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Nursing Management of Central Venous Access Devices - Portacaths

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Objectives

- Identify best practice methods in management and care of CVADS
- Clarify the requirements for safe accessing and deaccessing the Portacath
- Reflect on the specialty requirements with ‘Power’ devices

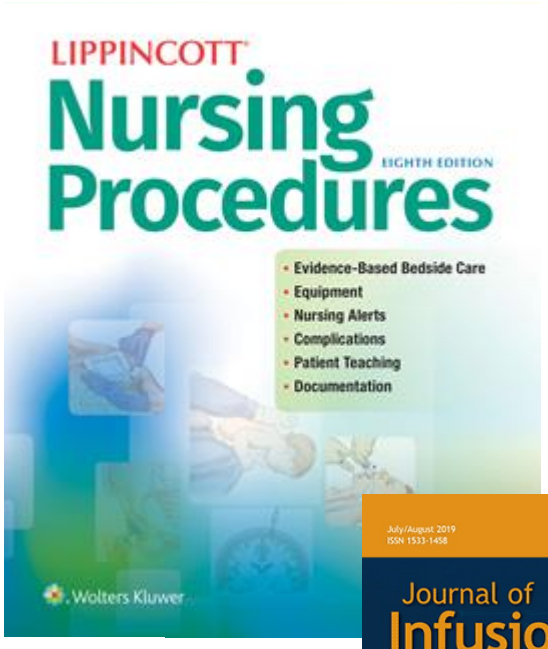
Best Practice

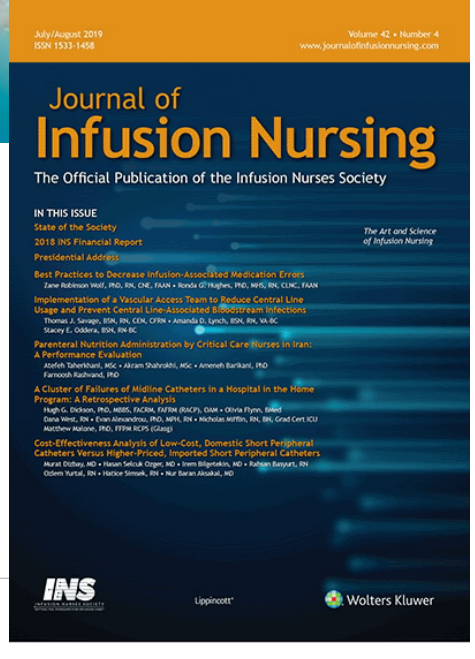
Policy

Guidelines

Evidence

Research





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Management of Intravascular (IV) Lines and Therapy Policy

Policy

Target Group: All Clinical Caregivers	**Original Date of Issue:** 04/08/2014	**Date of Last Review:** 13/06/2019	**Publication Date:** 13/06/2019
Approved by: Jorge Guzman, MD, Chief of Staff	**Date Last Approved:** 13/06/2019	**Document Owner:** Elias Tannous (Sr. Infection Control Practitioner)	**Version Number:** 4

Printed copies are for reference only. Please refer to the electronic copy for the latest version.

