Infection Prevention and Control

CANNULATION AND CARE OF PERIPHERAL VENOUS ACCESS DEVICES (PVAD) Policy

Document Author	Authorised
Written By: Infection Prevention and Control Team (IPCT) **Date:** October 2018	**Authorised By:** Chief Executive **Date:**12th December 2018
Lead Director: Director of Nursing	
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DOCUMENT HISTORY

(Procedural document version numbering convention will follow the following format. Whole numbers for approved versions, e.g. 1.0, 2.0, 3.0 etc. With decimals being used to represent the current working draft version, e.g. 1.1, 1.2, 1.3, 1.4 etc. For example, when writing a procedural document for the first time – the initial draft will be version 0.1)

Date of Issue	Version No.	Date Approved	Director Responsible for Change	Nature of Change	Ratification / Approval
3 Sep 12	5			Revision approved at	Executive Board
2 Oct 15	5.1		DIPC	Ratified at	Clinical Standards Group
20 Oct 15	6.0	20 Oct 2015	DIPC	Approved at	Approved at Policy Management Group
Oct 18	6.1		Director of Nursing	Revision	
5 Nov 18	6.1		Director of Nursing	Agreed at	IPCC
30 Nov 18	6.1		Director of Nursing	Endorsed at	Clinical Standards Group
12 Dec 18	7.0	12 Dec 18	Director of Nursing	Approved at	Policy Management Sub-Committee
17 Dec 2020	7.1	12 Dec 18	Director of Nursing	Policy Lead Director requested sentence to be added to 7.7	

NB This policy relates to the Isle of Wight NHS Trust hereafter referred to as the Trust

Contents **Page**

1 Executive Summary

Effective infection prevention and control must be embedded in everyday practice.

This policy is based on national best practice guidance including epic 3: National Evidence-Based Guidelines for Preventing Healthcare-Associated Infections in NHS Hospitals in England 2013.
The policy provides a clear standard for insertion and management of PVADs for all clinical staff who have been trained to undertake these tasks.

2 Introduction

Many patients admitted to hospital receive intravenous (IV) therapy via a PVAD, also known as a cannula or "venflon". PVAD's are used to access a patient's circulation for the purpose of giving intravenous fluids or intravenous drugs. Insertion of a PVAD is an invasive procedure that involves using various sized cannula to puncture a hole in a vein, leaving behind a plastic device through which the fluids and/or liquid drugs can be given.

PVADs may be associated with complications such as phlebitis and cellulitis. PVADs can also be a portal of entry for bacteria to the bloodstream.

3 Definitions

- **Aseptic Non-Touch Technique: (ANTT)** A standardised approach using a safe and effective non-touch technique for all aseptic procedures.
- **Cellulitis**: Inflammation of tissues.
- **Diabetes Mellitus (DM)**
- **Phlebitis**: Inflammation of a vein.
- **Peripheral venous access device (PVAD)**: a flexible hollow tube with a proximal connector designed specifically for insertion into a blood vessel to allow injection or infusion of liquids
- **Visual Infusion Phlebitis Score (VIP score)**: A guide to assessing PVAD site.

4 Scope

This Policy applies to staff of all grades who insert and/or manage PVADs, in all healthcare settings within the Trust. There is an adapted local protocol for neonates (held by neonatal unit).

5 Purpose

The purpose of this policy is to ensure insertion and management of peripheral venous access devices (PVADs) meets best practice standards to reduce the risk of infection and complications for the patient.

6 Roles and Responsibilities

It is the responsibility of all healthcare staff to comply with the Trust's infection control polices.

6.1 Chief Executive

The Chief Executive has ultimate responsibility for all aspects of Infection Prevention and Control within the Trust.

6.2 Director of Infection Prevention & Control (DIPC)

The Director for Infection Prevention & Control is responsible for ensuring this policy is implemented and adhered to.

6.3 Clinical Leads

Clinical Leads are responsible for ensuring the policy is implemented within their areas.

