The Clatterbridge Cancer Centre
NHS Foundation Trust

Patient care plan of a Skin Tunnelled Catheter

These guidelines are part of the Clatterbridge Care and Maintenance of CVADs in hospital and at home for adults

These general guidelines have been provided to assist all health care professionals or other users when handling skin tunnelled lines in any setting, and should be used as a record to help guide care and management of the line

The Clinical Interventions Team, The Clatterbridge Cancer Centre 0151 556-5737.

Mon –Fri 8-6 or alternatively the CCC Hotline on 0800 169 5555 which is available 24 hours a day 7 days a week.

When relatives have been trained and supervised please confirm they are ready to continue ongoing care:

Date:…… Trained by:……..

TROUBLE-SHOOTING GUIDE

Type of device	Risks	Actions	Variations / Comments	SIGN
Skin tunnelled catheter (Hickman line)	Infection due to loss of skin integrity Contact dermatitis Line infection potentially resulting in systemic bacteraemia	• Site clean and protect with aseptic dressing as per CCC guidelines according to patient preference. • Minimum of 8 hourly inspection of exit site for signs of inflammation or infection. • Take swab for culture and sensitivity if indicated • Check weekly or at each visit if in community setting • Use Biopatch or AG patch if necessary at exit site • For contact dermatitis see dressing sequencing guide • Chlorhexidine can be the allergen, if necessary replace all chlorhexidine with Povidone and AG patches *Visual Infusion Phlebitis scored (VIIAD) See chart* • Observe patient for signs of line infection (pyrexia/raised WCC) • If clinically unstable and patient has had rigors, first take blood cultures peripherally and then from line (each lumen). Administer antibiotic therapy as prescribed using the line in an attempt to conserve. Assess medical condition prior to removal of line for continued need for reliable venous access • Send line tip for culture and sensitivity following removal if line with infected lines only if the line cannot be salvaged • Ensure administration lines are used according to local policy. • Label infusion lines with date for renewal. • Change add-on devices at same time as administration sets or as soon as integrity is		

		compromised. Use needle free systems avoiding 3 way taps		
	Air embolus	• Use Needle-free systems • Ensure air dispelled from medication/ flushes/infusates prior to administration. • Close the clamp when accessing the line or removing or change infusion bags		
	Thrombus	• For suspected or confirmed thrombus commence treatment dose LMWH as soon as possible • Arrange a Doppler to confirm or exclude thrombus • Line should be used as required to conserve line and to provide reliable access particularly for those patients with restricted access • When a line is no longer required or has failed when a thrombus is diagnosed, treatment dose LMWH should be administered for between 3-5 days before removing the line to limit the risks of embolisation		
	Occlusion of lumen.	• Maintain patency with pre filled saline syringe flushes using positive pressure as per CCC guidelines, Pre & post drug/ infusion administration. • Check compatibility of drugs/infusates to eliminate precipitation. • Try to flush line using a to-fro method to re-establish patency • Attach a half filled 10ml syringe to the line then pull back on syringe and let go several times (Pop technique) to help re-establish patency		
	Bleeding from site / line itself.	• Observe for signs of new bleeding from site. • Apply pressure above dressing • Ensure add-on devices/taps securely fastened. • Ensure clotting studies are in acceptable range prior to removal of line.		
	Line migration / displacement	• Check notes to ensure insertion staff have documented line is in correct place and safe to use		

		• Check each time line accessed for signs of line migration • Anchor line during dressing changes to avoid accidental displacement until the sutures have been removed from around the line allowing it to become established. • If in doubt do not use line until instructed to do so by CIT staff and ensure patient is aware of problem.		
	Line in situ when no longer required.	Arrange for the removal when line no longer required.		

Visual Infusion Phlebitis (VIP) Scoring Tool for Intravenous Access Device (VIIAD)

Exit site appears healthy	0	**No sign of phlebitis** Observe PICC exit site
One of the following is evident: Slight pain near exit site Slight redness near exit site	1	**Possible first signs of phlebitis** Continue to observe IV catheter
Two of the following are evident: Pain at exit site Swelling Erythema	2	**IMPORTANT** **Seek advice VIP score 3-5** Mon-Fri between 8am and 6pm ring the Clinical Interventions Team on 0151 556-5737 CCC Hotline on 0800 169 5555
All of the following are evident: Pain along the IV catheter Erythema Swelling	3	
All of the following are evident and extensive: Pain along the path of the IV catheter Erythema Swelling Palpable venous cord	4	
All of the following are evident and extensive: Pain along the path of the IV catheter Erythema Swelling Palpable venous cord Pyrexia	5	

The Principles of Asepsis

Asepsis is defined as the absence of pathogenic (harmful) organisms.
The principles of asepsis/aseptic technique are:

