

PICC LINE DRESSING CHANGES

Indications and Procedure Guidelines for PICC Line Dressing
Changes in the UNC NCCC

January 2025

Considerations...

NANN provides the only neonatal specific guidelines related to PICC maintenance/care

- The neonatal population is unique, **greater risks** associated with **frequent dressing changes**:
 - **Infection** → Exposing the line/site with each dressing change
 - **Skin integrity/breakdown** from dressing removal, friction, antimicrobial agents → Repeated removal of transparent dressings (Tegaderm) results in damage to the thin stratum corneum and impaired skin integrity
 - **Procedural stress/discomfort, noxious stimuli** → Adverse developmental effects
 - **Catheter Dislodgement** → 0.5 cm or less can mean the difference between a central vs non-central line in neonates

NANN Guidelines

- Key Points:
 - **Reducing dressing disruptions results in decreased CLABSI rates and decreased line complication rates**
 - “Routine” (i.e. weekly or scheduled) dressing changes as part of “CLABSI bundles” did NOT result in decreased CLABSI rates⁴
 - Dressing changes should be performed “when integrity is lost” on a PRN basis
 - INS guidelines also recommend dressing changes on a PRN basis in the neonatal population due to the high risk of dislodgement
 - Dressing change procedure recommendations (NANN Guidelines):
 - Two- person procedure: NNP or NCCC trained PICC RN and assisting RN
 - Sterile procedure: NNP or NCCC trained PICC RN will be fully sterile and assisting RN will wear sterile gloves

The goal is to **minimize dressing disruptions.**

- Reduce unnecessary dressing changes
- Reduce complications leading to unnecessary/premature dressing changes

Minimizing dressing disruptions is associated with:

- *Decreased CLABSI rates*
- *Decreased rates of catheter complications (migration, dislodgement)*
- *Decreased skin integrity disruption*

PICC lines are placed, maintained, and managed by the NNP's. Dressing and site interventions are the responsibility and decision of the NNP's and/or NCCC trained PICC RN's.

RISK/BENEFIT ASSESSMENT OF DRESSING CHANGE

- How difficult was the line to obtain?
- What is the indication for the line? (Nutritional support, antibiotics vs life-sustaining medications such as vasopressors, paralytics)
- Can the dressing change be performed without high risk of line dislodgement? (Completely occlusive Tegaderm is extremely difficult to remove without major risk of line migration)
- Would accidental migration/dislodgement result in inability to provide necessary therapies?
- When is the line going to be removed?
- Skin integrity
- Patient stability
- Other considerations

NNP will determine necessity of dressing change based on this assessment and document accordingly within EPIC.

DRESSING CHANGES CAN BE PERFORMED BY:

- Nurse Practitioner
- NCCC trained PICC RN
 - *Must have completed necessary training (NCCC PICC RN course) and competency checks*
- Neonatal Fellow (if trained)
- Neonatologist (if trained)

This is a two-person procedure:

- The primary person performing the dressing change
- Assisting bedside RN

INDICATIONS FOR DRESSING CHANGE

- **Disrupted integrity**

- Non occlusive dressing
 - “Edge lift is not necessarily failure, unless there is a channel from the edge of the dressing to the I.V. entry site or wound” per 3M manufacturer (Tegaderm)
- Excessive drainage or moisture under the dressing

- **Soiled**

- Any sterile component of the dressing beneath the Tegaderm is soiled

INDICATIONS FOR DRESSING CHANGE

- Blood that OBSCURES the insertion site
 - Exceptions: Blood at the insertion site encapsulated within SecurePort IV cyanoacrylate glue from placement is nearly impossible to remove and excessive scrubbing will likely result in catheter dislodgement or impaired skin integrity
- Change within 7 days if hemostatic product has been used
 - StatSeal, Gelfoam, etc

NNP/PICC NURSE RESPONSIBILITIES

- Coordinate timing of PICC dressing change with infant's nurse
- Ensure infection risk is minimized
 - *Any staff within 3 feet of area will need to wear a hat & mask*
 - *Trash and cleaning will need to be postponed by environmental services until after the procedure*

NNP/PICC NURSE RESPONSIBILITIES

- Determine which RN will be your sterile assistant and guide the RN with his/her role
 - *The sterile RN can be an additional PICC RN, the patient's bedside RN, or any RN in the pod*
- Arrange for an additional RN to be available to hold the patient and/or to grab additional supplies if needed

BEDSIDE RN's RESPONSIBILITIES DURING PROCEDURE

- Available to assist with dressing change
 - *Assisting RN will wear sterile gloves during procedure*
- Gather extra supplies if needed
- May need to hold extremity or pacifier in place
- Notify NNP/PICC RN of break in sterile technique