6.4 Modern Matrons/Ward Sisters/Charge Nurses

Modern Matrons/Ward Sisters/Charge Nurses are responsible for

- Ensuring that PVAD risk assessment, insertion and management practices are monitored within their areas in (including completion and monitoring of monthly PVAD audits and leading on actions where poor compliance identified).
- Ensuring that infections related to PVADs are reported using the Organisational datix system and
- Taking the lead on root cause analyses when required.

6.5 All staff who undertake PVAD insertion and/or management

All staff who undertake PVAD insertion and/or management are responsible for complying with this policy and for maintaining their own competence in this discipline.

6.6 Infection Prevention & Control Team (IPCT

Infection Prevention & Control Team (IPCT) are responsible for updating the policy and providing advice on infection prevention and control precautions.

6.7 Education Training and Development

Education Training and Development are responsible for adequate provision of good quality clinical courses in relation to PVAD insertion and management.

Course attendance and competency completion will be recorded on the Trusts Learning Management System following notification from the Course Lead and Competency Assessor.

7 Policy detail/Course of Action

PVAD insertion is an invasive procedure that should not be undertaken without a full assessment of need. It must be performed using aseptic technique. Staff who perform this procedure must demonstrate competence in aseptic non-touch technique (ANTT).

7.1 Assessment of PVAD use

- Insertion of a PVAD should only be carried out where it is necessary and appropriate for clinical management (see 7.2). It is recommended that, where duration of intravenous therapy will exceed six days, the use of alternatives such as a mid-line or PICC (Peripherally Inserted Central Catheter) line should be considered.
- Check the identity of the patient and obtain verbal consent to the procedure. Where a consent form is used, i.e. Theatres, assessment and consent for PVAD insertion should be carried out as part of the consenting process.
- Document the assessment of need in the medical notes and sign. If a PVAD is required to be in place for longer than 12 hours, commence the PVAD care plan.
- Where a patient is returned to a ward or department following a procedure that has resulted in insertion of a PVAD, it is the receiving nurse's responsibility to assess whether the device will remain in place for longer than 12 hours and to commence a PVAD care plan if required.

7.2 Indications for inserting a PVAD

- Patient needs intravenous fluid administration
- Patient needs intravenous drug administration
- Critically ill patient with no other intravenous access route

7.3 Contraindications for inserting a PVAD

- Patient refuses procedure (may be exceptions in line with Consent to Examination or Treatment Policy).
- Cannulas should not be placed into the feet of people with Diabetes Mellitis (DM). The only exception is in an emergency when no other access can be found and as a short term measure only and the cannula removed from the foot as soon as possible.
- When the cannula is placed in the foot there is an increased risk of tissue damage, thrombophlebitis and ulceration (Gorski et al 2016). The risk of foot problems in people with diabetes is increased, due to either diabetes neuropathy or peripheral arterial disease or both (NICE 2015).
- Uncooperative/confused patient
- Inappropriate site for PVAD device (i.e. AV fistula, lymph node removal, fractured limb, signs of infection at site, hemiparesis from stroke etc.)
- Inappropriate procedure i.e. PVAD not necessary for assessment, treatment or management of patient condition.

7.4 Emergency situations

In exceptional emergency situations such as trauma, cardiac or respiratory arrest, anaphylaxis etc., full compliance with this policy may not be possible (eg breaches in

aseptic technique). In such situations the following measures must be taken to minimise risk of complications:

- Document emergency PVAD insertion in the patient record
- The PVAD must be removed and re-sited if necessary, using aseptic non-touch technique within 24 hours if it has been inserted in an emergency situation.

7.5 Key Points for PVAD insertion

PVAD insertion must be undertaken by a competent practitioner, or by a trainee supervised by a competent practitioner. Aseptic non-touch technique must be used for the insertion and care of an intravascular access device and when administering intravenous medication (See ANTT Policy).

