

NEVADA STATE BOARD OF NURSING

Practice Advisory Opinion

Practice Question:

Should the 1992 practice advisory opinion regarding peripherally inserted central catheters be updated?

Recommendation:

The Nursing Practice Advisory Committee recommends that the original 1992 PICC practice decision be expanded to include the following: Registered Nurses with documented training be allowed to 1) secure central lines by placement of a suture when securement devices are not available; 2) insert a central line in any setting including the home after an assessment is made regarding the safety of the setting and arrangements necessary for verification of placement prior to induction of infusion; 3) reposition repair, flush/declot, exchange or remove a nonfunctional line under the direction of a physician; and 4) assure proper placement of the catheter when the distal tip is positioned beyond the axillary vein to provide a preliminary reading of a chest x-ray for determining placement of the end of the PICC in the vena cava. (item #4 added to the existing practice decision by Board approval in March, 2006)

Consumer Safety and Public Interest:

Intravenous therapy is a component of basic RN education, however, intravenous therapy is and has been changing. There is now a need for specific expertise in this area. RNs specially trained in the use of PICC lines have been inserting central lines successfully across the country since 1975. Insertion of PICC lines has been successfully accomplished by RNs in Nevada since 1992. The therapeutic benefit to the consumer has been unquestioned.

PICC lines are used for the administration of medicines or nutrients in concentrations that would likely produce phlebitis or sclerosis and permanent injury in smaller veins. The PICC line can avoid or reduce complications with peripheral insertion in comparison to chest line insertion. Current literature shows that PICC lines have the lowest sepsis rate of all types in intravenous central devices and are appropriate for placement in multiple settings. Centrally placed catheters can be used for any type of IV therapy. There is increased patient comfort because a PICC is considered appropriate for IV therapy greater than 10 to 14 days and can remain in place for as long as required (at least a year) without complications.

This therapeutic intervention is a cost effective method of delivering IV therapy in the utilization of time and supplies.

Safe for the practitioner

Education and training with this procedure are vitally important. The Registered Nurse has the responsibility to be competent in this practice area. Equally important is the responsibility to organize and implement this nursing service so the procedure may be accomplished safely.

Current Trends and National Standards

In the current healthcare environment, the PICC line is the central line of choice over the Midline and the Midclavicular line. The Intravenous Nurses Society is the professional nursing organization source for standards of practice related to PICC lines. Standards have also been

articulated by the National Association of Vascular Access Networks, the Oncology Nurses Society, the Center for Disease Control and the American Society for Parenteral and Enteral Nutrition.

Literature review

The nursing literature is voluminous in regards to PICC lines. A bibliography may be obtained from the Board of Nursing Office.

Nursing Process; Standardized Procedure; Competency Mechanism:

Peripherally Inserted Central Catheter

Definition: A PICC line is a small, soft flexible radiopaque catheter, usually inserted through the veins of the antecubital fossa, or upper basilica/cephalic veins, threaded up the arm through the major veins of the chest, with tip location ending in the Superior Vena Cava. A PICC line may be advanced from the lower extremities and threaded into the Inferior Vena Cava for Pediatric patients only. The only time the term PICC can be used is when the terminal end of the PICC is in the Superior Vena Cava (SVC).

Uses: PICC lines can be used for any type of intravenous therapy. Confirmation by x-ray is required prior to any intravenous infusion. FDA/CVC, Working Group in 1994 stated that the catheter tip position should be confirmed by x-ray or other image modality and be re-checked periodically.

Types: Materials include, but are not limited to silicone, polyurethane and other polymers. Sizes range from 1.2 French to 7 French, with lengths from 6cm to 60cm, catheter lumens can be single, double or triple.

Dwell time: Optimal dwell time is unknown. Intravenous Nurses Society standards indicate that dwell time may be up to one year.

Midclavicular Catheter

Definition: A Midclavicular line is a small, soft flexible radiopaque catheter, usually inserted through the antecubital fossa, or upper basilica/cephalic veins, threaded up the arm with tip location ending in the subclavian vein.