Must do for all CVADs

Assess the need daily

Perform hand hygiene

Scrub the hub for a minimum of 5 seconds

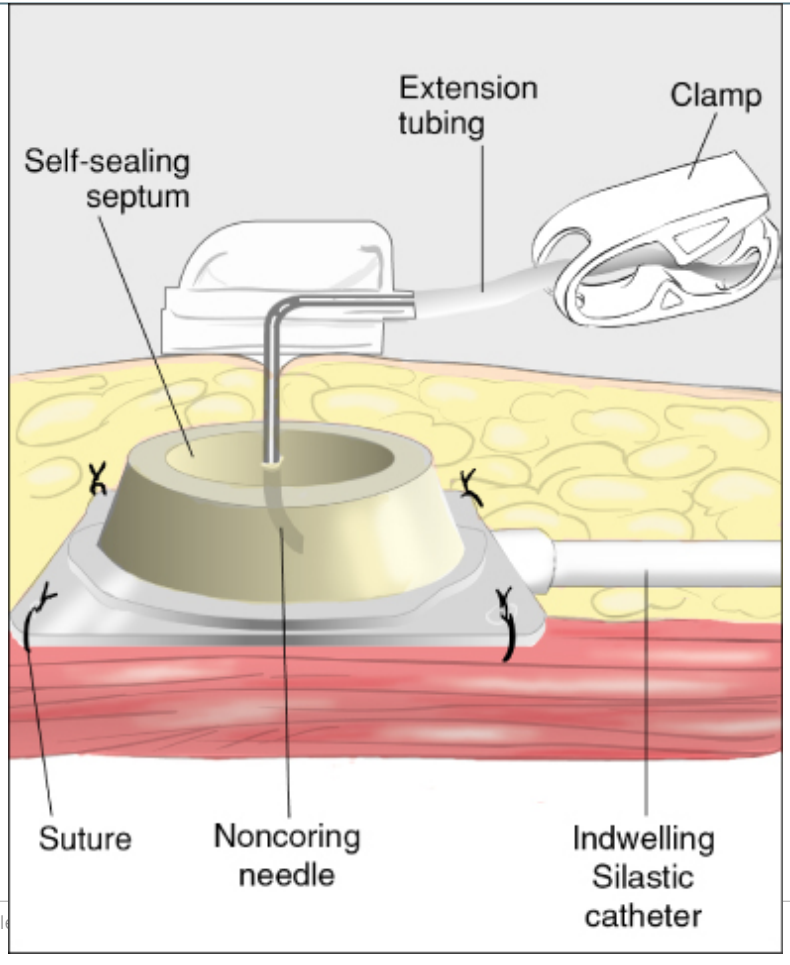
CHG, povidone-iodine, alcohol

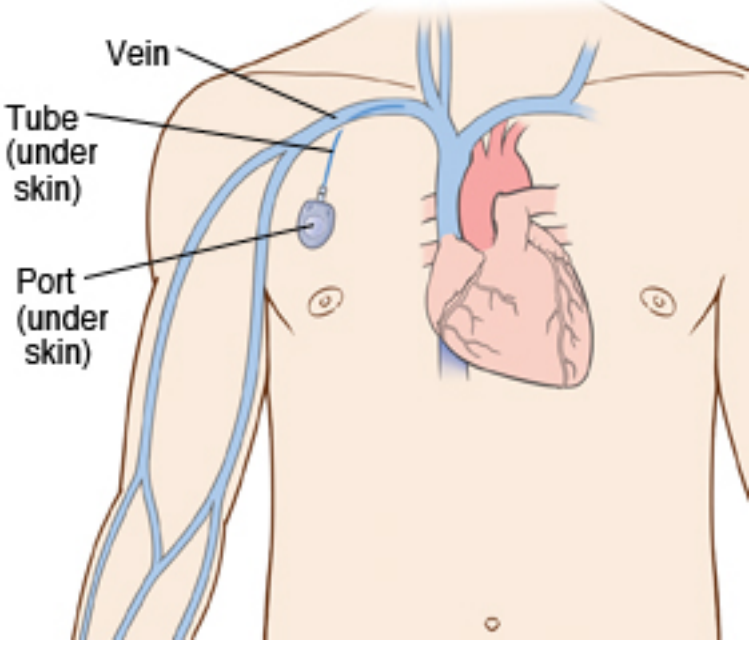
Curos caps – no need to scrub the hub

Inspect insertion site daily

Document

Components & Placement of a Port



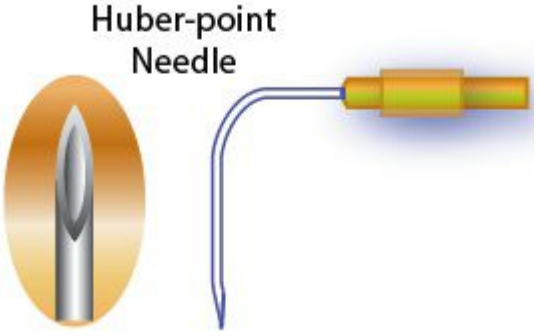


