Brighton and Sussex University Hospitals

Policy for Neonatal Venepuncture and Intravenous Cannulation by Nursing Staff on the Neonatal Unit

Version:	5.0
Category and number:	C034
Approved by:	Clinical Policies Steering Group
Date approved:	18th March 2019
Name of author:	Clare Morfoot (Neonatal Practice Educator)
Name of responsible committee/individual:	Clinical Policies Steering Group
Name of responsible director:	Nurse Director
Date issued:	March 2019
Review date:	March 2022
Target audience:	Neonatal Unit Nurses
Accessibility	This document is available in electronic format only

Contents

1 Introduction

1.1 Venepuncture and peripheral intravenous therapy are a vital aspect of neonatal care which may be appropriately performed by competent neonatal nursing staff. The Royal College of Nursing Neonatal Nursing Competency Framework identifies the ability to obtain intravenous access as an appropriate clinical skill for proficient and expert neonatal nurses (RCN 2015). Venepuncture and peripheral intravenous cannulation by nursing staff on the Neonatal Unit must be undertaken within the NMC Code of Professional Conduct (2018).

1.2 This policy applies to all registered nurses within Brighton and Sussex University Hospitals (BSUH) NHS Trust who work in neonatal services and who have been assessed as competent in neonatal venepuncture and peripheral intravenous cannulation.

2 Purpose

The purpose of this document is to standardise venepuncture and peripheral intravenous cannulation by Neonatal Unit nursing staff and promote safe clinical practice.

3 Definitions

3.1 The neonatal service within BSUH includes the Special Care Baby Unit (SCBU) at Princess Royal Hospital (PRH) and the Neonatal Intensive Care Unit (NICU) called Trevor Mann Baby Unit (TMBU) at the Royal Sussex County Hospital (RSCH).

3.2 A neonate is defined as a newborn infant who is less than four weeks old. An infant is defined as a baby/child between 0-1 years of age.

3.3 The neonatal service usually admits infants who require hospital admission but who have not yet spent time at home. Although many infants on the Neonatal Unit may be older than four weeks, the terms neonate and infant are used within this policy to encompass a patient on the Neonatal Unit.

4 Responsibilities, Accountabilities and Duties

4.1 Responsibility of the Chief Executive

The Chief Executive of BSUH is responsible for the provision of venepuncture and cannulation training for neonatal nurses. The Chief Executive is responsible for the dissemination of any known alerts which relate to venepuncture and cannulation e.g. Medicines and Healthcare products Regulatory Agency (MHRA) equipment alerts. The Chief Executive is responsible for the provision of appropriate equipment to perform safe and effective venepuncture and cannulation.

4.2 Responsibility of the Neonatal Unit Manager

Each unit manager is responsible for maintaining a register of nursing staff that are competent in neonatal venepuncture and peripheral intravenous cannulation and this should be available for audit purposes. The unit manager, in association with the procurement team, infection prevention team and the intravenous (IV) team, will be responsible for the selection of products used for venepuncture and cannulation on the neonatal unit. The unit manager, in association with the neonatal clinical risk panel, will be responsible for investigating any clinical incidents relating to neonatal venepuncture/cannulation by neonatal nursing staff.

4.3 Responsibility of the IV team

The IV team are responsible for supporting the delivery of staff training to enable neonatal nurses to perform venepuncture and cannulation.

4.4 Responsibility of the Infection Prevention Link Nurse

The neonatal unit link nurse for infection prevention is responsible for the ongoing audit of peripheral cannula care bundles and the dissemination of this data to the Unit and Trust.

4.5 Responsibility of the neonatal nurses

All neonatal nursing staff wishing to perform neonatal venepuncture and peripheral intravenous cannulation are responsible for ensuring that they are competent to undertake this role by completing the relevant workbook and practical competency assessment (Appendix 1).

All neonatal nursing staff are responsible for ensuring that they maintain their competency following training. Any prospective candidate should have a valid reason for requiring the skill and should prove that they will be able to continue to practice regularly to maintain competency. Following achievement of competency, the individual is responsible for maintaining that level of competency and arranging a practice review, if necessary, as per the competency assessment.

Neonatal nurses who insert a venous access device are responsible for completing a cannula insertion bundle.

