



Arizona State Board of Nursing

1740 West Adams Street, Suite 2000

Phoenix, AZ 85007

Phone (602) 771-7800

Home Page: www.azbn.gov

An advisory opinion adopted by AZBN is an interpretation of what the law requires. While an advisory opinion is not law, it is more than a recommendation. In other words, an advisory opinion is an official opinion of AZBN regarding the practice of nursing as it relates to the functions of nursing. Facility policies may restrict practice further in their setting and/or require additional expectations related to competency, validation, training, and supervision to assure the safety of their patient population and or decrease risk.

OPINION: P.I.C.C. LINES
APPROVED: DATE 10/87
REVISED DATE: 3/95, 1/99, 4/99, 1/02, 11/03,
5/04, 9/08, 3/12, 11/15, 01/2019
ORIGINATING COMMITTEE:
SCOPE OF PRACTICE

Within the Scope of Practice of RN LPN

ADVISORY OPINION

CENTRAL VENOUS CATHETER INSERTION AND REMOVAL BY REGISTERED NURSES

It is NOT within the scope of practice for the registered nurse (RN) to perform fluoroscopy or operate radiographic equipment.

It IS within the scope of practice for the RN to insert, suture, and remove a central venous catheter (CVC).

It is NOT within the scope of practice for the RN to insert a CVC using the subclavian vein, or to insert/remove any catheter using a tunneled or implanted approach. The only exception may be removal of a tunneled peripherally inserted central catheter (PICC).

It IS within the scope of practice for the RN to obtain informed consent for the placement of a CVC, in a manner consistent with agency/employer policies governing the informed consent process.

Type of CVC Insertion	Scope
Peripheral line into the external jugular vein	RN – after appropriate course of instruction
PICC	RN – after appropriate course of instruction
CVC into the external jugular vein	RN – after appropriate course of instruction, and with licensed independent practitioner (LIP) on site and readily available
CVC into the internal jugular vein	RN – after appropriate course of instruction, and with LIP on site and readily available
CVC into the femoral vein	RN – after appropriate course of instruction, and with LIP on site and readily available
CVC into the umbilical vein	NOT IN RN SCOPE
CVC into the subclavian vein	NOT IN RN SCOPE
CVC via tunneled or implanted approach	NOT IN RN SCOPE

II. GENERAL REQUIREMENTS

- A. The agency/employer maintains written policies and procedures, which address competency, scope, and supervision requirements (as appropriate)
- B. The RN inserting a CVC will have completed an instructional program that includes supervised clinical practice in ultrasound guided CVC insertion
- C. Didactic education, proctored clinical practice, and competencies for advanced CVC techniques are completed and on file with the agency/employer
- D. The RN using chest radiograph (initial or repeat) to verify tip placement must have completed education and supervised clinical practice (by an LIP), and may not extend that training to the interpretation of radiographs for any other purpose
- E. PICC specific:
 - 1. Completion of an instructional program that includes performance-based competency assessment related to:
 - i. PICC insertion using advanced placement techniques such as, but not limited to, Seldinger or Modified Seldinger.
 - ii. Anchoring of the PICC, including by suturing.
 - iii. Ultrasound-guided placement, over the wire technique, use of tip placement devices and troubleshooting.
 - 2. An RN may place a PICC using fluoroscopy to guide and/or verify tip placement if the radiologic technologist or radiologist operates the fluoroscopy equipment
 - 3. A wire may not extend past the shoulder or past the tip of the catheter for exchange or placement, unless the PICC is placed/repositioned using fluoroscopy
- F. Centrally placed CVC specific (all other CVC; not a PICC):
 - 1. A designated LIP who is qualified to manage potential complications of CVC insertion shall be present in the facility and readily available to assist with the management of complications.
 - 2. The RN inserting a CVC will have previous experience in insertion of ultrasound guided PICCs.
 - 3. These lines are placed using ultrasound guidance only.
 - 4. The RN inserting a CVC must possess evidence of current advanced life support training appropriate to the patient population (e.g. ACLS, PALS).
- G. RNs using advanced techniques to verify placement of the catheter tip, prior to and independent of a radiologist, will meet the following requirements:
 - 1. Completion of an instructional program related to the technique such as (not limited to): the use of fluoroscopy, interpretation of chest radiography, or the use of other tip placement verification devices such as an electrocardiogram tip confirmation device.
 - 2. Skills verification by a radiologist to determine interventions for suboptimal tip placement for age specific patients.
 - 3. The agency/employer maintains a written policy and procedures.
 - 4. The agency/employer maintains documentation of program completion and performance-based competency assessment.
- H. For nurses maintaining any CVC, including removal by an RN: The agency/employer maintains a written policy and procedure.
- I. The nurse may proceed with use of the CVC (infusion, etc.) per agency/employer policy and procedure after optimal tip placement verification.