- To minimise needle-stick injury, safe sharps systems/devices should be used routinely where provided.
- If a department/clinician identifies a need to use a non-safe sharp when a safe system is provided, a full detailed risk assessment must be completed and shared with the Associate Director for Health and Safety.
- Consider use of alternatives such as a mid-line or PICC (Peripherally Inserted Central Catheter) line if the duration of intravenous therapy is likely to exceed 6 days.
- Use aseptic, non-touch technique during PVAD insertion
- Use the smallest gauge catheter suitable for the task, to prevent damage to the vein and to minimise risk of vascular complications.
- Use a catheter with the minimum number of ports or lumens for management of the patient.
- Use a designated single lumen for administration of lipid containing parenteral nutrition or other lipid-based solutions.
- Disinfect clean skin with 2% Chlorhexidine gluconate in 70% isopropyl alcohol or povidone iodine in alcohol for patients with sensitivity to chlorhexidine or steret for premature babies or babies < 2 months old - see skin preparation).
- Some intravascular catheters may be damaged by disinfectants containing alcohol (e.g. some catheters used in haemodialysis). Manufacturer's guidance re using compatible disinfectants must be followed.

- The patient may require a local anaesthetic which may be a topical or intradermal product. If used, these must be given adequate time to take effect prior to inserting the PVAD

Note: ChloraPrep chlorhexidine in alcohol devices should NOT be used on premature babies or babies <2 months old. (use Alcohol "Sterets" instead - see NICU protocol).

Be aware that Chlorhexidine has the potential to cause an anaphylactic reaction. Ensure that;

- The patient's allergy status is checked and recorded in the patient notes.
- If a patient experiences any unexplained reaction after Chlorhexidine is used, medical attention is sought immediately.
- Allergic reactions to products containing chlorhexidine must be reported to the Medicines and Healthcare Products Regulatory Agency. Such incidents must be reported using the local incident reporting form.

7.6 Procedure for PVAD insertion.

STEP 1 Clean your hands in line with current Hand Hygiene Policy

STEP 2 Prepare equipment for the procedure
Refer to the ANTT cannulation procedure flowchart (Appendix A)

- **Use of the Vein Finder device**
  - The vein finder is a device that uses ultra-violet light to identify the position of veins up to 10mm below the skin for the purposes of cannulation or venepuncture.
  - Competent practitioners can use this device to assist them when cannulating patients whose veins are not easily identified using normal procedures.

STEP 3 For Skin preparation and insertion of PVAD refer to the ANTT cannulation procedure flowchart (Appendix A)

STEP 4 Inserting the PVAD – ANTT (Aseptic Non-Touch Technique) must be used

STEP 5 Clean hands

STEP 6 Documentation

- It is the responsibility of the individual inserting the PVAD to document complete details of the insertion using the designated label provided. Note any complications experienced.

If the PVAD will remain in situ longer than 12 hours, a PVAD care plan must be commenced.

