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**Care of Invasive Lines (VAD/CVAD) Policy**

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CONTENTS

[1. Introduction 3](#_Toc147935170)

[2. Policy Statement 3](#_Toc147935171)

[3. Scope 4](#_Toc147935172)

[4. Definitions 4](#_Toc147935173)

[5. Roles and Responsibilities 5](#_Toc147935174)

[6. Procedures 6](#_Toc147935175)

[7. Changing of Administration Sets 10](#_Toc147935176)

[8. Review of vascular access devices 10](#_Toc147935177)

[9. Packaging and Storage of Equipment 11](#_Toc147935178)

[10. Training 11](#_Toc147935179)

[11. Complications 11](#_Toc147935180)

[12. Incident Management 12](#_Toc147935181)

[13. Liability 12](#_Toc147935182)

[14. Monitoring 12](#_Toc147935183)

[15. Related Policies and Procedures 13](#_Toc147935184)

[16. Legislation and Guidance 13](#_Toc147935185)

[17. Summary of Review 14](#_Toc147935186)

# Introduction

A vascular access device (VAD) is a device that is inserted into either a vein or an artery, via the peripheral or central vessels, to provide either diagnostic (blood sampling or central venous pressure reading) or therapeutic (administration of medications, fluids and/or blood products) purposes.

Types of vascular access devises include peripheral intravenous cannulas, midline catheters, peripherally inserted catheters, central venous catheters non-tunnelled, skin tunnelled catheter, implanted ports.

The National Institute for Health and Care Excellence (NICE) have identified vascular access devices as being one of the main causes of healthcare-associated infections, and bloodstream infections associated with central venous device insertion are a major cause of morbidity.

Clients who need a vascular access device have their risk of infection minimised by the completion of specified procedures necessary for the safe insertion and maintenance of the device and its removal as soon as it is no longer needed.

The risk of infection is greatly reduced by complying with all parts of the process for safe insertion and maintenance of the device and its removal as soon as it is no longer needed.

Regardless of the type of VAD used, the principles of care for the device remain the same:

* to prevent infection
* to maintain a ‘closed’ intravenous system with minimal connections to reduce the risk of contamination
* to prevent damage to the device and associated intravenous equipment
* to maintain a patent and correctly positioned device

# Policy Statement

[Company Name] is committed to ensuring that all staff caring for, and using vascular access lines are competent and confident, and that client related risks, such as infection, are minimised/eradicated.

# Scope

This Policy aims to provide guidance to promote the safe and effective care, use and insertion of vascular access lines by staff employed at [Company Name].

Vascular access lines will only be monitored used and inserted by qualified and trained staff working at [Company Name] who are authorised to do so. Staff working for [Company Name] must have the necessary skills, knowledge and experience prior to assessing and using vascular devises.

Internal and external audit processes will be undertaken to demonstrate that [Company Name] operates adequate management controls to minimise the risk to client safety.

**This policy relates to the management and care of vascular access devices.**

**Insertion and removal of a central vascular access devices will be performed by a specialist clinician/vascular access specialist as this is an extended skill.**

**A twenty-four-hour contact number should be provided to the service user so they can seek help if required when at home with a Vascular access device.**

**The clinical lead must be contacted if the staff has any concerns regarding the vascular access device.**

**If there are any concerns regarding the vascular access device the client’s vascular access specialist must be involved if the clinical lead cannot rectify the problem.**

# Definitions

**Vascular Access Device (VAD):** Any device utilised for venous access regardless of location. These include peripheral intravenous catheter (PIV), peripherally inserted central catheter (PICC), centrally inserted central catheter (CICC), and implanted venous port.

**Central Venous Access Device (CVAD):** Includes peripherally inserted central catheter (PICC) and all centrally inserted catheters including non-tunnelled, tunnelled, or implanted catheter with the catheter tip ending in the vena cava, such as a subclavian, femoral, and internal jugular.

**Centrally Inserted Central Catheter (CICC)** [also known as central venous catheter (CVC)]: Includes tunnelled or non-tunnelled central venous catheters.

**Implanted venous port:** A surgically placed central venous catheter that is attached to a reservoir located under the skin.

**Non-Tunnelled Centrally Inserted Catheter (Non-Tunnelled CICC):** A catheter inserted by direct venous puncture through the skin in the subclavian, jugular or femoral areas without tunnelling.

**Peripherally Inserted Central Catheter (PICC):** A central venous catheter inserted into an upper extremity vein that is threaded within the superior vena cava.

**Tunnelled Centrally Inserted Catheter (Tunnelled CICC):** A catheter that is tunnelled under the skin before entering the venous system which can either be cuffed or non-cuffed. Cuffed indicates that the catheter has a small cuff promoting tissue growth for catheter adherence.

