Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Office of the
Nursing Services Director

National Clinical Policy and Procedural Guideline

for Nurses and Midwives undertaking

Venepuncture in Children

			For local adaptation
Document reference number		Document developed by	
Revision number		Document approved by	
Approval date		Responsibility for implementation	
Revision date		Responsibility for review and audit	

CLICK on any main section in the Table of Contents to jump to the correct page in this document.

Table of Contents

1.0 Introduction

1.1 Policy Statement

It is the policy of the HSE that registered nurses and midwives undertaking venepuncture must have successfully achieved competence having completed an education programme that is compliant with the HSE Guiding Framework for the Education, Training and Competence Validation in Venepuncture and Peripheral Intravenous Cannulation for Nurses and Midwives (2010). In addition, nurses and midwives undertaking venepuncture will do so in accordance with the procedural elements as outlined in this policy.

1.2 Purpose

The purpose of this policy is to:

- Outline the roles and responsibilities of the clinical line manager and the nurse or midwife undertaking the skill of venepuncture
- Set out procedures based on best evidence, aligned with the national HSE standardised approach, which safeguard the child and guide the nurse or midwife in the performance of venepuncture
- Aid in the preparation and support of children and their families while undergoing venepuncture

1.3 Scope

This policy applies to all nurses and midwives working with children, who have successfully completed the required education, training and competence assessment to carry out venepuncture.

1.4 Disclaimer

The information contained within this policy is the most accurate and up to date, at date of approval. The policy contains a procedural guideline for local adaptation and it is the responsibility of the local organisation to update this guideline, according to best practice.

2.0 Glossary of Terms

Aseptic Technique:

Aseptic Technique is implemented during any invasive procedure that bypasses the body's natural defences e.g. the skin or when handling equipment such as peripheral intravenous cannulae. This technique is used to reduce the potential problem of introducing pathogenic micro organisms into the body when the integrity and /or effectiveness of the natural body defences has been reduced

(Jamieson et al., 1988, Dougherty and Lister, 2009)

Assessor:

An assessor is an identified nurse or midwife, who has undertaken a similar educational and clinical programme and is a competent expert practitioner. It is recommended that nurses and midwives develop their competence within specific disciplines, according to their practice.

Child:

The term child refers to neonate, infant, child and adolescent under the age of 18 years of age unless otherwise indicated.

Competence:

The ability of the registered nurse or midwife to practice safely and effectively fulfilling his/her professional responsibility within their scope of practice.

(An Bord Altranais, 2000)

Family Centred Care:

A way of caring for patients and their families within health services which ensures that care is planned around the whole family, not just the individual patient and in which all the family members are recognised as care recipients.

(Shields et al., 2006)

Nurse:

A nurse is a person registered in the Live Register of Nurses as provided for in Section 27 of the Nurses Act 1985 and includes a midwife and nursing includes midwifery - Code of Professional Conduct for each Nurse and Midwife.

(An Bord Altranais, 2000)

Order of Draw:

The order of blood draw refers to the sequence in which blood collection bottles should be filled.

(WHO, 2002)

Parent or Legal Guardian:

The term parent or Legal Guardian is used to describe the parent and or legal guardian of the child who is under 16 years.

(A Practical Guide to Immunisations – HSE, 2008)

Safety Blood Collection Systems:

Safety blood collection systems are single use blood collection systems that enhance safer venepuncture. Equipment utilised for the procedure is approved for use in this organisation.

Venepuncture:

Venepuncture is the introduction of a needle into a vein to obtain a blood sample for haematological, biochemical or bacteriological analysis (also known as phlebotomy, venesection, drawing/ taking blood).

(Lavery & Ingram, 2005)

3.0 Roles and Responsibilities

3.1 Role and Responsibility of the Clinical Line Manager

It is the responsibility of the clinical nurse or midwife manager or line manager to ensure that nurses and midwives working with children who are undertaking venepuncture fulfil the following criteria. Nurses and midwives must:

- Be registered on the live register of nurses and midwives maintained by An Bord Altranais
- Be employed by the HSE
- Be approved by their Clinical Nurse or Midwife Manager as an appropriate person to expand their practice, to include venepuncture
- Be a Registered Nurse or Midwife with at least two years post registration experience of working with children
- Be employed in an area where venepuncture is required to enhance service provision
- Successfully complete the educational preparation and competence assessment provided by this organisation, that is compliant with or equivalent to that outlined in the HSE Guiding Framework for the Education, Training and Competence Validation in Venepuncture and Peripheral Intravenous Cannulation for Nurses and Midwives (HSE, 2010)

3.2 Role and Responsibility of the Nurse and Midwife

It is the responsibility of each registered nurse and midwife to:

- Work within their Scope of Practice -Scope of Practice Framework for Nurses and Midwives, (An Bord Altranais, 2000)
- Comply with local organisational venepuncture policy and procedures therein, when undertaking venepuncture
- Become competent in the skill of venepuncture and
  - i. the equipment specific to the procedure
  - ii. the use of blood collection systems used in this organisation
  - iii. be familiar with the relevant blood collection bottles and related blood tests used The colours of these will vary depending on the system used in the organisation and /or depending on the laboratory processing the sample
- Be familiar and comply with this organisation's infection prevention and control, health and safety procedures and risk management policies as they apply to venepuncture
- Develop competence specific to the needs of the service and patient group. The Royal College of Nursing (RCN, 2005) and the HSE recommend that registered nurses who are working with children develop their competencies within the following age groups:
  - Neonates
  - 0-1 Year Old
  - 1-5 Year Old
  - 5 Years and above

