FLUSHING A CENTRAL VENOUS ACCESS DEVICE (CVAD) (Peripherally inserted Central Catheter (PiCC) & Tunnelled Central Venous Catheter (TCVC)

TARGET AUDIENCE	NHS Lanarkshire Wide
PATIENT GROUP	All patients with a Peripherally inserted Central Catheter (PiCC) and Tunnelled Central Venous Catheter (TCVC) excluding paediatrics and Central Venous Access Devices (CVAD) used for renal dialysis

Clinical Guidelines Summary

This guideline has been developed to inform registered practitioners of the correct flushing procedure for Central Venous Access Devices(CVADs)

Please be aware that this guideline does not make / deem you competent in using these devices

CVAD's should only be accessed by staff that have completed the relevant face to face teaching session and completed the CVAD competency framework.

FLUSHING A CENTRAL VENOUS ACCESS DEVICE (CVAD)

Topic:	Flushing a Central Venous Access Device (Peripherally inserted Central Catheter (PiCC) & Tunnelled Central Venous Catheter (TCVC) excluding renal dialysis lines
Aim:	To ensure that all registered practitioners apply appropriate infection prevention and control precautions for Aseptic Flushing of Central Venous Access Devices
Implementation Date:	June 2025
Review Date:	June 2027
Author:	Tracey Laird Karen McKie
Version:	1.0

Procedure : Aseptic Flushing of Central Venous Access Device (PiCC & TCVC)

Preparation Before the Procedure Starts	
1. Prepare a surface	Prepare a reusable trolley or appropriate surface on which the equipment will be placed. Clean the surface with a universal disinfectant cleaning wipe. To ensure full contact time with the disinfectant product reapply product with a fresh wipe if the surface dries within 2 minutes, then allow to dry.
2. Gather all equipment and check	**Gather equipment:** • Apron • Sterile dressing pack • Sterile gloves • Individually wrapped 2% CHLORHEXIDINE in 70% ALCOHOL WIPES for cleansing needle free connector • Needle free connectors (weekly change only) • Green needles • Flushing solution: 10ml 0.9 % sodium chloride for injection ampoule 1 per lumen or Posiflush™ 10ml STERILE ONLY SYRINGE 1 per lumen

	• **Luer Lock** Syringes 10ml. The number needed depends on the number of lumens being flushed 2 per lumen
3. Identifying the critical parts	***Identify the critical parts of sterile equipment that must not be touched*** *or* ***make contact with a contaminated surface:*** • The male part of the syringe that connects to the device • The needle free septum
4. Identify unsterile surfaces needing decontamination	***Identify the critical surfaces that require an antiseptic prior to access:*** • The needle free connector
The Procedure	
1. Plastic apron & Hand Hygiene (Moment 2 & 5)	**Don a plastic apron and perform hand hygiene using an alcohol-based hand rub**: • **Before the procedure starts** and, if hands touch contaminated surfaces during the procedure. • **After touching the patient's surroundings.**
2. Open the sterile packages	• Open sterile dressing pack and arrange the equipment onto sterile field.
3. Apply antiseptic	• "Scrub the hub" with the 2% CHLORHEXIDINE in 70% ALCOHOL wipes concentrating on the flat connective surface but also scrub around the sides of the **needle-free connector.** This should be done for a minimum of 15 seconds and leave to dry for a minimum of 15 seconds.
4. Gloves	Gloves should be worn • to prevent blood contamination of the practitioner. • Sterile gloves should be used for accessing the line to reduce the risk of infection for the patient.
5. Procedure steps	**Procedure:** • Explain procedure to patient and gain consent. • Decontaminate hands using alcohol hand rub. • Put on sterile gloves. • Place sterile drape underneath the catheter. Using 2% CHLORHEXIDINE in 70% ALCOHOL wipe, cleanse from the needle free access device by scrubbing the hub as described

	above cleansing all the way up to the clamp for a minimum of 15 seconds, allow to dry naturally for a minimum of 15 seconds. Repeat for every lumen • Draw up 10 ml Sodium Chloride 0.9% (for injection) into a 10ml Luer lock syringe or use 10 ml prefilled STERILE ONLY POSIFLUSH 10 ml. • Change needle free connector access device if due changed. Recommended weekly or when damaged, leaking or soiled (cleanse underneath bung using 2% CHLORHEXIDINE in 70% ALCOHOL) • Attach an empty Luer lock 10mls syringe to end of line, open clamp and aspirate 5mls of blood to check the line is patent/aspirate dead space. • Close clamp and disconnect syringe and discard in disposable bag provided. • Attach Luer lock syringe of Sodium Chloride 0.9% 10mls for injection or STERILE ONLY POSIFLUSH 10ml open clamp and slowly flush, using push pause technique**.** Close clamp while injecting the last of the Sodium Chloride 0.9% to create positive pressure in the line. Disconnect syringe and discard in disposable bag provided. For double, triple or quadruple lumen lines repeat the above procedure for each lumen
6. Confirm safe	• Dispose of waste appropriately as per NHSL guidance. • Decontaminate any surfaces used • Hand Hygiene – Moments 4 & 5 after touching the patient / patient surroundings, decontaminate hands with alcohol-based hand rub. • Document procedure, any problems, action taken and review date in CVC bundle and or appropriate notes.
Additional info	If unable to aspirate blood to confirm line position follow the flow chart below.

FLUSHING A CENTRAL VENOUS ACCESS DEVICE (CVAD)

Troubleshooting flow chart

For PICC & Tunnelled Lines

If you are unable to aspirate blood from the line to ascertain patency check the following

- the dressing is not kinking the line
- clamp has not created a pinch point occluding the line

Try flushing with 1ml of sodium chloride 0.9% for injection using your already prepared flush in the first instance to establish patency. **If there is any resistance at all then STOP**.

If you can easily flush the 1ml of sodium chloride 0.9% for injection, try getting the patient to do some positional changes and light exercises before attempting aspiration again.

If you still cannot aspirate then remove the needle free connector (ensuring the line is clamped) and replace, then try again.

If you are still unable to aspirate the line, and there is NO RESISTANCE to flushing with 1 ml sodium chloride 0.9% for injection, flush the lines as per guidelines.

If there is ANY RESISTANCE STOP, contact appropriate service, radiology for ward patients, Outpatient parenteral antimicrobial therapy (OPAT) for patients receiving IV therapy in the community and the day unit for patients under oncology services.

Lead Author	**Karen McKie & Tracy Laird**	**Date approved**	**28/08/2025**
Version	**1**	**Review Date**	**28/08/2028**

References/Evidence

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Appendices

1. Governance information for Guidance document

Lead Author(s):	Karen McKie, Tracy Laird
Endorsing Body:	CGGEG
Version Number:	1
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Responsible Person (if different from lead author)	

CONSULTATION AND DISTRIBUTION RECORD	
Contributing Author / Authors	Michelle Spittal Graham White
Consultation Process / Stakeholders:	Acute Clinical Governance Group for noting Medicines Management Group for noting North and South Partnerships Governance Groups for noting
Distribution	

CHANGE RECORD			
Date	**Lead Author**	**Change**	**Version No.**
		e.g. Review, revise and update of policy in line with contemporary professional structures and practice	1
			2
			3
		.	4
			5

2.You can include additional appendices with complimentary information that doesn't fit into the main text of your guideline, but is crucial and supports its understanding.

e.g. supporting documents for implementation of guideline, patient information, specific monitoring requirements for secondary and primary care clinicians, dosing regimen/considerations according to weight and/or creatinine clearance