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Transition to Normal Saline ONLY for CVADs

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Purpose Statement

The purpose of this project is to implement a practice change throughout the system to remove heparin flushes for Central Venous Access Devices (CVADs) pending a successful pilot on Medical Oncology.

Synthesis of Evidence

- Sharma et al (2019) conducted a systematic review and meta-analysis including 886 participants that revealed no clear differences in CVC patency between heparin and NS.
- Klein et al (2018) conducted a pilot study on a 30-patient bone marrow transplant unit, each patient had a new CVC and were divided into two groups. Among 698 catheter-associated events overall incidence of central line issues were similar in both heparin and normal saline group.
- Egnatios & Gloria (2021) studied 37 patients receiving clinical trial infusions, they divided the study into two phases. During heparin phase there were 302 port accesses and four alteplase orders, during the NS study there was 261 accesses and seven alteplase orders. Alteplase was successful every time it was used.
- Zhong et al (2017) performed systemic review on use of heparin v. flushing protocols. Ten randomized control trials involving 7,785 participants were included in the meta-analysis. No general differences found between heparin v. NS in maintaining patency.
- Goossens et al (2013) oncology patients were randomly selected from 2009-2011. 382 were ultimately selected for normal saline group, and 283 for heparin group. All nurses were trained in proper pulsatile technique before study, it was found ultimately heparin was not superior in comparison to NS in maintaining the patency of CVC.

Team Members

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Angela Lindquist, Business Analyst

Evidence-Based Practice Change

<p>Current Practice: Any CVAD e.g., tunneled catheter, implanted port.</p> <p>Flush with the following after every access of the CVAD or when deaccessing:</p> <ul style="list-style-type: none"> Flush with 20mL of Normal Saline Flush with 5mL Heparin 500 units 	<p>Proposed Practice Change: Any CVAD e.g., tunneled catheter, implanted device</p> <p>Flush with the following after every access of the CVAD or when deaccessing:</p> <ul style="list-style-type: none"> Flush with 20mL of Normal Saline utilizing pulsatile technique.
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Benefits versus Risks

Heparin Flush:

- Benefits:**
- Thrombus Prevention
- Risks:**
- Bleeding
 - HIT (Heparin-Induced Thrombocytopenia)
 - Hypersensitivities
 - Medication Errors
 - Air embolism

Saline Flush:

- Risks:**
- Air embolism
 - Medication Error
- Benefits:**
- Reduce risk for infection
 - Reduce risk for occlusion

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GOT PATENCY??
THE PULSATILE (PUSH-PAUSE) FLUSHING TECHNIQUE

WHO?
Any patient with a central line (triple lumen/IT, PICC, port, Cordis, dialysis catheter, etc).

HOW?
Quick, forceful & repeated pressure is applied to the syringe barrel to generate turbulence within the catheter lumen. Inject 1-3 cc of NS per push with brief pauses in between each push. Then, simultaneously flush & clamp the line to maintain positive pressure.
It's a simple, easy, inexpensive, & evidence-based nursing intervention!

WHAT?
A special technique used to flush central lines that involves a "push-pause" or "start-stop-start" motion to ↓ the risk of catheter occlusion.

WHY?
The push-pause flushing method generates turbulence within the catheter lumen, which helps to dislodge fibrin & medication residue, thereby reducing the incidence of catheter occlusion. It's more effective than the traditional continuous flushing technique & it's evidence-based!

WHEN?

- Before & after medication administration.
- Accessing/deaccessing a line
- Before & after blood draws

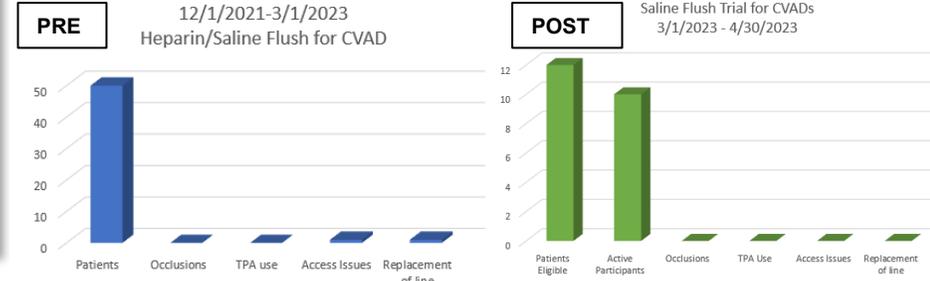
Constant flushing: Fluid moves in the center.

"Push-pause" flushing: Fluid moves in all directions & "sweeps" the catheter lumen.

Pre/Post Measurements

Saline Flush Pilot for Ports Data

- Piloting normal saline flushing only in inpatient Medical Oncology March 1st- May 30th.
- Must meet ALL criteria listed below to participate in pilot of 20mL of NS
(Receiving IV Chemotherapy & Implanted Port)



Note premeasurements are of the oncology patient population actively receiving IV chemotherapy that have a port.

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