4.0 Procedural Guideline for the Venepuncture Procedure

4.1 Indications for the Venepuncture Procedure

Venepuncture is the procedure of entering a vein with a needle and is undertaken to:

- Obtain a blood sample for diagnostic purposes using haematological, biochemical and bacteriological analysis
- Monitor levels of blood components

4.2 Considerations When Undertaking the Venepuncture Procedure

Venepuncture is one of the most common invasive procedures and can be traumatic for the child and family. It should only be ordered when necessary. A clinical assessment should be undertaken prior to the venepuncture procedure. The "Children First -National Guidelines for the Protection and Welfare of Children" (DOHC, 2009) should be adhered to.

4.2.1 Iatrogenic Anaemia

Iatrogenic anaemia or iatrogenic blood loss is the regular removal of blood for testing purposes over a short period of time. It is especially important with neonates and infants as they have smaller blood volumes and may need to have blood transfusions to replace the blood removed.

Coordination is needed between physicians, nurses and midwives and laboratories to minimise duplication of blood orders and to ensure the collection of the minimum amount of blood specimens required for testing. Please refer to local organisational policy for the maximum amount of blood that can be drawn from children.

4.3 Preparation for Procedure

4.3.1 Informed Consent

Informed consent should be obtained from the child and/or parent/legal guardian prior to the procedure and as per local organisational policy. Informed consent is obtained from the parent/legal guardian or next of kin in the following circumstances:

- If a child is under the age of consent (16 years)
- If the child does not have the cognitive ability to understand or make an informed decision

If the parents and/or child do not speak English, arrangements most be made to ensure the procedure is understood and the consent is valid. The child should be involved in the decision making process and be given adequate information and explanation. Identify preferences in relation to the venepuncture site should be discussed (Dominant hand, clothing worn and thumb sucking hand etc).

4.3.2 Clinical Holding

Minimal restraint and holding should be used for the venepuncture procedure. Restraint used should be appropriate to age, cognitive ability and behavior of the child. Please refer to local organisational policies on clinical holding and the restraining of children. For further information, please read "Restraining, Holding Still and Containing Young Children" (RCN, 2003) and Department of Health & Children "Children First -National Guidelines for the Protection and Welfare of Children"(DOHC, 2009).

4.3.3 Psychological, Pharmacological and Non Pharmacological Methods of Pain Relief

Anxiety associated with venepuncture can be reduced by good communication skills, diversion, distraction and relaxation techniques. Children's previous experiences with venepuncture should also be taken into consideration and measures applied that previously relieved pain and anxiety (Lavery, 2003). The need for local anaesthetic agents prior to the procedure should be considered on an individual basis (Scales, 2005). Please see appendix i for more information on psychological, pharmacological and non pharmacological methods of pain relief.

4.3.4 Topical Anaesthetic Agents

Topical anaesthetic agents such as Ametop Gel, EMLA Cream and Ethyl Chloride Spray produce numbness of the skin and have been proven to reduce the pain experienced during the venepuncture procedure (Dougherty, 2008). Details of topical anaesthetic agents are:

- **Ametop Gel:** Consists of Amethocaine 4% Gel. Indications: Children over 1 month. Application Time: Minimum of 30 minutes prior to procedure. Side Effects: Redness, swelling and itchiness
- **EMLA Cream** (Eutectic mixture of local anaesthetics). Consists of: Lidocaine and Prilocaine 5% Cream. Indications: Children over 1 Year. Application Time: Minimum of one hour prior to procedure. Side Effects: Redness, swelling and itchiness
- **Ethyl Chloride Spray:** Consists of: Ethyl Chloride Spray. Indications: Use if allergic to or has poor tolerance or anxiety relating to other agents or occlusive dressings. Suitable in emergency situations due to it's immediate action. Application Time: Immediate. Side Effects are extremely rare and include: cutaneous sensitisation, pigmentation. Overexposure can lead to headaches, dizziness, vomiting, loss of co-ordination and disorientation.

Topical anaesthetic agents should be applied to a limited number of locations only, as excessive use of agent can be harmful when absorbed (Scales, 2005 and Franurik et al., 2000). Infants should be supervised when agents are applied in case of accidental ingestion. Topical anaesthetic agents must be prescribed on an individual basis and be used according to manufacturer's instructions. Current practice does not advocate the application of any anaesthetic agents for neonates, instead sucrose/glucose may be used for babies over 32 weeks gestation as prescribed.

