Standard Operating Procedures for Peripheral & Central Vascular Access Catheters

This sop sets out best practice in relation to the care & management of peripheral & central vascular access catheters when used on adult patients under the care of LPT and not receiving Parenteral Nutrition.

Keywords: Central Lines, PICC Lines, Hickman Lines, Totally Implanted venous Port Device

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Contents

1.0 Introduction

This document establishes best practice for clinical staff in the community and community hospitals. While not requiring mandatory compliance, staff must have sound reasons for not implementing standards or practices set out within the guideline, or for measuring consistent variance in practice.

1.1 Purpose and Scope

The purpose of this document is to describe the Standard Operating Procedures for Peripheral and Central Vascular access Catheters.

Management of patients who have Central Venous Access Devices (CVADs) is seen an advanced clinical skill. This requires clinicians to adhere to strict clinical guidance to mitigate against the primary risk of infection.

The higher risks associated with the management of CVADs requires LPT to ensure it has training, education and support in place for clinicians. This document incorporates best practice clinical guidance reflecting the evidence base held within the care plans and procedures

Children and young people:

The management for children differs slightly from adults, with the use of Heparin Sodium for locking the line

Currently the Diana Children's Community Nursing services who provide care for CVADs to children and young people in the community has their own service SOP for management of CVAD's.

Transition:

General principles of central line care apply to children and young people however LPT staff have a responsibility to have awareness of the Diana SOP when a young person is transitioning into adult services so that they are aware of the practice that the child and family have been accustomed to.

Young people will be referred on an individual basis and transitioned to adult services as per LPT trust process

1.2 Version control and summary of changes

Version number	Date	Comments (description change and amendments)
1	May 2026	Moved from guideline to SOP. Diana service SOP removed, and transition statement added. Changes to Heparin Sodium lock for adult TVADs

1.3 Key individuals involved in developing and consulting on the document

LPT clinicians (Authors of original guidelines)
Senior Nurse Vascular Access Team UHL
UHL clinicians (Authors of the original guidelines)
Infection Prevention and Control Lead LCRCHS Nurse
Consultant CHS
CHS Clinical Education & Practice Development Service (CEPDS)

Other relevant stakeholders

Amanda Hemsley	Head of Infection Prevention and Control
Tracy Yole	Deputy Head of Nursing CHS
Joanne Charles	Lead Pharmacist CHS
Michaela Ireland	Operational and Transformation Lead Community Hospital
Eleanor Charles	Acute Clinical Team Lead Diana Childrens Services

1.4 Governance

LPT Clinical Effectiveness Group

2.0 Equality Statement

Leicestershire Partnership NHS Trust (LPT) aims to design and implement policy documents that meet the diverse needs of our service, population and workforce, ensuring that none are placed at a disadvantage over others. It takes into account the provisions of the Equality Act 2010

(Amendment) Regulations 2023 and promotes equal opportunities for all. This document has been assessed to ensure that no one receives less favourable treatment on the protected characteristics of their age, disability, gender reassignment, ace, religion or belief, marriage and civil partnership, pregnancy and maternity, sexual orientation and sex.

3.0 Abbreviations and definitions that apply to this SOP.

Aseptic Non-Touch Technique	Mechanisms employed to reduce potential contamination
Bionector™	The 7 Day/100 Access, Closed, Needle-Free, IV Access System employed within LPT to close and access venous catheters and cannula
CVAD	Central venous access device which includes PICC lines, Hickman lines, TIVPDs & Midlines
Extravasation	Inadvertent infiltration of vesicant solution or medication into surrounding tissue; rated by a standard scale.
Hickman Line (Skin tunnelled catheter)	A Central Vascular access device whose proximal end is tunnelled subcutaneously from the insertion site and brought out through the skin at an exit site. Its tip is positioned in the lower third of the superior vena cava.
IV Infusion	Intravenous infusion
PICC Line	A Peripherally Inserted Central Catheter.
TIVPD-Totally Implanted Venous Port Device (Port-a-Cath)	A catheter surgically placed into a vessel or body cavity and attached to a reservoir located under the skin.
UHL	University Hospitals of Leicester NHS Trust

4.0 Purpose and Introduction

The primary aim of this document is to provide clinical guidance of the care and management of peripheral and central vascular access devices (CVADs) in the community and community hospitals. The guidance provides information to support staff in a safe and consistent manner in accordance with current legislation, national and local guidance and professional standards.

WHO DOES THIS IMPACT ON
The information contained within this document has been adapted from the University Hospitals of Leicester (UHL) vascular access policy and should be used only for patients under the care of UHL. If a patient is being cared for by a different Acute trust, nursing staff should contact the appropriate trust for further specific guidance.

What will be the outcome?

To provide standardisation of care across the two organisations (UHL & LPT) facilitating continuity in patient care.

Why do you need to do it?