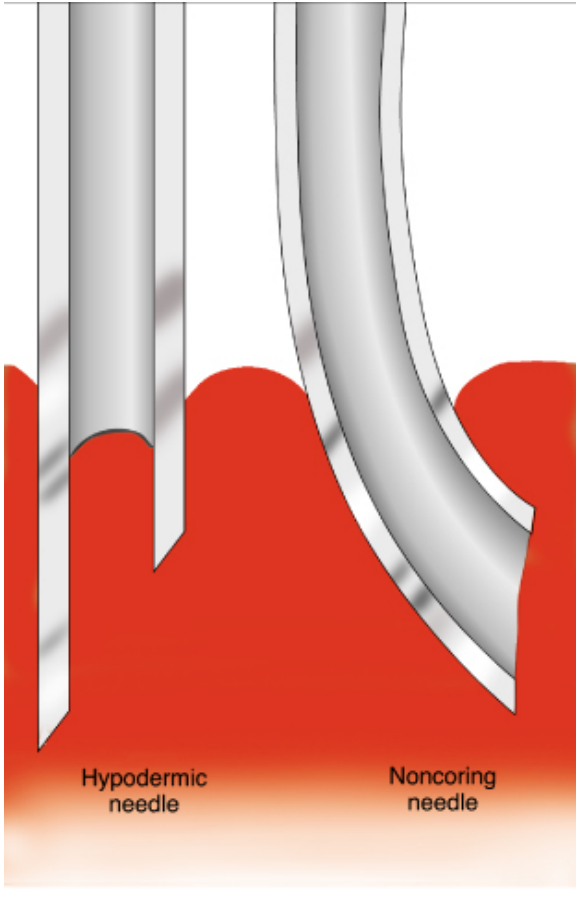
Accessing Ports

Competency based
Confidence based
Sterile technique

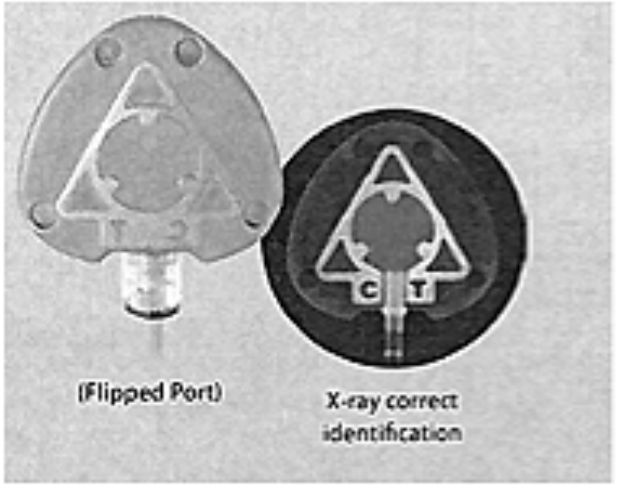
Lippincott Procedures Optional:
prescribed local anaesthetic
prescribed locking solution
e.g. prefilled heparinized saline flush solution syringe (10 units/mL)

What needle should I use?






