



Title	Protocol for the Care of the Midline Peripheral Venous Catheter
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**PROTOCOL FOR THE CARE OF THE
MIDLINE PERIPHERAL VENOUS CATHETER**

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CARE OF THE MIDLINE PERIPHERAL VENOUS CATHETER

GENERAL POINTS

- i A 10ml luer lock syringe or larger should be used for accessing a Midline. 0.9% Sodium Chloride should be used when flushing the Midline. All staff should refer to the Intravenous Flush Policy which can be accessed at: <http://intranet/resource.asp?uid=37081>.
- ii The SmartSite needle free valve should be changed every 3 days as per manufacturer guidelines'

MAINTENANCE / FLUSHING

- i Follow procedure for the Aseptic Non Touch Technique (ANTT) when accessing and flushing a Midline.
- ii Flush lines that are not in use weekly with 10mls 0.9% Sodium Chloride.
- iii All lines should be aspirated if possible (unless directed otherwise) to check patency and flushed when changing the SmartSite.
- iv The SmartSite should be changed every 72 hours.

EXIT SITE CARE

- i Inspection of the insertion site should be carried out daily whilst in hospital for signs of infection.
- ii DRESSINGS – Follow procedure for ANTT when changing the dressing used in PIC/Midlines and this should be carried out:
 - o ROUTINE: A weekly Grip-lok and weekly dressing change is required unless the dressing is no longer intact or moisture has collected under the dressing.
- o SHOWERING/ BATHING/ SWIMMING
Patient should be encouraged to shower.
- iii INFECTION
 - o INSERTION SITE: If there are signs and symptoms of localised infection i.e. erythema, discharge, pain, oedema or pyrexia.
 - o Remove device.
 - o Obtain insertion site swab.

- Refer to medical staff for consideration of oral antibiotics.
- **SYSTEMIC INFECTION:** If there are signs of systemic infection i.e. pyrexia/ hypothermia, chills/rigors, raised or low WCC, raised CRP. Obtain insertion site swab, peripheral blood cultures. Refer **URGENTLY** to medical team. Recommendation is to remove/replace it if clinically possible.

THROMBOSIS / OCCLUSION

- If there is any sign of swelling of site, infusion fluid leakage, stop the Infusion.
- **Aspiration Difficulties** can be due to: blockage; kinking, occlusion or clotting.
- First check the line for kinking and that the clamps are open.
- **NEVER** try to aspirate with anything less than a 10ml syringe. ○
- If aspiration is still unsuccessful, please refer to appendix 1 & 2 ○
- Recommendation is to remove/replace it if clinically possible.

REMOVAL

- ▣ Midlines line removal should be discussed with an appropriate doctor.
- ▣ Midlines lines can be removed by nursing staff.

Observe for any complications post removal – bleeding, haematoma formation or vascular damage. Ensure the entire device has been removed.

This protocol should be read in conjunction with:

- The National Infection Prevention and Control Manual
- Zero Tolerance Hand Hygiene Policy
- The Consent to Treatment Policy
- NHS Borders Code of Practice for the Control of Medicines 2019
- The Intravenous Flush Policy 2019
- NMC guidelines on record keeping

All the above policies are available on the NHS microsite.

ASEPTIC NON-TOUCH TECHNIQUE FOR BLOOD ASPIRATION AND FLUSHING OF MIDLINES.

Equipment required for accessing and flushing a Midline.

- 2 x Plastic aprons and appropriate face covering
- 2 x Non-sterile gloves
- Hard surface disinfection wipes
- 1 plastic tray
- 3 x chlorhexidine 2% and alcohol 70% wipes
- 1 x 10ml luer lock syringes
- 1 x 10ml vial of 0.9% Sodium Chloride
- Sharps Bin

	ACTIVITY	RATIONALE
1	Confirm patient identity by asking full name and date of birth.	To ensure correct patient and positive patient identification.
2	Explain and discuss the procedure with the patient.	To ensure understanding of the procedure and allow time for the patient to ask questions.
3	Obtain verbal consent.	To gain patient consent.
4	Ensure patient is comfortable (In a supine position) if possible and in a private area.	To maintain privacy and dignity.
5	Check that all jewellery is removed except for a plain wedding band.	As per NHS Borders Infection Control Policy.
6	Utilising the Six Step hand washing technique in the National Infection Prevention and Control Manual, wash hands and pat dry thoroughly with paper towels.	To ensure that no health care associated micro-organisms are transferred via the hands.
7	Collect all required equipment and plastic tray.	To reduce the risk of transfer of micro-organisms.
8	Re wash hands utilising the Six Step hand washing technique or apply hand gel.	To ensure that no health care associated micro-

