Acacium Group

Administration via Central Line (Hickman, PIC, Porta Cath)

Procedure Reference | SOP MEDS 08

Version | V5.0

Procedure Name	Administration via Central Line (Hickman, PIC, Porta Cath)
Purpose of Document	To ensure that the correct preparation, procedures & outcomes are achieved by implementing a consistent and systematic approach to administration of medication via a central line
Target Audience	All Nurses
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Next Review Date	April 2026
Equality Impact Assessment (EIA) Form	Acacium Group is committed to Equality, Diversity and Inclusion and in line with our values, we strive to ensure that everyone that is part of the Acacium community is not disadvantaged or discriminated against given their individual need or characteristics. To support this, an Equality Impact Assessment has been undertaken on this policy/procedure. This information is held centrally and can be requested from the Clinical Governance Team.
About Acacium Group	Details of all Acacium Group trading companies that this policy applies to are detailed within Appendix A

Document History			
Version	**Date**	**Changes made/comments**	**By whom**
V1	Dec 2016	Implementation of document history page	KNF/VM
V1	Apr 2018	Updated front sheet to include new review frequency date	KMS/VM
V2	Sept 2019	3 Yearly review and new template implementation	Clinical Advisory Group
V2.1	Apr 2020	Updated to new community Template	CC
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V4	Apr 2023	Reviewed and updated	Clinical Advisory Group
V5	Jan 2024	Rebrand	Clinical Advisory Group

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1. Introduction

Only Registered practitioners who are trained and assessed as competent may administer via A central venous access device (CVAD).

Regardless of the type of vascular device the principles of care remain the same:

- To prevent infection
- To maintain a 'closed' IV system with as few connections as possible
- To maintain a patent device
- To prevent damage to the device.

A central venous access device (CVAD) is one where the catheter is threaded into the central vasculature. A Central Venus Canula (CVC) tip will always be in the superior vena cava or right atrium.

CVAD is used:

- To monitor central venous pressure in ill clients
- For the administration of large amounts of IV fluid
- To provide long term access for:
    - Hydration
    - Repeated administration of drugs
    - Repeated transfusion of blood or blood products
    - Repeated specimen collection
    - Parenteral nutrition

The complications of a CVAD include dislodgement or twiddler's syndrome, catheter migration or occlusion, pinch-off syndrome, catheter related thrombosis, damaged catheter, site infection or erosion or arrhythmias.

This SOP does not cover the insertion or replacement of the CVAD as this would be done by a medical practitioner and is usually performed in a hospital or clinic setting.

Often clients will care for the CVAD themselves; it is essential that the health care professional, the client and carers understand the following:

- How to maintain patency
- How to inspect for signs of infection or other complications
- How to get help if needed.

2. Aim

To ensure the safe and effective delivery of medications via the central intravenous route.

3. General

Injections can be described as the act of giving medication by the use of a syringe and needle; an infusion is defined as an amount of fluid in excess of 100ml designated for parenteral infusion because the volume must be administered over a long period of time. (Note on occasions smaller volumes (50–100ml) may be administered or over a shorter period of time (30–60 mins). Refer to administration sheet and/or summary of product characteristic sheet for further advice.)

This standard operating procedure covers intra-venous routes of administration.

This standard operating procedure does not cover intra-cardiac, intra- articular or intrathecal routes of administration. All CVADs should be not be accessed with a syringe smaller than 10mls this is due to the risk of increased pressure inside the line from a small syringe.

This SOP looks at the following CVADs Hickman/central line, peripherally inserted central catheter (PICC) and portacath theses lines are defined as:

