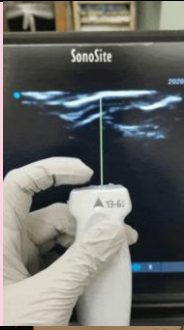# Ultrasound Guided IV Access

Preparation

1. Ultrasound Preparation
- **Equipment:** USS machine, probe cover, gel or water
- **Probe**: linear, marker on same side as screen (your left)
- **Pre-set**: vascular or superficial
- **Image optimisation:** depth, Res/Gen/Pen, gain, TGC, centre-marker

2. IV equipment
- Alcohol wipe
- Tourniquet
- Cannula
- IV tubing, extension
- NaCl 0.9% flush
- Tegaderm
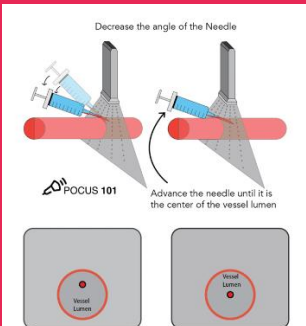- Tapes and board

3. Patient and equipment position
- Direct line of sight from your position, catheter direction and USS screen
- Good patient hold is key

Technique

4. Choose a target vein and pre-scan to determine length and direction
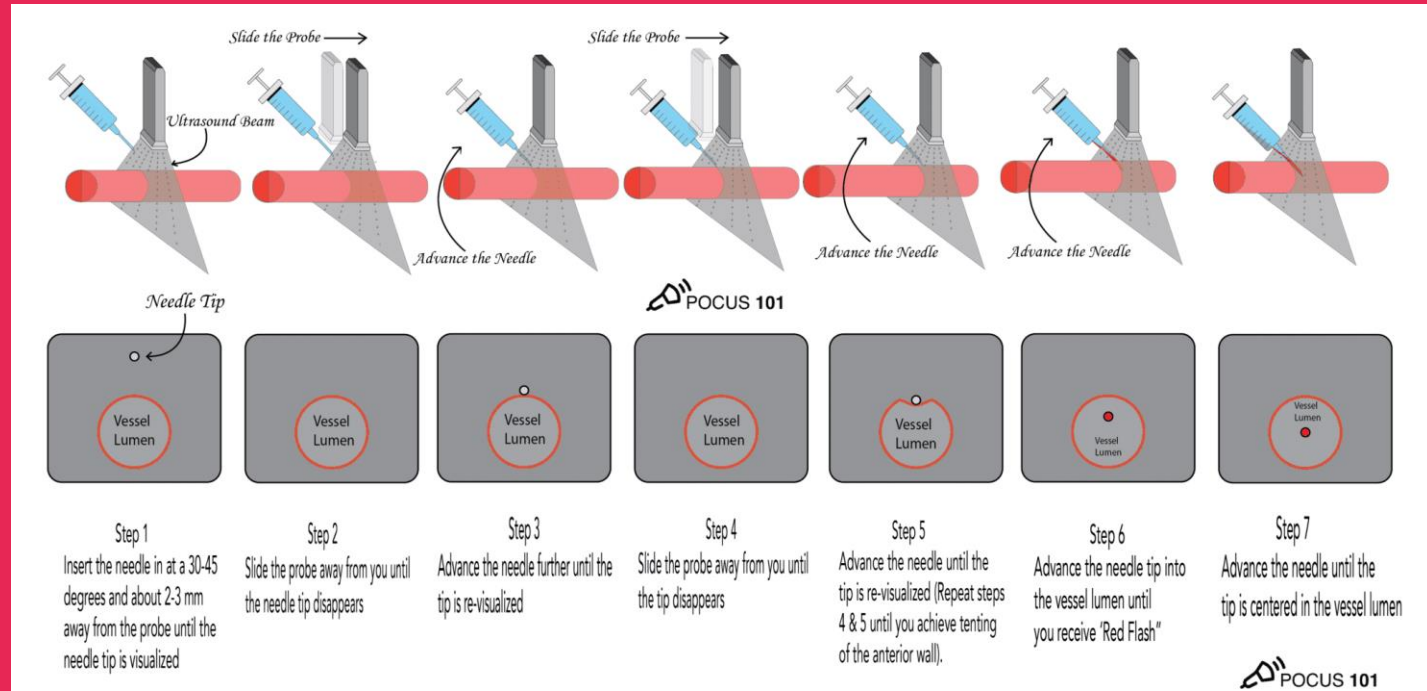- Straightest, longest, biggest, best ergonomic direction
- Stay away from arteries and nerves if possible
- Make a mental note of depth from skin

5. Short-axis technique for needle insertion using creep
- Centre vessel in middle of screen and insert cannula needle 2-3mm away from transducer at 30-45 degree angle, stop insertion as soon as needle tip appears on USS monitor
- Slide the probe away from the needle tip until it disappears
- Advance the needle tip until it appears on the screen then stop
- Repeat sliding USS probe away and then advancing needle until needle is seen in vessel and flashback seen in cannula
- Decrease the angle of the needle and advance it until it is in the centre of the vessel lumen

Secure cannula as usual.

Slide the Probe → Ultrasound Beam Advance the Needle

Slide the Probe → Advance the Needle Advance the Needle

POCUS 101

Needle Tip

Vessel Lumen (repeated across steps)

Step 1 Insert the needle in at a 30-45 degrees and about 2-3 mm away from the probe until the needle tip is visualized

Step 2 Slide the probe away from you until the needle tip disappears

Step 3 Advance the needle further until the tip is re-visualized

Step 4 Slide the probe away from you until the tip disappears

Step 5 Advance the needle until the tip is re-visualized (Repeat steps 4 & 5 until you achieve tenting of the anterior wall).

Step 6 Advance the needle tip into the vessel lumen until you receive "Red Flash"

Step 7 Advance the needle until the tip is centered in the vessel lumen

POCUS 101

Creep Method for Leading the Needle