II. COURSE OF INSTRUCTION

Instruction shall include but is not limited to the following, as applicable to the individual's scope, and per agency/employer policy

- A. For RNs performing insertion of any type of CVC:
 - 1. Infection control practices
 - 2. Nursing responsibilities including patient education
 - 3. Indications and contraindications
 - 4. Use of central line bundle components (specifically Institute for Healthcare Improvement bundle)
 - 5. Insertion, maintenance, and removal techniques
- B. For RNs performing PICC insertion:
 - 1. Anatomy and physiology of the vascular system as it relates to PICC placement and removal
 - 2. Patient assessment skills associated with PICC placement and removal
 - 3. Use of ultrasound or fluoroscopy as applicable
 - 4. Simulated insertion techniques related to PICC placement and removal (if available)
 - 5. PICC/midline insertion, including patient preparation, sterile technique, set up, and insertion.
 - 6. Insertion and post-insertion related complications and management
- C. For RNs performing insertion of all other CVCs (not a PICC):
 - 1. Anatomy and physiology of the vasculature and adjacent structures of the neck, chest, axillary, and groin area, veins, and nerve structures.
 - 2. Advanced vascular access insertion, using ultrasound technology, and management of lines
 - 3. Anchoring and suturing techniques
 - 4. Potential complications, unexpected outcomes, and management
- D. For RNs using advanced techniques to verify location of the PICC tip:
 - 1. Anatomy and physiology of vascular system as it relates to PICC placement/removal
 - 2. Radiographic landmarks and techniques
 - 3. Abnormal anatomy and techniques for catheter positioning/interpretation
 - 4. Management of PICCs that do not demonstrate optimal positioning
 - 5. Device specific training, such as for electrocardiogram tip placement device
 - 6. If using fluoroscopy, radiation management and safety
 - 7. Nursing responsibilities per facility policies

I. RATIONALE

Due to growth in the field of vascular access, a need has arisen for further clarification of the RN scope of practice as it relates to insertion of CVCs. A PICC is a type of CVC; when there are different expectations between PICC and other types of CVCs, those elements are separately delineated within this advisory opinion.

It is within the scope of practice of an RN to insert a CVC only if the RN is educationally prepared and clinically competent. The cannulation of the subclavian vein and/or insertion/removal of tunneled or implanted catheters may present complications that may necessitate interventions that are outside the scope of the RN.

The expertise of the nurse educated to insert and maintain PICC lines is consistent with current state of practice as outlined by the Infusion Nurse's Society (INS) and the Association of Vascular Access (AVA).

The expertise and education required for radiographic tip placement interpreting x-rays and using fluoroscopy for positioning and repositioning PICC lines is consistent with the American College Radiology standard as to ensure safe practice and continuity of care for patients.

IV. REFERENCES

American College of Radiology. (2018). ACR-AAPM technical standard for management of the use of radiation in fluoroscopic procedures. Retrieved from <https://www.acr.org/-/media/ACR/Files/Practice-Parameters/mgmtfluoroproc.pdf?la=en>

Association of Vascular Access. (2011). Position statement: Use of Seldinger or modified Seldinger technique in combination with real-time imaging modalities for peripherally inserted central catheter and midline placement by clinicians. Retrieved from https://cdn.ymaws.com/www.avainfo.org/resource/resmgr/Files/Position_Statements/The_Use_of_Seldinger_or_MST.pdf

Gorski, L., Hadaway, L., Hagle, M., McGoldrick, M., Orr, M., & Doellman, D. (2016). Infusion therapy standards of practice. *Journal of Infusion Nursing*, 39(1S).

Institute for Healthcare Improvement. (2012). How-to-guide: Prevent central line-associated bloodstream infection. Retrieved from <http://www.ihl.org/resources/Pages/Tools/HowtoGuidePreventCentralLineAssociatedBloodstreamInfection.aspx>

Journal of Infusion Nursing Society. (2010). The role of the registered nurse in determining distal tip placement of peripherally inserted central catheters by chest radiograph. *Journal of Infusion Nursing*, 33(1), 19-20.

Verhey, P., Gosselin, M., Primack, S., Blackburn, P., & Kramer, A. (2008). The right mediastinal border and central venous anatomy on frontal chest radiograph. *Journal of the American Vascular Association*, 13(1), 32-35.