**Vascular Access Specialist/Team:** comprised of registered nurses/clinicians who are skilled and educated in the management and care of central and peripheral venous access devices.

# Roles and Responsibilities

**All elements of this policy are an extended role, the** **staff must have attended the relevant training and have been deemed competent to perform these tasks. These tasks are a registered clinician role.**

The Registered Manager will be responsible for the following:

* Ensuring that appropriate vascular access line care is implemented and audited in line with this policy
* Ensuring there is a log of all competent staff that can use and care for IV access lines. The specific type of access lines that staff can use will be logged.
* Performing monthly checks to ensure that all staff are in compliance with this policy and that these checks are recorded for audit purposes.
* That staff are competent and trained to administer intravenous medications.

All healthcare professionals employed at [Company Name] will be trained in line with their profession and appropriate level of competency. It is expected that staff will take full responsibility for remaining up to date with best practice, attend appropriate training and maintain their own CPD records.

Healthcare Professionals are responsible for:

* Always practicing within their own professional codes of conduct and performance.
* Ensuring that training records of competence to care for/insert vascular access lines are documented in line with compliance requirements.
* Ensuring that all adverse incidents are reported on.

# Procedures

The procedures for this policy will incorporate all care as directed by The National Institute of Clinical Excellence and The Royal Marsden’s latest clinical guidelines ensuring that best practice is followed [1 Guidance | Healthcare-associated infections: prevention and control in primary and community care | Guidance | NICE](https://www.nice.org.uk/guidance/cg139/chapter/1-Guidance" \l "vascular-access-devices) .

**Consent/Refusal of Care/Right client**

Check the client’s details and check for any previous problems and any allergies.

Explain the procedure to the client and answer any questions they may have, consider their individual needs when explaining. Assess their understanding of the procedure/treatment and if possible, gain their verbal consent (See Consent Policy).

**(Edit/ Delete if not applicable)** Refusal of treatment must be documented and reported to the client’s clinician responsible for the care of the client as soon as possible. If it is considered the client may lack capacity refer to the mental capacity policy, [Clinical Lead Name] must be informed of any issues that arise.

**Client Dignity and Privacy**

All staff involved in client care will introduce themselves and ensure that client dignity and privacy is provided when providing care and discussing care with the client.

**General asepsis**

All care musts be followed as per the infection control policy.

Hands must be decontaminated before accessing or dressing a vascular access device as per the infection control policy.

An aseptic technique must be used for vascular access device catheter site care and when accessing the system, as per the aseptic technique policy.

**Vascular access device site care**

Refer to the client individualised care plan / notes for consistency of care and individualised treatment plan.

Ensure the old dressing is removed gently - Trauma to the skin is associated with an increased risk of skin injury. Use a ‘low and slow’ technique. Consider using an adhesive remover wipe.

Clean the vascular access line site and surrounding skin during dressing changes using chlorhexidine gluconate in 70% alcohol and allow to air dry,Individual sachets of antiseptic solution or individual packages of antiseptic-impregnated swabs or wipes should be used to disinfect the dressing site.  Consider using an aqueous solution of chlorhexidine gluconate if the manufacturer's recommendations prohibit the use of alcohol with their catheter**.**

Assess the site as per the Visual Infusion Phlebitis (VIP) scoring system, look for skin irritation/damage. If there are signs of infection, damage, irritation or an increased VIP score seek support from the clinical lead/Vascular access specialist.

Allow the area to dry before applying the dressing, apply a barrier cream if prescribed, consider a dressing alternative that is device compatible if the current dressing is causing irritation.

Use a sterile transparent semipermeable membrane dressing to cover the vascular access device insertion site.

Depending on the care plan a bio patch may be applied.

Consider a sterile gauze dressing covered with a sterile transparent semipermeable membrane dressing only if the patient has profuse perspiration, or if the vascular access device insertion site is bleeding or oozing. If a gauze dressing is used:

* change it every 24 hours, or sooner if it is soiled and
* replace it with a sterile transparent semipermeable membrane dressing as soon as possible.

The dressing must be correctly position in relation to the vascular access insertion site, the dressing will not obscure the visibility of the insertion site. The dressing will be dated with the date it was changed.

On removal of the dressing, the patient should be pain free and their skin under the dressing should be of a similar condition to the surrounding skin.

Change the transparent semipermeable membrane dressing covering a central venous access device insertion site every 7 days, or sooner if the dressing is no longer intact or moisture collects under it.

Leave the transparent semipermeable membrane dressing applied to a peripheral cannula insertion site in situ for the life of the cannula, provided that the integrity of the dressing is retained.

Dressings used on tunnelled or implanted central venous catheter sites should be replaced every 7 days until the insertion site has healed, unless there is an indication to change them sooner.