4.4 Vein Selection in Children

Choosing the correct vein is important. When selecting the appropriate site of vein for venepuncture, it is best practice to begin in the most distal aspect of the vein. This allows for further attempts above the selected vein which will not have been impeded. When cannulating children, the specific advantages and disadvantages of potential venepuncture sites must be considered. These are outlined below:

Median Cubital Vein in the Antecubital Fossa	**Advantages** • Deep veins with rich blood supply • Easy to palpate • Well supported by subcutaneous tissue (prevents vein rolling under the needle) • Accessible in thin people **Disadvantages** • Brachial artery and radial nerve in close proximity • Difficult to locate in child with increased subcutaneous fat
Cephalic and Basilic Veins in the Forearm	**Advantages** • Larger veins **Disadvantages** • Cannot be used if site is used for arteriovenous fistula • Not well supported by subcutaneous tissue (vein can roll from needle) • Brachial artery close to both veins • Median nerve close to basilic vein • Radial nerve close to cephalic vein
Metacarpal Veins in the Dorsal Venous Network	The metacarpal veins would be the first choice for neonates and infants under 2 years as other veins may not be accessible due to higher levels of subcutaneous fat. **Advantages** • Easily accessible, easily visualised and palpable • Prominent in obese patients **Disadvantages** • Difficult to secure • Skin can be delicate and subcutaneous tissue is diminished (small veins may only offer small volumes of blood) • Only suitable for small blood collection set (23G Butterfly system)

Children may also require venepuncture in either the **leg or foot**. These are not very common sites and should only be carried out by suitably trained personnel when all other sites are inaccessible.

4.5 Clinical Assessment

A clinical assessment should be carried out by the nurse or midwife prior to the venepuncture procedure. Consideration must be given to the child's developmental, cognitive and mobility needs when selecting a site. A Four Step Approach is outlined as follows:

Four Step Approach – Clinical Assessment

Check

- The indication for venepuncture to determine equipment and specific bottles to use
- If the child has fasted as required for specific tests
- The clinical condition (acute/ chronic/emergency) of the child
- Location and length of the vein
- Condition of the vein (visual and palpation)
- Area is warm prior to the venepuncture procedure (veins constrict if cold, making the procedure more difficult)
- Allergies to topical anaesthetic agents or plasters
- For needle phobia
- Previous history of difficult venepuncture procedures
- Increased amounts of subcutaneous fat
- For history of blood borne viruses, bleeding disorders or if receiving anticoagulation therapy

Choose

- Most distal aspect of the vein
- Non dominant hand
- Correct location, avoiding arteries and nerves
- Appropriate equipment to undertake procedure
- Appropriate topical anaesthetic agent

Avoid

- Hard, sclerosed, fibrosed, knotty, thrombosed veins or previous venepuncture sites
- Sites with intravenous infusions in situ
- Sites that may require peripheral intravenous central catheter (PICC) insertion or arterial monitoring
- Valves in the vein (if visible or palpable)
- Veins in the upper arm in babies less than 28 weeks as this could impede long line insertion
- Duplication of blood orders, especially in children (neonates and infants) due to smaller blood volumes
- Thumb sucking hand in children
- Lower extremities sites especially when children have just started walking
- Veins suitable for peripheral intravenous cannulation and treatment if a child requires repeated treatments such as chemotherapy

Do Not Use

- Arm with obvious infection or bruising
- Arm with a fracture
- Arm with an arteriovenous (AV) fistula
- Arm affected by a cerebro vascular accident
- Arm affected by lymphoedema

4.6 Equipment

The equipment required for the venepuncture procedure is outlined in each of the venepuncture procedures in appendix ii and iii.

Equipment required should be based on the assessment of the child and the specific blood tests required.

Venepuncture Procedure – Child – List of Equipment	
• A clean clinical tray • Sharps container (large enough to accommodate the blood collection system) • Disposable non sterile Sheet – (optional in case of blood spillage) • *Personal Protective Equipment (e.g., 2 pairs of well fitting non-sterile gloves, protective plastic apron, safety goggles/visor/mask with eye shield) • Skin disinfectant (70% impregnated alcohol wipes) • Alcohol Hand rub/gel	• Clean tourniquet • Topical anaesthetic agent if prescribed • **Required blood collection set • **Required blood specimen bottles • Blood requisition forms (fully completed with child details) • A biohazard bag for transport of specimens • Sterile gauze – (to apply pressure and absorb blood spillages) • Sterile child friendly plaster/band aid • Reward as agreed with child and parent e.g. sticker, or certificate
* As per Standard Precautions the use of a plastic apron and/or face protection should be assessed by each HCW based on the risk of blood splashing or spraying during the procedure.	
**Range and type of equipment may vary depending on local organisational policy.	

- Venepuncture Procedure Infant – Appendix ii
- Venepuncture Procedure Child – Appendix iii

4.6.1 Types of Safety Blood Collection Systems

The nurse and midwife should be familiar with the types of safety blood collection systems used in their organisation, which are outlined below.

Butterfly Safety Blood Collection Set	
The Butterfly Safety Blood Collection Set allows for blood aspiration from patients with very fine and fragile veins. The butterfly safety blood collection set can be used as an aspiration method or vacuum method.	It is best used in the dorsal venous network of the hand and the cephalic and basilic veins of the forearm. This method provides the best option for children and especially children with problematic, fragile and delicate veins. (The vygon neonatal needle is suitable for neonatal use).
Monovette System	
The Monovette System can be used as an aspiration method and/or a vacuum method. Components in the system include: • Multi-sampling needles with pre-assembled holders • Needle protection devices • Series of specific bottles with caps of various colours which are unique to this system (The colours indicate the type of additives).	This blood collection system is suitable for all veins for venepuncture. It is also suitable for fragile veins.
Vacutainer and Vacuette Safety Blood Collection Systems	
The Vacutainer and Vacuette Safety Blood Collection Systems use the vacuum method. This method allows for the automatic transfer of blood into the blood specimen bottles via a vacuum. There are a number of providers who offer a range of products that utilise the vacuum method and these products vary across organisations.	It is recommended for the prominent veins in the antecubital fossa area (median cubital vein). Use with caution on fragile veins as it may cause them to collapse.

