

Title	Totally Implanted Venous Access Devices (TIVAD) or PortaCath Protocol
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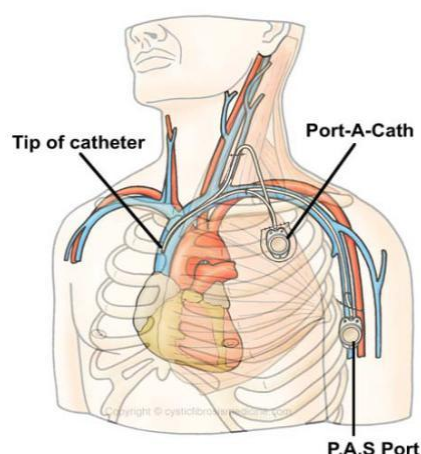
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Totally Implanted Venous Access Devices (TIVAD/Ports) Protocol

1. Introduction

A Totally Implanted Venous Access Device (TIVAD or Port) is a central venous catheter that is completely implanted beneath the patient's skin and advanced until the tip of the catheter lies in the lower third of the superior vena cava or right atrium if arterial. The lines are available as single or dual lumen connectors and are inserted via a Gripper needle when intravenous access is required for more than 6 weeks. The port is available with or without an internal valve system, which will be indicated in the documentation provided to the patient. In order to access the port a Gripper / Huber needle must be inserted through the septum of the port into the port reservoir. TIVAD/port may be required for intermittent intravenous therapy e.g Total Parental Nutrition/Chemotherapy. The needle can be left in place for up to one week in order to minimise repeated puncture of the connector. When not in use, ports require to be accessed and flushed on a 4 weekly basis with Heparinised Saline (100units/ml).



1.2 Purpose

This protocol has been developed with the aim of providing a safe environment for both practitioner and patient, which is evidence-based, for accessing, care and maintenance of Ports. It will aim to ensure all practitioners involved with Ports are aware of their responsibilities, are competent in placing these devices, that they maintain and update their knowledge and skills.

These procedures will enable the user to reduce the risk to patients and staff.

For patients: these risks include local and systemic infection, thrombosis and pain. **For staff:** risks include occupational sharps injury, and blood spillage. The document covers maintenance of Totally Implanted Venous Access Devices/ports in adults only.

1.3 Scope

These procedures apply to **all** staff involved in TIVAD/ports within their role at NHS Borders. IV therapy forms an integral part of professional practice for Registered Nurses/Midwives who will be expected to maintain and develop their competence in accordance with the NMC Code (2015). Totally Implanted Venous Access Devices competency will be demonstrated via the Competency, Assessment, Recording System (CARS) hosted on learnpro.

2. General

- 2.1** When accessing the port only use the dedicated gripper needle with an integrated extension set with clamp.
- 2.2** Following Insertion there may be oedema/tenderness around the port. This may make accessing the port painful and difficult. Ideally the port should be accessed whilst the patient is in theatre if it is to be used immediately after insertion.
- 2.3** Use a volumetric infusion pump with a filtered giving set for blood and blood products to avoid blockage
- 2.4** If the patient requires an MRI scan – inform the scanning personnel about the port
- 2.5** Never use the port for the administration of contrast medium as this may cause the catheter to split
- 2.6** FLASHBACK MUST BE OBTAINED PRIOR TO ACCESS TO ADMINISTER CHEMOTHERAPY, TOTAL PARENTAL NUTRITION and ALL INTRAVENOUS THERAPIES. In the absence of blood return refer to Hickman Line Protocol appendix 3 and 4
- 2.7** If the patient requires defibrillation do not place pads over port site

3. Infection Control

Patients with an Intravenous (IV) device insitu are particularly susceptible to infection therefore strict Aseptic Non-Touch Technique must always be adhered to when accessing central venous catheters (Loveday 2014).

- 3.1** **Access and Maintenance of TIVAD/ports** require strict use of the Aseptic Non Touch Technique (ANTT) and observation of standard precautions and product sterility.
- 3.2** When performing hand hygiene the Health Care professionals must be bare below the elbow with no nail varnish or false nails, plain wedding band only – no stoned rings. Please refer to the hand hygiene guides:

- 3.3** It is important to decontaminate hands with soap and water before and after each patient contact and before applying / removing gloves (Saving Lives 2011).
- 3.4** Cleansing of skin, and relevant equipment such as ports, ampoules and blood bottles must be undertaken using the appropriate Chlorhexidine 2% with 70% alcohol wipe. Clean for a minimum of 30 seconds and allow to air dry for at least a minute. In the event of patient allergy to chlorhexidine 2 %, use povidone iodine (10% in aqueous solution) as an alternative cleanser if compatible with equipment (see manufacturer's guidelines).