SUPPLIES

- Suture removal kit
- Steri-Strips
- Transparent film dressing (adequate size, appropriate product for site)
- SecurePort IV
- Appropriate skin cleansing agent x 4 swabs (Chlorhexidine or Betadine)
 - Refer to NCCC Clinical Guidelines, Procedural Skin Preparation
 - 1 swab used for outside of old dressing and 3 during dressing change
- Disposable masks/hats
- Sterile gloves
 - Two pairs (double gloving) for person performing dressing change
 - Current size glove for inner glove and one size larger glove for outside glove*
 - Additional pair for sterile RN
- Sterile gown
- Appropriate securement device
 - Mepilex Lite + Posey
 - Griplock + Cavilon No Sting barrier
- Sterile towels



Procedural Skin Preparation

PROCEDURE	INFANT ≤ 1000 G		INFANT > 1000 G
	< 1 Week Old	> 1 Week Old	
PIV	Betadine, then sterile saline	Chloraprep	Chloraprep
PAL	Betadine, then sterile saline	Chloraprep	Chloraprep
Umbilical Line Placement	Betadine	Chloraprep	Chloraprep
PICC	Betadine	Chloraprep	Chloraprep
Thoracentesis or Thoracostomy Tube	Betadine	Chloraprep	Chloraprep
Other Invasive Sterile Procedures (Suprapubic Tap, Paracentesis)	Betadine	Chloraprep	Chloraprep
Lumbar Puncture	Betadine	Betadine	Betadine
Urinary Catheterization	Betadine	Betadine	Betadine
Circumcision	N/A	N/A	Betadine

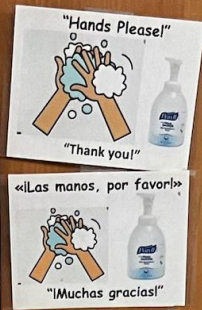
PRIOR TO PROCEDURE

- Provide comfort measures to infant (swaddle/oral sucrose)
- Remove extraneous items from bed which could contaminate sterile field
- Perform "Time Out" with patient's bedside RN
- Assess site: Note exposed cm markings visible under dressing (used to determine insertion depth)
- Review procedure note from line insertion: Determine insertion depth at placement
 - *Notify NNP/MD of need for placement assessment radiograph if there is concern for catheter migration*
- Don hat and mask and perform hand hygiene
 - *Assisting RN and anyone within three feet of sterile field must wear hat/mask*



**DON MASK
AND HAT**

**PERFORM
HAND
HYGIENE**



PLACE EQUIPMENT ON STERILE FIELD

- Skin Prep
- Suture removal kit
- Steri-strips
- Transparent film dressing
- SecurePort IV
- Sterile Drapes



PREPARING THE DRESSING FOR REMOVAL

- Clean extremity/existing dressing with appropriate skin prep agent (one swab)
- Remove exterior Steri-Strips
- Loosen edges of transparent film dressing
- ***Take note of exposed insertion depth markings prior to removal of dressing***

Assistant should then hold extremity while NNP/PICC RN performs hand hygiene and becomes sterile

**PERFORM
HAND
HYGIENE**





Two pairs of sterile gloves!

**DON STERILE
GOWN, GLOVES**

Prepare/Drape Patient

Assisting RN to hold extremity while the patient is draped

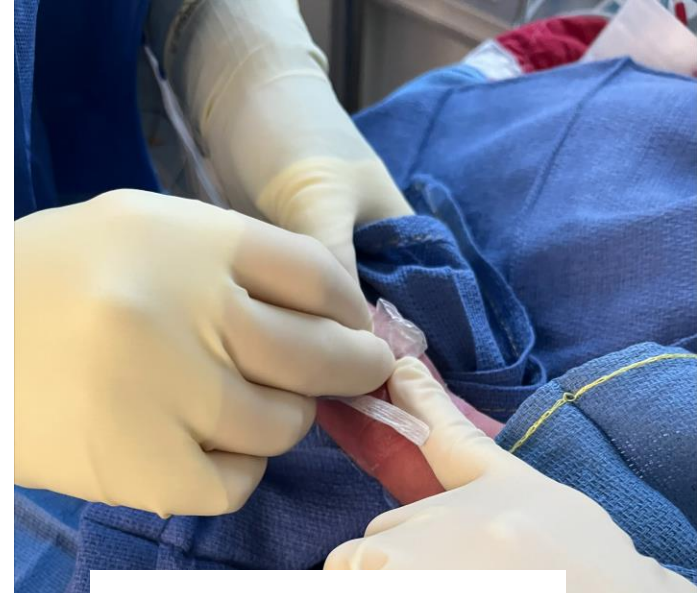
Utilize a sterile towel to securely hold the extremity for dressing removal