4.6.2 Types of Blood Collection Bottles and Tubes

The blood collection bottles and tubes will vary depending on the safety blood collection system utilised. The nurse or midwife should be familiar with the types of blood collection bottles and tubes used in this organisation.

4.7 Recommended Order of Draw

The order of blood draw is the sequence in which blood collection bottles should be filled. The needle which pierces the bottle can carry additives from one bottle into the next, and so the sequence of draw is standardised so that any cross-contamination of additives will not affect laboratory results. The general principles applied to the order of blood draw are:

- 1st: Samples – no additives
- 2nd: Samples – anti coagulants
- 3rd: Samples – additives (WHO, 2002)

4.8 Procedure

The venepuncture procedure follows aseptic principles, using a non touch technique. **Two** attempts **ONLY** should be made at the venepuncture cannulation. If unsuccessful refer to another practitioner. Single use closed safety blood collection systems (sanctioned for use locally) are recommended for use in accordance with manufacturer's instructions.

The procedures for infant, child and adult are specified in appendices ii and iii.

- Venepuncture Procedure Infant – Appendix ii
- Venepuncture Procedure Child – Appendix iii

4.9 Management of Complications

Potential problems such as patient fear and anxiety, inability to draw blood or cessation of blood flow may arise and it is important to know how these may be overcome. Complications such as haematoma, phlebitis, nerve injury, arterial puncture, venous spasm and/or needle stick injury can occur and it is important that the nurse or midwife is able to recognise treat and /or prevent them. It is critical for the nurse to detect and prevent complications arising. It is especially important for children who may not be able to verbalise pain. Please see appendix iv for more information on complications.

5.0 Documentation

The nurse or midwife must be familiar with the documentation required for the venepuncture procedure. A requisition form must accompany blood samples submitted to the laboratory. The requisition form must contain the proper information in order to process the specimen.

The essential elements of the requisition form include the:

- Surname, first name, and middle initial
- Date of birth and sex
- Identification number
- Diagnosis or symptoms
- Complete name of healthcare professional requesting test
- Date of venepuncture procedure
- Indication of the blood test(s) requested
- Location (for example, ward, department, address)

6.0 Implementation Plan

The Director of Nursing and Midwifery is responsible for the dissemination, implementation and ongoing evaluation and audit of this policy within the organisation.

7.0 Evaluation and Audit

Evaluation will include a:

- Mechanism for recording, reviewing and acting on adverse venepuncture incidents
- System for maintaining practitioner competence
- Method for identifying further training needs

References

- An Bord Altranais (2000) Scope of Nursing and Midwifery Practice Framework. An Bord Altranais: Dublin.
- An Bord Altranais (2000) The Code of Professional Conduct for each Nurse and Midwife. An Bord Altranais: Dublin.
- Department of Health and Children (2009) Children First National Guidelines for the Protection and Welfare of Children. Department of Health: Dublin
- Dougherty, L. (2008) Peripheral Cannulation. Nursing Standard. 22 (52), 49-56.
- Dougherty, L. & Lister, S. (2009) The Royal Marsden Hospital Manual of Clinical Nursing Procedures. 7th Ed. Wiley Blackwell Pub: Chicester.
- Franurik, D., Koh, J.,L., and Schmitz, M.,L. (2000) Distraction Techniques with EMLA: Effects on IV Insertion Pain and Distress in Children. Children's Healthcare. 29 (2), 87-101.
- Health Service Executive (2008) A Practical Guide to Immunisations. HSE: Dublin.
- Health Service Executive (2010) A Guiding Framework for the Education, Training and Competence Validation in Venepuncture and Peripheral Intravenous Cannulation for Nurses and Midwives. HSE: Dublin
- Jamieson, E. et al (1988) Guideline for Clinical Nursing Practice. Churchill Livingstone: London.
- Lavery, I. (2003) Peripheral Intravenous Cannulation and Patient Consent. Nursing Standard. 17 (28) 40-42.
- Lavery, I., and Ingram, P. (2005) Venepuncture: Best Practice. Nursing Standard. 19 (49) pp 55-65.
- Royal College of Nursing (2003) Restraining, Holding Still and Containing Children and Young People (Guidance for Nursing Staff). Royal College of Nursing: London.
- Royal College of Nursing (2005) Competencies: An Education and Training Competence Framework for Peripheral Venous Cannulation in Children and Young People: Royal College of Nursing: London .http://www.rcn.org.uk/
- Scales, K. (2005) Vascular Access: A Guide to Peripheral Venous Cannulation. Nursing Standard. 19 (49) pp. 48-52
- Shields, L., Pratt, J. and Hunter, J. (2006) Family-Centred Care: A Review of Qualitative Studies. Journal of Clinical Nursing, 15: 1317 – 1323
- World Health Organisation (2002) World Health Organisation- Collaborating Centre for Patient Safety Solutions. http://www.ccforpatientsafety.org/

