CALCULATING THE PRIMING VOLUME (DEAD-SPACE)

LOCAL CVAD PROCEDURE ©

To be read in conjunction with the SCHN CVAD Practice Guideline Section 4.1.3 and CVAD Untrimmed Priming Volume Information Sheet.

Practice Points:

Occasionally it is necessary to administer medications just into the catheter lumen and not systemically into the patient (e.g. Alteplase, antibiotic locks). Prior to administration of these types of medications it is necessary to calculate the priming volume of the catheter lumen.

Most CVADs in children will be trimmed at the time of placement, therefore the internal volume of the lumen differs between patients depending on the length of catheter that has been trimmed.

Review the Operation Report to determine if the catheter was trimmed on insertion and length of catheter inserted.

Make note if including NAD (approximately 0.1mL volume) or Port needle extension set (approximately 0.5mL volume) in overall measurement.

All aspects of ANTT must be followed.

Each lumen of multi lumen CVADs need to be measured as the volumes will most likely differ between lumens.

If unable to aspirate, use the product information identifying the priming volume of these devices as a guide. This should be discussed with the patient's treating team prior to administration.

Equipment:

- Gather equipment as per ANTT risk Assessment –Standard or Surgical
- 3 x 10mL luer lock syringes (4x if CVAD locked)
- 3 x pre-filled sodium chloride 0.9% syringe (or 10mL sodium chloride 0.9% ampoules and luer lock syringe with drawing up needle).
- 3 x 2% chlorhexidine gluconate in 70% alcohol (large) swabs.
- 1 x blunt needle

Procedure

Practice Point: Explain the intended procedure to the patient/family/carer and obtain verbal consent.

1. Set up as per ANTT risk assessment – Standard/Surgical
2. Perform hand hygiene and don clean gloves
3. Attach blunt drawing up needle to 10mL luer lock syringe and draw up 2mL of sodium chloride 0.9%.
4. Hold the hub of the CVAD in a downward position, using 2% chlorhexidine gluconate in 70% alcohol swab vigorously clean the hub of the CVAD for of 20 seconds and allow to dry.

   If the CVAD is locked, remove lock solution and discard using a 10mL luer lock syringe. Change NAD if required.
5. Attach a 10mL sodium chloride 0.9% syringe and flush the lumen using a pulsating technique.
6. Attach the 10mL luer lock syringe with 2mL of sodium chloride 0.9% to NAD. Inject slowly to the 1mL mark of the syringe. Then SLOWLY aspirate from the lumen until you see the first “flash” of blood in the syringe. This volume, minus 1mL, is the priming volume of the line/lumen.
7. If unsure about the volume measured repeat steps 6 and 7 again, to ensure accuracy of the priming volume.
8. Attach second 10mL sodium chloride 0.9% syringe and flush the lumen using a pulsating technique.
9. Lock the lumen or connect IV fluids as required.
10. Complete process for multiple lumens if required
11. Remove gloves and perform hand hygiene
12. Discard waste in appropriate receptacle and return equipment to designated areas
13. Document in patient’s medical record as per minimum documentation requirements in Section 1.6 in CVAD Guideline.

Revision History

Version (date)	Approved by	Amendment notes *(summary of what was changed)*
14th Nov 2023	PPG Committee	Due for mandatory review – no changes made.
11th May 2020	PPG Committee	No major practice changes for calculating priming volumes. Now presented in CVAD Local Procedure.