- **Hickman/central line:** A Hickman/central line is a long, thin, hollow tube that can be used to give IV medication. Central lines are also called skin-tunnelled central venous catheters. This can be single or double lumen.. The central line is normally sited under local anaesthetic and into a large vein in the neck. One end of the line goes into a large vein and advanced to just above the heart. The other end can be tunnelled down from the neck to a point in the chest, where it exits the body. A central line can be left in for a period of months to years.
- **PICC Line:** A PICC line is a long, thin, hollow, flexible tube that is sited into one of the large veins of the arm, above the bend of the elbow, this is normally done under local anaesthetic. Then the PICC is thread it along the vein until the tip is in a large vein just above the heart. Sometimes the PICC line is made up of 2 or 3 fine tubes. These are joined as 1 tube inside the body and divide into 2 or 3 lines outside the body. This allows for have different treatments at the same time. A PICC line is designed to be left in for a period of weeks to months
- **Portacath:** A portacath is a made of two connected parts. The first part is a thin tube called a catheter is attached to a small reservoir called a port. It can be used to give IV medication into a large vein, or to take blood samples. The catheter is a thin, soft, flexible tube. It is usually put in under the skin of the chest or sometimes in the arm, this procedure is normally done under local anaesthetic. One end of the tube goes into a large vein just above the heart. The other end connects to the port. The port is a small metal disc with a soft gel like pad that goes under the skin on the upper chest or arm. A portacath is accessed using a gripper needle that is inserted into the skin and then into the gel part of the port. A portacath can be left in for a period of months to years.

4. Insertion of Needle Gripper for portacath

Only those that have been specifically trained for accessing potracath

Equipment for Insertion and Removal of Needle Gripper

- Needle Gripper
- Anaesthetic cream/ Cryogenic spray if appropriate
- Sterile gloves
- Appropriate PPE as per current guidelines
- Sterile dressing pack
- 10ml leur lock syringes x3
- 0.9% Sodium chloride (SALINE) 10mls vial OR 0.9% SALINE prefilled 10ml syringe.
- Blunt end needle x2
- Heparin sodium (100units/ml) 8mls
- 70% alcohol, 2% chlorhexidine wipes
- Chlorhexidine 3ml Applicator stick
- Bionector
- Occlusive dressing e.g. tegaderm
- Sterile gauze
- Small plaster

Procedure for Insertion of Needle Gripper (Portacath)

Action	Rationale

1.	Explain /discuss the procedure with the service user	To ensure understanding and gain valid consent
2.	If required apply topical anaesthetic cream/ cryogenic spray. Follow manufacturers guidelines on application of topical cream or spray. Please note that topical cream can take a set period to be effective.	To reduce pain sensation on insertion of needle
3.	Assist the service user into a comfortable position ensuring the port can be easily accessed	To aid insertion
4.	Locate the port and identify the septum assess the depth of the port and the thickness of the skin	To allow correct length of needle to be selected – this information should be documented in the service users care plan
5.	P Decontaminate hands using soap and water and dry using a clean paper towel or sterile towel. Put on appropriate PPE.	To minimise the risk of contamination and to promote infection control.
6.	Open dressing pack and place all the equipment including sterile gloves onto the sterile field utilising a aseptic non-touch technique (ANTT)	To adhere to infection prevention and control protocol and minimise the risk of infection
7.	Open 0.9% SALINE vial, place outside of sterile field. OR open prefilled syringe of 0.9% SALINE onto sterile field.	In preparation for using 0.9% SALINE.
8.	Put on sterile gloves	To minimise the risk of contamination
9.	Draw up 0.9% SALINE into a syringe using blunt end needle and ANTT OR use prefilled 0.9 SALINE syringe to flush the port needle with 0.9% Saline	To check the patency of the needle and remove air
10.	Cleanse the skin over the port with chlorhexidine wipes wipe OR Chlorhexidine 3ml Applicator stick utilising an outward spiral motion cleansing as far out as the dressing will be placed repeat twice more. Allow the area to dry completely.	To minimise the risk of contamination and destroy skin flora. To ensure disinfection.
11.	Holding the gripper needle in the dominant hand locate the port by palpation and stabilise between the forefinger and index finger of the non-dominant hand	To ensure the port is stabilised and will not move on insertion of the needle.
12.	Inform the service user that you are about to insert the needle.	To prepare the service user for a pushing sensation
13.	Using a perpendicular angle, push the needle through the skin until the needle hits the back plate of the portacath.	To ensure the needle is well inserted in the portal space
14.	Aspirate the portacath to obtain positive blood return to verify vascular access patency. If no blood return: flush with 2 mL of normal Saline; then pull back on syringe again. If still no blood return: have the patient to lift arms above head, if still no blood return: attempt access again using all new sterile equipment and consider using longer needle. If second attempt is unsuccessful, stop procedure call relevant healthcare provider for r x-ray to determine catheter placement. Alert Clinical lead.	To check patency and correct positioning and ensure patient safety is maintained
15.	Flush with 0.9% sodium chloride and observe site and the service user for any swelling or signs	To check patency and correct positioning and ensure patient safety is maintained

