

## Management of Peripheral Intravenous (IV) Devices

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Author (name):	Angela Kelly
Author (designation):	IPC Matron
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### Version control

Version	Type of Change	Date	Revisions from previous issues
1	New document		

### Equality Impact

Bolton NHS Foundation Trust strives to ensure equality of opportunity for all service users, local people and the workforce. As an employer and a provider of healthcare Bolton NHS FT aims to ensure that none are placed at a disadvantage as a result of its policies and procedures. This document has therefore been equality impact assessed to ensure fairness and consistency for all those covered by it regardless of their individuality. The results are shown in the Equality Impact Assessment (EIA).

Version	1	Document	Management of Peripheral IV Access Devices Policy	Page 1 of 10
Date	10/2017	Next Review Date	07/2020	

<b>Contents</b>		
1.	Purpose	3
2.	Definition	3
3.	Content	3
4.	Insertion	3
5.	Skin prep	3
6.	Documentation	4
7.	Procedure	4
8.	Management	4
9.	Visual Infusion Phlebitis (VIP) Score	5
10.	CT Scan	5
11.	Removal	5
12.	Monitoring Compliance	5
13.	Appendix 1: References	6
14.	Appendix 2: VIP Score	7
15.	High Impact Intervention; Peripheral intravenous cannula care bundle	8
16.	Equality Impact Assessment	9
17.	Document Development Checklist	10

## Purpose

1. This policy defines the measures by which the Trust shall comply with its duty of care to its patients, staff and others to assess and minimise the risks to their health and safety in regards to the safe management of peripheral IV devices.
2. This policy applies to all staff working within Bolton Foundation Trust (including bank or agency staff, locums, contractors, other members of staff visiting the Trust) and Workplace Health and Wellbeing.
3. This policy aims to ensure that Trust staff follow infection control procedures for all patients requiring peripheral IV devices. All healthcare workers are aware of the actions and precautions required to minimise the risk of harm to patients with peripheral IV devices in situ.
4. This policy should be read in conjunction with the ANTT policy.
5. Managers must ensure that staff are competent to practice ANTT before being deemed competent to practice independently.

## DEFINITION

6. A peripheral IV device is a device that is inserted into a vein to provide for either blood sampling or therapeutic purposes (administration of medications, fluids and/or blood products).
7. This excludes peripherally inserted central catheters (PICC) which are defined as central catheters.
8. This policy must be read in conjunction with the Royal Marsden guidelines for management of peripheral IV devices. It explicitly covers the management, care and review of peripheral lines only.

## CONTENT

### Insertion:

9. The indication for insertion of a peripheral IV device must be recorded. The procedure must be explained to the patient/relative to obtain consent and help alleviate anxiety.
10. Hands must be washed and cleaned with alcohol hand rub and aseptic non-touch technique (ANTT) employed, including correct use of PPE. Refer to ANTT guidelines/policy.

### Skin prep:

11. Skin preparation must occur to reduce the risk of contamination.
12. 2% chlorhexidine in 70% alcohol should be used for skin prep (Chloraprep Sepp<sup>®</sup>).
13. Skin must be swabbed for at least 30 seconds and allowed to air dry for at least 30 seconds before the device is inserted. This period is required to:
  - a. Effectively apply the solution
  - b. Allow the agents to be effective and render the insertion site aseptic
14. Do not re-palpate the vein once the site has been allowed to air dry.
15. Apply a transparent cannula dressing which allows site to be inspected and reduces infection risk.
16. Connect needle free device (NFD) to cannula. Always consider the use of an extension set for improved comfort and to ease access to the line.
17. Flush line to check patency of cannula and that there is no resistance, pain or swelling evident.

Version	1	Document	Management of Peripheral IV Access Devices Policy	Page 3 of 10
Date	10/2017	Next Review Date	07/2020	

18. Document the IV device size/colour on care plan and on IV device insertion sticker in the patient notes.

**Documentation:**

19. A record must be maintained for:

- a. Date and time of insertion
- b. Skin preparation details
- c. Indication/rationale for insertion
- d. Site of insertion
- e. Number of insertion attempts
- f. Practitioner details (name and role)
- g. NFD attachment
- h. Colour/size of device
- i. Line flush use

20. The cannula care plan must be completed, as must the IV device insertion sticker in the patient notes.

**Procedure:**

21. The correct procedure is outlined in the Royal Marsden Hospital Manual of Clinical Nursing Procedures (available on the Trust intranet site).