The higher risks associated with the management of CVADs requires LPT to ensure it has training, education, and support in place for clinicians. This document incorporates best practice clinical guidance reflecting the evidence base held within the care plans and procedures.

How do you need to do it?

The primary purpose of this document is to provide clinical guidance on the care & management of peripheral & central vascular access devices (CVADs) in the community and community hospitals.

Promote procedural uniformity amongst practitioners when using managing CVADs.

Clarify roles and responsibilities of clinicians and managers.

Provide information to support staff in a safe and consistent manner in accordance with current legislation, national and local guidance, and professional standards.

Adherence to the document and the clinical guidelines will ensure that LPT meet the fundamental NIVAS standards.

Related legislation, Standards, Professional Guidelines, Codes of Practice or Ethics:

LPT Administration of Intravenous Medication Policy and Procedure
LPT Anaphylaxis Policy Drug Allergy Policy
LPT Aseptic Non-Touch Technique and Clean Technique Policy
LPT Consent to Examination or Treatment Policy.
LPT Hand Hygiene Policy (including bare below the elbows)
LPT Medicines Management Policy
National Infusion and Vascular Access Society (NIVAS)

5.0 Duties and responsibilities

The Trust Board has a legal responsibility for Trust policies and for ensuring that they are carried out effectively.

Trust Board Sub-committees have the responsibility for ratifying policies and protocols.

Service Directors and Heads of Service are responsible for:
Ensuring that there are clear policies and protocols that give authority for individuals to perform the tasks and that this is reflected in their job descriptions.

Managers and Team leaders are responsible for:
Ensuring that there is a clear process for dissemination of this document.
Ensuring that there is a process in place to allow staff to be released to meet training needs.
To ensure that the line manager(s) are clear in their roles and responsibilities in implementing the clinical guidance.
To ensure that staff have access to the correct equipment to manage CVADs safely. A list of consumables is available (Appendix 5)

Line managers are responsible for
Ensuring that all staff work in line with this clinical guidance.
Ensuring that staff evidence their competencies annually as part of the appraisal process.
Ensuring that staff who are unable to pass their competency are managed in line with the organisations performance management policy.
Ensure that staff act in accordance with the organisational policy on the reporting of incidents.

Staff undertaking the management of CVADs:

Registered nurses are responsible and accountable for their practice and should always work within their competence in accordance with The Code (NMC, 2018) and adhere to the Royal Pharmaceutical Society (2019). Professional Guidance on the administration of Medicines in Healthcare settings.

- must maintain their clinical skills within this area and must refresh their knowledge and skills by attending blended training (E-Learning and face to face) bookable on Ulearn. Followed by a LCAT assessment to provide evidence of competency.

- If staff are not familiar with a medication to be administered via a CVAD they can access information from the IV monographs https://www.medusaimg.nhs.uk or BNF as required.

- must be adequately prepared and equipped to deal with an anaphylactic or untoward reaction. Registered Community Nursing staff must have Sepsis bag and adrenaline at point of care.

In community hospitals two registered Nurses should check drugs and flushes to be given intravenously before administration in accordance with the Trusts Medicines Management Policy.

Where Registered Nurses are administering a drug or flush in the patients' home and have demonstrated the necessary knowledge and competence, they may administer drugs without a second checker.

6.0 Training Requirements

Training needs

Training topic:

Care and Maintenance of Central Venous Access Devices

Before accessing a CVAD independently all staff must:

- Have completed the organisation's competency-based training and assessment programme to include the following topics:
- Intravenous Therapy
- Management of CVADs
- Medicines Management
- Anaphylaxis
- Adult Basic Life support or Paediatric Basic Life Support (Diana Service staff)
- Infection Prevention and Control
- Staff groups who require the training: Any Registered nurse who may be required to care for a central Venous Access Device as part of their work in Community Health Services

The Clinical Education and Practice Development Service (CHS) is responsible for delivery of this training. Resources have been identified. Completion of this training be recorded on ULearn

The training will be monitored as part of the appraisal process and via uLearn administered by the Learning and Development Dept.

7.0 References and Associated Documents

Jackson, D. (2001) Infection Control Principles and Practices in the Care and Management of VADS: alternate care settings. Journal of Intravenous Nursing 24 (supp 3) p 28-30

NIVAS (2020) Practice guidance: locking vascular access devices with heparinised saline. National Infusion and Vascular Access Society. V3 May 2020

NICE (2012) CG139. Infection: Prevention and Control of Healthcare Associated Infection in Primary and Community Care. Published: 28 March 2012 Last updated: 15 February 2017

NMC (2018) The Code. Standards of Conduct, performance and ethics for nurses, nursing associates and midwives. London. Nursing &Midwifery Council

RCN (2022) Standards for Infusion Therapy. Royal College of Nursing. London 4th Edition

Royal Pharmaceutical Society (2019). Professional Guidance on the administration of medicines in Healthcare Settings

UHL (2017) Vascular Access in Adults & Children. Policy & Procedures V5 University Hospital of Leicester

Walker Claire (2023) Accessing and care of a totally implanted venous access device (Adults). Clinical skills.net

8.0 Signatures for relevant staff to sign

I confirm that I have read and consider myself to be sufficiently trained in the above Standard Operating Procedure with regards to my individual roles and responsibilities

Signature of Trainee …… Date ……

Additional Notes & Signatures

Signature of Trainer (where appropriate)

I confirm training in the above SOP was delivered as recorded above and that the trainee may be considered sufficiently trained in their roles and responsibilities

Signature of Trainer …… Date ……..

