

# Lovelace

Site: Westside Hospital	Protocol: Ultrasound-guided Peripheral IV Catheter Insertion	
Effective Date: 04/01/11	Focus Area: Nursing Practice Protocol	
Doc. Owner: D. Juckette	Ref. #: Reference #	Version: 1
Approved: MEC, Quality Council	Next Review Date: 04/2013	Page 1 of 3

## 1 Protocol: Ultrasound-guided Peripheral IV Catheter Insertion

### 2 Definitions:

- 2.1 Only Patients with difficult venous access are candidates for ultrasound-guided peripheral IV starts.
- 2.2 Patients may become candidates after 2 unsuccessful attempts at IV placement
- 2.3 Only RNs with training and task verification in ultrasound guidance may perform this procedure. Completion of a didactic training class and practicum with simulators is required prior to precepting with patients.
- 2.4 1% Lidocaine or Emla Cream may be used for local anesthesia at nurse's discretion for deep vein placements.
- 2.5 Patient and anticipated therapy should be assessed to determine that peripheral IV catheter is the most appropriate device based on diagnosis, IV medications and duration of therapy. Specific questions should be asked about patient history regarding mastectomy, lymph node dissection, upper extremity trauma or surgery, upper DVT or central lines.

### 3 Special Considerations:

- 3.1 The deeper veins utilized with ultrasound guidance are associated with greater risk of complications from infiltration due to later recognition of infiltration and their proximity to arteries and nerves.
- 3.2 Brachial veins should be avoided due to proximity to artery and nerves.
- 3.3 Upper arm veins should be avoided. Upper Cephalic vein may be used after consulting PICC Team.
- 3.4 Bedside use of Ultrasound carries high risk of patient-to-patient microbial cross-contamination. Ultrasound probe should be cleaned with Sani-Wipe towel and allowed to dry completely immediately preceding and after with patient skin. Device surfaces should be cleaned after exiting patient room.
- 3.5 Catheter selection should be based on depth of vein. At least ½ of catheter length should reside in vein at final positioning.

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## 4. Procedure:

- 4.1 Explain Procedure to patient and obtain verbal consent. Inform patient of reason for IV therapy.**
- 4.2 Position patient with forearm accessible on bed or table, and under absorbent impermeable pad. Position ultrasound device for optimal viewing.**
- 4.3 Apply Tourniquet, clean ultrasound probe and perform non-sterile scan to determine and mark venipuncture site after determining compressibility, directionality, and sufficiency of vein for catheter size and length.**
- 4.4 Remove tourniquet and prepare supplies as per standard peripheral IV start. Draw up anesthetic if needed. Don gloves after supplies ready. Re-tighten tourniquet.**
- 4.5 Use Chloraprep scrub on patient and on ultrasound probe. Open catheter and apply sterile gel to ultrasound probe.**
- 4.6 Relocate vein at marked site and orient transverse to venous direction.**
- 4.7 Perform venipuncture watching US screen until tip of catheter is imaged in center of vein.**
- 4.8 Verify blood return in catheter reservoir and advance catheter while withdrawing needle.**
- 4.9 When catheter fully advanced, remove tourniquet and verify continued blood return.**
- 4.10 Connect extension set and verify that catheter flushes without pain, burning swelling or discomfort to patient. Palpate vein while flushing to verify site is not swelling and fluid moves through the vein.**
- 4.11 Secure catheter in place with StatLock or other securement device. Cover site with transparent dressing and re-verify blood return after site is secured.**
- 4.12 Educate patient about the signs and symptoms of infiltration. Explain methods used to prevent IV-related infections and when to notify staff of a problem.**

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**4.13 Date site on dressing and document procedure, including number of attempts, catheter size, and vein selected, anesthesia agent used and ultrasound guidance.**

## **5.0 References/Resources:**

**Infusion Nurses Society. (2011) “Infusion Nursing Standards of Practice “. Journal of Infusion Nursing 34 (15)**

**Centers for Disease Control and Prevention. (2010) Guidelines for Prevention of Intravascular Catheter-Related Bloodstream Infections.**

**Infusion Nurses Society. (2006) “Infusion Nursing Policies and Procedures”**

**Department of Emergency Medicine- University of Ottawa. (2003) “Peripheral Intravenous Access.”**

**LSUHSC-Shreveport- Nursing Policy I-49. (2010) “Peripheral IV Therapy”**