- Reducing activity in the immediate vicinity of the area in which the procedure is to be performed
- Using an aseptic non touch technique (ANTT) to protect key parts and key sites
- Keeping the exposure of a susceptible site to a minimum
- Checking all sterile packs to be used for evidence of damage or moisture penetration
- Ensuring all fluids and materials to be used are in date
- Not re-using single use items
- Ensuring contaminated/non-sterile items are not placed in the aseptic field
- Ensuring appropriate hand decontamination prior to the procedure and at other necessary time throughout the procedure
- Protecting uniform/clothing with a disposable apron
- Using sterile gloves when required
- Knowing the difference and when to use standard ANTT or surgical ANTT
- Risk assess each procedure prior to commencement for either standard or surgical ANTT.

Steps to performing an aseptic dressing change – Surgical ANTT

- Indicated for complex procedures with many key parts and key sites
- Staff should be “bare below the elbow”
- Maintain an aseptic field throughout the procedure
- Decontaminate hands by washing with liquid soap and warm water or by applying alcohol handrub, using the recommended technique.
- Don disposable apron and wearing gloves
- Decontaminate the trolley (or working surface to be used if trolley not available, e.g., in the patients home) with detergent and warm water or detergent wipes and dry.
- Assemble sterile procedure packs, e.g., dressing packs and equipment, check all items are in date and packaging is intact.
- Explain and discuss the procedure with the patient.
- Ensure patient is positioned both comfortably and so the area to be exposed is accessible without undue exposure.
- Open sterile procedure pack outer packaging, sliding the contents onto the top shelf of the trolley (or working surface).
- Add any extra items without compromising the prepared aseptic field, clean items if needed to be placed close by but not compromising the aseptic field.
- Lift the plastic waste disposal bag from the aseptic field carefully by its open end and holding one edge of the opening end, place the other hand into bag, hence covering the hand with an aseptic 'glove'. Using the aseptic 'glove', arrange items on the aseptic field.
- Attach the bag to the trolley, below the top shelf or on a nearby surface if in a patients home. Decontaminate hands with alcohol hand rub,

- Don non sterile gloves, remove old dressing and dispose of in disposal plastic bag. Decontaminate hands with alcohol hand rub
- Put on sterile gloves ensuring hands do not contaminate outer surface of the glove.
- Perform the procedure as directed, using the correct dressings to suit the patients individual needs
- Ensure equipment is discarded if it becomes contaminated.
- Dispose of all used items, including soiled dressings, into the plastic waste disposal bag and seal.
- Discard disposal waste bag into clinical waste bag.
- Remove gloves and apron and dispose of in clinical waste
- Decontaminate hands with alcohol hand rub; document all actions taken within the patients hand held records or electronically as required.

Standard ANTT

- Staff should be “bare below the elbow”
- Maintain a clean field throughout the procedure - protect key parts and key sites
- Decontaminate hands by washing with liquid soap and warm water or by applying alcohol hand rub, using the recommended technique throughout the procedure.
- Don disposable apron and wear non sterile gloves, single use items should not be reused
- Mirrored precautions using non sterile gloves , a prepared clean field used to handle equipment by protecting key parts and key sites by holding non critical areas
- Simple procedures with few key sites and key parts

Care and Maintenance of a Skin Tunnelled Catheter – Surgical ANTT

EXIT DRESSING CHANGE (Weekly) - Dressings are optional once the Dacron cuff has become embedded –
Often combines weekly flush and possible bloods
Procedure carried out by band 2 support workers and above. Only Pre filled saline syringes should only be used if support workers are maintaining line

Action	Rationale
Equipment required **Dressing Pack containing sterile towel and Gloves** **Surgical tape** **2% Chlorhexidine in 70% Isopropyl alcohol impregnated applicator (Chloroprep)** **Povidone if allergic to Chlorhexidine at all stages throughout** **Chlorhexidine 2% wipe (sani cloth) x2** **Grip Lok if required** **Semi- Permeable transparent IV dressing** **Alcohol hand rub or gel** **Plastic apron** Disinfectant end cap	
Care of Exit site Dressing changes should be performed on a weekly basis or when dressing is dirty or loose. • Maintain aseptic technique at all times. • Explain the procedure to the patient. Ensure that valid consent is gained.	To prevent/reduce patient anxiety. To prevent infection.
▪ Ensure working area is clean. ▪ Ensure all equipment is gathered before commencing the procedure and all packaging is intact and in date.	Maintain safety.