	of pain. Stop flushing if any of the following occur: • Resistance • Pain • Unable to flush • Swelling Leakage of fluid	
16.	Clean any blood from around insertion site using sterile gauze and secure gripper needle with Occlusive dressing	Cleaning any blood will reduce the risk of infection and securing the needle ensure the needle is well supported and will not become dislodged and allow for monitoring of the site during future administration of medication
17.	Administer the drug prescribed following manufacturers guidelines and prescription	To ensure appropriate treatment is commenced and to maintain service user safety
18.	Flush gripper needle with 10mls 0.9% sodium chloride	To ensure the service user received the entire prescribed dose
19.	If the needle is to remain insitu attach a Bionector and flush with 8mls of heparin sodium 100 units/ml (as prescribed) using a pulsatile flush and clamp the line under positive pressure.	To maintain patency
20.	Ensure all equipment and PPE is disposed of in the correct manner	Top ensure safety of staff and patients and uphold trust policy on infection prevention and control and waste management
21.	Wash hands following hand hygiene guidelines	To minimise the risk of contamination and to promote infection control.
22.	Complete the documentation required	To ensure contemporaneous records are kept

5. Removal of Needle Gripper for portacath

Equipment for Removal of Needle Gripper

- Appropriate PPE as per current guidelines
- 10ml leur lock syringes x2
- 0.9% Sodium chloride (SALINE) 10mls OR 0.9% SALINE prefilled 10ml syringe.
- Blunt end needle x2
- Heparin sodium (100units/ml) 8mls
- Gauze
- Sticking plaster

	Action	Rationale
1	Explain /discuss the procedure with the service user	To ensure understanding and gain valid consent
2.	Assist the service user into a comfortable position ensuring the port can be easily accessed	To aid removal
3.	Decontaminate hands using soap and water and dry using a clean paper towel or sterile towel. Put on appropriate PPE.	To minimise the risk of contamination and to promote infection control.
4.	Loosen the edge of the old dressing carefully	To enable the dressing to be lifted off easily
5.	Put on clean gloves	To protect from the client's blood
6.	Using gloved hands, remove the old dressing and discard it.	To reduces risk of infection and cross contamination.

7.	Draw up 0.9% SALINE into a syringe using blunt end needle and ANTT OR use prefilled 0.9 SALINE syringe to flush the portacath with 0.9% Saline	To ensure line patency and to reduce the risk of the line being blocked
8.	Draw up Heparin sodium and then Flush portacath with heparin (100 U/mL), The amount of heparin depends on type of line follow manufactures instructions. Clamp the extension tubing while maintaining positive pressure on the barrel of the syringe. Remove the syringe	To hep lock the line to reduce the risk of blood clots forming that could affect line patency
9.	Secure the port on either side with the fingers of your nondominant hand. Grasp the needle/wings with the fingers of your dominant hand. Firmly and smoothly, pull the needle straight up at a 90-degree angle from the skin to remove it from the port. Depose of needle in sharps bin	To prevent trauma to the clients skin and reduce the risk of a needle stick injury.
10.	Apply gentle pressure with the gauze to the insertion site. A sticking plaster may be applied over the port site if any oozing occurs.	To reduce bleeding and minimize the risk of infect on needle site
11.	Ensure all equipment and PPE is disposed of in the correct manner.	To ensure safety of staff and patients and uphold trust policy on infection prevention and control and waste management
12.	Wash hands following hand hygiene guidelines	To minimise the risk of contamination and to promote infection control.
13.	Complete the documentation required	To ensure contemporaneous records are kept

6. Procedure for accessing PICC or Hickman line for IV fluids or drug administration.

Equipment for accessing PICC or Hickman line for IV fluids or drug administration.