Appendix 1

Principles and Guidance for managing CVADs

All procedures relating to the care and maintenance of CVADS must be performed in line with the following principles:

1.0 To prevent infection an aseptic non-touch technique (ANTT) must be used for catheter site care and for accessing the system. Throughout the procedures whenever hand washing is required this requires the practitioner to make use of liquid soap and paper towels to dry the hands thoroughly within a community hospital, and within the patient's own home liquid soap and paper towels or an unused clean towel, or when conditions dictate the use of hand hygiene kits. For all procedures within this policy, it is expected that practitioners utilise sterile dressing packs that contain single use sterile gloves, measures, and a sterile apron. Sterile gloves must always be used when the closed system is breached e.g., giving drugs or flushes, taking bloods, changing the needleless valve (bionector) and for re-dressing the insertion & exit sites, and in the case of PICC or Midlines changing the fixation device.

1.1 All inpatients consider the use of a daily cleansing with chlorhexidine in adult patients with a central venous catheter as a strategy to reduce catheter related bloodstream infection.

1.2 Entry sites of lines must be inspected whenever the lines are to be accessed or dressings changed. Use of the VIP (Visual Infusion Phlebitis Score see **1.5**) scoring system should be adopted with scores above 1 being acted on**.**

- To maintain a 'closed' intravenous system.
- Accidental disconnection can result in air embolism or profuse blood loss.
- Minimise the number of connections to reduce the risk of contamination.
- Use needless valves to provide a closed system.
- Use Luer lock syringes and administration sets to provide a secure connection.
- Ensure clamp is closed when disconnecting equipment and when line is not in use.

1.3 To maintain a patent device

- Ensure adequate flushing with 0.9% sodium chloride after blood withdrawal. Followed by Heparin Flush for those patients under care of Diana Service
- Use a pulsated "stop start" flush to create turbulent flow.
- Use a positive pressure technique to remove the syringe to prevent reflux of blood into the tip of the line1.5 to prevent damage to the line
- Artery forceps, scissors or sharp-edged clamps **must not** be used on the line.

- Always use a smooth clamp on the reinforced area of the line.
- Always access the line initially using a 10ml luer lock syringe as smaller syringes create a greater pressure which can result in rupture of the line.
- Do not apply extra pressure if resistance is felt in the syringe.

1.4 A procedure manual may be given to the patient on discharge from UHL for use by the patient if managing their own line or the community nurse is caring for the patient and their line.

1.5 Visual Infusion Phlebitis Score (Appendix 7 LPT Peripheral Cannulation Guidelines V7) can be utilized to establish if inflammation of the vein present.

Scores above 1 must be acted upon and actions documented.

Appendix 2

Care Plans

Hickman Line Care Plan

Problem
The patient has a Hickman line in situ and is at risk of complications associated with this type of central venous access device including thrombus, infection, and occlusion of the line.

Aim: To prevent complications
To maintain patient safety

Nursing interventions:

- This should always be an aseptic non-touch technique (ANTT) procedure.
- The dressing should be changed after 24hrs post insertion, as an accumulation of blood from the exit sites will increase the risk of infection developing. A transparent, semi permeable dressing should cover the exit and entry sites until the wound(s) has healed. A transparent semi permeable dressing should always cover the entry site when the patient is in hospital.
- After the initial post insertion change, the dressing will need changing every 7 days thereafter unless indicated i.e., if a dressing becomes soiled, or is no longer secure the dressing should be changed as soon as possible.
- Remove sutures from insertion site 7-10 days post insertion.
- Remove suture from exit site 28 days (earliest) post insertion.

Changing the dressing:

Equipment needed:

- Sterile dressing pack
- Clean single use nonsterile gloves and spare sterile gloves
- Transparent semi permeable dressing
- Chloraprep 3mls applicator (2% Chlorexidine in 70% alcohol)
- Alcohol gel hand sanitiser
- Biopatch antimicrobial dressing (if in hospital or patient prefers) or 3M Tegaderm CHG dressing

Procedure

- Explain procedure to patient and gain consent.
- Wash hands with soap and water and dry thoroughly
- Open sterile dressing pack onto clean surface
- Open other sterile equipment onto sterile field
- Put on non-sterile gloves and apron.
- Remove old dressing from exit site (if one in situ).
- Discard dressings into clinical waste bag. Remove gloves.
- Wash hands with soap and water or decontaminate with alcohol sanitiser.
- Observe the exit site for signs of infection and swab if appropriate.
- Remove sutures (if applicable)
- Put on sterile gloves.