		organisms are transferred via the hands
9	Put on good fitting non-sterile gloves, Apron and appropriate face covering.	To reduce the risk of transfer of micro-organisms.
10	Clean plastic tray with hard surface disinfection wipes.	To maintain aseptic conditions.
11	Clean 2 chlorhexidine 2% and alcohol 70% wipes with hard surface disinfection wipes, open top and place in tray.	To maintain aseptic conditions.
12	Open 10 ml leur lock syringe without contaminating key parts. Wipe 0.9% Normal Saline vial with hard surface disinfection wipes. Clean neck of vial with chlorhexidine 2% and alcohol 70% wipe, attach 10 ml leur lock syringe and draw up Normal Saline into the syringe (a vial access cannula may be necessary to draw up solution depending on the vial) and place in tray.	To maintain aseptic conditions.
	Procedure	
13	Expose the catheter lumen end.	To reduce the risk of transfer of micro-organisms.
14	Remove gloves and use the Six step hand rub technique in the National Infection Prevention and Control Manual.	To reduce the risk of transfer of micro-organisms.
15	Put on good fitting non-sterile gloves.	To reduce the risk of transfer of micro-organisms.
16	Remove chlorhexidine 2% and alcohol 70% wipe from packet without touching the sides.	To maintain aseptic conditions.
17	Clean SmartSite thoroughly with a chlorhexidine 2% and alcohol 70%wipe applying friction, rubbing the cap in a clockwise	To maintain aseptic conditions.

	and anticlockwise manner at least five times, 15 seconds and wait a minimum of 60 seconds to air dry.	
18	To check the patency of the line (Aspiration to check for patency only requires a flashback of blood into a syringe filled with saline (INS, 2016) Attach leuc lock syringe with 10mls 0.9% Sodium Chloride, unclamp the line and withdraw a small amount of blood, then flush using a rapid pulsating action. Re-clamp the line prior to disconnecting the syringe.	To ensure patency. To create turbulence within the device lumen removing debris from the internal device wall.
19	Clean the SmartSite with a chlorhexidine 2% and alcohol 70% wipe applying friction, rubbing the cap in a clockwise and anticlockwise manner at least five times, 15 seconds ensuring any residual blood is removed and wait a minimum of 60 seconds to air dry.	To maintain aseptic conditions.
20	Dispose of all equipment as per NHS Borders policy and remove PPE. Clean plastic tray inside and out using hard surface disinfection wipes.	To comply with NHS Borders clinical waste policy.
21	Utilising the Six Step hand washing technique in the National Infection Prevention and Control Manual, wash hands and pat dry thoroughly with paper towels.	To prevent contamination of items used following the procedure.
22	Document procedure in patient's nursing notes and Midline Catheter Skin Bundle.	To maintain accurate patient Records.

ASEPTIC NON-TOUCH TECHNIQUE FOR INSERTION SITE DRESSING CHANGE FOR MIDLINES

Equipment required for insertion site dressing change for Midlines

- 2 x Plastic aprons and appropriate face covering
- 3 x Non-sterile gloves
- Hard surface disinfection wipes
- 1 x Dressing trolley
- 1 x sterile dressing pack (containing sterile towel and low-linting gauze)
- 1 x chlorhexidine 2% and alcohol 70% Wipe
- 1 x Grip-Lok dressing and a Semi-permeable transparent dressing

	ACTIVITY	RATIONALE
1	Confirm patient identity by asking full name and date of birth.	To ensure correct patient and positive patient identification.
2	Explain and discuss the procedure with the patient.	To ensure understanding of the procedure and allow time for the patient to ask questions.
3	Obtain verbal consent.	To gain patient consent.
4	Ensure patient is comfortable and in a private area.	To maintain privacy and dignity.
5	Check that all jewellery is removed except from plain wedding band	As per NHS Borders Infection Control Policy.
6	Utilising the Six Step hand washing technique in the National Infection Prevention and Control Manual, wash hands and pat dry thoroughly with paper towels.	To maintain aseptic conditions.
7	Put on plastic apron.	To ensure health care worker is wearing PPE as per trust policy.