ChronoFlex® Polyurethane
8 Fr Catheter resistant to
Taxol®/Taxotere® drugs
Suture Plugs
(Open or silicone-filled
options available)
Soft palpation
bumps on septum
Unique triangular
port shape


C
T
(Flipped Port)
X-ray correct
identification


5 Fr PowerPICC

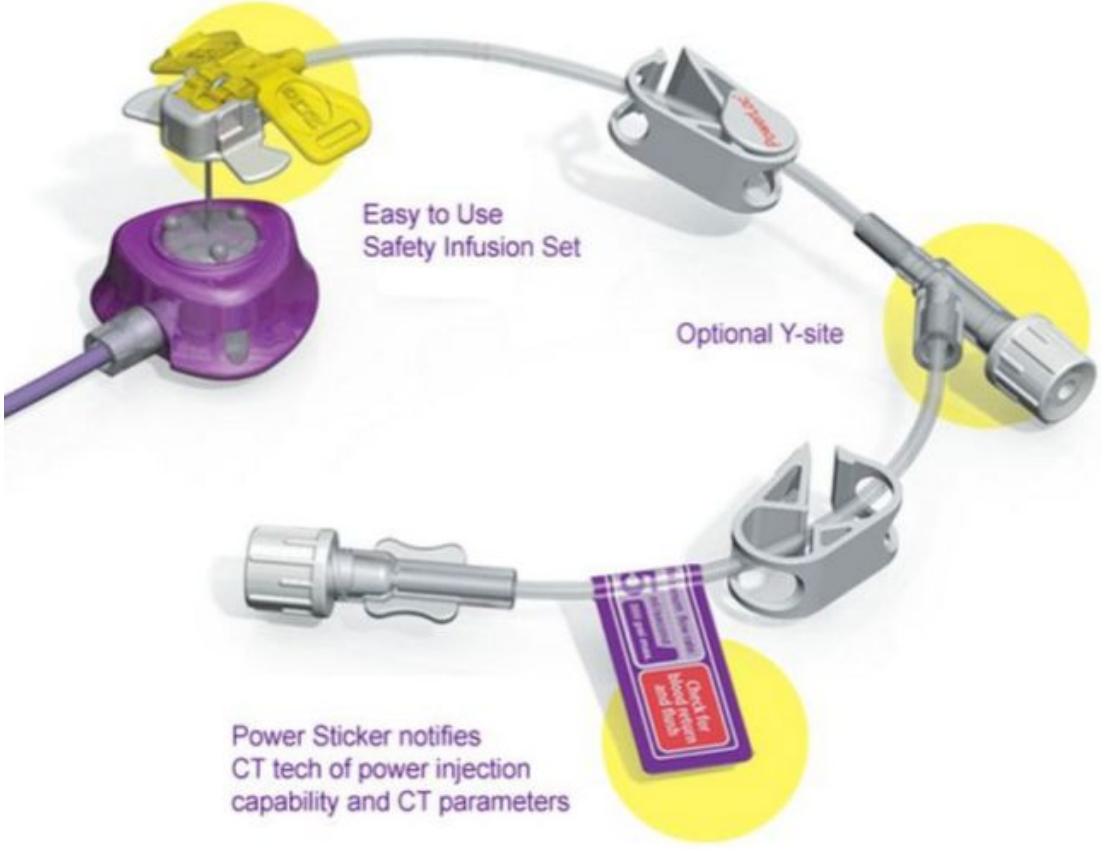

PowerPICC

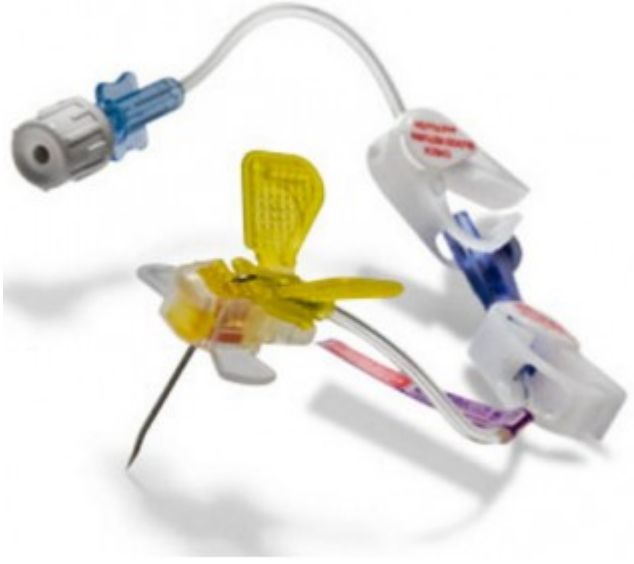

5 mL/sec
MAX


POWER INJECTABLE

Power Ports & Power PICCS

- These devices are designed with withstand 5mL/sec power injections at 300 psi
- Requires the use of a needle designed to withstand higher PSI, such as a PowerLoc® needle


Easy to Use
Safety Infusion Set
Optional Y-site
Power Sticker notifies
CT tech of power injection
capability and CT parameters



Dressings

- 7 days unless compromised
- Date (attended); Time; Initials
- Epic will calculate the due date

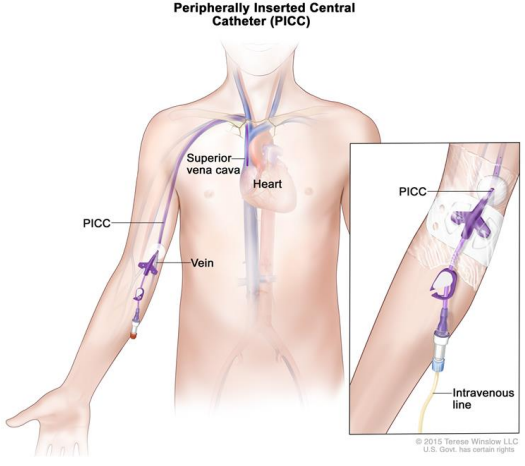
Central venous access device dressing change

Revised: June 14, 2019

Critical Notes!

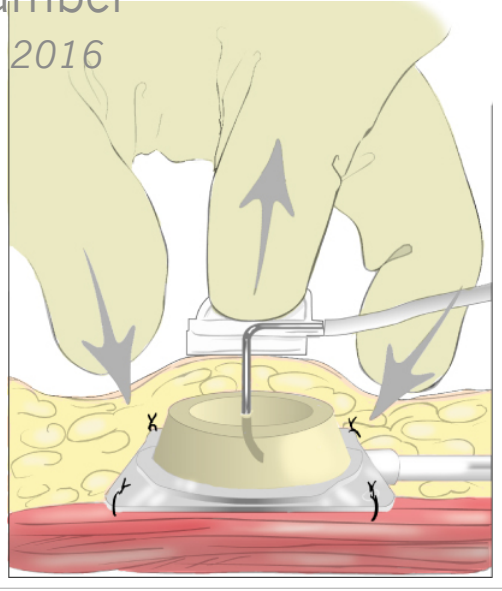
- At CCAD use Chlorhexidine-impregnated sponge or gel and transparent dressing included in the CCAD standardized CVC dressing change kit.
- If allergic to chlorhexidine omit using impregnated sponge or gel.
- Change dressing when soiled at a minimum/ every seven (7) days to limit exposure of the insertion site. Refer to Care and Maintenance of Intravenous Lines Procedure / Intravascular Lines and Devices Policy / Prevention of Central Line Associated Blood Stream Infection Policy.

Power injection of PICCs can result in catheter malposition. Verification of proper tip placement should be reestablished after power injection. www.bardaccess.com



The bevel of an implanted access needle should be placed in the opposite direction from the outflow chamber

INS, 2016



Flushing & Locking – Volume

For flushing;

- Use a minimum volume equal to twice the internal volume of the VAD system

For locking;

- Use volume that is equal to the internal volume of the VAD system plus 20%

Central vascular access devices (CVADs)

- either heparin 10units per mL or preservative-free 0.9% sodium chloride (USP)