- Appropriate PPE as per current guidelines
- Clean IV tray
- 10ml leur lock syringes x3
- 0.9% Sodium chloride (SALINE) 10mls vial OR 0.9% SALINE prefilled 10ml syringe.
- Blunt end needle x2
- Heparin sodium (100units/ml) 8mls
- 70% alcohol, 2% chlorhexidine wipes (clinnell)

Procedure for accessing PICC or Hickman line for IV fluids or drug administration.

Please see client care plan to check if line should be locked with heparin.

	Action	Rationale
1	Explain /discuss the procedure with the service user	To ensure understanding and gain valid consent
2.	Decontaminate hands using soap and water and dry using a clean paper towel or sterile towel. Put on appropriate PPE.	To minimise the risk of contamination and to promote infection control.

3.	Draw up 0.9% SALINE from vial in to 10 ml syringe. OR open prefilled syringe of 0.9% SALINE. Prepare drug or infusion onto cleaned tray. Draw up medication using ANTT and prepare medication following manufactures guidelines.	In preparation for using 0.9% SALINE and IV medication. Use clean tray and ANTT is to reduce the risk of cross contamination.
4.	Hold on to the PICC/Hickman line clean the end of needle free connector thoroughly with the sterile Clinnell wipe and allow to dry, visually check that the end of the end connector is dry	To reduce the risk of cross contamination.
5.	Place the empty syringe into the needle free connector at the end of the PICC/Hickman line and to withdraw 1-3mls blood into the syringe discard the syringe. If the blood does not come out, flush with a small amount of Saline and try again. For PICC line, there is no need to withdraw blood from the catheter. However, if any drug or a solution other than saline is to be used, a blood return has to be verified prior to use in order to verify location within a vein.	To ensure line patency as per NICE Guidelines.
6.	Attach a syringe containing the 10mls of 0.9% Sodium Chloride onto the end connector and flush with 5-10mls of Saline.	To ensure line patency
7.	Attach infusion or administer IV medication	To ensure appropriate treatment is commenced and to maintain service user safety
8.	At end of infusion or after administration, flush PICC/Hickman line with 10mls 0.9% sodium chloride. Flush using a turbulent, (pulsating push pause) action, finishing with a positive pressure.	To ensure the service user received the entire prescribed dose
9.	IF LINE IS NOT LOCKED WITH HEPARIN. Clamp the line under positive pressure. Then go to step 11.	To reduce the risk of the line becoming blocked
10.	IF USING HEAPRIN LINE LOCK. Draw up (using blunt end needle and 10 ml syringe) Heparin sodium and then Flush portacath with heparin (100 U/mL), The amount of heparin depends on type of line follow manufactures instructions. Clamp the extension tubing while maintaining positive pressure on the barrel of the syringe. Then go to step 11.	To hep lock the line to reduce the risk of blood clots forming that could affect line patency
11.	Ensure all equipment and PPE is disposed of in the correct manner.	Top ensure safety of staff and patients and uphold trust policy on infection prevention and control and waste management
12.	Wash hands following hand hygiene guidelines	To minimise the risk of contamination and to promote infection control.
13.	Complete the documentation required	To ensure contemporaneous records are kept

Problem solving and troubleshooting for accessing CVADs

Problem	Potential solution
Line not flushing or drawing back	Reposition the client get them to raise their arms above their head. Attempt a pulse flush with 0.9% Saline. Do not force the line, however. If line continues not to flush escalate to appropriate health care provider for further support and alert clinical lead.
Line site showing signs of infection (Redness, pain exudate at the line entry site Swelling around the site, Pain, and or pyrexia)	Escalate to appropriate health care provider for further support and treatment. Alert clinical lead.
Line leaking	Recheck and tighten connections. Check that line is not split, if it is split escalate to appropriate health care provider for further support and treatment. Alert clinical lead.

7. Catheter Site Dressing Change

Equipment for Catheter Site Dressing Change

- Gloves
- Appropriate PPE as per current guidelines
- Alcohol based hand rub
- 70% alcohol, 2% chlorhexidine wipes
- Chlorhexidine 3ml Applicator stick
- Semi-permeable transparent dressing or other appropriate dressing (if the client requests one)

Procedure for Catheter Site Dressing Change.

Dressing change routine should be done in line with care plan, if dressing is visibly soiled or is no longer intact.