5 Policy

5.1 Indications for the procedure

- To enhance the quality of holistic care offered to the infant;
- To facilitate diagnosis or treatment;
- To facilitate monitoring of a disease;
- To regulate current therapy;
- To facilitate rehydration of the infant, drug therapy, infusion of blood products;
- To prevent harm or distress to the infant, which may occur if it is not performed.

5.2 Venepuncture is necessary when a large volume of blood or a non-haemolysed sample is required; when there is ineffective capillary sampling; to obtain a blood culture; and to accurately diagnose polycythaemia. Blood cultures, clotting and enzymes can **only** be obtained by venepuncture.

5.3 Peripheral intravenous cannulation may be indicated in order to administer emergency/lifesaving medication; for the administration of medication which cannot be tolerated orally; when fluid and electrolyte balance cannot be maintained by enteral intake; for the administration of blood and blood products; for the administration of parenteral nutrition (only in exceptional circumstances) and to administer medication only available in an injectable form.

5.4 Nursing staff should only attempt the procedure twice and if unsure of their competency in the procedure, hand over the responsibility to a more experienced practitioner.

5.5 Staff should have knowledge of relevant local policies and procedures including those relating to health and safety; infection prevention; aseptic non-touch technique.

5.6 The practitioner must be familiar with the infant's plan of care.

5.7 Staff should be able to identify appropriate venous sites for venepuncture and cannulation.

5.8 The practitioner should demonstrate competency in venepuncture before attempting cannulation.

5.9 Contraindications to the procedure

- Where there is paralysis or deformity of the limb, except if it is in the best interests of the infant, or if there is no other access site available;
- On a dying infant unless it is essential for the continuing care and comfort of the infant;
- Where other clinical duties would be compromised if venepuncture and cannulation were performed.

5.10 Equipment for venepuncture

Blue tray cleaned with Clinell wipes;
Winged blood sampling needles e.g. Vygon Neo-safe or intravenous cannulae;
Syringe or vacutainer for blood collection (depending on device used);
Gloves (clean, well fitting, non-sterile); Apron;
Appropriate skin cleansing agent (see 5.11.14); Specimen bottles/labels/diagnostic request forms;
Gauze swabs;
Alcohol gel;
Sharps bin;
A prepared cannulation or blood culture pack may be used if available.

5.11 Procedure for venepuncture

5.11.1 Confirm the identity of the infant and the need for venepuncture.

5.11.2 The parents should be informed of the need for venepuncture and the rationale and procedure explained to them. Ensure appropriate support for parents who have additional communication requirements e.g. overseas languages, British Sign Language, Braille etc. Parents may wish to stay and support their infant during the procedure and act as the infant's comforter.

5.11.3 Put on a disposable apron.

5.11.4 Wash hands with soap, according to infection prevention policy. Dry well and apply alcohol gel.

5.11.5 Assess the infant's peripheral circulation and promote peripheral dilatation, using appropriate methods.

5.11.6 Select the most suitable vein for venepuncture, commonly the dorsum of the hand or foot.

5.11.7 Consider use of Ametop, according to the unit pain protocol.

5.11.8 Consider use of oral sucrose, according to the unit pain protocol.

5.11.9 Gather together all equipment required (see 5.10 above), ensuring packaging is intact. Arrange blood specimen bottles in correct order of draw.

5.11.10 Prepare the infant. Developmental care interventions should be used at all times during the procedure e.g. comfort holding, swaddling, cuddling, non-nutritive sucking.

5.11.11 Wash hands with soap, according to infection prevention policy. Dry well and apply alcohol gel.

5.11.12 Put on well-fitting, non-sterile gloves.

5.11.13 Use an aseptic non-touch technique throughout the procedure.

5.11.14 Clean the infant's skin with an appropriate cleansing agent.

5.11.15 Use 2% chlorhexidine and 70% alcohol impregnated applicators e.g. SEPP® for small areas and FREPP® for larger areas, for all infants greater than 32/40 from birth or infants born at less than 32/40 who are more than 7 days of age. Use 0.05% chlorhexidine sachets for infants born at less than 32/40 and less than 7 days of age. However, there is little robust evidence to recommend any one particular choice of antiseptic. Despite the lack of safety data in premature infants, chlorhexidine is commonly used worldwide for off-label skin antisepsis in neonatal intensive care units (Vanzi & Pitaro 2018). Be aware that most topical antiseptics can cause irritation and skin erythema in neonates, particularly at higher concentrations. Serious chemical burns have been reported with isopropyl alcohol, 0.5% chlorhexidine and 2% aqueous and alcohol-based chlorhexidine formulations. This risk may be increased in extremely premature infants or if there is prolonged direct contact with the skin or if excess antiseptics are not removed with 0.9% sodium chloride (Lashkari, Chow & Godambe 2012). However, a contact time of 30 seconds of disinfection is recommended to eliminate skin flora (Ponnusamy, Venkatesh & Clarke 2014).

