

Standardized Procedure
Peripheral Intravenous Access with the use of Bedside Ultrasound in Adults

I. Definition

This procedure will take place when there is an urgent or emergent need for peripheral intravenous access in a patient. The purpose of this standardized procedure is to allow the Advanced Health Practitioner (AHP) to place an ultrasound (US) guided peripheral intravenous device.

II. Background Information

- A. Setting:** The setting (inpatient and outpatient) and population (adults only) for the AHP is determined by the approval of the privileges requested on the AHP standardized procedures eLog.
- B. Supervision:** The necessity of the procedure will be determined by the AHP and may involve verbal collaboration with the attending physician or his/her designee. Direct supervision will not be necessary once competency is attained per the requirements of the AHP standardized procedures eLog. After which time, direct supervision as required may be requested. Designee is defined as another attending physician who works with the collaborating physician and is authorized to supervise the AHP.
- C. Indications:** Bedside Ultrasound will be used to identify a peripheral vein which can be accessed for intravenous catheter insertion in order to obtain blood, fluid resuscitate, give intravenous antibiotics or for use by radiology for imaging.
- D. Precautions:** Whenever a vein is punctured there is risk of hemorrhage, hematoma formation and infection.

III. Materials

- 1) Bedside Ultrasound
- 2) Ultrasound gel
- 3) Chlorhexadine solution
- 4) Gauze
- 5) IV catheter (appropriate gauge)
- 6) Tourniquet
- 7) Syringes
- 8) Peripheral IV saline flushes
- 9) Tegaderm or tape
- 10) Local anesthetic (1% lidocaine) as needed

IV. Procedure

A. Pre treatment evaluation

Standardized Procedure
Peripheral Intravenous Access with the use of Bedside Ultrasound in Adults

Assess clinical necessity for peripheral IV by US when multiple attempts have been made without US to gain IV access or if patient has required US guided IV access in the past. Working collaboratively, the necessity of the procedure will be determined along with the expected outcomes of the procedure, and the treatment plan.

B. Site Selection

The preferred site selection is the antecubital vein followed by any of the upper arm veins (basilica, brachial, cephalic) which appear to be the most suitable target based on size and location.

Any other sites must have collaborating physician approval

- C. **Set up:** Gather all necessary materials. Order bedside US on Apex.
Enter needed information into bedside US machine.

D. Prepare the patient

- 1) Identify patient with two patient identifiers prior to start of the procedure
- 2) Inform the patient of the treatment plan, which includes using US to obtain peripheral venous line placement
- 3) Position the patient in the comfortable position that gives adequate access to the placement site

E. Perform the Procedure

- 1) Wash hands and don gloves
- 2) If necessary, inject local anesthetic (1% lidocaine)
- 3) Place US gel to skin and locate compressible vein
- 4) Cleanse area selected for IV
- 5) Apply tourniquet
- 6) Prepare patient for puncture
- 7) Stabilize vein by pulling skin taut
- 8) Puncture skin at 45-60 degree angle
- 9) Advance catheter into compressible vein on US and advance catheter when flash of blood is observed in catheter
- 10) Record images on US
- 11) Flush IV with saline flushes
- 12) Cleanse area of any blood and allow site to dry
- 13) Secure IV with Tegaderm dressing
- 14) Properly dispose of the IV sharps and other used material

F. Post procedure

- 1) Record the procedure note in Apex
- 2) Clean US probe and other areas of US machine as needed
- 3) Order any additional nursing instructions as needed.

G. Follow up treatment

Standardized Procedure
Peripheral Intravenous Access with the use of Bedside Ultrasound in Adults

- 1) Instruct the patient on what to expect when having a peripheral IV placed under US
- 2) Instruct the patient that if the line should become dislodged accidentally, to apply direct pressure and call for assistance at once.

V. Documentation

- A. Document in Apex.
 - 1) Documentation of the pretreatment evaluation and any abnormal physical findings
 - 2) Record the procedure under peripheral IV placement and US documentation as required. Provide any teaching as needed.
- B. **All unexpected or abnormal findings are reviewed with collaborating physician.**

VI. Competency Assessment

- A. **Initial competence**
 - 1) The Advanced Health Practitioner will be instructed on the efficacy and the indications of this therapy and demonstrate understanding and clinical use of the ultrasound equipment.
 - 2) The Advanced Health Practitioner will demonstrate knowledge of the following:
 - a. Medical indication and contraindications of peripheral IV's
 - b. Risks and benefits of the procedure
 - c. Related anatomy and physiology
 - d. Steps in performing the procedure
 - e. Documentation of the procedure
 - f. Ability to interpret results and implications in management
 - 3) Advanced Health Practitioner will observe the collaborating physician perform procedure once and perform the procedure at least ten times under direct supervision. All images will be reviewed by the Emergency Department US Director on a weekly basis
 - 4) After AHP has completed and documented in the eLog under collaborating physician supervision the required proctoring then competency will be met and may perform procedure without direct supervision
 - 5) The Advanced Health Practitioner will ensure the completion of competency sign off documents and provide a copy for filing in

Standardized Procedure
Peripheral Intravenous Access with the use of Bedside Ultrasound in Adults

their personnel file and a copy to the medical staff office (MSO) for their credentialing file.

B. Continued Proficiency

- 1) The AHP will demonstrate competence by successful completion of the initial competency.
- 2) AHP must perform this procedure at least three times per year. In cases where this minimum is not met, the collaborating physician must sign off the competency for continued practice of the procedure.
- 3) Demonstration of continued proficiency shall be monitored through the eLog and MSO credentialing.
- 4) A standardized procedure eLog is to be submitted with each renewal of credentials. It will include the number of procedures performed and any adverse outcomes. If any adverse outcome occurred then appropriate completion of an incident report should occur.

VII. Responsibility

Questions about this procedure should be directed to the Chief Nursing and Patient Care Services Officer at 353-4380.