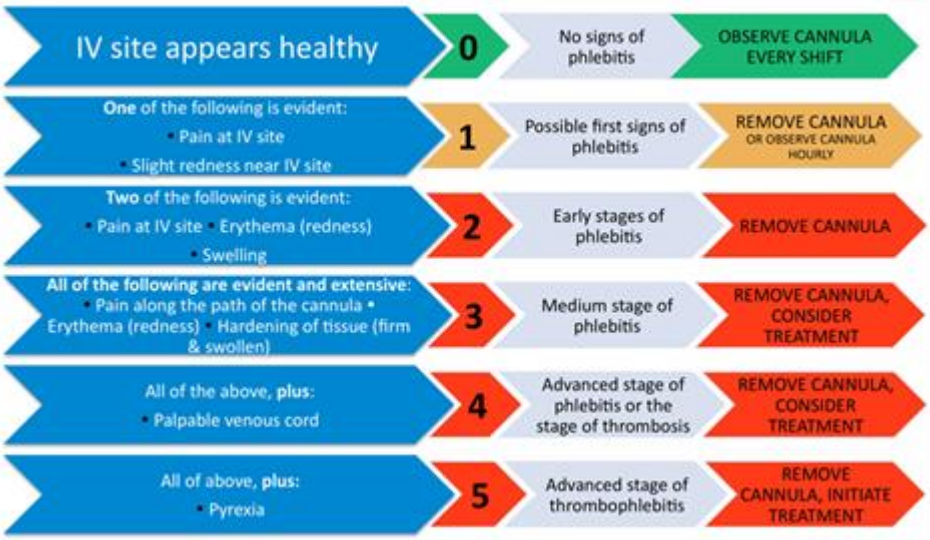
7.7 PVAD Care and management

Visual Infusion Phlebitis (VIP) scores

- The PVAD site must be observed at least twice daily (separate shifts) using the Visual Infusion Phlebitis Score (VIP score). If a peripheral venous cannula is not being used/required for access, it should be removed and removal documented.
- If signs of infection develop, the appropriate action should be taken promptly, as per the Care Plan in the Adult Risk Assessment Booklet.

- Document VIP score findings in the Care Plan.
- If a VIP score of 2 or more is noted appropriate action must be taken to ensure the problem is managed and resolved swiftly. Any actions taken must be documented in the PVAD care plan.

Visual Infusion Phlebitis Score chart



7.8 Length of PVAD use

Keep the PVAD in place for the minimum time necessary (the longer in situ the greater the risk of infection).

- A PVAD should be re-sited when clinically indicated and not routinely unless device-specific recommendations from the manufacturer indicate otherwise.
- A PVAD inserted in an emergency situation or when aseptic technique has not been used must be removed within 24 hours. If reinsertion is necessary, a different site must be used.
- Where duration of intravenous therapy exceeds (or is likely to exceed) 6 days, the use of alternatives such as central venous devices must be considered.

A PVAD that is no longer in use should be removed, unless there is a documented clinical rationale why the cannula should remain in situ.

It is essential that a PVAD is removed prior to the patient being discharged home or to a residential care placement. It is the responsibility of the nurse in charge of the patient to ensure all devices are appropriately removed. The only exception would be for patients who are continuing short course intravenous treatment under the OPHIT service (i.e. OHPIT patients in whom alternative intravenous access has been determined unsuitable; the PVAD site must be monitored on a daily basis in those patients).

7.9 Managing a PVAD

PVAD management and line care must only be undertaken by trained and competent practitioners.

- Use aseptic non-touch technique when accessing, changing or re-dressing the PVAD
- Flush the PVAD before, between and after medicine administrations or at least daily with 0.9% sodium chloride for injection using a 10ml syringe, to maintain patency.
- Change infusion administration sets every 96 hours, unless (i.e. sooner):
    - device specific recommendations from the manufacturer indicate otherwise
    - they become disconnected
    - the PVAD is replaced.
- Administration sets for blood products and blood components should be changed when the transfusion episode is complete or every 12 hours (whichever is sooner).
- Administration sets for lipid containing parenteral nutrition should be changed every 24 hours.
- Discard administration sets for intermittent infusions immediately after they are completed.
- Replace PVAD dressings at least every 7 days or sooner if become damp, loose or soiled, or when the device is removed or replaced.
- Use a sterile gauze dressing if a patient has profuse perspiration or if the insertion site is bleeding or leaking, and change when inspection of the insertion site is necessary or when the dressing becomes damp, loosened or soiled. Replace with a transparent semi-permeable dressing as soon as possible.
- When replacing site dressings, use skin preparation agent as per Section 6.6 Step 2 (ensure you allow to dry):
    - 2% Chlorhexidine gluconate in 70% isopropyl alcohol ChloraPrep
    - povidone iodine in alcohol for patients with sensitivity to chlorhexidine
    - steret for premature babies or babies < 2 months old
- Needle-free connection systems should be used wherever possible for accessing the PVAD. 3-way taps or other rigid devices that attach directly to the PVAD without a length of flexible tubing, should not be used
- Ensure that the top/septum of the needle-free connector is in its closed/ home position. If the top/septum remains recessed, replace the connector.
- Decontaminate ports and needle free connectors with a 2% Chlorhexidine gluconate in 70% isopropyl alcohol wipe (or povidone iodine in alcohol for patients with sensitivity to chlorhexidine) for 30 seconds and allow to dry before and after accessing the system. Access must only take place using sterile devices and aseptic non-touch technique.

