### INDICATIONS:
- Critically ill or injured patient in whom IV access cannot be obtained within 90 seconds or with two attempts, or
- Critically ill or injured patient in whom it is anticipated IV access will not likely be obtained within 90 seconds or with two attempts

### CONTRAINDICATIONS:
- Bone fracture near or proximal to site in consideration
- Intraosseous (IO) placement at same site within 72 hours
- Burn or overlying infection at site in consideration
- Landmarks cannot be adequately localized
- Transport time less than time required to initiate IO access
- Osteogenesis imperfecta

### NOTES:
- Any devices approved by Health Canada may be used with this protocol.
- Prepare the equipment as per the manufacturer’s recommendations.
- Select appropriate site for insertion.
- Position and stabilize the limb.
- Using strict sterile technique prepare the insertion site.
- Insert the device in the method prescribed by the manufacturer.
- Aspirate using a sterile syringe. Return of bone marrow confirms correct intramedullary needle tip placement. Note that absence of marrow does not rule out correct placement.
- Test irrigation with 5 to 10 ml of sterile NS:
  - Watch for evidence of fluid extravasation into overlying soft tissue. If device does not irrigate properly or there appears to be fluid extravasation, do not use this site but secure the device in place.
  - If the device irrigates properly and there is no sign of fluid extravasation, connect to an IV line as per the manufacturer’s recommendations and initiate fluid infusion and/or medication administration.
- Stabilize and dress the device in the method prescribed by the device manufacturer.
- Assess site every 15 minutes for evidence of fluid extravasation into overlying soft tissues.
- If IO cannulation attempt is not successful, do not repeat attempt at or near the same site.
- If IO cannulation is initially successful, but fluid flow subsequently stops, repeat irrigation with 5 to 10 ml of sterile NS. Watch for any sign of fluid extravasation. If device does not irrigate properly or there appears to be fluid extravasation, do not continue to use this site but leave the device secured in place.
- Providers with appropriate delegation may consider the local injection of 1% lidocaine solution in the awake or awakening patient.