5.11.16 Confirm integrity of device and remove needle guard. Check the bevelled edge is facing upwards.

5.11.17 Position the chosen limb to ensure a secure hold, therefore, preventing withdrawal of the limb and possible failure of the

procedure.

5.11.18 Insert the winged needle into the vein to 3-5mm past the bevel at a shallow angle. Depending on the blood-letting device used, the needle may need to be connected to a syringe or vacutainer.

5.11.19 Release and application of gentle pressure of the limb may be used to facilitate blood flow.

5.11.20 Collect blood samples into correctly labelled bottles.

5.11.21 Place a gauze swab over the puncture site and carefully remove the needle. Continue to apply pressure to the puncture site until bleeding has stopped.

5.11.22 Re-position the infant comfortably and safely.

5.11.23 Dispose of sharps correctly.

5.11.24 Remove gloves and apron.

5.11.25 Wash and dry hands thoroughly.

5.11.26 Clean blue tray, as described previously.

5.11.27 Place labelled blood samples in nominated place for collection and transportation.

5.11.28 Document procedure.

5.12 Equipment for peripheral intravenous cannulation

Blue tray cleaned with Clinell wipe;
Cannulae;
Gloves (clean, well fitting, non-sterile);
Apron;
Appropriate skin cleansing agent (see 5.11.14);
Gauze swabs, steri-strips and cotton wool (may be used in fixation);
T-piece extension set, primed with 0.9% saline flush in a 5-10 ml syringe;
Splint if needed;
Adhesive tape;
Sterile clear film dressing e.g. Tegaderm;
Alcohol gel;
Sharps bin;
A prepared cannulation pack may be used if available.

5.13 Procedure for peripheral intravenous cannulation

5.13.1 Confirm the identity of the infant and the need for peripheral cannulation.

5.13.2 The parents should be informed of the need for cannulation and the rationale and procedure explained to them. Ensure appropriate support for parents who have additional communication requirements e.g. overseas languages, British Sign Language, Braille etc. Parents may wish to stay and support their infant during the procedure and act as the infant's comforter.

5.13.3 Put on a disposable apron.

5.13.4 Wash hands with soap, according to infection prevention policy. Dry well and apply alcohol gel.

5.13.5 Assess the infant's peripheral circulation and promote peripheral dilatation, using appropriate methods.

5.13.6 Select the most suitable vein for cannulation, commonly the dorsum of the hand and foot or the forearm. The antecubital fossa and long saphenous veins should be avoided as these may be required for

central venous line placement.

5.13.7 Consider use of Ametop, according to the unit pain protocol.

5.13.8 Consider use of oral sucrose, according to the unit pain protocol.

5.13.9 Gather together all equipment required (see 5.12 above), ensuring packaging is intact.

5.13.10 Prepare the infant. Developmental care interventions should be used at all times during the procedure e.g. comfort holding, swaddling, cuddling, non-nutritive sucking.

5.13.11 Wash hands with soap, according to infection prevention policy. Dry well and apply alcohol gel.

5.13.12 Put on well-fitting, non-sterile gloves.

5.13.13 Use an aseptic non-touch technique throughout the procedure.

5.13.14 Clean the infant's skin with an appropriate skin cleansing agent (see 5.11.14).

5.13.15 Confirm integrity of device and remove needle guard. Check the bevelled edge is facing upwards.

5.13.16 Position the chosen limb to ensure a secure hold, therefore, preventing withdrawal of the limb and possible failure of the procedure. The most distal entry point should be used first, as this allows a subsequent attempt to be made further up the vein should the initial attempt prove unsuccessful.

5.13.17 Insert the needle into the vein to 3-5mm past the bevel at a shallow angle and observe for flashback. In the absence of a flashback seek advice from experienced practitioners.