Healthcare workers should ensure that catheter-site care is compatible with catheter materials (tubing, hubs, injection ports, luer connectors and extensions) and carefully check compatibility with the manufacturer's recommendations.

**Maintaining Patency of VAD**

Sterile 0.9 percent sodium chloride injection should be used to flush and lock catheter lumens using a push pause (start stop) technique.

Do not use syringes smaller than 10 ml for infusion into the catheter, to prevent excessive pressure being exerted on the lumen which might cause it to rupture. Smaller syringes exert greater pressure.

Flushes must be prescribed and will be administer as per the client’s individual care plan.

When recommended by the manufacturer, implanted ports or opened-ended catheter lumens should be flushed and locked with heparin sodium flush solutions as prescribed. The line must be labelled if locked with heparin sodium and the heparin sodium must be prescribed.

**General principles for the management of vascular access devices**

All VAD sites must be clamped when not in use.

All VAD must have compatible needle free connectors on them.

In-line filters should not be used routinely for infection prevention.

Antibiotic lock solutions for devises should not be used routinely to prevent catheter-related bloodstream infections.

Systemic antimicrobial prophylaxis should not be used routinely to prevent catheter colonisation or CRBSI during the use of a central venous catheter.

Systemic anticoagulants should not be used routinely to prevent Catheter-related bloodstream infection (CRBSI).

Healthcare workers should ensure that all components of the needless system are compatible and secured to the access line, to minimise leaks and breaks in the system.

The manufacturer's recommendations for changing the needleless components should be followed.

**Total Parental Nutrition (TPN)**

**[Delete if not appropriate]**

Preferably, a single lumen catheter should be used to administer parenteral nutrition. If a multilumen catheter is used, one port must be exclusively dedicated for total parenteral nutrition, and all lumens must be handled with the same meticulous attention to aseptic technique.

**Cather occlusion**

The occlusion of venous catheters is not uncommon, causes can be as follows

* External compression of the catheter wall
* Mechanical obstruction of the catheter lumen by drug precipitate, clotted blood, kinking or lipid deposits. Unless catheter removal is an option, the cause must be identified and treated. Increased infection risk posed by blocked catheters necessitates treatment.

Prevention of catheter occlusion can include

* Dressing the line to prevent kinking or external pressure of catheter wall.
* Flushing catheters immediately upon completion of all infusions and injections.
* Looking after the lines and line patency as per the client’s care plan/ vascular access team specialist advice.

**Troubleshooting**

Occlusions should be suspected if the clinician is unable to aspirate blood (CVAD only) and/or flush a VAD Sometimes client positional change is sufficient, encouraging the client to deep breathe /cough (CVAD only) may help.

Attempt to carry out procedure for obtaining blood and or flushing central lines. Do not use force to flush the catheter as this could result in catheter rupture or dispersal of the clotted material into the systemic circulation. Syringes less than 10mls should not be used.

If the occlusion cannot be rectified the clinical lead / vascular access specialist must be contacted.

# Changing of Administration Sets

Administration sets in continuous use can be replaced every 72-hours unless they become disconnected, or a catheter-related infection is suspected or documented. Apart from the following:

* Administration sets for blood and blood components should be changed every 12 hours or earlier if disconnected or deemed to be contaminated
* Administration sets used for total parenteral nutrition infusions should be changed every 24 hours (If the solution contains only glucose and amino acids, administration sets in continuous use do not need to be replaced more frequently than every 72 hours).
* IV Line administration sets should be in place for 24hours only when the medication contains lipids.
* Contact pharmacy for guidance if unsure. If new venous access is inserted all IV-line administration sets must be changed to prevent cross contamination).

# Review of vascular access devices

Vascular catheter insertion sites should be inspected during every daily at a minimum, and a visual phlebitis score should be recorded by the clinician.

The insertion site should be checked for signs of phlebitis (erythema, pain and/or swelling) or infection using the Visual Infusion Phlebitis (VIP) scoring system. Complaints of soreness, unexpected pyrexia, and damaged, wet or soiled dressings are reasons for immediate inspection and renewal of the dressing.

Any signs of infection must be reported immediately to the clinical lead/Vascular access specialist. Monitoring for blood stream infections/sepsis must be implemented.

**If the client has pyrexia / is showing additional clinical signs of infection in addition to the increased VIP score of the VAD site immediate medical input must be sought.**

# Packaging and Storage of Equipment

Equipment will be stored as per the manufacture’s instruction.

The Lot/batch Number, Expiry Date and Manufacturer details will be present on the product packaging.

# Training

All healthcare professionals undertaking the care of vascular access must have attended the appropriate formal training, followed by a period of supervision.

Healthcare professional must be trained and assessed as competent in using and consistently adhering to the infection prevention practices described in this policy.