Resources

- An Bord Altranais (2002) Recording Clinical Practice Guidance to Nurses and Midwives An Bord Altranais: Dublin
- An Bord Altranais (2003) Guidelines on the Key Points that may be Considered when Developing a Quality Clinical Learning Environment: http://www.nursingboard.ie/
- An Bord Altranais (2005) Requirements and Standards for Nurse Registration Education Programmes. 3rd Ed. An Bord Altranais: Dublin. http://www.nursingboard.ie/en/publications_current.aspx?page=1
- An Bord Altranais (2005) Requirements and Standards for Midwife Registration Education Programmes. 3rd Ed. Dublin: An Bord Altranais. http://www.nursingboard.ie/en/publications_current.aspx?page=1
- An Bord Altranais (2007) Requirements and Standards for Post-Registration Nursing and Midwifery Education Programmes – Incorporating the National Framework of Qualifications. 1st Ed. An Bord Altranais: Dublin: http://www.nursingboard.ie/
- An Bord Altranais (2007) Guidance to Nurses and Midwives on Medication Management An Bord Altranais: Dublin.
- An Bord Altranais (2007) Requirements and Standards for Post-Registration and Continuing Competence Nursing and Midwifery Education Programmes-Incorporating the National Framework of Qualifications. An Bord Altranais: Dublin
- Ayliffe, G., A., J., Fraise, A., P., Geddes, A., M. and Mitchel, K. (2000) Control of Hospital Infection, A Practical Handbook. 4th ed. Arnold: London
- Back, F., & Hughes, J. (1997) Venepuncture. Nursing Standard. 11(41), pp.49-53
- Beyersdoerfer, B. (2001) cited in Smith, C. (2005) The Venepuncture Procedure-Pediatric Practices in Children's Nursing.
- Bowden, V., R. & Greenberg, C., S (2007) Pediatric Nursing Procedures. 2nd edn Lippincott Williams & Wilkins: New York.
- Briggs, J. (2006) Venepuncture - Acute Care. Johanna Briggs Institute. www.joannabriggs.ed.au
- Brooker, C. (2003) Human Structure & Function. Mosby: London.
- Broome, M., E. (2000) Helping Parents Support Their Child in Pain. Pediatric Nursing 26(3), 315-317.
- Chamley, C., A., Carson P., Randall, D. and Sandwell, M. (2005) Developmental Anatomy and Physiology of Children, A Practical Approach. Churchill Livingstone: London.
- Collins, M., Dougherty, L., de Verteuil, A. and Morris, W. (2005) A Structured Learning Programme for Venepuncture and Cannulation. Nursing Standard. 20(26), pp. 34-40
- Davies, E., H. & Molloy, A. (2006) Comparision of Ethyl Chloride Spray with Topical Anaesthetic in Children Experiencing Venepuncture. Paediatric Nursing. 18(3), 39-43.
- Department of Health and Children (2005) The Prevention of Transmission of Blood-Borne Diseases in the Health-Care Setting: http://www.dohc.ie/
- Duff, A., J., A. (2008) Incorporating Psychological Approaches into Routine Paediatric Venepuncture. ARCH.DIS.Child. http://adc.bmj.com/cgi/contenr/full/88/10/931
- Ernst, D., J. and Ernst, C. (2001) Phlebotomy for Nurses and Nursing Personnel 1st edn Healthstar Press: USA

- Glasper, A., & Richardson, J. (2006) A Textbook of Children's and Young Peoples Nursing. Churchill Livingston: London.
- Health Information and Quality Authority (2009) National Standards for the Prevention and Control of Health Care Associated Infections. HIQA: Dublin
- Health Information and Quality Authority (2008) National Hygiene Services Quality Review Standards and Criteria: http://www.hiqa.ie/
- Health Service Executive. (2001) Health Protection Surveillance Centre. The Strategy for the Control of Antimicrobial Resistance in Ireland: http://www.ndsc.ie/
- Health Service Executive (2005) The Control and Prevention of MRSA in Hospitals and in the Community: A Strategy for the Control of Antimicrobial Resistance in Ireland. Health Protection Surveillance Centre. http://www.ndsc.ie/
- Health Service Executive (2005) Strategy for the Control of Antimicrobial Resistance in Ireland-Guidelines for Hand Hygiene in Irish Health Care Settings. HSE: Dublin. www.hpsc.ie/
- Health Service Executive (2007) Infection Control Action Plan. http://www.hse.ie/eng/newsmedia/2007_Archive/June_2007_/HSE_committed_to_tackling_MRSA.html
- Health Service Executive (2007) The Prevention and Control of Health Care Associated Infections in Ireland. HSE: Dublin
- Health Service Executive (2007) Quality & Risk Management Standards.
- Health Service Executive (2007) Risk Management in the HSE: An Information Handbook
- Health Service Executive South Eastern Area (2007) Guidelines for Nursing/Midwifery Staff Undertaking Peripheral Intravenous Cannulation and/or Venepuncture in Children. Health Service Executive South Eastern Area.
- Health Service Executive (2008) Findings from the Survey of Venepuncture and Intravenous Cannulation Education and Training Among Nurses and Midwives Employed within the Republic of Ireland. Dublin: Stationary Office.
- Health Service Executive (2009) Infection Control E Learning Module: http://www.hseland.ie/
- Health Service Executive (2010) A Guiding Framework for the Education, Training and Competence Validation in Venepuncture and Peripheral Intravenous Cannulation for Nurses and Midwives. HSE: Dublin
- Hockenberry, M., J. & Wong, D., L. (2003) Wong's Nursing Care of Infants and Children. 7th ed. Mosby: Philadelphia
- Krechel, S., W., & Bildner, J. (1995). CRIES: A New Neonatal Postoperative Pain Measurement Score–Initial Testing of Validity and Reliability. Paediatric Anaesthesia 5: 53-61.
- Lillystone, R. (1999) Easing the Pain. Nursing Standard. 19 (41), 67-68.
- Malarkey, L., and McMorrow, M., E. (1998) Laboratory & Diagnostic Tests, A Pocket Guide. Saunders: Philadelphia.
- Masoorli, S. (2002) Catheter Related Nerve Injury: Inherent Risk or Avoidable Outcome? Journal of Vascular Access Devices. 7 (4) 49.
- McCall, E. & Tankersley, (2003) Phlebotomy Essentials. 3rd Ed. Lippincott Williams & Wilkins: Philadelphia
- Melhuish, S. & Payne, H. (2006) Nurses' Attitudes to Pain Management during Routine Venepuncture in Young Children. Paediatric Nursing. 16(2) 20-22.