5.13.18 Remove the needle as you further advance the cannula. DO NOT attempt to replace the needle into the cannula whilst still in the vein, in an attempt to reposition it prior to fully advancing it, as the needle may shear the tip of the cannula into the circulation.

5.13.19 A cannula should only be inserted once. If the line is not patent, then the procedure should be repeated with a new cannula.

5.13.20 Connect T-piece extension and flush the cannula.

5.13.21 If the line is patent, secure cannula with sterile dressing and apply a splint, if required, using Velcro bands or minimal tape. The entry site of the cannula should remain easily visible to allow ongoing assessment, following fixation of the cannula.

5.13.22 Re-position the infant comfortably and safely.

5.13.23 Dispose of sharps correctly.

5.13.24 Remove gloves and apron.

5.13.25 Wash and dry hands thoroughly.

5.13.26 Clean blue tray, as described previously.

5.13.27 Label T-piece with insertion date of cannula.

5.13.28 Document procedure and complete care bundle.

6 Training Implications

6.1 Prior to unsupervised practice, all registered nursing staff must have completed the neonatal venepuncture and cannulation workbook, which precedes a subsequent period of supervised practice and successful completion of the competency assessment (Appendix 1). A periodic review of practice may be necessary if competency is not maintained.

6.2 The assessor is required to be a clinically competent, experienced

practitioner, ideally with a teaching and assessing qualification (e.g. mentorship, ENB 997/998 or equivalent, A1, A2, PGCE, C&G 7307), who has themselves undertaken training in neonatal venepuncture and cannulation and achieved and maintained competency. This will most commonly be an Advanced Neonatal Nurse Practitioner (ANNP) or a senior member of the medical team, as they perform this procedure routinely as part of their role.

7 Monitoring Arrangements

The effectiveness of this policy will be monitored by the following means.

Measurable Policy Objective	**Monitoring/ Audit Method**	**Frequency**	**Responsibility for performing monitoring**	**Where is monitoring reported and which groups/committees will be responsible for progressing and reviewing action plans**
Care bundles for all venous lines	Audit	Ad hoc but at least monthly	Neonatal staff IV team Infection prevention link nurse	Trust Infection Prevention Dashboard Unit meetings
List of competent staff	List maintained to show competent staff	Ongoing	Neonatal Matron	List of competent staff will be held locally and available for auditing purposes
Hand hygiene compliance	Audit	Weekly	Neonatal staff	Local safety and quality meetings Infection Prevention updates Directorate, Trust and Unit meetings

8 Due Regard Assessment Screening

BSUH NHS Trust has a statutory duty to assess and consult on whether planning, policies and processes impact service users, staff and other stakeholders with regard to age, disability, gender (sex), gender identity, marriage or civil partnership, pregnancy and maternity, race (ethnicity, nationality, colour), religion or belief and sexual orientation. It recognises that some people may face multiple discrimination based on their identity. A review of the assessed impact of this policy against these criteria can be seen in Appendix 2. The due regard statements have been discussed with and agreed by the Head of Equality, Diversity and Human Rights. A full impact assessment is not deemed to be necessary.

9 Links to Other Trust Policies

This policy should be read in conjunction with the following policies:

Policy for the Safe and Secure Handling of Medicines
Policy for the Care of the Patient Receiving a Blood Component
Health and Safety Policy and Statement of Intent
Infection Prevention Standard Principles Policy
Policy for Sharps Injury and Body Fluid Contamination
Policy for Intravenous Therapy Administration to Infants on the Neonatal Unit

10 Associated Documentation

Local neonatal unit guideline on aseptic non-touch technique
Local neonatal unit guideline on Hickman/Broviac catheter

Both of these guidelines are available via the Trust website at:
https://www.bsuh.nhs.uk/information-for-professionals/guidelines/nursing-guidelines/

11 References

Lashkari, H.P., P. Chow and S. Godambe. 2012. Aqueous 2% Chlorhexidine-induced chemical burns in an extremely premature infant. *Archives of Disease in Childhood: Fetal and Neonatal Edition* 97(1): F64.

Nursing and Midwifery Council (NMC). 2018. *The Code: Professional Standards of Practice and Behaviour for Nurses, Midwives and Nursing Associates.* London: NMC.