REMOVE DRESSING



- Stabilize the line with non dominant hand
- Remove the Steri-Strips, transparent film dressing towards insertion site



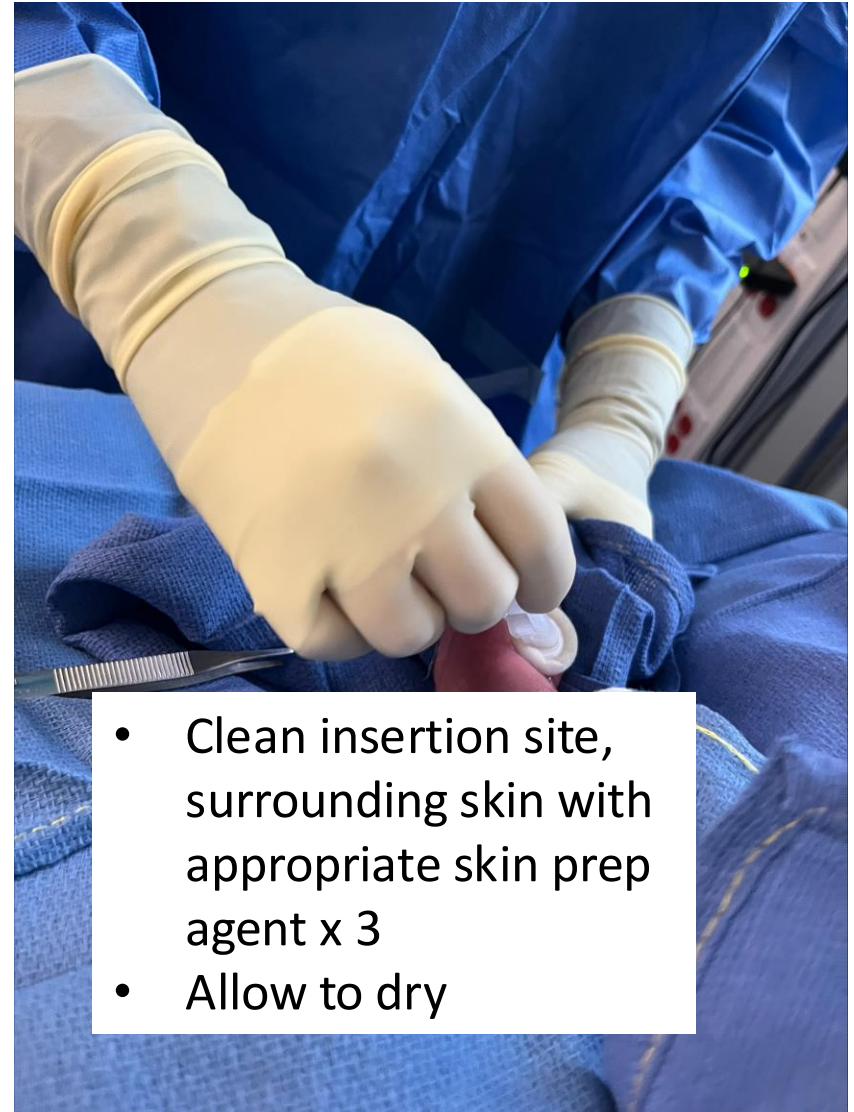
Have **STERILE** assisting RN hold insertion site for remainder of dressing removal to prevent migration

REMOVE TOP LAYER OF STERILE GLOVES





Stabilize line with sterile thumb at hub



- Clean insertion site, surrounding skin with appropriate skin prep agent x 3
- Allow to dry

Apply SecurePort IV



- One drop at insertion site

APPLY TRANSPARENT DRESSING

- **Place 2 Steri-Strips over hub**
- **Position Catheter**
 - *If possible, ensure a slight curve in the catheter under the dressing (decreases tension)*
 - *Ensure line does not coil/loop on itself at any point*
- **Place a transparent film dressing (Tegaderm) over the insertion site and the “hub” of the catheter**
 - *Depending on anatomical site, alternative bordered Tegaderm products are available and may be used*
- **Ensure the PICC HUB, catheter, and site are contained within occlusive "border" on all sides**
 - *Ensure entire catheter/site is visible within transparent window if utilizing a bordered dressing*
 - *Ensure Steri-Strip does not extend beyond the borders of the overlying occlusive transparent film dressing*