Uses: A Midclavicular line can be used for any type of intravenous fluids, electrolytes and/or other medications commonly infused through peripheral veins with an isosmotic or near isosmotic solution of 500mOsm or less. Irritating, parenteral nutrition, chemotherapeutic solutions should not be administered through the catheter.

Types: materials include, but not limited to silicone, polyurethane and other polymers. Average sizes range from 1.2 French to 5 French with length based on external measurement.

Dwell time: Optimal dwell time is considered to be 2-3 months according to the 1997 Intravenous Nurses Society position.

Midline Catheter

Definition: A Midline is a short radiopaque catheter, greater than 3” in length, inserted most commonly into the basilica/cephalic veins 2” below or above the antecubital fossa, with a terminal tip in the upper arm of the basilica, cephalic or axillary vein. Midlines are peripheral devices with terminal tip in the proximal portion of the extremity below the axilla.

Uses: Midlines are a limited peripheral access which can be used for any type of intravenous therapy with an isosmotic or near isosmotic solution, 500mOsm or less irritating, hyperosmotic, chemotherapeutic and total parenteral nutrition should not be infused through this line.

Types: Materials include, but are not limited to, silicone, polyurethane and other polymers. Average sizes range from 1.2 French to 5 French and lengths from 8cm to 25 cm.

Dwell time: Recommended dwell time is 2 to 4 weeks. Maximum dwell time should be limited to four weeks. The decision for Dwell times longer than four weeks should be based on factors including the length of therapy remaining, the patient’s peripheral venous status, the patient’s condition and the condition of the vein the catheter is placed and skin integrity.

Competency

Initial and on-going training including demonstration of competence must be done on a regular basis to insure optimal patient care and safety. All provisions for competence per NRS Chapter 632 must be documented. Training should follow the curriculum standards set out by the Intravenous Nurses Society and the National Association of Vascular Access Networks. PICC, Midclavicular and Midline insertions require maintenance of skill by performing insertions on a regular basis. Neonatal/Pediatric PICC insertions should be attained after successful adult insertions unless the expert is a Neonatal/Pediatric nurse with documented IV therapy skills. Policy and procedure need to be written to determine frequency of training as well as the number of insertions per year to demonstrate competency.

The Registered Nurse performing the procedure must obtain informed consent, whether written or verbal, and document this in the medical record. As with any consent, the patient must be educated on the benefits, risks, and alternatives related to this procedure.

Documentation of PICC, Midclavicular, and Midlines must include, but not limited to:

- physician order
- informed consent
- catheter brand, gauge, lot number
- type of introducer, macro or micro (modified seldinger/seldinger) and technique used for insertion
- name of vein accessed
- guide wire stylet used or not used, removal of

- patient measurement results, distance from site to SVC
- patients mid arm circumference and where it was measured
- total length of catheter
- trimmed or not trimmed
- radiology confirmation of tip by an RN for a preliminary read, a final read must be done by the physician (RN role added by Board approval in March, 2006)
- complications, blood loss, flushes, aspirate non-pulsatile blood
- patient comments and instructions
- RN signature

Consistent with Previous Decisions

This recommendation expands the 1992 Board practice decision regarding insertion of PICC lines by Registered Nurses.

Impact-On Nevada

Expanded use of the PICC line would impact all patients required long term PICC access in any healthcare setting in all urban and rural areas.

Scope of Practice Affected

This applies only to the qualified Registered Nurse.

Type of Function

Insertion of PICC, Midclavicular and Midline lines is a dependent function requiring a physician order.

Approved by the Nurse Practice Advisory Committee: July 12, 2000

Adopted by the Nevada State Board of Nursing: September 3, 2000

Approval of addition of RN role in radiological verification of placement: Nevada State Board of Nursing: March 29, 2006

Reviewed and revised by the Nurse Practice Advisory Committee: April 12, 2011

Approved by the Nevada State Board of Nursing: May 18, 2011