▪ Take equipment/trolley to patients' bedside.	To prevent infection and catheter contamination.
▪ Inspect the catheter exit site for signs of skin discolouration or signs of infection e.g. exudate from exit site. Check observation and VIAD chart for any indications of infection or complications. Ensure the intravenous access device has been comfortable and pain free. Observe for any swelling of the chest/neck. If you suspect any problems please contact the hospital team who placed the catheter for advice. Refer to trouble-shooting guide	Exit site dressings are important in preventing trauma and the extrinsic contamination of the site of entry (Jones 2004).
▪ Decontaminate hands • Open sterile pack and use a non-touch technique to place inner pack onto clean working area. • Open out sterile pack to create an aseptic field. Open remaining equipment using a non-touch technique, ensuring no contamination of aseptic field. • Don non sterile gloves ▪ Loosen exit site dressing. To loosen dressing lift lower-end and gently ease the dressing off, from the skin.	To avoid contamination of aseptic field. To allow for an aseptic environment for accessing intravenous catheter, and to reduce incidence of infection. Chlorhexidine-based solutions are recommended (in alcohol) as per policy (DOH 2001). To prevent accidental removal of the catheter and friction or trauma to skin surface.
▪ Aseptically remove the dressing and stat lock if present. ▪ Decontaminate hands ▪ Put on sterile gloves ▪ Place sterile towel as near as possible to the catheter. ▪ Clean around the catheter and exit site with Chlorhexidine 2% impregnated applicator or Povidone if allergic to Chlorhexidine for 15 seconds. ▪ The solution should be applied with friction but should not be too vigorous or the skin's natural defence may be destroyed. ▪ Using a chlorhexidine 2% wipe, carefully clean the catheter from the exit site to the part of the catheter that will be covered by the sterile dressing. ▪ Allow to dry. ▪ Apply new securing device i.e. Skin closure strips or skin fixation device (if required) ▪ Apply new dressing to exit site without touching the adhesive site to suit the patient.	Alcohol Chlorhexidine combines the benefits of rapid action and excellent residual activity (DOH 2001) Semi-permeable transparent IV dressings are well tolerated by patients (Campbell et al 1999, Treston-Aurand et

▪ Remove the dressing towel - if procedure is completed ▪ Remove gloves. ▪ Clear away equipment disposing of waste as per organisational policy. Wipe down the trolley that has been used during the procedure with multi-surface detergent wipes. ▪ Wash hands. ▪ Document care on patient's records.	al 1997, Wille 1993) and are easy to apply and remove (Wille 1997).

Skin Tunnelled Catheters – 0.9% Sodium Chloride for weekly maintenance Flush - Part of Surgical ANTT

Action	Rationale
Equipment Required **Dressing Pack containing sterile towel and gloves** **Gauze swabs x 1** **Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol impregnated wipe (sani cloth) x 3** **10ml syringe x 1** **10ml 0.9% Sodium Chloride (Saline) prefilled syringe** **Disinfecting port protector if required** **Sharps container** **Alcohol hand rub/gel** **Plastic apron** **Needle free I/V access connector change weekly**	10ml syringes should always be used; smaller syringe sizes may damage the catheter (Hadaway 1998).
• Explain the procedure to the patient. Ensure that valid consent is gained. • Check the patient identity, prescription and flush required in accordance with trust policy for the administration of medications. ▪ Before the procedure begins make sure that your hands are washed and dried thoroughly and that they continue to be decontaminated during the procedure. A plastic apron should be worn. ▪ Maintain aseptic technique at all times. • Ensure working area is clean. ▪ Ensure all equipment is gathered before commencing the procedure and all packaging is intact and in date. ▪ Take equipment/trolley to patients' bedside.	Reduce anxiety Patient compliance Maintain asepsis and safety. Reduce risk of infection. To avoid contamination. To ensure that the procedure can be carried out safely. To maintain a sterile field.