SECURE WITH STERI-STRIPS

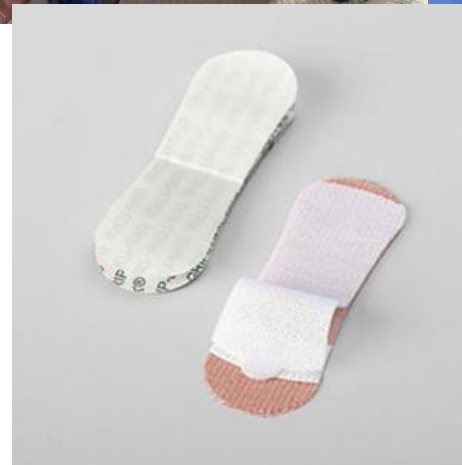
- Using a chevron technique, place a Steri-Strip (adhesive side up) under the extension tubing immediately below the “hub,” crossing over the “hub” and on top of the transparent dressing.
 - *Do not place over insertion site*
- Secure with two Steri-Strips placed perpendicular to hub



APPLY APPROPRIATE SECUREMENT DEVICE

•All infants should have the appropriate securement device in place at all times!

- **Griplock:** Sites for which a Posey cannot be used (non-extremity PICC's), Term/Large infants with extremities too large for Posey
 - Skin Prep (Cavilon No-Sting barrier) should be utilized prior to application
 - Adhesive remover should be utilized to aid in removal
 - Device should be changed every 7 days and per manufacturer recommendation s: "Replace securement device if soiled or saturated in fluid or if device shows signs of wear or damage"
- **Posey:** Preterm infants, small infants, extremity PICCs
 - Mepilex Lite should be placed between the skin and PICC extension to prevent pressure points
 - Posey/Mepilex Lite should be changed (signed and dated) every 24 hours with line changes



DO NOT EVER!

- Place tape (including Steri-Strips) over the catheter. This will compromise the strength and integrity of the catheter.
- Reinforce with anything other than Steri-Strips
- Loop the catheter over itself whereby one section is resting on another section of the catheter.



DOCUMENT DRESSING CHANGE

- In Epic, click Notes, click procedure tab and new note
- Once in the note, type “Neo PICC” in the smart text box and click on dressing change option
- Select appropriate options via dropdown menus
- Document use of SecurePort IV
- Add documentation regarding placement of the line prior to and after dressing change.
- Sign note

The screenshot displays the Epic EMR interface for creating a new procedure note. At the top, the 'New Note' button is visible. Below it, the 'Type' is set to 'Procedures', 'Service' is 'Neonatology (PICC)', 'Date' is '11/19/2014', and 'Time' is '1533'. A table of associated orders is shown, listing 'Insert peripheral IV' and 'Saline lock IV' for 'Jacquelyn K. Patten'. The 'Procedure Name' field is empty, and the 'Add to History' checkbox is checked. Below the procedure name, there are fields for 'Pre-procedure Diagnoses' and 'Post-procedure Diagnoses'. The main text area contains the following text:

Procedure Note- PICC DRESSING CHANGE

Day of Life: 9 days

Indication: Replacement of [PICC Dressing Desc:23205] dressing

Time out: Performed with the bedside RN by utilizing two of the JCAHO approved patient identifiers.

Procedure: The [PICC Dressing Desc:23205] dressing was removed. The patient was prepped with [Cleansing solution:24386] solution and draped in sterile fashion and the procedure was performed utilizing sterile technique. The insertion site and surrounding tissue were without evidence of an infectious process. The PICC was dressed according to the manufacturers recommendations.

Complication: [Procedure Complications:22063]

Sources

1. Adhezion Products (n.d.). 2024 Infusion Therapy Standards of Care: Tissue Adhesive (TA) Review. SecurePortIV. <https://adhezion.com/wp-content/uploads/2024/02/INS-2024-Tissue-Adhesive-Review.pdf>
2. Adhezion Products (n.d.). SecurePort IV. <https://adhezion.com/wp-content/uploads/2022/04/SecurePortIV-Sell-Sheet-SPI-SS01-2202.pdf>
3. 3M Products (n.d.) Tegaderm transparent film dressing. https://multimedia.3m.com/mws/media/4479830/tegaderm-transparent-film-dressing-brochure.pdf?&fn=70-2008-8759-7_R2.pdf
4. Sharpe, E., Curry, S. & Wycoff, M. (2022). Peripherally Inserted Central Catheters: Guideline for Practice (4th ed.). National Association of Neonatal Nurses.
5. TIDI products (n.d.) Universal securement products. <https://www.tidiprodu>