- Moore, K., L., and Dalley, A., F. (2009) Clinically Oriented Anatomy. 6th Edn Lippincott Williams and Wilkins: New York.
- National Health Service Education for Scotland (2004) Transferring the Skills: A Quality Assurance Framework for Venepuncture, Cannulation and Intravenous Therapy: http://www.nes.scot.nhs.uk/
- National Health Service of United Kingdom, National Patient Safety Agency: http://www.npsa.nhs.uk/
- National Health Service of United Kingdom, The Health and Safety Executive: http://www.hse.gov.uk/
- National Health Service of United Kingdom, The Medicines and Healthcare Products Regulatory Agency: http://www.mhra.gov.uk/.
- National Institute of Health Pain Consortium (2007) Pain Intensity Scales. www.painconsortium.nih.gov/pain_scales/index.html
- Royal College of Nursing (2005) Informed Consent in Health and Social Care Research. Royal College of Nursing: London.
- Tortora, G., L. and Grabowaki, S., R. (2003) Principles of Anatomy and Physiology. Harper Collins College Publications: New York

Appendix i

Psychological, Pharmacological and Non Pharmacological Methods of Pain Relief for Intravenous Cannulation and Venepuncture in Children

Please refer to local guidelines and policies on pain scales and distraction techniques, pharmacological and non pharmacological methods of pain relief.
Pain Scales used when appropriate should be developmentally, physically, emotionally and cognitively suitable for the child.

Stage-Age	Understanding of pain and responses to pain & Fears and concerns	Measuring pain Suggested Pain scales: (used where appropriate)	Family Involvement	Distraction techniques & pharmacological and non pharmacological methods of pain relief
Neonatal	• Exhibits facial expressions of pain: • Brows lowered & drawn together, eyes tightly closed mouth opened & squarish. • Cry intensely, loudly, inconsolable • Changes in sleep/awake cycles, activity level • Exhibit hypersensitivity or irritability • Becomes withdrawn unresponsive. **Fears and concerns:** Totally dependant on parents and other adults for basic needs.	**CRIES** Pain scale for neonates that uses biophysiological indicators of pain (Krechel & Bildner, 1995).	• Explain procedure to parents/ legal guardian and reason for same and encourage questions. (If the parents do not speak English arrangements most be made according to organisational policy to organise an interrupter). • Encourage parental tactile contact and soothing verbal stimuli. • Mum can also be encouraged to breastfeed if child does not use a pacifier when appropriate. • Ask parents if they wish to be present during the procedure (Duff 2008).	• Sucrose and Glucose as prescribed and if neonate is not NPO. • Topical anaesthesia is not recommended for neonates. Instead sucrose is used for babies over 32 weeks gestation • Oral pacifiers (soothers) over 24 weeks or if mum is breastfeeding encourage same where appropriate. • Neonate should be kept warm for procedure (Trigg & Mohammed, 2006)