Supervision must be undertaken by healthcare professionals already deemed competent in vascular access and capable of assessing the competency of others. All competencies must be officially signed off and passed to the Registered Manager, to allow for future auditing.

All healthcare professionals are responsible for maintaining their own competency.

As per The National Institute of Clinical Excellence all clients and their carers will be taught any techniques they may need to use to prevent infection and safely manage a vascular access device.

Follow up training will be available to all clients and their carer, this will be arranged and monitored by the [Clinical Lead Name].

# Complications

There are a multitude of complication that can occur with VAD’s they can include

* Injury to site / structures involved
* Phlebitis at insertion site (inflammation of a vein)
* Air Embolism
* Hematoma
* catheter malposition
* Infection local (to site) and systemic
* Thrombosis
* Extravasation (leak of fluids from the vein into the tissues)
* Catheter damage/split/migration

Urgent action must be taken to prevent the situation worsening, liaison with the clinical lead and vascular access specialist plus any other relevant clinician must be sought immediately. Infusions/use of the device must be stopped until the device is deemed safe to use. If the situation is deemed as an emergency/critical medications or care cannot be provided and the relevant specialist is not immediately available 999/111 must be called.

# Incident Management

All incidents and near misses will be reported via our incident reporting system, refer to the incident management policy.

Any adverse issues/incidents will be informed to the registered manager/clinical lead as well as the relevant specialist external party depending on the situation i.e., the client’s prescriber, Vascular access specialist/specialist, GP etc.

Any needlestick injuries/exposure to bodily fluids should be reported immediately to Occupational Health for any appropriate checks to be undertaken. If Occupation Health is not available immediately a medical review must be sought imminently.

# Liability

[Company Name] will accept responsibility for any negligence from its qualified personnel, provided vascular access management and care are in line with its policies, individual qualifications and training.

[Company Name] will not be liable for any of its personnel if/when working for organisations, whether private or voluntary, other than [Company Name].

# Monitoring

The effectiveness of this policy will be monitored through routine audits and the audit and investigation of any reported incidents or complaints. Staff competency and training will be monitored by [Clinical Lead Name].

# Related Policies and Procedures

* Administration of IV Medicines Policy
* Aseptic technique Policy
* Consent Policy
* Incident Management Policy
* Infection Prevention and Control Policy
* Phlebotomy and Cannulation Policy

# Legislation and Guidance

**Guidance**

* The Royal Marsden Manual of Clinical Nursing Procedures, 10th edition
* [visual infusion phlebitis score | Search results page 1 | Evidence search | NICE](https://www.evidence.nhs.uk/search?q=visual+infusion+phlebitis+score)
* [Quality statement 5: Vascular access devices | Infection prevention and control | Quality standards | NICE](https://www.nice.org.uk/guidance/qs61/chapter/quality-statement-5-vascular-access-devices)
* [1 Guidance | Healthcare-associated infections: prevention and control in primary and community care | Guidance | NICE](https://www.nice.org.uk/guidance/cg139/chapter/1-Guidance#vascular-access-devices) .
* [Clinical\_Review\_IV\_Film\_Dressings\_Part-2\_Report\_October\_2018.pdf (supplychain.nhs.uk)](https://wwwmedia.supplychain.nhs.uk/media/Clinical_Review_IV_Film_Dressings_Part-2_Report_October_2018.pdf)
* Royal Pharmaceutical Society and Royal College of Nursing Professional Guidance on the Administration of Medicines in Healthcare Settings (2019) [Admin of Meds prof guidance.pdf (rpharms.com)](https://www.rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Professional%20standards/SSHM%20and%20Admin/Admin%20of%20Meds%20prof%20guidance.pdf?ver=2019-01-23-145026-567)
* Nice guidance on Intravenous Infusions, [Guidance on intravenous infusions | Medicines guidance | BNF content published by NICE](https://bnf.nice.org.uk/guidance/guidance-on-intravenous-infusions.html)
* Infusion Nurses Society 2016 Infusion Therapy Standards of Practice, Journal of Infusion
* Nursing, <https://source.yiboshi.com/20170417/1492425631944540325.pdf>
* National Patient Safety Agency [Specimen High Risk Injectable Medicines List – SPS - Specialist Pharmacy Service – The first stop for professional medicines advice](https://www.sps.nhs.uk/articles/specimen-high-risk-injectable-medicines-list/)
* RCN, Standards for Infusion Therapy [Standards for infusion therapy | Infection prevention and control | Royal College of Nursing (rcn.org.uk)](https://www.rcn.org.uk/clinical-topics/infection-prevention-and-control/standards-for-infusion-therapy)
* VipScore [VIP score](http://www.vipscore.net/)

# Summary of Review

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| --- | --- |
| Version | 1 |
| Last amended | [Date of Issue] |
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| Were changes made? |  |
| Summary of changes |  |
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