**Management:**

22. Peripheral IV devices should not remain in situ for more than 96 hours with notable exceptions:

- a. Where access is difficult and the patient needs prolonged IV access, paediatrics, neonates. The need for IV device must be reviewed daily and the continued need for IV access clearly documented daily.
- b. Continuing IV therapy outside the Acute Trust setting in either community environment or another healthcare establishment; again there should be a regular documented review of the continued need for IV access.

23. For these exceptions, there should be a consideration for the insertion of a medium or long-term line where it is anticipated that IV access is going to be required for a prolonged period.

24. Visual Infusion Phlebitis (VIP) score to be recorded each time cannula is accessed (per shift) in the community setting or three times daily in the Acute Trust.

25. Care plan to be maintained daily including number of indwelling days.

26. Scrub the hub every time the device is accessed. Use a 2% chlorhexidine/70% alcohol wipe on the hub of the device when lines are changed or when administering boluses of drugs

27. The hub must be scrubbed for at least 30 seconds and allowed to air dry for at least 30 seconds before accessing the device.

28. Flush line pre and post use with 0.9% saline.

29. If line is not in use, but still required, it must be flushed daily to maintain patency; this must be documented.

30. Assess and document the continued need for the IV device daily.

31. Document whether the dressing is clean and intact on daily basis. Change dressing if it is soiled/ contaminated and document the change.

32. Discuss with senior clinician if there are indications for prolonged IV access, e.g. home IV therapy, haematology patients, etc.

Version	1	Document	Management of Peripheral IV Access Devices Policy	Page 4 of 10
Date	10/2017	Next Review Date	07/2020	

**Visual Infusion Phlebitis (VIP) Score:**

- 33. VIP scoring is a common method of assessing the insertion site for early signs of phlebitis and allows for prompt action to be taken to avoid thrombophlebitis or a line related local infection or systemic septicaemia.
- 34. Devices should be reviewed at least twice daily and the VIP score recorded.
- 35. If the VIP score is two or more, the device must be removed and the patient managed in line with **Appendix 2**.

**CT Scan:**

- 36. Infusions for CT contrast must be administered through a non-ported cannula. This will be inserted and removed in the radiology department and this intervention must be documented in the casenotes.

**Removal:**

- 37. Indications for removal include:
  - a. VIP score  $\geq 1$
  - b. Pain on injection
  - c. Swelling
  - d. Extravasation
  - e. As soon as the device is no longer required
  - f. Patient discharge (unless there is a management plan to continue IV administration after discharge).
- 38. Document the following:
  - a. Date and time of removal
  - b. The VIP score on removal
  - c. The reason for removal of device
  - d. The practitioner's name and role
- 39. The staff member removing the device must wear appropriate personal protective equipment during the procedure.
- 40. Apply pressure using sterile gauze for 2 minutes/ until bleeding no longer evident from puncture site. Apply plaster/sterile gauze and adhesive tape.
- 41. Discard of any waste and sharps appropriately into clinical waste bag and sharps bin at the point of care.
- 42. Wash hands following completion of procedure.

**Monitoring Compliance**

- 43. Ward managers will constantly monitor adherence to good practice through the process of safety huddles, completion of care plans and audit of practice.
- 44. Compliance will be monitored by incident reporting.
- 45. Compliance will be monitored by audits undertaken by the IPC team using the standards outlined here in line with High Impact Intervention for Peripheral Lines (see **Appendix 3**).

Version	1	Document	Management of Peripheral IV Access Devices Policy	Page 5 of 10
Date	10/2017	Next Review Date	07/2020	

## Appendix 1: References

1. Department of Health (2010). Health & Social Care Act 2008, Department of Health. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/449049/Code\\_of\\_practice\\_280715\\_acc.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/449049/Code_of_practice_280715_acc.pdf)
2. Goode, C.J., Titler, M., Rakel, B., et al. (1991) A meta-analysis of effects of heparin flush and saline flush: quality and cost implications. Nursing Research, 40(6), 324–330. Cross Ref link Pubmed link RMM online
3. Health and Safety Executive (1992) Personal Protective Equipment at Work Regulations (HSE 1992)
4. H.P Loveday et al (2014) Epic 3: Evidence-Based Guidelines for Preventing Healthcare-Associated Infection in NHS Hospitals in England. The Journal of Hospital Infection 8651, S1-570
5. Department of Health (2007). Saving Lives: reducing infection, delivering clean and safe care. <http://hcai.dh.gov.uk/whatdoido/high-impact-interventions> (Accessed 26/10/17)
6. The Royal Marsden Manual of Clinical Nursing Procedures, Ninth Edition. <http://www.rmmonline.co.uk/> (26/10/17)