▪ Inspect the catheter exit site for signs of skin discolouration or signs of infection e.g. exudate from exit site. Check observation and VIIAD chart for any indications of infection or complications. Ensure the intravenous access device has been comfortable and pain free. Observe for any swelling of the chest/neck. If you suspect any problems please contact the hospital team who placed the catheter for advice. Refer to trouble-shooting guide • Open sterile pack and use a non-touch technique to place inner pack onto clean working area. • Decontaminate hands. • Open out sterile pack to create an aseptic field. Open remaining equipment using a non touch technique, ensuring no contamination of aseptic field. • Ensure easy access to the needle free system. • Decontaminate hands. • Put on sterile gloves. • Remove old needle free cap, scrub the hub with 2% Chlorhexidine impregnated wipe, rubbing from the top. Do this several times using different parts of the wipe over a period of 15 seconds. Allow to dry. • Replace a new needle free device. • Attach pre filled saline syringe aspirate enough blood to blush the saline and inject the flush using a push/pause action, clamping as the last ml of solution is instilled into the catheter. • Remove the syringe and discard. • NEVER FORCE THE SOLUTION INTO THE CATHETER, this can damage the catheter. The solution should flow easily. If resistance felt refer to trouble shooting guide or contact the Clinical Interventions Team. • Clean the needle free connector again with a sani cloth; attach a disinfecting port protector if necessary. Secure this to the patients' chest to suit patients' requirements. Ensure that the catheter is comfortable. • Remove dressing towel and discard. Remove gloves. Wash hands. • Clear away equipment disposing of waste as per organisational policy. Wipe down the trolley that has been used during the procedure with multi-surface detergent wipes • Decontaminate hands • Document care in patient's records.	Chlorhexidine-based solutions are recommended (in alcohol) as per policy (DOH 2001). 10ml syringes should always be used; smaller syringe sizes may damage the catheter (Hadaway 1998). There is no requirement to routinely withdraw blood and discard it prior to flushing (except prior to blood sampling although the first sample can be used for blood cultures (RCN 2005).

	There is an increased risk of infection and occlusion when withdrawing blood via a central venous catheter (RCN 2005), therefore for routine flushing of a line withdrawal of blood is not required. The pulsated flush creates turbulence within the catheter lumen, removing debris from the internal catheter wall (Goodwin & Carlson 1993, Todd 1998). Positive pressure within the lumen of the catheter should be maintained to prevent reflux of blood (INS 2000).

Skin Tunnelled Catheters – Blood Sampling as part of weekly maintenance and flush – Surgical ANTT

Action	Rationale
Equipment Required **Dressing Pack containing sterile towel and gloves** **Gauze swabs x 1** **Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol impregnated wipe (Sani Cloth) x 3** **10ml syringes x 4** **10ml 0.9% Sodium Chloride for injection prefilled syringe** **Sharps container** **Surgical tape** **Alcohol hand rub/gel** **Plastic apron** **Needle free I/V access connector change weekly**	
• Explain the procedure to the patient. • Ensure that valid consent is gained. ▪ Before the procedure begins make sure that your hands are washed and dried thoroughly and that they continue to be decontaminated during the procedure. A plastic apron should be worn. • Maintain aseptic technique at all times. • Ensure working area is as clean as possible. • Ensure all equipment is gathered before commencing the procedure and all packaging is intact and in date. • Take equipment /trolley to patients' bedside ▪ Inspect the catheter exit site for signs of skin discolouration or signs of infection e.g. exudate from exit site. Check observation and VIIAD chart for any indications of infection or complications. Ensure the intravenous access device has been comfortable and pain free. Observe for any swelling of the arm/neck. If you suspect any problems please contact the hospital team who placed the catheter for advice. Refer to trouble-shooting guide	Reduce anxiety Patient compliance To ensure that the procedure can be carried out safely. Reduce risk of infection To avoid contamination To maintain a sterile field.

• Open sterile pack and use a non-touch technique to place inner pack onto clean working area. • Decontaminate hands. • Ensure easy access to the needle free system. • Decontaminate hands. • Put on sterile gloves. • Place sterile towel as near as possible to the catheter. • Scrub the hub of the needle free system with 2% Chlorhexidine impregnated wipe, rubbing from the top of the needle free connector to the sides. Do this several times using different parts of the wipe, over a period of 15 seconds. Allow to dry. • Attach empty 10ml syringe into needle free system and aspirate at least 8-10mls of blood from the catheter. Discard aspirated blood. Note if taking blood samples from a parenteral nutrition line, following PN or for INR sample waste 20mls of blood before taking the sample. • Attach an empty 10ml syringe and withdraw amount of blood required for analysis and transfer into the relevant blood tubes while maintaining an ANTT by holding the blood tubes with sterile gauze, once filled place outside the aseptic field. • Attach pre filled saline syringe, flush using a push/pause action, clamping as the last ml of solution is instilled into the catheter. • Remove the syringe and discard. • NEVER FORCE THE SOLUTION INTO THE CATHETER, this can damage the catheter. The solution should flow easily. If resistance is felt refer to the trouble shooting guide or contact The Clinical Interventions team. • Clean the needle free connector again with a sani cloth, attach a disinfecting port protector). Tape this to the patients' chest as needed. • Ensure that the catheter is secure and comfortable. • Remove dressing towel and discard. Remove gloves and apron. Wash hands. • Clear away equipment disposing of waste as per organisational policy. Wipe down the trolley that has been used during the procedure with multi-surface detergent wipes. • Wash hands • Document care in patient's records.	Chlorhexidine-based solutions are recommended (in alcohol) as per policy (DOH 2001). Check catheter patency. Remove any residual solution from catheter The pulsated flush creates turbulence within the catheter lumen, removing debris from the internal catheter wall (Goodwin & Carlson 1993, Todd 1998).