	Action	Rationale
1	Explain and discuss the procedure with the client	To ensure understanding and obtain consent
2.	Wash hands using a bactericidal soap and water Put on appropriate PPE.	To reduce the risk of cross infection
3.	Loosen the edge of the old dressing (if applicable) carefully	So the dressing can be lifted off easily
4.	Put on clean gloves	To protect from the client's blood
5.	Using gloved hands, remove the old dressing and discard it.	To reduces risk of infection and cross contamination.
6.	If the site is showing signs of infection contact the GP to have a swab taken. Swab to be take before site is cleaned. Alert Clinical lead of situation	For identification of pathogens to enable appropriate treatment pathway is followed.
7.	Cleanse the skin over the port with chlorhexidine wipes Chlorhexidine wipe OR Chlorhexidine 3ml Applicator stick utilising an outward spiral motion cleansing as far out as the dressing will be placed repeat twice more. Allow the area to dry completely.	To minimise the risk of contamination and destroy skin flora. To ensure disinfection.
8.	Apply the new dressing, moulding it into place so that there are no creases or folds	To minimise skin irritation and reduce the risk of the dressing becoming loose

9.	Remove PPE and Dispose of waste	To prevent environmental contamination
10.	Wash hands using a bactericidal soap and water.	To reduce the risk of cross infection
11.	Document date and time of dressing and any relevant changes	To ensure adequate records and to enable continued care of device and client

8. Maintaining Patency

This is a simple procedure which may be performed after each use or once weekly when no therapy is necessary.

Equipment for Maintaining Patency

- Alcohol swabs
- 10ml leur lock syringes x2
- 0.9% Sodium chloride (SALINE) 10mls OR 0.9% SALINE prefilled 10ml syringe.
- Blunt end needle x2
- gloves
- Appropriate PPE as per current guidelines

Procedure for Maintaining Patency

	Action	Rationale
1	Explain and discuss the procedure with the client	To ensure the client understands the procedure and gives their consent
2.	Wash hands using a bactericidal soap and water dry hands apply appropriate PPE.	To reduce the risk of cross infection
3.	Clean the needleless injection cap using the swab and apply with friction, rubbing the cap in a clockwise and anti-clockwise manner for at least 30 seconds, allow to dry.	To minimise the risk of contamination at the connections
4.	Fill syringe with 10ml 0,9% Saline using a blunt ended needle OR open a prefilled 0.9% Saline syringe. Place syringe on clean tray ensuring key parts are kept clean,	In preparation for use. Key part are to be kept clean to reduce to risk of cross contamination
5.	Attach the syringe with the 0.9% Saline in it to the needleless injection cap	To establish connection
6.	Using a push-pause method, inject the contents of the syringe (inject 1ml at a time) if the catheter is blocked, i.e. the flush will not go medical advice should be sought	To create turbulence in order to flush the catheter thoroughly
7.	Maintain pressure on the plunger as the syringe is disconnected from the cap then clamp the catheter if necessary	To maintain positive pressure and prevent back flow of blood into the catheter, and possible clot formation
8.	Remove PPE anddispose of equipment safely	To prevent contamination of others
9.	Wash hands using a bactericidal soap and water dry hands.	To reduce the risk of cross infection
10.	Document date and time of dressing and any relevant changes	To ensure adequate records and to enable continued care of device and client

9. Associated Policies / SOPs

Policies
CLIN 03 Medicines Management Policy
CLIN 06 Consent Policy

SOPs
SOP Meds 01 Controlled Drugs
SOP Meds 08 Administration via Central Line (Hickman, PIC and Portacath)
SOP Meds 09 Removal of Medicines from Client's Home
SOP Meds 11 Topical & Transdermal Application of Medicines
SOP Meds 18 Administration of Epi-pen, Anapen and Emerade
SOP Meds 19 Self Administration of Medicines
SOP Meds 20 Oxygen Therapy: Adult and Child

10. References

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Appendix A: About Acacium Group

Acacium Group consists of a number of trading companies, each providing services within core niche areas of the health and social care industries. Therefore, as this document is a Group Policy, the Policy herein applies to all trading companies detailed below:

pulse Part of Acacium Group	Thornbury Nursing Services Part of Acacium Group
Thornbury Community Services Part of Acacium Group	Scottish Nursing Guild Part of Acacium Group