8	Put on good fitting non sterile gloves and appropriate face covering	To maintain aseptic conditions.
9	Clean suitable dressing trolley with hard surface disinfection wipes.	To reduce the risk of transfer of micro-organisms.
10	Place all equipment required on bottom of trolley.	To reduce the risk of transfer of micro-organisms.
11	Attach a yellow clinical waste bag to the side of trolley below level of top shelf.	To reduce the risk of transfer of micro-organisms.
12	Take dressing trolley with assembled equipment to patient.	To reduce the risk of transfer of micro-organisms.
13	Open and drop sterile dressing pack onto top of trolley. Open Semi-permeable transparent dressing onto sterile sheet.	To maintain aseptic conditions.
14	Clean the chlorhexidine 2% and alcohol 70% wipe with hard surface disinfection wipes, open and place on sterile sheet.	To maintain aseptic conditions.
15	Remove gloves and apron. Use the six step hand rub technique in the National Infection Prevention and Control Manual.	To ensure that no health care associated micro-organisms are transferred via the hands.
16	Put on good fitting non sterile gloves and apron.	To maintain aseptic conditions.
17	Loosen the old dressing gently, remove from the bottom up to reduce chance of inadvertent catheter dislodgement and discard in yellow waste bag. Remove any securing tapes or securing device if loose or contaminated or due to be changed and discard in yellow waste	To reduce the risk of transfer of micro-organisms.

	bag.	
18	If the site is red or discharging, take a swab for bacterial investigation.	To ensure the insertion site is no infection.
19	Remove gloves and re-clean hands using the Six step hand rub technique in the National Infection Prevention and Control Manual.	To ensure that no health care associated micro-organisms are transferred via the hands.
20	Re-apply clean pair of non-sterile gloves.	To ensure that no health care associated micro-organisms are transferred via the hands.
Procedure		
21	Clean the insertion site and surrounding area the size of the dressing with chlorhexidine 2% and alcohol 70% wipe in one direction away from the insertion site (use crosshatch cleaning technique (back and forth) for 15 seconds and wait a minimum of 60 seconds to air dry.	To maintain aseptic conditions.
22	Re-apply the tapes or securing device if necessary, this may require skin preparation prior to application of securing device.	To prepare the skin to receive the dressing and ensure the Midline is secure.
23	Apply Grip-Lok dressing as directed and semi permeable transparent dressing to secure and ensure insertion site is covered.	To cover exit site and minimize infective risk.
24	Dispose of all equipment as per NHS Borders policy and remove PPE Clean plastic tray inside and out using hard surface disinfection wipes.	To comply with NHS Borders clinical waste policy.
25	Utilising the Six Step hand washing technique in the National Infection Prevention and	To prevent contamination of items used following

	Control Manual, wash hands and pat dry thoroughly with paper towels.	the procedure.
26	Document date and time of procedure in patients nursing notes and Midline Catheter Skin Bundle.	To maintain accurate patient records.

ASEPTIC NON-TOUCH TECHNIQUE FOR CHANGING THE NEEDLE-FREE VALVE - SMARTSITE FOR MIDLINES

Equipment required for changing the needle-free valve - SmartSite for Midlines

- 2 x Plastic aprons and appropriate face covering
- 2 x Non-sterile gloves
- Hard surface disinfection wipes
- 1 plastic tray
- 5 x chlorhexidine 2% and alcohol 70% Wipes
- 2 x 10ml leur lock syringes (per lumen)
- 2 x 10ml vial of 0.9% Sodium Chloride (per lumen)
- 1 x SmartSite – Needle-Free valve (CareFusion)

	ACTIVITY	RATIONALE
1	The SmartSite can be changed during the Aseptic Non Touch Technique (ANTT) procedure of accessing and flushing the line.	To maintain aseptic conditions.
2	Follow steps 1- 12 in the ASEPTIC NON-TOUCH TECHNIQUE FOR BLOOD ASPIRATION AND FLUSHING OF MIDLINES , repeating step 12.	Follow Protocol.
3	Open the SmartSite ensuring that key parts are not contaminated. Attach the leurlock syringe filled with 0.9% Normal Saline to the Smartsite and push the fluid through until it comes out the end of the SmartSite, return to sterile cover and place in tray.	To maintain aseptic conditions.
4	Continue through steps 13-18.	Follow protocol.
5	Remove the Smartsite from the line and discard. Clean the end of the line with chlorhexidine 2% and alcohol 70% Wipe and allow to dry for 60 seconds.	To maintain aseptic conditions.

