance directly into vein with one smooth motion, without stopping
Monitor for and verbalize flashback
After flashback, advance angiocath an additional 1-2mm into vein
Advance catheter with index finger while simultaneously pulling needle out
If angiocath designed for needle-stick protection, advance until device engages
Remove tourniquet
Disconnect needle from catheter hub
Use finger of nondominant hand to occlude vein proximal to end of catheter
Immediately place needle in approved sharps container
Connect saline lock (and/or IV tubing) to catheter hub
Slowly administer 10 ml of saline from syringe to check IV patency
Should flow freely and evenly
Inspect/palpate around cannulation site for infiltration (swelling/rigidity)
If infiltrated, immediately turn off fluids and discontinue IV
Engage clamp on saline lock while administering fluid
Disconnect syringe and replace appropriate cap(s) to seal saline lock

Secure Site and Tubing
Secure venipuncture site
Utilize transparent commercial device, if available (e.g., Veniguard®, Bio-occlusive®)
Otherwise, wrap tape in “awareness ribbon” pattern around hub
Secure saline lock with tape

Critical Criteria:
___ Use appropriate standard precautions
___ Maintain aseptic technique throughout procedure
___ Avoid catheter shear by not reinserting needle into catheter
___ Observe for infiltration
___ Establish a patent IV line within 6 minutes
___ Dispose of sharps in an appropriate container