- Clean around the exit site with the Chlora-prep using a hashtag motion and leave to air dry for 30 seconds.
- Measure line length from exit site to distal tip of bionector and compare to insertion/baseline measurement in the patients' records. Contact hospital if there has been any migration.
- Apply Biopatch, (blue side up) and cover with transparent semi permeable dressing (if In-patient or on patient request)/or 3M Tegaderm CHG dressing
- Remove PPEs and discard all waste following trust policy.
- Wash hands with soap and water and dry thoroughly
- Document care given in patient's records.

2.2 PICC LINE or Midline Care Plan

Problem:
The patient has a PICC Line or Midline in situ and is at risk of complications associated with
this type of central venous access device including thrombus, infection mechanical phlebitis and occlusion of the line.

Aim: To prevent complications
To maintain patient safety.

Nursing interventions:
This should always be an aseptic non-touch technique (ANTT) procedure.
The dressing may need to be changed 24/48hrs post insertion, as an accumulation of blood from the exit sites will increase the risk of infection developing. A transparent semi permeable dressing should always cover the exit site; this dressing must be kept dry to prevent infection. The dressing will need changing every 7 days, unless soiled or has become loose.
Changing the dressing:

Equipment:
- Sterile dressing pack
- Clean single use nonsterile gloves and spare sterile gloves
- Chloraprep 3mls applicator (2% Chlorexidine in 70% alcohol)
- Alcohol gel hand santiser
- Transparent semi permeable dressing
- Catheter fixative device (statlock) for Midlines or PICCs without SecurAcath stabilization devices attached.
- Biopatch antimicrobial dressing/or 3M Tegaderm CHG dressing

Procedure for PICC or Midlines secured with statlock device:
- Wash hands with soap and water and dry thoroughly.
- Open sterile dressing pack onto clean surface
- Open other sterile equipment onto sterile field
- Put on non-sterile gloves and an apron.
- Remove transparent dressing in an upwards motion from the PICC/Midline.
- Remove stat lock/fixation device. Take care not to pull line.
- Discard dressings into clinical waste bag. Remove gloves.
- Wash hands with soap and water or decontaminate with alcohol gel.
- Observe the exit site for signs of infection and swab if appropriate.
- Put on sterile gloves.
- Clean around the exit site with the Chlora-prep using a hashtag motion, and leave to air dry for 30 seconds.
- Measure length of line from exit site to distal tip of the bionector and compare to insertion/baseline measurement in patient's records. Contact hospital if any migration.
- If able apply a steri-strip onto line to ensure line does not migrate down the patient's arm or apply sterile gauze over exit site and ask patient to

hold in situ.
- Apply Biopatch (blue side up)
- Apply the new Statlock (ensuring clamps are secure around the butterfly) or the new skin-fix.
- Cover with transparent dressing or 3M Tegaderm CHG dressing
- Remove PPE's and discard all waste following Trust policy.
- Wash hands with soap and water and dry thoroughly
- Document care given in patient's records.

Procedure for PICC lines with SecurAcath Stabilisation Device attached:

- Wash hands with soap and water and dry thoroughly.
- Open sterile dressing pack onto clean surface
- Open other sterile equipment onto sterile field
- Put on non-sterile gloves and an apron.
- Remove transparent dressing in an upwards motion from the PICC/Midline.
- Remove Biopatch (if present)
- Gently lift stabilisation device (with line clamped in situ) off skin in a 'lever' movement.
- Do not twist or rotate the stabilisation device from its original position during site cleansing.
- Observe the exit site for signs of infection and swab if appropriate.
- Cleanse around site and under stabilization device with Chlora-prep wand using hash tag motion. Leave to air dry for 30 seconds.
- Apply Biopatch (blue side up)
- Replace stabilisation device flat onto skin.
- Loosely cover with transparent film dressing or 3M Tegaderm CHG dressing
- Remove PPE's and discard of all waste following Trust policy.
- Wash hands with soap and water and dry thoroughly
- Document care given in patient's records.

2.3 INTRAVENOUS DRUG ADMINISTRATION –Via Vascular Access Catheter

Aim: To administer Intravenous drugs according to trust policies and prevent micro-organism contamination of the catheter.

Important Notes

- If drugs are administered in the home, you must take adrenaline into the house with you (refer to LPT Anaphylaxis Policy)
- Strict aseptic non-touch technique is required throughout the procedure.
- Patency of the line **must** be ascertained by obtaining a flashback of blood into a syringe before drugs are administered. If in doubt refer to Vascular Access Clinic, UHL. (It is not necessary to obtain flashback of blood prior to routine weekly flushing)
- If unable to obtain flashback of blood when checking patency, try altering the patient's position by asking them to lean forward, cough or raise their arms in the air whilst drawing back on the syringe. If unsuccessful consult with medical staff.
- Monitor patient throughout procedure and act on signs of deterioration or anaphylaxis.