6	Connect the primed Smartsite with 10 mls 0.9% Normal Saline attached and unclamp the line and flush using a rapid pulsating action. Reclamp the line prior to disconnecting the syringe.	To ensure patency To create turbulence within the device lumen removing debris from the internal device wall.
7	Clean the SmartSite with a chlorhexidine 2% and alcohol 70% wipe applying friction, rubbing the cap in a clockwise and anticlockwise manner at least five times, ensuring any residual blood is removed and wait a minimum of 60 seconds to air dry.	To maintain aseptic conditions.
8	Dispose of all equipment as per NHS Borders policy and remove PPE. Clean plastic tray inside and out using hard surface alcohol detergent wipes.	To comply with NHS Borders clinical waste policy.
9	Utilising the Six Step hand washing technique in the National Infection Prevention and Control Manual, wash hands and pat dry thoroughly with paper towels.	To prevent contamination of items used following the procedure.
10	Document procedure in patient's nursing notes and Midline Catheter Skin Bundle.	To maintain accurate patient Records.

ASEPTIC NON-TOUCH TECHNIQUE FOR MIDLINE PERIPHERAL VENOUS CATHETER REMOVAL

Equipment required for removal of Midlines

- 2 x Plastic apron and appropriate face covering
- 2 x Non-sterile gloves
- Hard surface disinfection wipes
- 1 plastic tray
- 1 x chlorhexidine 2% and 70% alcohol Wipe
- 1 x Hypoallergenic tape

	ACTIVITY	RATIONALE
1	Confirm patient identity by asking full name and date of birth.	To ensure correct patient and positive patient identification.
2	Explain and discuss the procedure with the patient.	To ensure understanding of the procedure and allow time for the patient to ask questions.
3	Obtain verbal consent.	To gain patient consent.
4	Ensure patient is comfortable (In a supine position) if possible and in a private area.	To maintain privacy and dignity.
5	Check that all jewellery is removed except for plain wedding band.	As per NHS Borders Infection Control Policy.
6	Utilising Six Step Technique, wash hands and pat dry thoroughly with paper towels.	To ensure that no health care associated micro-organisms are transferred via the hands.
7	Collect all required equipment and plastic tray	To reduce the risk of transfer of micro-organisms.
8	Re wash hands utilising the Six Step hand washing technique or apply hand gel.	To ensure that no health care associated micro-organisms are transferred

		via the hands
9	Put on good fitting non-sterile gloves, apron and appropriate face covering.	To reduce the risk of transfer of micro-organisms.
	Procedure	
10	Discontinue the infusion, if in progress, and disconnect the infusion system from the catheter. Clamp the catheter.	To reduce the risk of air getting into the catheter.
11	Expose the catheter lumen end.	To reduce the risk of transfer of micro-organisms.
12	Loosen and gently remove the old dressing and discard it. Remove tapes or securing device.	To reduce the risk of transfer of micro-organisms.
13	Clean the insertion site and surrounding area with 2% Chlorhexidine in 70% alcohol wipe using back-and-forth strokes, with friction and allow to air dry for 60 seconds.	To maintain aseptic conditions.
14	Hold the Midline catheter with one hand near the point of insertion and pull firmly and gently and dispose of in a sharps bin. When the catheter is removed from the patient, press firmly down on the site with the swabs. Maintain pressure on the swabs for about 5 minutes after the catheter has been removed.	To prevent bleeding.
15	When bleeding has stopped (approximately 5 minutes), cover site with a small dressing and make the patient comfortable.	To maintain asepsis and prevent bleeding.
16	Dispose of all equipment as per NHS Borders policy and remove PPE. Clean plastic tray inside and out using hard surface alcohol detergent wipes.	To comply with NHS Borders clinical waste policy.

17	Utilising the Six Step hand washing technique in the National Infection Prevention and Control Manual, wash hands and pat dry thoroughly with paper towels.	To prevent contamination of items used following the procedure.
18	Document procedure in patient's nursing notes and Midline Catheter Skin Bundle.	To maintain accurate patient Records.