INS, 2016

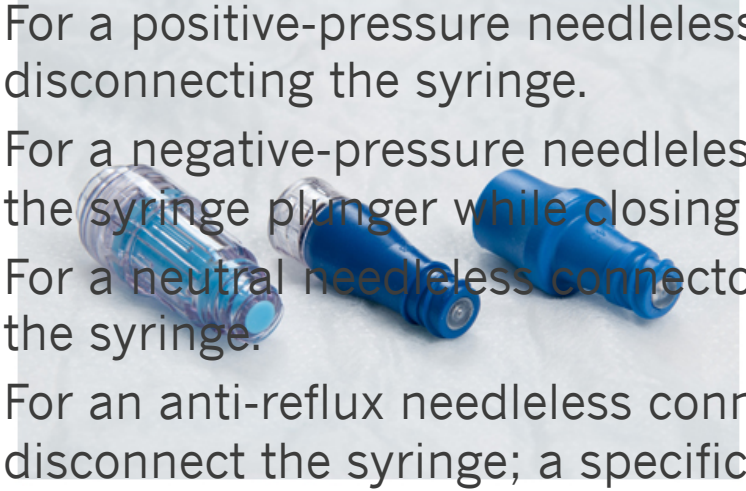
Flushing & Locking – Technique

- Use positive pressure techniques
- Use pulsatile flushing techniques 10 short boluses of 1 mL with brief pauses
- Prevent disconnection reflux by using appropriate flushing, clamping and disconnection methods

INS, 2016

Flushing & Locking – Connectors

- Three different types; impact on the sequencing of clamping and disconnecting



For a positive-pressure needleless connector, clamp after disconnecting the syringe.

For a negative-pressure needleless connector, maintain pressure on the syringe plunger while closing the clamp.

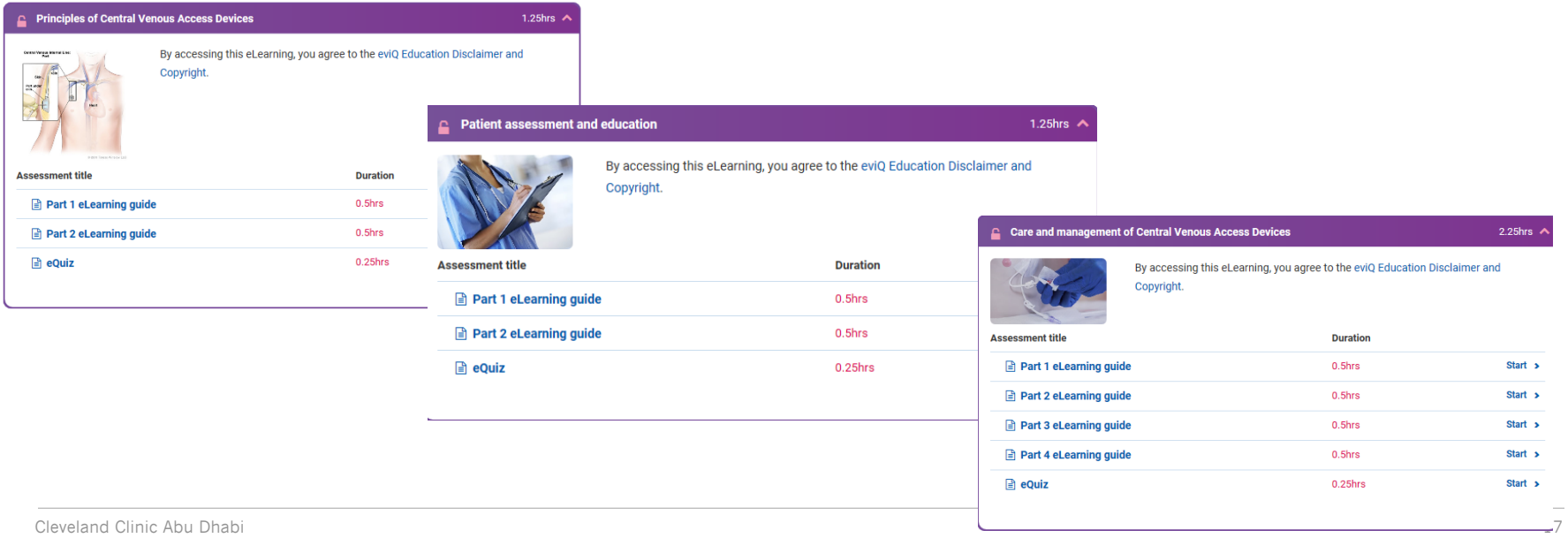
For a neutral needleless connector, clamp before or after disconnecting the syringe.