	Positive pressure within the lumen of the catheter should be maintained to prevent reflux of blood (INS 2000).

ALL CENTRAL LINE TIP POSITIONS NEEDTO BE CONFIRMED EITHER BY X-RAY OR BY TIP LOCATION TECHNOLOGY AND RECORDED IN THE PATIENTS MEDICAL RECORDS PRIOR TO THE LINE BEING USED FOR CHEMOTHERAPY

Skin Tunnelled Catheters – Administration of antibiotics/infusion/additives
Administer drugs or IV therapy as prescribed using correct diluent and rate of infusion. Always use 10ml syringe, never use force to flush the catheter. – Standard ANTT

Action	Rationale
Equipment Required **Non sterile gloves** **Gauze swabs x 1,** **Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol impregnated applicator and wipes or Povidone if allergic** **10ml syringes x 4** **2 x 10ml 0.9% Sodium Chloride for injection prefilled syringes** **Sharps container** **Surgical tape** **Alcohol hand rub/gel** **Antibiotics/Infusion/additives as prescribed** **Plastic apron** Disinfectant cap if necessary	
• Explain the procedure to the patient. • Ensure that valid consent is gained. • Check the patient identity, prescription and flush required in accordance with trust policy for the administration of medications. • Medication reconstitution should be performed in a clean clinical environment using standard ANTT. This may be performed in an area designated for drug preparation or at the patient's bedside as part of this procedure. ▪ Before the procedure begins make sure that your hands are washed and dried thoroughly and that they continue to be decontaminated during the procedure. A plastic apron should be worn. • Maintain ANTT at all times. • Ensure working area is as clean as possible. • Ensure all equipment is gathered before commencing the procedure and all packaging is intact and in date.	Ensures patient compliance and reduce anxiety Reduce the risk of infection and contamination Maintain asepsis.

• Take equipment trolley to patients' bedside. ▪ Inspect the catheter exit site for signs of skin discolouration or signs of infection e.g. exudate from exit site. Check observation and VIIAD chart for any indications of infection or complications. Ensure the intravenous access device has been comfortable and pain free. Observe for any swelling of the chest/neck. If you suspect any problems please contact the hospital team who placed the catheter for advice. Refer to trouble-shooting guide • Open equipment and use a non-touch technique to place inner pack onto clean working area/ANTT tray. • Decontaminate hands. • Ensure easy access to the needle free system. • Decontaminate hands • Put on non sterile gloves. • Scrub the hub of the needle free system with 2% Chlorhexidine impregnated wipe, rubbing from the top of the needle free connector to the sides. Do this several times using different parts of the wipe, over a period of 15 seconds. Allow to dry. • Attach syringe with 0.9% sodium chloride for injection, aspirate enough blush to colour the 0.9% Sodium Chloride solution then flush using a push pause action clamping as the last ml of the solution is instilled into the catheter. Remove the syringe and discard. • If unable to aspirate blood from the line continue to administer prescribed medication unless this is a **vesicant drug/infusion, in this case refer to algorithm on persistent withdrawal occlusion.** • NEVER FORCE THE SOLUTION INTO THE CATHETER, this can easily damage the catheter. The solution should flow easily. If resistance felt refer to trouble shooting guide or contact The Clinical Interventions team. • Administer IV antibiotics/infusion/additives as prescribed following trust policy. • Flush catheter again with pre filled Saline syringe using a push/pause action. • Remove the syringe and discard. • Clean the needle free connector again with a sani cloth attach a disinfecting port protector • Ensure that the catheter is secure and comfortable. • Remove dressing towel and discard. Remove gloves and apron. Wash hands.	To check catheter patency and to remove residual solution from catheter. The RCN Standards for infusion Therapy state, "the nurse should aspirate the catheter and check for blood return to confirm patency prior to the administration of medications and/or solutions (INS 2000). On no account should a vesicant drug or vesicant infusion be administered through a vascular access device where difficulty is experienced in withdrawing blood (Masoorli 2003).

• Clear away equipment disposing of waste as per organisational policy. Wipe down the trolley that has been used during the procedure with multi-surface detergent wipes. • Wash hands • Document care in patient's records.	Creates turbulence in catheter, preventing clotting in the catheter. Maintains positive pressure and prevents backflow of blood into the catheter.