SUPPORTING REFERENCES

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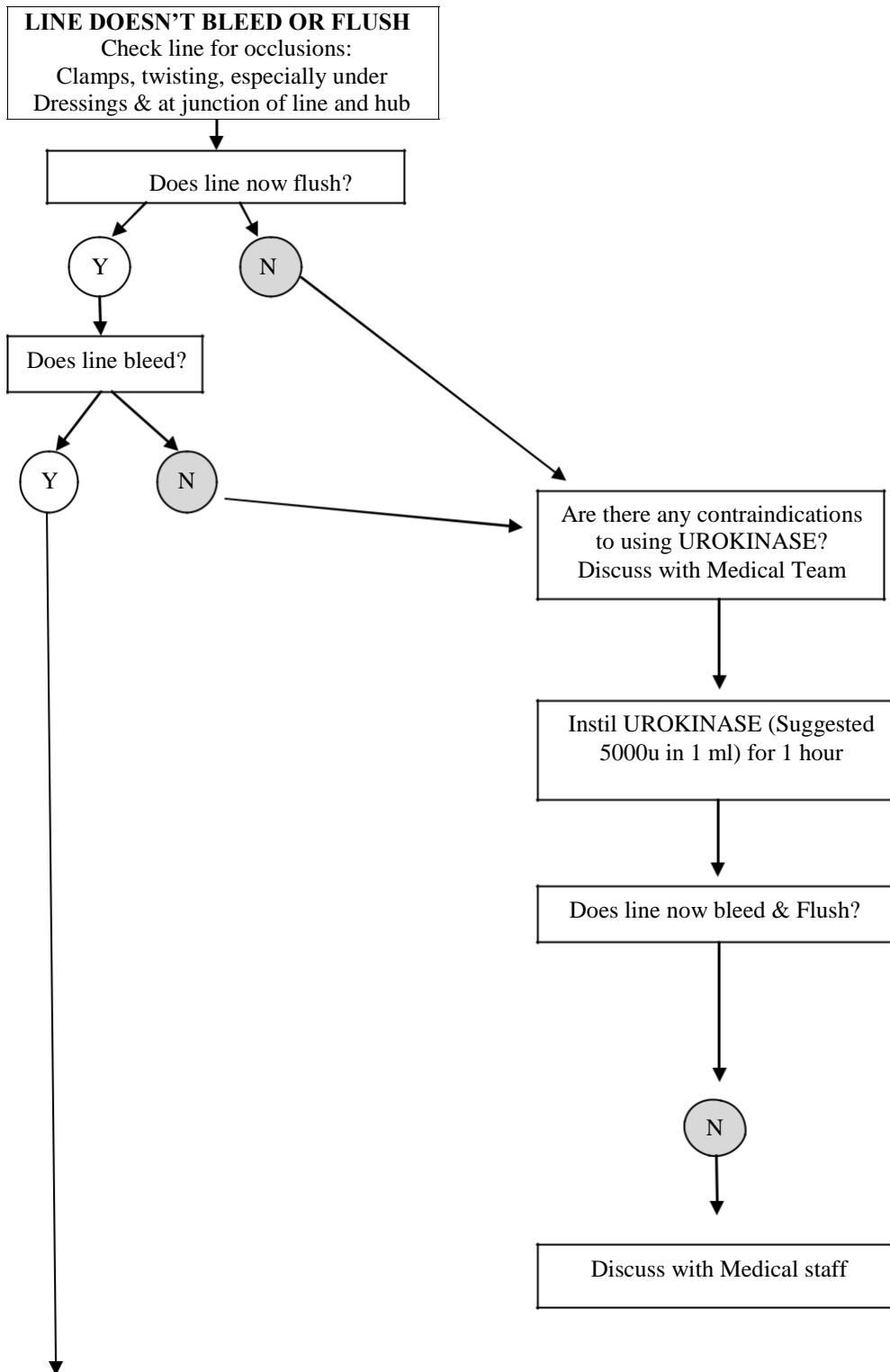
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Appendix 1

DIFFICULTY ASPIRATING AND FLUSHING A MIDLINE



Record the procedure in nursing notes and Midline Catheter Skin Bundle.

Appendix 2

PROCEDURE FOR ADMINISTRATION OF UROKINASE

- Ask Doctor to prescribe Urokinase
- Reconstitute Urokinase 10,000 units with 2mls of water of injection. Withdraw 1ml Urokinase 5,000 units
- Follow procedure for: ASEPTIC NON-TOUCH TECHNIQUE FOR CHANGING THE NEEDLE-FREE VALVE - SMARTSITE FOR MIDLINES until step 6
- Unclamp Midline and attach prepared syringe with Urokinase and insert into Midline. Clamp Line. Leave for 1 hour
- Attach 10ml leur lock syringe and aspirate the Urokinase back, if unable to do so discuss with medical staff.