4. Medicines Management

- 4.1** Refer to the Code of Practice for the Control of Medicines regarding correct prescribing and administration of medicines and the NHS Borders Transfusion Policy which can be accessed at: [Code of Practice for the Control of Medicines \(January 2019\)](#) for the correct authorisation of blood products.
- 4.2** Where ready prepared Potassium solutions are not available and if there is a sound clinical reason for KCl 15% to be used for addition to an IV fluid, Please refer to: Potassium Chloride advice (KCl) concentrate solutions available on the intranet. For further information contact: Pharmacy Department, NHS Borders. Further information can be accessed from Medusa-National computer based system.

5. Flushes

- 5.1** Strict Aseptic Non Touch Technique (ANTT) must be followed when accessing and flushing Implantable Ports

Recommendations for the administration of IV flushes are:

- 5.1.1 Syringes used for flushing must be luer lock with a minimum size of 10mL.
- 5.1.2 Push pause and positive pressure techniques must be used for all flushes
- 5.1.3 The line must be flushed before administration, after administration and in between every consecutive medicine administration to prevent potentially incompatible medicines from mixing in the IV line.
- 5.1.4 All flushes must be compatible with medicine and checked against manufacturers guidelines prior to administration.
- 5.1.5 Flush Port at least every 4 weeks with 10 ml 0.9% NaCl and lock with 4 mls of Heparinised saline 100/ml, when not in use.
- 5.1.6 10mLs 0.9% sodium chloride for injection (or recommended compatible alternative) should be used to flush the port. All staff should be conversant with

the NHS Borders NaCL flushing policy where a prescription for the flush may not be required

6. Infusion Devices

- 6.1** The Registered Nurse/Midwife must have received training in relation to the device being used. Competency has to be maintained and recorded. Please refer to the [Medical Infusion Device Protocol](#)

7. Administration of Cytotoxic Agents

- 7.1** Administration of Cytotoxic agents should follow relevant organisational policies and Procedures. (Safe Delivery of Systemic Anti-Cancer Therapy)
Clinical guidelines are available on the intranet [Safe Delivery of Systemic Anti-Cancer Therapy](#)

8. Administration of blood transfusions

- 8.1** BD blood giving set for Alaris GP Infusion pump should be used.

Administration sets for blood transfusions should be removed immediately when the transfusion is complete or changed at least every 12 hours in accordance with the NHS Borders [Transfusion Policy](#).

All staff are required to be competent in the blood administration procedure as detailed in the NHS Borders Transfusion policy

Competency assessment checklist for the Administration of Blood Components is available on the e- Portfolio Competency Assessment Recording System (CARS). The NHS Borders Transfusion Policy is also available on the intranet.

9. Documentation

- 9.1** Report any adverse reactions to the Prescriber, and complete a DATIX incident form and document in notes.
- 9.2** All documents and record keeping to be maintained as per Record Keeping Policies.

10. Patient monitoring

- 10.1** All observations to be decided upon according to individual patient assessment and therapy required and recorded in the patients care plan and notes.

11. Risks Associated with Totally Implanted Venous access Devices

- 11.1 Systemic Infection: - refer to NHS Borders Hickman Line Protocol
- If there are signs of systemic infection i.e pyrexia/hypothermia, chills/rigors, **DO NOT USE THE LINE** – Refer to Medical Team
 - Raised or low WCC, raised CRP. **Obtain both peripheral and central blood cultures**

11.2 Thromboembolism

11.3 Catheter fracture

11.4 Catheter Occlusion – refer to Hickman Protocol Appendix 4 - **Procedure for Administration of Actilyse Cathflo**

12 Exit site care

12.1 Sutures:

Venepuncture site and port site remove at 7 days

12.2 Frequency of Needle Changes:

If the port is in constant use for more than a week, gripper needle to be changed weekly using a different puncture site.

12.3 Dressings:

Non Accessed ports: No dressing or exit care required(except immediately post insertion where the port should be covered with a semi-permeable occlusive dressing(Tagaderm) until sutures removed.

Accessed ports: Cover gripper needle with an occlusive dressing, inspect site daily whilst in hospital. Encourage patient to report pain or discomfort.