Stage-Age	Understanding of pain and responses to pain & Fears and concerns	Measuring pain Suggested Pain scales: (used where appropriate)	Family Involvement	Distraction techniques & pharmacological and non pharmacological methods of pain relief
Infants 0-1 year	• Exhibit facial expressions of pain- • brows lowered & drawn together, eyes tightly closed, mouth opened & squarish • Cry intensely, loudly, inconsolable • Poor oral intake • Changes in sleep/awake cycles, activity level. • Exhibit hypersensitivity or irritability. • Becomes withdrawn unresponsive **Fears and concerns:** Totally dependant on parents and other adults for basic needs. Trusts that adults will respond to basic needs.	**FLACC (Face, legs, arms, cry and consolability Scale)** Behavioural assessment scale that uses body movements and sounds to assess: the pain of infant and toddlers (Hockenberry & Wong 2003)	• Explain procedure to parents and reason for same • Encourage parental tactile contact and encourage parent to hold and comfort but not to restrain the child (RCN 2003). • Explain to the child regarding that the spray can feel cold. • Also explain that Ametop or Emla can be called 'magic cream or gel' as it 'disappears' absorbs when used.	• Sucrose and Glucose as prescribed. • Application of topical anaesthetic (e.g. Amethocaine 4% Gel Ametop as Emla is not recommended for children under 1 year) (Please refer to manufacturer's guidelines and local organisational guidelines). • Infants should be supervised when applied in case of ingestion. • Use of ethyl chloride spray. • (Davies & Molloy, 2006, Scales, 2008 & Dougherty, 2008). (Please refer to local guidelines, policies and manufactures' instructions) • Oral pacifiers (soothers) or if mum is breastfeeding encourage same. • May cry for discomfort on being held rather than being in pain.
Toddler (1-3 year)	• Changed behaviour: • Irritability, crying, screaming, • unusual posture, unusual quietness • Increased clinging, loss of appetite • Restlessness, disturbed sleep pattern **Fears and concerns:** Little fear of danger. Fear of separation from parents. Limited language and understanding of procedure. Threat of immediate pain is overwhelming.	**FLACC** pain scale: same as above	• Same as infant. • Ascertain from parent common word and for pain (hurt) and ways of alleviating pain. • Parents should be encouraged to hold and comfort the child prior, during and after procedure. • Encourage parents to decorate cot of child with pictures and toys. • Parent may read a story book to child with clinical procedure explained in a child friendly manner (Broome 2000 & Willock et al., 2004).	• Application of topical anaesthetic agents or 'magic cream' (e.g. Amethocaine 4% Gel (Ametop Gel) and Lidocaine and Prilocaine 5% (Emla Cream). Refer to manufacturer's instructions and local organisational guidelines. • Toddlers should be supervised when applied in case of ingestion. (Tak & van Bon 2006 & Franuirk et al 2000). • Be honest with child and let them know that they will feel a little pinch and let them know when they will feel it. • Listen to cassettes with music/family voices or child's favourite story/song. • Distract child with favourite toy or game. • Oral pacifiers (soothers) or if mum is breastfeeding encourage same. • Reassure the child that you are only taking a small amount of blood and that they will have sufficient blood left. • Ascertain the advice/support of play therapist and psychologist if indicated. • The organisation may have Distraction boxes to use for distraction and minimisation of fear 10 minutes prior to the procedure. • Such boxes would include carefully selected toys such as bubbles, toys, picture glasses etc (Winskill & Andrews 2008) • Child may need sedation as directed by the Doctor if procedure will cause severe distress or has needle phobia.

Stage- Age	Understanding of pain and responses to pain & Fears and concerns	Measuring pain Suggested Pain scales: (used where appropriate)	Family Involvement	Distraction techniques & pharmacological and non pharmacological methods of pain relief
Preschool age children (4-6yr)	• Able to use more descriptive adjectives and attachments of associated emotions (e.g. sad, painful, mad) **Fears and concerns:** Greater body awareness. Fear injury to body. Difficult to realise that the pain from the needle will be over quickly. Reassure child that crying is ok.	**Wong-Baker Face Rating Scale** Suggested age group 4 years and over & older children with different languages. (Hockenberry & Wong 2003)	• Advised to have parent present to assist with comforting the child and gaining child's cooperation. • (If the parents and/or chid does not speak English arrangements most be made according to organisational policy to organise an interpreter) • Reassure the child that they have done nothing wrong and are not being punished. • Parent may read a story book to child with the clinical procedure explained in a child friendly manner.	• Same as with toddler. • Ascertain what the child likes to play with as this could be used as a distraction technique. • Child will have developed magical thinking which can be used for fantasy scenes in guided imagery. • Allow child to be involved in the decision making process for procedure. (e.g. choice of vein)
School age children (6-12yr)	• Clearer differentiation of pain intensity. Beginning to use cognitive coping strategies. Wants explanations of why pain hurts. **Fears and concerns:** Fear loss of self control. More willing to participate and less dependant on parent. Concerns of pain or procedure limiting current activities rather than future abilities.	**Numerical scale rating** Child rates pain intensity from 1-10. **Wong-Baker Face Rating Scale** Can be used for child with different languages. (Hockenberry & Wong 2003 & Trigg & Mohammed 2006) **FLACC** Pain scales have been proven to be beneficial in this age group. (Nillson et al 2008)	• Child may not want parent present. • Parents and practitioner can use diagrams models to explain procedure. • Encourage parents to bring in child's favourite music and books.	• Important to allow child to be involved in the decision making process. • Child will want more explanations of need for procedure. • Child will have developed magical thinking which can be used for fantasy scenes in guided imagery • Child can be distracted by reading books, listening to music or T.V. (Doverty, 1992).

Stage-Age	Understanding of pain and responses to pain & Fears and concerns	Measuring pain Suggested Pain scales: (used where appropriate)	Family Involvement	Distraction techniques & pharmacological and non pharmacological methods of pain relief
Adolescent 13 yrs+	• Pain acknowledged as a 'feeling' • May be hyperresponsive to pain, minor procedures magnified. **Fears and concerns:** Want to be consulted with decisions regarding procedure. Sense of identity. Maybe embarrassed to show fear. May act hostile to hide fear. Separation from peers (Duff 2008, Melhuish & Payne 2006 & Willock et al 2004).	As per 6-12yr on previous page	• Child may not want parent present. • Child may be resistant to parental and authority figures. • Explanation should be given in adult terms.	• Consulted in the decision making process. • Give as much time as possible for advanced warning of procedure. • Reality conversation • Guided imagery • Listening to music, reading books. • Explanation of equipment and function allow time for questions.
Children with special needs/ Intellectually challenged	• Indications of pain: • Increased flexion or extension • Crying or alteration in type of sounds made • Quieter/withdrawn • Hypersensitivity • Breath holding • Colour changes • Changes of facial expression • Protective posture **Fears and concerns:** Similar to age appropriate behaviours that are based on their developmental level (Duff 2008).	**FLACC** Behavioural assessment scale that uses body movements and sounds to assess: older children that are cognitively & verbally impaired	• Parent/ Family member or carer should stay with child and assist if necessary. • Ascertain from parent/ family member or carer how the child normally reacts to pain or discomfort and the comforting measures that they use. • Explain procedure to parent/ Family member or carer and reason for same (Hockenberry & Wong 2003 & Trigg & Mohammed 2006).	• Similar to age appropriate behaviours that are based on their developmental level

Developed by Carmel O' Donnell, RNT, CCNE, based in OLCHC.