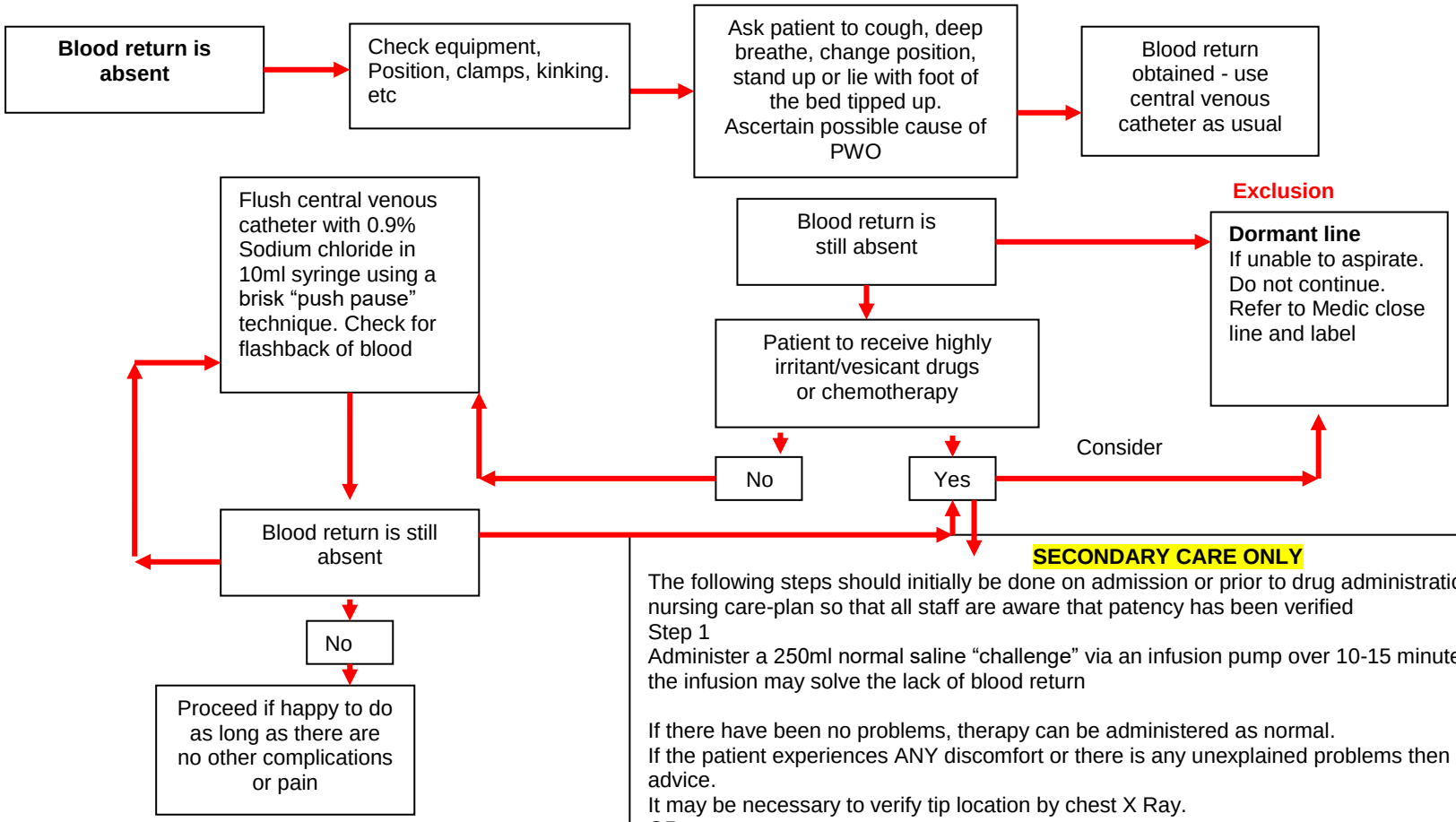
Disconnection of Ambulatory Chemotherapy (Infusor/ Infuser) from Central Venous Access Device (DST1) - Standard or surgical ANTT depending on risk assessment

Action	Rationale
Equipment Required **Dressing Pack containing sterile towel and gloves if needed** **Gauze swabs x 1** **10ml syringes x 1** **Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol impregnated wipe (Sani Cloth)** **10ml 0.9% Sodium Chloride for injection prefilled syringe** **Sharps container** **Surgical tape,** **Alcohol hand rub,** **Needle-free system** **Plastic apron** **Plastic bag for empty cytotoxic chemotherapy infusor** **Luer lock stopper for Infusor**	
• Explain the procedure to the patient. Ensure that valid consent is gained. ▪ Before the procedure begins make sure that your hands are washed and dried thoroughly and that they continue to be decontaminated during the procedure. A plastic apron should be worn. • Maintain ANTT at all times • Ensure working area is as clean as possible. • Inspect the catheter exit site for signs of skin discolouration or signs of infection e.g. exudate from exit site. Check observation and VIIAD chart for any indications of infection or complications. Ensure the intravenous access device has been comfortable and pain free. Observe for any swelling of the chest/neck. If you suspect any problems please contact the hospital team who placed the catheter for advice. Refer to trouble-shooting guide. • Open pack and use a non-touch technique to place inner pack onto clean working area. • Decontaminate hands.	Ensures patient compliance and reduces anxiety Reduce the risk of infection, to avoid contamination To maintain asepsis Luer lock stopper will prevent leakage of chemotherapy from infusor this is now a sealed unit