Ponnusamy, V., V. Venkatesh and P. Clarke. 2014. Skin antisepsis in the neonate: what should we use? *Current Opinion Infectious Diseases* 27(3): 244-250.

Vanzi, V. and R. Pitaro. 2018. Skin injuries and chlorhexidine gluconate-based antisepsis in early premature infants: a case report and review of the literature. 32(4): 341-350.

Appendix 1:

COMPETENCY ASSESSMENT FOR NEONATAL VENEPUNCTURE AND PERIPHERAL INTRAVENOUS CANNULATION

NAME:

GRADE:

UNIT:

DATE WORKBOOK COMPLETED:

COMPETENT TO PRACTISE: YES/NO

DATE ASSESSED:

SIGNATURE OF ASSESSOR:

WHEN COMPLETED, PLEASE SEND A COPY TO: NEONATAL PRACTICE EDUCATOR, TMBU, LEVEL 14, RSCH

COMPETENCY ASSESSMENT FOR NEONATAL VENEPUNCTURE

Theoretical knowledge **The candidate must:**	**Competent**	**Not competent**	**Comments**
▪ Read this policy and demonstrate an awareness of their responsibilities; ▪ Discuss developmental care considerations and appropriate analgesics available; ▪ Demonstrate an understanding of the professional and legal issues concerning venepuncture; ▪ Discuss the appropriate infection prevention measures for venepuncture; ▪ Describe the location of suitable venepuncture sites; ▪ Discuss the principles of aseptic non-touch technique; ▪ Discuss the appropriate size of needle to use; ▪ Explain the process of assessing the infant's peripheral circulation and appropriate methods for dilating the vein; ▪ Discuss the procedure for undertaking venepuncture; ▪ Describe what action should be taken in the event of: a) bruising; b) haematoma formation; c) accidental puncture of an artery; ▪ Discuss the procedure following unsuccessful venepuncture; ▪ Explain how to deal with an infant with restricted venous access; ▪ Describe examples when they would <u>not</u> undertake venepuncture; ▪ Discuss situations where venepuncture may not be appropriate.			

COMPETENCY ASSESSMENT FOR NEONATAL VENEPUNCTURE

Practical performance **The candidate will:**	**Competent**	**Not competent**	**Comments**
▪ Successfully undertake ten supervised venepunctures; ▪ Make positive identification of the infant; ▪ Respect the wishes of parents and support them if they wish to be present during the procedure; ▪ Select the correct equipment for venepuncture; ▪ Position the infant correctly, taking into account developmental care considerations and provide appropriate and effective analgesia; ▪ Wash and dry hands, according to infection prevention policy, apply alcohol gel and put on well-fitting, non-sterile gloves; ▪ Assess the infant's peripheral circulation and promote peripheral dilatation, using appropriate methods; ▪ Select an appropriate vein for venepuncture; ▪ Prepare the skin correctly and use aseptic non-touch technique throughout the procedure; ▪ Demonstrate correct insertion of the needle; ▪ Obtain blood samples, as required, in the correct sequence with the correct amount into the correct bottle; ▪ Remove the needle and take measures to ensure that bleeding is stopped; ▪ Dispose of sharps correctly; ▪ Remove gloves and apron, wash and dry hands thoroughly; ▪ Re-position the infant comfortably and safely; ▪ Place blood samples in the nominated place for collection and transportation; ▪ Document the procedure.			

COMPETENCY ASSESSMENT FOR NEONATAL PERIPHERAL INTRAVENOUS CANNULATION

Theoretical knowledge **The candidate must:**	**Competent**	**Not competent**	**Comments**
▪ Read this policy and demonstrate an awareness of their responsibilities; ▪ Discuss developmental care considerations and appropriate analgesics available; ▪ Demonstrate an understanding of the professional and legal issues concerning venepuncture; ▪ Discuss the appropriate infection prevention measures for cannulation; ▪ Describe the location of suitable cannulation sites; ▪ Discuss the principles of aseptic non-touch technique; ▪ Discuss the appropriate size of cannula to use; ▪ Explain the process of assessing the infant's peripheral circulation and appropriate methods for dilating the vein; ▪ Discuss the procedure for undertaking cannulation and appropriate dressings for the cannulation site; ▪ Describe what action should be taken in the event of: a) bruising; b) haematoma formation; c) accidental puncture of an artery; ▪ Discuss the procedure following unsuccessful cannulation; ▪ Explain how to deal with an infant with restricted venous access; ▪ Describe examples when they would <u>not</u> undertake cannulation; ▪ Discuss situations where cannulation may not be appropriate.			