Version	1	Document	Management of Peripheral IV Access Devices Policy	Page 6 of 10
Date	10/2017	Next Review Date	07/2020	

## Appendix 2: VIP Score

Score	Indication	Implication	Action
0	IV site appears healthy, there is no redness, swelling or pain	No signs or symptoms of phlebitis	<ul style="list-style-type: none"> <li>Continue to observe the site and document the VIP score at least twice daily</li> </ul>
1	One of the following is evident: <ul style="list-style-type: none"> <li>Slight pain at the insertion site</li> <li>Slight redness at or near the insertion site</li> </ul>	Possible first signs of phlebitis	<ul style="list-style-type: none"> <li>Increase observation and document the VIP score at least every six hours</li> </ul>
2	Two of the following are evident: <ul style="list-style-type: none"> <li>Pain at the insertion site</li> <li>Redness (erythema) at the insertion site</li> <li>Swelling at the insertion site</li> </ul>	Early signs of phlebitis	<ul style="list-style-type: none"> <li>Remove the device as soon as possible</li> <li>Re-site the device at a different site if IV access is still required</li> <li>Document the problem in the patient's casenotes</li> <li>Consider treating</li> </ul>
3	All of the following are evident: <ul style="list-style-type: none"> <li>Pain along the path of the cannula</li> <li>Redness (erythema)</li> <li>Induration (hardening of the tissues) at the site</li> </ul>	Mid-stage of phlebitis	<ul style="list-style-type: none"> <li>Remove the device as soon as possible</li> <li>Refer to the medical team to assess the need for treatment</li> <li>Re-site the device at a different site if IV access is still required</li> <li>Document the problem in the patient's casenotes</li> </ul>
4	All of the following are evident: <ul style="list-style-type: none"> <li>Pain along the path of the cannula</li> <li>Redness (erythema)</li> <li>Induration (hardening of the tissues) at the site</li> <li>Palpable venous cord</li> </ul>	Advanced phlebitis or start of thrombophlebitis	<ul style="list-style-type: none"> <li>Remove the device as soon as possible</li> <li>Refer to the medical team to initiate for treatment</li> <li>Consider antibiotic treatment</li> <li>Consider culture</li> <li>Re-site the device at a different site if IV access is still required</li> <li>Document the problem in the patient's casenotes</li> </ul>
5	All of the following are evident: <ul style="list-style-type: none"> <li>Pain along the path of the cannula</li> <li>Redness (erythema)</li> <li>Induration (hardening of the tissues) at the site</li> <li>Palpable venous cord</li> <li>Pyrexia</li> </ul>	Advanced phlebitis or start of thrombophlebitis	<ul style="list-style-type: none"> <li>Remove the device as soon as possible</li> <li>Refer to the medical team to initiate treatment</li> <li>Consider antibiotic treatment</li> <li>Consider culture</li> <li>Re-site the device at a different site if IV access is still required</li> <li>Document the problem in the patient's casenotes</li> </ul>

Version	1	Document	Management of Peripheral IV Access Devices Policy	Page 7 of 10
Date	10/2017	Next Review Date	07/2020	

## Appendix 3: High Impact Intervention; Peripheral intravenous cannula care bundle

Insertion Actions
<p><b>Hand hygiene</b></p> <ul style="list-style-type: none"> <li>▪ Decontaminate hands before and after each patient contact and before applying examination gloves.</li> <li>▪ Use correct hand hygiene procedure.</li> </ul>
<p><b>Personal protective equipment</b></p> <ul style="list-style-type: none"> <li>▪ Wear examination gloves if risk of exposure to body fluids.</li> <li>▪ Gloves are single-use items and should be removed and discarded immediately after the care activity.</li> <li>▪ Gowns, aprons, eye/face protection are indicated if there is a risk of splashing with blood or body fluids.</li> </ul>
<p><b>Skin preparation</b></p> <ul style="list-style-type: none"> <li>▪ Use 2% chlorhexidine gluconate in 70% isopropyl alcohol, and allow to dry.</li> <li>▪ If patient has a sensitivity use a single patient use povidone-iodine application.</li> </ul>
<p><b>Dressing</b></p> <ul style="list-style-type: none"> <li>▪ Use a sterile, semi-permeable, transparent dressing to allow observation of insertion site.</li> </ul>
<p><b>Documentation</b></p> <ul style="list-style-type: none"> <li>▪ Date of insertion should be recorded in notes.</li> </ul>