• Create aseptic field. • Ensure easy access to the needle free system. • Decontaminate hands • Put on sterile gloves if necessary. • Place sterile towel as near as possible to the catheter. • Close catheter clamp. Using a Chlorhexidine 2% wipe lift the end of the catheter carefully and clean, including the pump connection, allow to dry. • Hold the catheter with sterile gauze; disconnect Infusor from the access device. Apply leur lock stopper to the end of the Infusor tubing this will need to be placed inside the plastic bag clearly labelled cytotoxic waste after the procedure has been completed. • Scrub the hub of the needle free system with 2% Chlorhexidine impregnated wipe, rubbing from the top of the needle free connector to the sides. Do this several times using different parts of the wipe, over a period of 15 seconds. Allow to dry. • Attach pre filled saline syringe, and flush the catheter using a push pause action clamping as the last ml of the solution is instilled into the catheter. Remove the syringe and discard. • NEVER FORCE THE SOLUTION INTO THE CATHETER, this can easily damage the catheter. The solution should flow easily. If resistance felt refer to trouble shooting guide or contact Clinical Interventions team. • Clean the needle free connector again with a sani cloth, attach a disinfecting port protector. • Ensure that the catheter is secure and comfortable. • Remove dressing towel and discard. Remove gloves and apron. Wash hands. • Clear away equipment disposing of waste as per organisational policy. Wipe down the trolley that has been used during the procedure with multi-surface detergent wipes. • Decontaminate hands. • Document care in patient's records.	

Algorithm persistent withdrawal occlusion

i.e. fluids can be infused freely by gravity but blood cannot be withdrawn from



SECONDARY CARE ONLY

The following steps should initially be done on admission or prior to drug administration and documented in nursing care-plan so that all staff are aware that patency has been verified

Step 1

Administer a 250ml normal saline "challenge" via an infusion pump over 10-15 minutes to test for patency – the infusion may solve the lack of blood return

If there have been no problems, therapy can be administered as normal.

If the patient experiences ANY discomfort or there is any unexplained problems then stop and seek medical advice.

It may be necessary to verify tip location by chest X Ray.

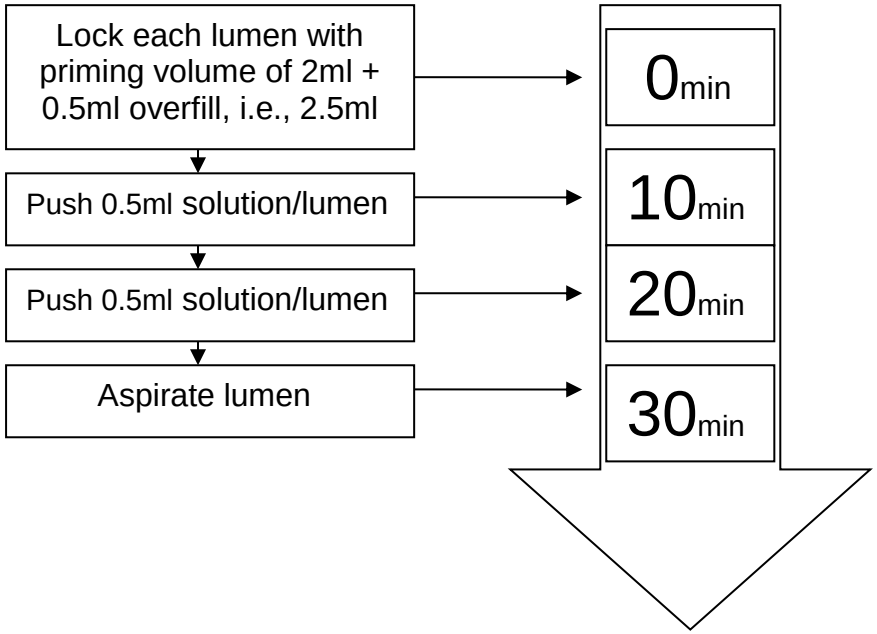
OR

Step 2 Instill Urokinase 10,000iu in 3.5mls using the push-lock method see guidance.