8 Consultation

This policy has been circulated to members of Infection Prevention and Control Committee and clinical education lead, medical devices lead and medical education lead for approval prior to ratification.

9 Training

This policy has a mandatory training requirement, in that staff undertaking this element of clinical practice must have undertaken annual Infection Prevention & Control training in line with the Trust mandatory training matrix.

Insertion and management of PVADs must only be undertaken by staff that have been trained and competent in the procedure:

- Skills training will be provided by a competent, designated trainer.
- Competency will be assessed by a practitioner competent in PVAD insertion & management.
- It is the responsibility of individuals to ensure they are trained and maintain their competence in insertion and management of PVADs.
- Record of initial training and of final assessment of competence must be recorded on the Trust's electronic training record system.

10 Monitoring Compliance and Effectiveness

This policy will be monitored by audits undertaken to the agreed Organisational infection control audit programme. This includes the monthly PVAD inpatient self-audit and annual audit undertaken by the IPCT. Where areas of non-compliance are noted, departments must complete action plans to clearly identify how these will be addressed and report progress to the Infection Prevention and Control Committee.

11 Links to other Organisational Documents

To be read in conjunction with:

- Standard Precautions - Aseptic Non-Touch Technique (ANTT) Policy
- ANTT Cannulation procedure flowchart
- Standard Precautions – Hand Hygiene Policy
- Standard Precautions – Personal Protective Equipment in direct patient care Policy
- Policy for safe handling and disposal of sharps and prevention of occupational exposure to blood borne viruses
- Medicines Management Policy
- Consent to Examination or Treatment Policy

12 References

epic 3: National Evidence-Based Guidelines for Preventing Healthcare-Associated Infections in NHS Hospitals in England 2013. Available at:

http://www.his.org.uk/files/3113/8693/4808/epic3_National_Evidence-Based_Guidelines_for_Preventing_HCAI_in_NHSE.pdf

Department of Health (2015) The Health and Social Care Act 2008. Code of practice for health and adult social care on the prevention and control of infections.

Journal of Infusion Nursing Jan/Feb 2016 Vol 39 No15 ISSN 1533-1458
Diabetic foot problems: prevention and management NICE guideline
Published: 26 August 2015
nice.org.uk/guidance/ng19

The Royal Marsden Hospital Manual of Clinical Nursing Procedures (9th Edition)
http://www.rmmonline.co.uk/contents/procedures
(This website is continually updated and may contain more recent information than the policy. Data was accurate as at October 2018)

13 Appendices

- Appendix A ANTT
- Appendix B Financial Impact Assessment
- Appendix C Equality and Diversity Impact Assessment

Also available at:- [ANTT - Aseptic Non Touch Technique]() on the intranet

Appendix B

Financial and Resourcing Impact Assessment on Policy Implementation

NB this form must be completed where the introduction of this policy will have either a positive or negative impact on resources. Therefore this form should not be completed where the resources are already deployed and the introduction of this policy will have no further resourcing impact.

Document title	CANNULATION AND CARE OF PERIPHERAL VENOUS ACCESS DEVICES (PVAD) Policy

Totals	**WTE**	**Recurring £**	**Non Recurring £**
Manpower Costs			
Training Staff			
Equipment & Provision of resources			

Summary of Impact:
Revision of existing policy, no further financial impact on organisation.

Risk Management Issues:

Benefits / Savings to the organisation:

Equality Impact Assessment

- Has this been appropriately carried out? YES
- Are there any reported equality issues? NO

If "YES" please specify:

Use additional sheets if necessary.

Please include all associated costs where an impact on implementing this policy has been considered. A checklist is included for guidance but is not comprehensive so please ensure you have thought through the impact on staffing, training and equipment carefully and that ALL aspects are covered.