12.4 Showering/Bathing/Swimming

Non Accessed ports: Patients may bathe, swim or shower once sutures are removed

Accessed ports: Showering is recommended whilst gripper needle insitu

Avoid swimming or bathing

13. Patient Education

13.1 Ensure patient is aware of the importance of reporting complications and has a contact number for that purpose.

14. Occlusion/Thrombosis

Refer to Protocol for Insertion,care and removal of Hickman Type, Skin Tunnelled Central Venous Catheters

15. Training Pathway for Ports

Book on the Hickman/PICC/TIVAD(PORT) programme through CBS and complete the foundation programme hosted on CARS. Update programme completed every 2 years in clinical practice.

Update Training Pathway for IV Practitioners

Element to be monitored	Lead	Frequency	Reporting arrangements
Competency in vascular access – CVC/Peripheral	Line manager	Every two years	Annual Appraisal
Competency in TIVAD/port Access	Line manager	Every two years	Annual Appraisal
Competency in Blood Administration (Blood 360)	Line manager	Every two years	Annual Appraisal

16. Transferability of Clinical Skills

This procedure is in place to support staff and promote transferability of their IV clinical skills (see Appendixes 13 & 14 Standard operating Procedure for Intravenous Therapy and Peripheral Cannulation version: July 2020) and appendix 2 in this document.

17. Associated NHS Borders Documents

This protocol needs to be read in conjunction with the current organisational policies:

- Infection Control Policies
- NHS Borders Code of Practice for the Control of Medicines
- NHS Borders Patient Identification Policy
- NHS Borders Policy for Consent to Examination or Treatment
- NHS Borders Sharps Policy, (Infection Control Manual 2011, section 9.1)
- NHS Borders Hickman Type Central Venous Catheters
- NHS Borders Standard operating Procedure for Intravenous Therapy and Peripheral Cannulation version: July 2018
- Safe Delivery of Systemic Anti-Cancer Therapy
- NHS Borders [Transfusion Policy](#)
- NHS Borders [Medical Infusion Device Protocol](#)
- Zero Tolerance Hand Hygiene Policy
- NHS Borders [Intravenous Flush Policy](http://intranet/resource.asp?uid=37081)

18. Supporting References:

- Adults with Incapacity (Scotland) Act 2000. Available at: <https://www.gov.scot/publications> (Accessed on 11 September 2019).
- Implanted Ports www.macmillan.org.uk
- Professional Guidance on the Safe and Secure Handling of Medicines recommended by NMC January 2019. <http://www.rpharms.com/recognition/setting-professional-standards/safe-and-secure-handling-of-medicines/professional-guidance-on-the-safe-and-secure-handling-of-medicines>
- CVAD –NICE 2017. Royal Marsden NHS Foundation Trust Policy (1748) www.nice.org.uk
- Scottish Government (2007) Better Health, Better Care: Action Plan
- National Infection Prevention and Control Manual: <http://www.nipcm.hps.scot.nhs.uk>
- ANNT –Approach ANTT.org
- The Royal Marsden Manual of Clinical Nursing Procedures Ninth Edition (On Line)
- NHS Improvement (2017) epic 3:national evidence based guidelines for preventing healthcare-associated infections
- National Patient Safety Agency (2007b) *Alert 20 Promoting the safer use of injectable medicines*, London: NPSA. Agency Ref: NPSA/2007/20.
- NMC (2009) Record Keeping, London, NMC.
- Royal College of Nursing (RCN) (2016) Standards for Infusion Therapy, London. <https://www.rcn.org.uk/professional-development/publications/pub-005704>
- Lothian Totally Implanted Vascular Access Device competency documents.

Appendix 1

Adapted for NHS Borders with kind permission of NHS Lothian

	Access and Flushing of Totally Implanted Venous Access Devices TIVAD- Ports
Process 1	Positively identify patient by asking full name and date of birth.
Process 2	Explain and discuss the procedure with the patient and obtain verbal consent
Process 3	Before starting the procedure, all relevant information leaflets Should be read and any specific safety or handling or reconstitution instructions noted. Check the date, time, route and method of administration. Ensure prescription is valid legible and signature of prescriber is present.
Process 4	Ensure patient comfort and privacy
Process 5	Check that all jewellery is removed except for a plain wedding band.
Process 6	Hand hygiene must be performed as per 5 key moments for this procedure
Process 7	Clean inside and outside of the tray using Hard surface disinfectant wipes. If the tray is visibly dirty, clean with detergent wipes before using disinfectant wipes and allow to dry. Gather required equipment.
Process 8	Using the Six Step hand washing technique in the National Infection Prevention and Control Manual, wash hands and pat dry thoroughly with paper towels.
Process 9	Put on apron and appropriate face covering.
Process 10	Put on good fitting non-sterile gloves.
Process 11	Outer wrappers, ampoules and fluid bottles which cannot be prepared in an ANTT method should be cleaned with hard surface disinfection 70% alcohol wipes.
Process 12	Prepare tray by Individually opening syringes, needles and connectors ensuring that "key parts" are not contaminated whilst connecting. Place in tray. (A Sterile dressing pack may be used)
Process 13	Open syringe without contaminating key parts. Wipe 0.9% Normal Saline vial with hard surface disinfection wipes. Clean neck of vial with chlorhexidine 2% and alcohol 70% wipe and draw up into syringe. Attach smartsite to gripper needle and flush through with 0.9%NaCl without contaminating key parts and place in tray.
Process 14	Opens syringe without contaminating key parts. Cleans neck of Heparinised saline vial with chlorhexidine 2% and alcohol 70% wipe and draws up into syringe using a blunt filter safety needle ensuring the key parts are covered.
Process 15	Locate the port and identify the septum.

