**Syllabus Template for Peripheral IV (PIV) Insertion and Removal**

**Course Number and Name:**

**Credits:**

**Hours:**

**Instructor:**

**Course Description:** This workshop has been designed to help sonographers and sonography students gain didactic and "hands-on" experience with the theory and skills needed to insert a peripheral IV. Content includes criteria for vein selection, vein location and identification, selection of supplies and equipment, and potential complications of IV therapy. Information on legal aspects, malpractice insurance, and proper documentation will be included. Supplies will be provided for practicing insertion and removal of peripheral IV catheters using anatomical models and individual competency validation will be provided by the instructor at the end of the program. However, a supplemental period of structured on-the-job training and competency evaluation for each individual is required in order to successfully apply this knowledge in a clinical setting.

**Learning Objectives:**

* Identify legal and policy considerations in regard to IV placement
* Define the proper technique and procedure for PIV insertion and removal
* Identify appropriate intravenous access sites
* Demonstrate the ability to properly insert a PIV
* Demonstrate the ability to properly remove a PIV
* Recognize complications that can occur with IV insertions
* Demonstrate appropriate documentation of PIV insertion and removal

**Instructional methods:** Lectures, labs, simulated IV insertion and removal

**Suggested Reference Materials:**

[American Society of Echocardiography Contrast Zone](http://www.contrastzone.com/)

[IAC & ICUS Present: IAC & ICUS Present: IV Insertion by a Sonographer | Presented by Pam Burgess, ACS, BS, RDCS, RDMS, RVT, FASE.](https://www.youtube.com/watch?v=dQr8vQ8PT9g&feature=youtu.be)

Examples of online IV insertion videos:

["Procedural Demonstration of Inserting a Peripheral IV" by Brienne Leary for OPENPediatrics](https://www.youtube.com/watch?v=_Xq4S9fqZBY)

[Starting a Peripheral IV Catheter](https://www.youtube.com/watch?v=aq8OwFaIQ4I)

Example of online IV insertion course for purchase

<https://infusionknowledge.com/peripheral-iv-catheter-insertion/>

Examples of books

* Venous Access Made Easy by James Michael Forsyth, Ahmed Shalan, Andrew Roger Thompson. ISBN-13: 9780429783081
* Lippincott Nursing Procedures (2016). IV Catheter Insertion and Removal. Lippincott Williams & Wilkins; Philadelphia, PA 19103 USA. ISBN 978-1-4698-5303-1
* Anatomy book of choice detailing venous anatomy

Anatomical models may be obtained through medical suppliers

Examples

* [Gaumard IV training arms](https://www.gaumard.com/products/nursing-skill-trainers/iv-training-arms)
* [Laerdal IV training arms](https://www.laerdal.com/us/doc/104/Multi-Venous-IV-Training-Arms)

**Course Syllabus (Suggested Learning Modules)**

Definitions (you may choose to include more)

* Peripheral Intravenous (PIV) Catheter: A short (less than or equal to 7.5 cm) intravenous catheter inserted into a peripheral vein. A PIV permits short-term access of the venous system for intermittent or continuous infusion therapy.
* Infiltration: Inadvertent administration of a non-vesicant medication or solution into the surrounding tissue. Signs and symptoms can include skin blanching, edema, skin cool to touch, and/or pain.
* Extravasation: Inadvertent infiltration of vesicant medications or solution into surrounding tissue.
* Extension Set: Tubing (approximately 15 cm in length) attached to the PIV cannula at time of insertion.

Legal/policy considerations

* Individual facility/state policies
* Requires hospital approval, knowledge of sterile technique and venous anatomy, and awareness of associated risks
* Individual facility practice
  + Procedures/protocols/standing orders
  + Indications
  + Contraindications
  + Patient education/consent

Overview of venous anatomy of the upper extremities

* Veins typically considered for PIV placement are those found on dorsal and ventral surfaces of the upper extremity, including the metacarpal, cephalic, and basilic veins.
* Review of potential complications of IV insertion

Placement and Removal

* Videos of IV insertion should be used as appropriate
* It is recommended that no more than two persons attempt placement (maximum of four attempts). Multiple unsuccessful attempts may limit future vascular access and cause unnecessary trauma to the patient.
* Discuss appropriate catheter size and length for UEA administration
  + 18-20 gauge catheters preferred
* Refer to provided PPT for general insertion and removal guidance, being aware that facility policies may differ

General Documentation Guidelines (facility policies may differ)

* Patient education/consent
* Date/time
* Ordering physician
* Responsible individual
* Location of IV access/catheter size
* Complications or inability to obtain access
* Patient status post-procedure

Practice Lab with anatomic model

* Enlist qualified faculty
* PIV insertion
  + Determine minimum number of practice attempts prior to competency testing
* PIV removal and site care
  + Determine minimum number of practice attempts prior to competency testing
* Documentation of lab-based competency testing

Plan for transition to clinical practice and competency testing according to facility policy

Plan for ongoing competency (if applicable)