For an anti-reflux needleless connector, clamp the catheter and then disconnect the syringe; a specific clamping sequence isn't required.

Flushing and Locking is confusing

Learning Resources

- Lippincott
- eviQ education



Infusion Nurses Society

Central vascular access devices (CVADs): either heparin 10 units per mL or preservative-free 0.9% sodium chloride (USP)

Randomized controlled trials have shown equivalent outcomes with heparin and sodium chloride lock solutions for multiple-lumen non tunneled CVADs, peripherally inserted central catheters (PICCs), and implanted ports while accessed and when the access needle is removed.

There is insufficient evidence to recommend one lock solution over the other. 30-33 (I)

- Infusion Nurses Society (2016) *Policies and Procedures for Infusion Therapy 5th edition*

BARD

- Perform heparin lock procedure for open-ended catheters
- For implantable ports with Groshong® Catheters, a sterile normal saline lock may be used
- Consider – hypersensitive to heparin or suffer from HIT

In April 2019 – someone asked the question…..?

- Sent: **04-04-2019** 17:35

  Subject: **Flushing ports with heparin**

  Hello all,

  I have done a **research fellowship** in my hospital to see **if heparin is needed to flush ports intermittently between meds**, or if normal saline is just as good. **My research shows that heparin is not superior to normal saline**. I am now trying to change our policy so that it no longer says to flush ports intermittently with 50 units of heparin between medication uses. I met with one of our oncology doctors today to talk about it and get her to back me up with changing the policy. Before **she will agree to it, she is curious what other facilities are practicing today**. So long story short, if you do not mind, could you please state what your facility does and if you are comfortable enough what facility you are from. I am located in Virginia, and she is definitely interested in other Virginia facilities, but any input is great.

  Thanks everyone,

  Stephanie

- Posted **04-10-2019** 08:40
- Hello Stephanie,
  Our hospital also no longer uses heparin intermittently in between meds. I would encourage you to also to **reference the Infusion Nurse Society as they also encourage limited heparin use in ports**.
  Nice work and good luck to you!
  Robin

- Posted 04-05-2019 06:13
- Hi Everyone !
  I work at Allegheny Health Network in Pittsburgh and **we have been heparin free for over 5 years even in long term maintenance of port flushing.** Our EBP review showed inconclusive evidence to the use of heparin and increased HIT with heparin use. Since we stopped **as long as we use the correct neutral pressure caps with the pulse push flush method we also have not seen a significant increase in thrombolytic use.**
  Anna Vioral PhD MEd RN OCN BMTCN
  Director Practice and Professional Development

- Posted 04-05-2019 08:18
- Good morning,

  In our institution, we have been utilizing **normal saline for flushing of all valved central lines for many years now and have not found it to be inferior to heparin flushes**. Even with monthly port flushes, we have not noticed an increase in occlusion related to fibrin sheath etc.

  Hope this helps!