- Not all lines will necessarily bleed and occasionally some patients may find their lines do not allow any blood backflow after insertion, however, before the administration of drugs into the catheter, especially vesicant or other toxic drugs, measures should be taken to ensure that the catheter is within the lumen of the vein – see algorithm for blocked lines (Appendices)
- There is approximately 2.5mls of dead space in each lumen therefore care must be taken when flushing infusions of highly concentrated solutions, drug infusions etc. and flushing should be performed slowly. Manufacturer's instructions should be referred to for exact amount of dead space.
- If there is already an established infusion running, then the bolus drugs should be given via the infusion set's injectable port as this does not involve disturbing the line reducing the risk of any possible infection.

Equipment:

- Sterile dressing pack x 2
- Drug
- Diluent
- Sterile sodium chloride 0.9% for injection x2 10ml
- Leur lock syringes (not smaller than 10ml syringe) NB: some ready prepared drugs may come in a syringe smaller than10ml this is okay if the line is accessed by a 10ml syringe first.
- Blunt end sterile safety needles – for drawing up solutions only.
- Chlorhexidine 2% in alcohol 70% swab
- Alcohol hand sanitizer
- Sharpsbin

Procedure:

- Collect all equipment ready to use and take to patient
- Wash hands with liquid soap and water and dry thoroughly
- Open sterile dressing pack and put on apron
- Unpack other equipment onto sterile field
- Decontaminate hands using alcohol hand rub and apply sterile gloves
- Mix the drug and diluent using aseptic technique. The drug should be checked according to Trust policy.
- Discard needle into sharps bin
- Draw up 2 syringes with 10mls of sodium chloride 0.9% for injection in each and discard needles into sharps bin. Remove sterile gloves.
- Ensure patient identity is checked according to Trust policy
- Explain procedure to patient and gain consent
- Decontaminate hands by washing or use alcohol gel
- Apply fresh sterile gloves
- Clean needleless valve (Bionector) thoroughly using Chlorhexidine 2% in alcohol 70% swab, leave to dry for 30 seconds
- Attach one of the sodium chloride 0.9% syringes to the Bionector. Unclamp line. Drawback syringe observing for flashback of blood and inject sodium chloride 0.9%
- Clamp line and discard syringe into sharps bin
- If unable to get flashback or flush line, see management of blocked

line(appendices)

- Inject drug(s) as prescribed flushing in between each drug (5mls Sodium Chloride 0.9%)
- Unclamp line ONLY when drug is immediately injected
- Following drug administration flush line with Sodium Chloride 0.9% in a 10ml syringe using push pause technique and positive lock whilst clamping line
- Clear away equipment. Ensure patient is comfortable and line is secure.
- Remove PPE and decontaminate hands
- Document all relevant information in patient's records

2.4 DISCONNECTING AN INTRAVENOUS INFUSION FROM A VENOUS ACCESS CATHETER

Aim:
To disconnect the infusion safely and prevent any complications occurring from the procedure.

NB There is no need to flush the line if sodium chloride 0.9% has been infused unless the line is not being accessed within 8 hours. All other infusions require flushing.

Equipment:

- Sterile dressing pack
- PPE
- 10 ml Leur lock syringes
- Blunt end sterile needles – for drawing up flushes only
- Alcohol hand rub
- Chlorhexidine 2% in alcohol 70% swab
- Sharps bin
- Sodium chloride 0.9% 10mls

Procedure:

- Gather equipment required and take to patient
- Wash and dry hands thoroughly
- Open sterile dressing pack and empty sterile equipment onto sterile field
- Decontaminate hands using alcohol gel.
- Apply sterile gloves.
- Draw up sodium chloride 0.9% into 10ml syringe
- Remove gloves and decontaminate hands
- Check patient's identity, explain procedure and gain consent
- Turn infusion off and clamp line
- Decontaminate hands and apply 2nd pair sterile gloves
- Disconnect infusion
- Clean Bionector with chlorhexidine 2% in alcohol 70% swab. Allow to dry for 30 seconds
- Unclamp line. Flush line with sodium chloride 0.9% using push pause technique with positive pressure lock for the last 0.5mls
- Disconnect syringe and dispose into sharps bin
- Ensure patient is comfortable and line is secure
- Dispose of all equipment according to Trust policy
- Document procedure in patient's records

2.5 TAKING BLOOD FROM A CENTRAL VENOUS ACCESS CATHETER

Aim: To safely obtain blood sample required and prevent micro-organism contamination of the catheter.

To ensure correct sample is taken from the correct patient.