Ongoing care actions
<p><b>Hand hygiene</b></p> <ul style="list-style-type: none"> <li>▪ Decontaminate hands before and after each patient contact.</li> <li>▪ Use correct hand hygiene procedure.</li> </ul>
<p><b>Continuing clinical indication</b></p> <ul style="list-style-type: none"> <li>▪ All intravenous cannulae and associated devices are still indicated.</li> <li>▪ If there is no indication then the intravenous cannula should be removed.</li> </ul>
<p><b>Site inspection</b></p> <ul style="list-style-type: none"> <li>▪ Regular observation for signs of infection, at least daily.</li> </ul>
<p><b>Dressing</b></p> <ul style="list-style-type: none"> <li>▪ An intact, dry, adherent transparent dressing should be present.</li> </ul>
<p><b>Cannula access</b></p> <ul style="list-style-type: none"> <li>▪ Use 2% chlorhexidine gluconate in 70% isopropyl alcohol, and allow to dry prior to accessing the cannula for administering fluid or injections.</li> </ul>
<p><b>Administration set replacement</b></p> <ul style="list-style-type: none"> <li>▪ Immediately after administration of blood, blood products.</li> <li>▪ All other fluid sets after 72 hours.</li> </ul>
<p><b>Routine cannula replacement</b></p> <ul style="list-style-type: none"> <li>▪ Replace in a new site after 72–96 hours or earlier if indicated clinically.</li> <li>▪ If venous access limited, the cannula can remain in situ if there are no signs of infection.</li> </ul>

Version	1	Document	Management of Peripheral IV Access Devices Policy	Page 8 of 10
Date	10/2017	Next Review Date	07/2020	



## Equality Impact Assessment Tool

To be completed and attached to any procedural document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	<b>Does the document/guidance affect one group less or more favourably than another on the basis of:</b>		
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender (including gender reassignment)	No	
	• Culture	No	
	• Religion or belief	No	
	• Sexual orientation	No	
	• Age	No	
	• Disability - learning disabilities, physical disability, sensory impairment and mental health problems	No	
2.	<b>Is there any evidence that some groups are affected differently?</b>	No	
3.	<b>If you have identified potential discrimination, are there any valid exceptions, legal and/or justifiable?</b>	NA	
4.	<b>Is the impact of the document/guidance likely to be negative?</b>	NA	
5.	<b>If so, can the impact be avoided?</b>	NA	
6.	<b>What alternative is there to achieving the document/guidance without the impact?</b>	NA	
7.	<b>Can we reduce the impact by taking different action?</b>	No	

If you have identified a potential discriminatory impact of this procedural document, please refer it to the Equality and Diversity Co-ordinator together with any suggestions as to the action required to avoid/reduce this impact.

Version	1	Document	Management of Peripheral IV Access Devices Policy	Page 9 of 10
Date	10/2017	Next Review Date	07/2020	

## Document Development Checklist

Type of document	Policy
Lead author:	Angela Kelly
Is this new or does it replace an existing document?	New – it incorporates and replaces the previous Visual Infusion Phlebitis (VIP) Score Policy
What is the rationale/ Primary purpose for the document	Provide guidance for staff in managing patients with peripheral IV devices
What evidence/standard is the document based on?	National guidance
Is this document being used anywhere else, locally or nationally?	No
Who will use the document?	All clinical staff
Is a pilot run of the document required? (optional)	No
Has an evaluation taken place? What are the results? (optional)	No
What is the implementation and dissemination plan? (How will this be shared?)	Update to be communicated to staff via a newsletter to all department managers. Rolled out via the IPC links, ward managers and matrons meetings
How will the document be reviewed? (When, how and who will be responsible?)	The document will be reviewed when and if national guidance is updated. The IPC team will be responsible for this
Are there any service implications? (How will any change to services be met? Resource implications?)	No
Keywords (Include keywords for the document controller to include to assist searching for the policy on the Intranet)	Invasive devices, IV, Cannula, Venflon, Peripheral
Staff/stakeholders consulted	Via IPC committee
Any document that gives an instruction to prescribe or administer a medicine should have that instruction reviewed by the senior divisional pharmacist before it goes for ratification.	NA
EIA	Complete
Signed and dated	
By validator	.....
By ratifying officer	.....

Version	1	Document	Management of Peripheral IV Access Devices Policy	Page 10 of 10
Date	10/2017	Next Review Date	07/2020	