Manpower	**WTE**	**Recurring £**	**Non-Recurring £**
Operational running costs			
Totals:			

Staff Training Impact	**Recurring £**	**Non-Recurring £**
Totals:		

Equipment and Provision of Resources	Recurring £ *	Non-Recurring £ *
Accommodation / facilities needed		
Building alterations (extensions/new)		
IT Hardware / software / licences		
Medical equipment		
Stationery / publicity		
Travel costs		
Utilities e.g. telephones		
Process change		
Rolling replacement of equipment		
Equipment maintenance		
Marketing – booklets/posters/handouts, etc		
Totals:		

- Capital implications £5,000 with life expectancy of more than one year.

Funding /costs checked & agreed by finance:	
Signature & date of financial accountant:	
Funding / costs have been agreed and are in place:	
Signature of appropriate Executive or Associate Director:	

Appendix C

Equality Impact Assessment (EIA) Screening Tool

Document Title:	**CANNULATION AND CARE OF PERIPHERAL VENOUS ACCESS DEVICES (PVAD) Policy**
Purpose of document	The purpose of this policy is to ensure insertion and management of peripheral venous access devices (PVADs) meets best practice standards to reduce the risk of infection and complications for the patient.
Target Audience	This Policy applies to staff of all grades who insert and/or manage PVADs, in all healthcare settings within the Trust. There is an adapted local protocol for neonates (held by neonatal unit).
Person or Committee undertaken the Equality Impact Assessment	Karen Robinson, Head of Infection Prevention and Control

1. To be completed and attached to all procedural/policy documents created within individual services.

2. Does the document have, or have the potential to deliver differential outcomes or affect in an adverse way any of the groups listed below?

No Equality or diversity issues – applicable to ALL staff to give best outcomes for ALL patients in our care.

If no confirm underneath in relevant section the data and/or research which provides evidence e.g. JSNA, Workforce Profile, Quality Improvement Framework, Commissioning Intentions, etc.

If yes please detail underneath in relevant section and provide priority rating and determine if full EIA is required.

		Positive Impact	Negative Impact	Reasons
Gender	Men	no	no	
	Women	no	no	

Race	Asian or Asian British People	no	no	
	Black or Black British People	no	no	
	Chinese people	no	no	
	People of Mixed Race	no	no	
	White people (including Irish people)	no	no	
	People with Physical Disabilities, Learning Disabilities or Mental Health Issues	no	no	
Sexual Orientation	Transgender	no	no	
	Lesbian, Gay men and bisexual	no	no	
Age	Children	no	no	
	Older People (60+)	no	no	
	Younger People (17 to 25 yrs)	no	no	
Faith Group		no	no	
Pregnancy & Maternity		no	no	
Equal Opportunities and/or improved relations		no	no	

Notes:
Faith groups cover a wide range of groupings, the most common of which are Buddhist, Christian, Hindus, Jews, Muslims and Sikhs. Consider faith categories individually and collectively when considering positive and negative impacts.

The categories used in the race section refer to those used in the 2001 Census. Consideration should be given to the specific communities within the broad categories such as Bangladeshi people and the needs of other communities that do not appear as separate categories in the Census, for example, Polish.

3. Level of Impact

If you have indicated that there is a negative impact, is that impact:			
		YES	**NO**
Legal (it is not discriminatory under anti-discriminatory law)			

Intended		

If the negative impact is possibly discriminatory and not intended and/or of high impact then please complete a thorough assessment after completing the rest of this form.

3.1 Could you minimise or remove any negative impact that is of low significance? Explain how below:
3.2 Could you improve the strategy, function or policy positive impact? Explain how below:
3.3 If there is no evidence that this strategy, function or policy promotes equality of opportunity or improves relations – could it be adapted so it does? How? If not why not?

Scheduled for Full Impact Assessment	Date:
Name of persons/group completing the full assessment.	
Date Initial Screening completed	