Equipment:

- PPE
- Sterile dressing packs
- Chlorhexidine 2% in alcohol 70% swab
- Sterile sodium chloride 0.9% 10 mls (plus Heparin Sodium if Diana Service)
- Blunt end sterile needles – for drawing up fluids only
- 10 ml Luer lock syringes
- Luer lock adaptor for monovette bottles
- Blood test bottles and request forms
- Alcohol hand rub
- Sharps bin

Important notes

- Using blunt fill needles draw up saline flush into separate 10 ml leur lock syringes.
- If patient under care of Diana Service draw up Heparin Sodium according to prescription
- When a CVAD has more than one lumen in situ then the largest lumen (i.e. red lumen) should be used both for infusing blood products and for taking blood samples.
- Infusions running via both lumens should be switched off prior to blood sampling.
- It is advisable to flush both lumens at this time particularly if samples are only taken weekly as this synchronises the flushing of the lumens and prevents confusion over the timing of flushes.
- Occasionally difficulty may be encountered when taking blood samples as the tip of the catheter can lie against the vessel wall and the suction required to draw blood bring this into close contact, causing a temporary occlusion.
- Measures to try to dislodge the tip include asking the patient to:
    1) Cough and breathe deeply
    2) Roll from side to side
    3) Raise their arms
    4) Increase general activity (e.g., walking up and down the stairs)
    5) Perform the Valsalva Manoeuvre – (Pinch nose, close mouth, and pop ears)
- If unsuccessful, irrigation of the catheter with normal sodium chloride 0.9% may be helpful; however, as a last resort it may be necessary to take blood via a peripheral vein.
- If blood cultures are required, then separate samples may need to be taken from all lumens of the CVAD and a peripheral vein.

If taking blood samples for drug assay e.g. Gentamycin, Vancomycin levels etc. ensure the blood to be tested is taken from the lumen that was not used to infuse the drug through to prevent a false level being recorded.

Procedure:

- Label blood form before going to patient.
- Check patient's identity, explain procedure and gain consent
- Never label blood bottles before samples are taken
- Gather equipment required and take to patient
- Wash and dry hands thoroughly
- Open sterile dressing pack and open equipment onto sterile field
- Put on sterile gloves
- Draw up sodium chloride 0.9% 10mls (and Heparin if Diana Service) into luer lock syringe
- Remove needle and discard into sharps bin. Remove gloves
- Stop any infusions running via line prior to taking blood sample
- Wash and dry hands thoroughly
- Apply sterile gloves
- Clean end of Bionector with chlorhexidine 2% in alcohol 70% swab and allow to dry for 30 seconds
- Attach 10ml syringe, unclamp line, and draw back 10mls blood, re-clamp line and discard syringe into sharps bin
- Attach luer lock adapter and blood sample tubes to end of Bionector and withdraw required amount of blood for each bottle.
- Re-clamp line and clean Bionector to remove any blood left
- Attach syringe with sodium chloride 0.9% and flush line using push pause method with positive lock.
- If Diana Service: administer Heparin Sodium as prescribed
- Re-clamp line, remove and discard syringe into sharps bin
- Ensure patient is comfortable and line is secure
- Label correctly all blood sample bottles and send with appropriate form to laboratory
- Remove PPE, wash and dry hands thoroughly
- Dispose of all equipment according to Trust policy
- Document procedure in patient records

2.6 ROUTINE WEEKLY MAINTAINANCE FLUSH FOR CENTRAL VENOUS ACCESS CATHETER (NOT TIVPD (PORT –A-CATH))

Aim: To maintain asepsis and minimise infection whilst completing a series of tasks as part of one procedure.

Note:
The dressing change and Bionector change should be completed as part of the maintenance of the CVAD at the same time as the flush (often done by community nurses as part of one visit when a patient is no longer receiving treatment but still has a CVAD in situ).

The CVAD should be flushed with sodium chloride 0.9% pre and post bolus/infusion of drugs or fluids.

Equipment:

- Sterile Dressing Pack
- Pair non sterile gloves
- Spare pairs of sterile gloves
- Leur lock 10ml syringe
- Blunt end sterile needle
- Bionector
- Alcohol 70%/Chlorhexidine 2% swab
- Sodium Chloride 0.9% solution for injection (10mls)
- Heparin Sodium (Diana Service only)
- Sharps bin
  Alcohol hand gel

Procedure:

- Collect all equipment required
- Wash and dry hands thoroughly
- Explain procedure to patient and gain consent
- Check exit site for any signs of infection.
- Complete VIPP score. DO NOT flush if any indication of infection.
- Open all sterile equipment onto sterile field in dressing pack
- If stat lock present measure line from exit site to distal tip of Bionector. Contact hospital if migration noted.
- Remove old Bionector if weekly flush (or after 100 uses)
- Cleanse the line using the 3ml ChloraPrep wand and allow to dry for 30 seconds
- Dispose of wand into sharps bin
- Using ANTT draw up 10mls 0.9% Sodium Chloride into 10 ml leur lock syringe and Heparin Sodium into separate 10mls syringe (Diana service only)
- Discard needle into sharps bin
- Ensure catheter is clamped
- Cleanse end of line with Alcohol swab, rubbing vigorously and leave to dry for 30 seconds

- Fix syringe to sterile Bionector and prime
- Fix Bionector (with syringe attached) to end of line
- Unclamp line and insert flush(s)using push pause technique
- Clamp line and disconnect empty syringe, leaving Bionector in situ
- Ensure patient is comfortable and line is secure
- Clear away and dispose of equipment according to Trust policy
- Document procedure in patient's record.