- Posted 04-05-2019 12:22
- **Saline for the past 20 years in our outpatient Infusion department.**

  Seth

- Posted 04-05-2019 18:24
- We use **saline in the hospital.** I'm from Kaiser Permanente, Portland, Oregon.
-

- Hi Stephanie, The Royal Brisbane Hospital Australia **removed heparin from PICCs and Portacaths more than 10 years ago** (from memory). I personally **removed heparin from Portacaths at the Gold Coast University Hospital Australia in 2012 without incidences**. It did not require physician approval but instead was led by the education team (myself) and the nurse managers (inpatient and ambulatory care). I currently work **in the United Arab Emirates** and one of the hospitals here that I worked **in removed heparin from all CVADs including Ports** (excluding dialysis lines) 10-11 years ago. I was not at that facility when this was implemented but was told that it was driven by an Intensivist in ICU. I have already initiated the conversation at the hospital I am currently working at in the UAE, so your story is of great interest. Reach out to Mikaela Olsen (Johns Hopkins and ONS) as she is also doing a DNP on this topic.

- Hi Stephanie, as mentioned **most hospitals in Australia don't Hep Lock standard PICC / Port's.** There was a **Heparin 50units/5mls shortage about 10 years ago** and a lot of places looked at local studies for Saline locks up to 4 weekly intervals; and no significant issues with blockages. So no issue saline locking in between medications I believe; unless the CVAD has been sluggish or unable to get blood withdrawals if could do so previously. **Main issue is education of staff with positive pressure locking to minimise occlusions.** In oncology, **any line, peripheral or central should be treated with respect to minimise potential side effects (occlusion / sepsis)**. Thanks Ron

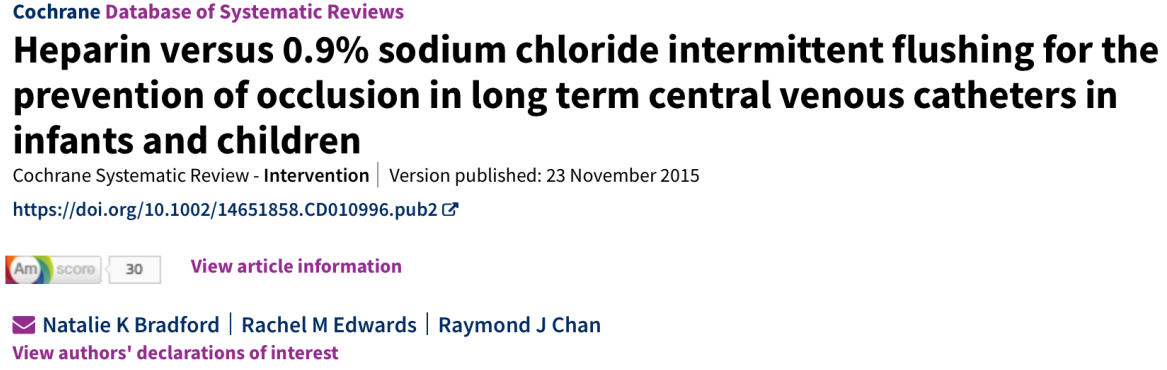
  ---

  Ron Middleton, CNC
  Haematology Care Coordinator
  Toowoomba Hospital
  Toowoomba, Queensland, Australia

What is the best evidence?

- Good quality studies are the best evidence?

- The review found that **there was not enough evidence to determine the effects of intermittent flushing of heparin versus normal saline** to prevent occlusion in long term central venous catheters in infants and children. Ultimately, **if this evidence were available, the development of evidenced-based clinical practice guidelines and consistency of practice would be facilitated.**



Cochrane Database of Systematic Reviews

Heparin versus 0.9% sodium chloride intermittent flushing for the prevention of occlusion in long term central venous catheters in infants and children

Cochrane Systematic Review - **Intervention** | Version published: 23 November 2015

https://doi.org/10.1002/14651858.CD010996.pub2

Am score 30 View article information

Natalie K Bradford | Rachel M Edwards | Raymond J Chan

View authors' declarations of interest


DATA IS
THE NEW OIL


where
do we go
from
here?

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Lippincott Procedures