Process 16	Remove gloves and apron and using the Six Step hand washing technique in the National Infection Prevention and Control Manual, wash hands and pat dry thoroughly with paper towels.
Process 17	Re-apply apron, open dressing pack, prepare sterile field and apply good fitting sterile gloves.
Process 18	Cleanse the skin with Choraprep applicator using cross hatch method and allow the skin to dry for at least 1 minute.
Process 19	Locate the port and hold firmly taking care not to contaminate the centre of the port.
Process 20	Inform the patient you are going to insert the gripper needle.
Process 21	Insert the needle at a 90 degree angle to skin until the back of the port is felt.
Process 22	To verify needle position: Attach an empty syringe to smart site unclamp and withdraw 10mls of blood, re-clamp before disconnecting the syringe.
Process 23	For blood sampling, attach a multi adapter and unclamp the line. Attach the first blood tube and aspirate the required amount. Clamp the line and repeat the process for further blood samples. Clamp line prior to removal of multi adapter. NB: Clean smartsite with chlorhexidine 2% and 70% alcohol wipes before and after <u>every access</u>
Process 24	Attach syringe with 10 mls 0.9%NaCl unclamp the line and flushing with a rapid pulsation action (push/pause). Apply positive pressure prior to removal of syringe.
Process 25	If the line is to be left in situ or to be used immediately for infusional purposes apply a Tagaderm/IV3000 dressing to the gripper needle site before attaching a primed giving set. Apply positive pressure whilst injecting the last ml (clamp whilst injecting last ml).
Process 26	If the TIVAD/port was accessed for flushing only then: Attach the syringe containing heparinised saline 4mls (100u/ml), Unclamp the gripper and flush using a rapid pulsating action. Apply positive pressure whilst injecting the last ml (clamp whilst injecting the last ml)
Process 27	To remove gripper needle: hold port securely whilst removing the gripper needle slowly and place in sharps bin.
Process 28	Apply pressure over the port site with a sterile swab until bleeding has stopped (approx 5 minutes). No dressing is required.
Process 29	Remove gloves and decontaminate hands.
Process 30	Discard waste as per NHS Borders policy and remove PPE. Wash and dry tray. Document procedure in patients notes.

Appendix 2

Transferability of Skills Form – Assessment of Training Requirements

Date Of Preparation	July 2020	Date of next review	June 2023	IV Group
Practitioner Name: (Print Name)			Please Circle: RN / Midwife	
Clinical Area / Hospital site:				
Date / provider of Previous training details:				
Content of previous training: • Theory • Practical Sessions • Competencies				
Evidence of supporting Information Provide (e.g.certificate, Competency sign offs)				
Competency Based on evidence and Discussion of further learning needs, agreed action plan will be:	<p>1. Tick agreed action from the list below:</p> <p>a) Accept supporting evidence, direct individual to NHS Borders policies and e-Learning and supervise practice to assess competence in each IV therapy skill once only. <input type="checkbox"/></p> <p>b) Accept majority of supporting evidence, however requires: <input type="checkbox"/></p> <p>- to review NHS Borders educational pack, policies/procedures <input type="checkbox"/></p> <p>- to attend practical session, <input type="checkbox"/></p> <p>- further supervised practice, <input type="checkbox"/></p> <p>c) Complete full NHS Borders approved clinical skills programme. <input type="checkbox"/></p> <p>2. Agreed timescale for completion: <input type="checkbox"/></p>			
Further Comments:				

On completion of agreed actions, please complete and retain original copy in staff file.

Senior Nurse/Midwife/Manager (Print name) _____ Signature _____

Practitioner Signature _____ Date _____

In addition nursing staff Acute Services Division only photocopy this form and send to: Your CARS reviewer or Christine Irving, Clinical and Professional Development, Education centre, BGH.TD6 9BS