2.7 ROUTINE MAINTAINANCE PROCEDURE FOR A TIVPD (PORT- A – CATH) WHICH INCLUDES FLUSH and HEPSAL LOCK (if authorised -patient specific) (EVERY 28 DAYS WHEN PORT IS NOT IN REGULAR USE)

Aim: To access a TIVPD (Port-a-Cath) safely ensuring the risks of infection are kept to a minimum

Equipment:

- Sterile Dressing pack (containing gauze, apron and sterile gloves)
- x 10 ml luer lock syringes
- 2x blunt end sterile needles
- Chlorprep 3ml applicator
- Huber non-coring “Gripper” needle of an appropriate length
- 5 mls Heparinised Sodium Flush Solution (10units per ml) (Diana Service and if specifically prescribed for patient)
- 0.9 % Sodium Chloride 10mls
- Sharps bin
- Bionector
- Transparent film dressing dressing (If leaving needle in situ).
- Alcohol hand gel

Procedure:

- Collect all equipment required
- Wash and dry hands thoroughly
- Explain procedure to patient and gain informed consent
- Open sterile dressing pack
- Put on sterile apron
- Open all sterile equipment onto sterile field
- Uncap Sodium Chloride 0.9% and Heparin Sodium ampoules and stand them away from sterile field
- Put on sterile gloves
- Remove needles from syringes and discard into sharps bin
- Attach Bionector to line of Huber needle
- Attach syringe with saline flush into the Bionector.
- Prime the line and clamp
- Remove saline syringe and put onto sterile field
- Cleanse the skin with ChloraPrep applicator, using a hashtag motion and leave to dry for 30 seconds. Pick up port needle (Huber) and hold in one hand
- With other hand feel for outside of port and stabilise it
- Insert the huber needle into the centre of the port at a 90°angle facing the bevel opposite to the catheter line, until the needle touches the back of the port
- Reattach filled saline syringe to end of Bionector
- Open clamp and obtain flash back of blood to confirm line patency
- Flush line using push pause technique
- Clamp line and remove empty syringe and discard into sharps bin
- Attach syringe containing Heparin Sodium solution (if authorised)
- Open clamp and flush. As you get to last 0.5 ml close clamp as you continue to

apply gentle pressure on the syringe.

- Disconnect syringe from Bionector creating positive pressure lock off
- Stabilise port and gently but firmly remove Huber needle. Discard into sharps bin
- Apply pressure to exit site to stop any bleeding and apply a small dressing (if required) for 24 hours
- If needle is to be left in for treatment purposes secure with IV film dressing
- Dispose of clinical waste according to Trust policy
- Ensure patient is comfortable
- Document in patient record

Appendix 3

Removal of a PICC

Removal of a Peripherally Inserted Central Catheter (PICC) Line. Adult services ONLY

Aim: To safely remove PICC line and prevent complications during the procedure

Equipment:

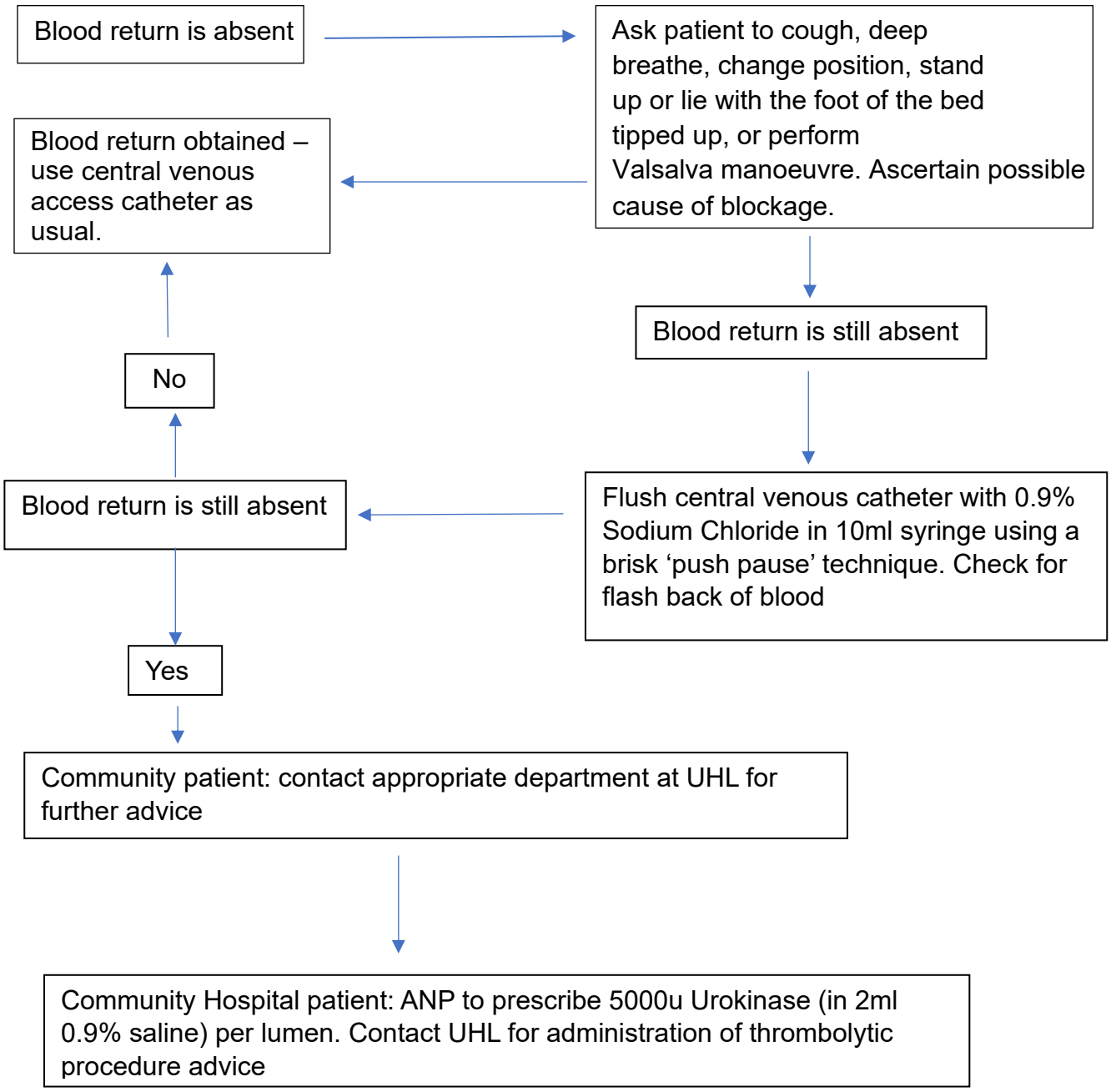
- Sterile dressing pack
- Alcohol gel
- One pair nonsterile gloves
- ChloraPrep wand 3 ml
- Sharps bin (Purple lid if chemotherapy has been used)
- Sterile dry dressing

Procedure:

- Explain procedure to patient and gain consent
- Gather all equipment required
- Wash hands and dry thoroughly
- Open sterile dressing pack and put on sterile apron
- Put all sterile disposable items onto sterile field
- Put on non-sterile gloves and remove film dressing and stat lock fixation device or top of SecurAcath device (follow marked guidance on device)
- Cleanse skin around line with ChloraPrep wand, allow to dry for 30 seconds
- Dispose of wand in sharps bin
- Slowly withdraw line.
- If line appears to 'grab' wait for 20 seconds and attempt withdrawal again
- Check tip to ensure all line removed
- Remove rest of SecurAcath device by folding wings back and lifting out from skin in upwards direction or by cutting down centre of device and removing one leg at a time
- If possible, check line length against insertion record – any incomplete line MUST be reported to the Vascular Access Dept. at UHL and an e-irf incident form completed
- Use sterile gauze over exit site and pressure to stop any bleeding
- Once bleeding stopped cover with sterile dressing for 24 hours
- Dispose of line into sharps/cytotoxic bin and all other equipment as per Trust policy
- Ensure patient's comfort and document procedure in patient's records

Appendix 4

Algorithm for Blocked Central Venous Access Devices Problem: When blood cannot be withdrawn from the catheter.



Appendix 5

Consumables
(Codes correct as of March 2026) All equipment can be obtained by the NHS supply chain

ITEM	ORDER CODE
2% Chlorhexidine in 70% alcohol swabs (PDI sanicloth CHG 2%)	**VJT 169**
ChloraPrep applicator (3ml)	**MRB 306**
Tegaderm Transparent Semi Permeable dressing	**ELW 213** **ELW 211** **ELW 174**
3M Tegaderm CHG dressing	**ELW 295**
Biopatch Anti-bacterial disk	**FWX 1105**
Stat Lock Fixation Device – Bard for PICC lines	**ELW 703**
Grip Loc Fixation Device – Vygon for PICC lines	**ELW238**
Needleless valve (Bionector, Vygon)	**FSW 141**
Leur- lock adaptor for monovette bottles	**KCM 114**
Double lumen Octopus Cannula extension – Vygon	**FSW 323**
Huber non-coring Gripper needles – For Port -a –Caths	**FTR 131**