Then reassess the catheter again. Repeat as necessary. If blood return is still absent, it may be Necessary to verify tip location by chest X Ray.in the absence of Urokinase instill Actilyse, 2mg in 2ml left for 2 hours then aspirate. May repeat, often line will bleed on the next occasion. For long term lines it may be necessary to schedule this procedure regularly

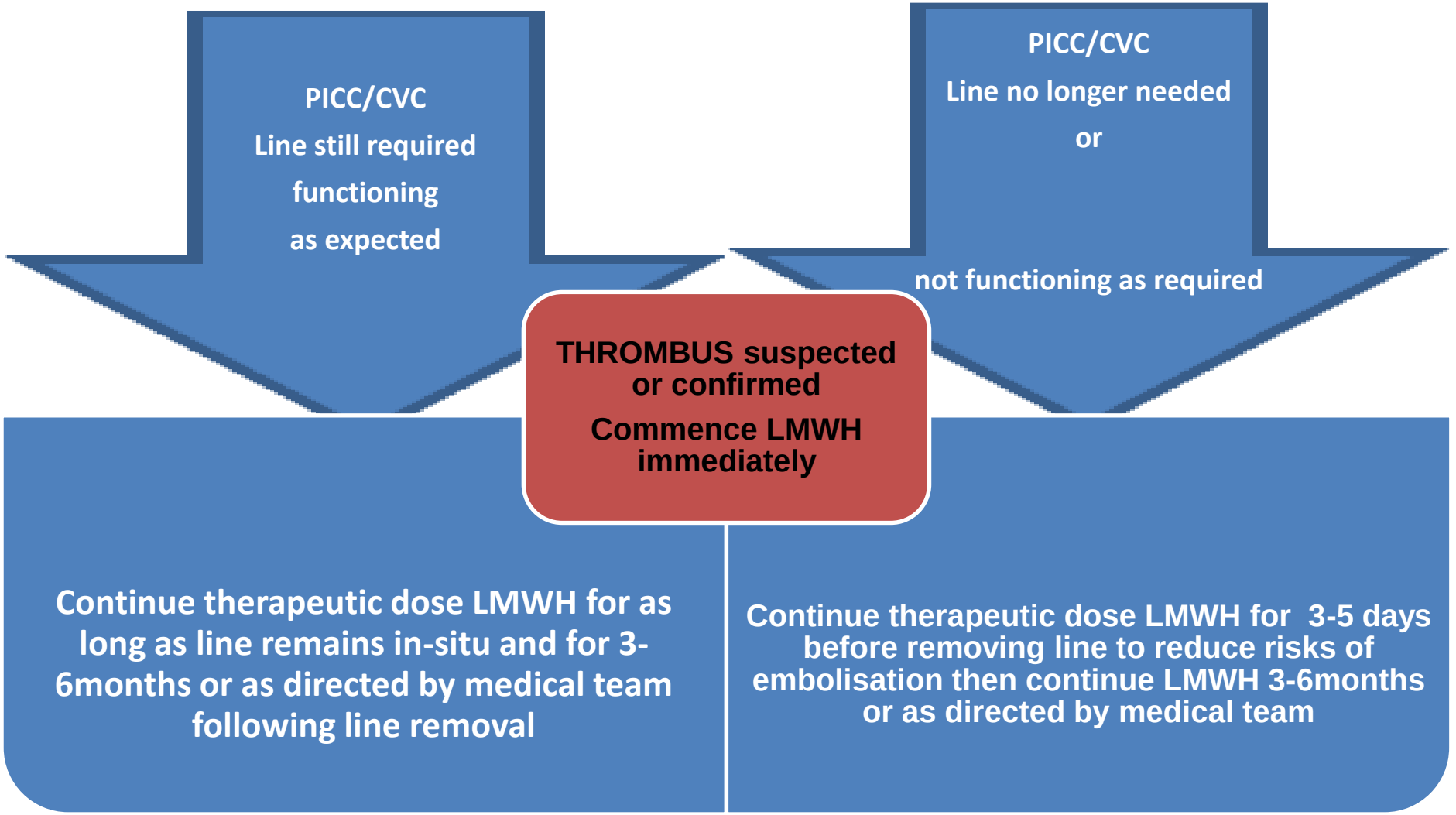
Adapted from Standards for Infusion Therapy RCN (2016)

The Push–Lock Method: Reconstitute a 10,000IU vial of Urokinase using 3.5ml of 0.9% sodium chloride for each lumen.



In the absence of Urokinase use Actilyse – 2mg in 2ml left for 2 hours then aspirate, this may be repeated or planned regularly for PWO

Algorithm for the management of Upper Extremity Deep Vein Thrombosis (UEDVT)



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