COMPETENCY ASSESSMENT FOR NEONATAL PERIPHERAL INTRAVENOUS CANNULATION

Practical performance **The candidate will:**	**Competent**	**Not competent**	**Comments**
▪ Successfully undertake ten supervised cannulations; ▪ Make positive identification of the infant; ▪ Respect the wishes of parents and support them if they wish to be present during the procedure; ▪ Select the correct equipment for cannulation; ▪ Position the infant correctly, taking into account developmental care considerations and provide appropriate and effective analgesia; ▪ Wash and dry hands, according to infection prevention policy, apply alcohol gel and put on well-fitting, non-sterile gloves; ▪ Assess the infant's peripheral circulation and promote peripheral dilatation, using appropriate methods; ▪ Select an appropriate vein and entry site for cannulation; ▪ Prepare the skin correctly and use aseptic non-touch technique throughout the procedure; ▪ Demonstrate correct insertion of the cannula; ▪ Ensure patency and secure cannula appropriately; ▪ Dispose of sharps correctly; ▪ Remove gloves and apron, wash and dry hands thoroughly; ▪ Re-position the infant comfortably and safely; ▪ Label the T-piece with insertion date of cannula; ▪ Document the procedure.			

Appendix 2: Due Regard Assessment Tool

The following due regard statements have been discussed with and agreed by the Head of Equality, Diversity and Human Rights.

		Yes/No	Comments
1.	**Does the document/guidance affect one group less or more favourably than another on the basis of:**		
	• Age	No	Policy is only applicable to neonates and infants (see section 3)
	• Disability	No	Any infant who is born with an absent limb or a limb deformity may still be cannulated and receive intravenous therapy. An alternative limb may need to be used or an alternative site e.g. a scalp vein (see 5.9)
	• Gender (sex)	No	
	• Gender identity	No	
	• Marriage and civil partnership	N/A	
	• Pregnancy and maternity	N/A	
	• Race (ethnicity, nationality, colour)	No	Provision for language/communication needs of parents (see 5.11.2 & 5.13.2)
	• Religion or belief	No	
	• Sexual orientation, including lesbian, gay and bisexual people	N/A	
2.	**Is there any evidence that some groups are affected differently and what is/are the evidence source(s)?**	No	Any deviation in standard practice is to mitigate unfair advantage and to meet additional diverse needs e.g. creating a level playing field
3.	**If you have identified potential discrimination, are there any exceptions valid, legal and/or justifiable?**	N/A	
4.	**Is the impact of the document/guidance likely to be negative?**	No	
5.	**If so, can the impact be avoided?**	N/A	
6.	**What alternative is there to achieving the document/guidance without the impact?**	N/A	
7.	**Can we reduce the impact by taking different action and, if not, what, if any, are the reasons why the policy should continue in its current form?**	N/A	
8.	**Has the document been assessed to ensure service users, staff and other stakeholders are treated in line with Human Rights FREDA principles (fairness, respect, equality, dignity and autonomy)?**	Yes	

Appendix 3: Dissemination, Implementation and Access Plan

	Dissemination Plan	Comments
1.	**Identify:**	
	• **Which members of staff or staff groups will be affected by this policy?**	Any neonatal unit nursing staff who wish to be competent in neonatal venepuncture and peripheral intravenous cannulation
	• **How will you confirm that they have received the policy and understood its implications?**	All nurses who undertake this task must have completed the competency assessment in appendix 2, which highlights the need to read the policy and be aware of their responsibilities
	• **How have you linked the dissemination of the policy with induction training, continuous professional development and clinical supervision as appropriate?**	Not all neonatal nurses will undertake this role but anyone who completes the workbook and practical competency will need to read the policy
2.	**How and where will staff access the document (at operational level)?**	The document can be accessed electronically via the neonatal service website and the Trust infonet

		Yes/No	Comments
3.	**Have you made any plans to remove old versions of the policy or related documents from circulation?**		
4.	**Have you ensured staff are aware the document is logged on the organisation's register?**		