References

- Broome M.E. (2000) Helping parents support their child in pain. Pediatric Nursing 26(3), 315-317.
- Davies E.H. & Molloy a. (2006) Comparision of ethyl chloride spray with topical anaesthetic in children experiencing venepuncture. Paediatric Nursing. 18(3), 39-42.
- Dougherty L. (2008) Peripheral cannulation. Nursing Standard. 22 (52), 49-56.
- Doverty N. (1992) Therapeutic play in hospital. British Journal of Nursing. 1(2), 77-81.
- Duff A.J.A. (2008) Incopporating psychological approaches into routine paediatric venepuncture. ARCH.DIS.Child. http://adc.bmj.com/cgi/contenr/full/88/10/931.
- Franuirk D., Koh J.L. & Schmitz M.L. (2000) Distraction techniques with Emla: Effects on IV insertion pain and distress in children. Childrens Health Care. 29(2), 87-101.
- Hockenberry M.J. & Wong D.L. (2003) Wong's Nursing care of infants and children. 7th ed. Mosby. Philadelphia.
- Melhuish S. & Payne H. (2006) Nurses' attitudes to pain management during routine venepuncture in young children. Paediatric Nursing. 16(2) 20-22.
- Nilson S., Finnstrom B. & Kokinsky E. (2008) The FLACC behavioral scale for procedural pain assessment in children ages 5-16 years. Pediatric Anesthesia. (18), 767-774.
- Krechel, SW & Bildner, J. (1995). CRIES: a new neonatal postoperative pain measurement score– initial testing of validity and reliability. Paediatric Anaesthesia, 5: 53-61.
- Royal College of Nursing (2003) Restraining, holding still and containing children and young people (Guidance for nursing staff). Royal College of Nursing, London.
- Scales K. (2008) Intravenous therapy: a guide to good practice. British Journal of Nursing. 17(19), S4-S10.
- Tak J.H. & van Bon W.H.J. (2006) Pain-and distress-reducing interventions for venepuncture in children. Health & Development, 32 (3), 257-268.
- Trigg E. & Mohammed T.A. (2006) Practices in Children's Nursing. Guidelines for hospital and community. 2nd ed. Churchill Livingstone, London.
- Willock J. et al (2004) Peripheral venepuncture in infants and children. Nursing Standard. 18 (27),43-50.

Appendix ii
Venepuncture Procedure-Infant

The venepuncture procedure follows aseptic principles using a non touch technique.

In undertaking the procedure, it is important that only the equipment required is brought to the bedside. This is to ensure that cross-contamination does not occur, increasing the risk to other patients.

Equipment required should be based on an assessment of the infant and is as follows:

Venepuncture Procedure – Infant - List of Equipment

- A clean clinical tray
- Small kidney dish for Healthcare Risk Waste (placed in tray)
- Sharps container (large enough to accommodate the blood collection system)
- Disposable non sterile sheet – (optional in case of blood spillage)
- *Personal Protective Equipment (e.g., 2 pairs of well fitting non-sterile gloves, protective plastic apron, safety goggles/visor/mask with eye shield)
- Skin disinfectant
  - < 2 Months 0.5% -1% Chlorhexidine Aquous Solution
  - > 2 Months -70% impregnated alcohol wipes or 2% Chlorhexidine in 70% alcohol when supply available
- Alcohol hand rub/gel
- Clean tourniquet
- Topical anaesthetic agent if prescribed
- **Required blood collection set
- **Required blood specimen bottles
- Blood requisition forms (fully completed with infant details)
- A biohazard bag for transport of specimens
- Sterile gauze – (to apply pressure and absorb blood spillages)
- Sterile child friendly plaster/band aid
- Reward e.g. sticker or certificate

*As per Standard Precautions, the use of a plastic apron and/or face protection should be assessed by each Health Care Worker based on the risk of blood splashing or spraying during the procedure.

**Range and type of equipment may vary depending on local organisational policy.

Venepuncture Procedure - Infant

Prior to Procedure

- Confirm indication for the procedure, checking requisition forms for specific blood tests required
- Disinfect a clean clinical tray using 70% alcohol (or equivalent as per local guidelines)
- Collect the appropriate equipment and inspect it's integrity

At the Bedside

- Carry out Hand Hygiene for a minimum of 15 seconds
- Check the infant's identification, confirming same with parent, legal guardian or family
- Explain the procedure as appropriate to age and understanding and check for allergies
- Discuss pain relief (Pharmacological and non pharmacological methods)
- Obtain informed consent with parent or legal guardian
- Ensure the infant is comfortable, using minimal clinical holding or distraction therapies as required
- Request assistance from other health care workers or family as required
- Apply the tourniquet (5/6cms above chosen site) and tighten slowly (Do not leave on for longer than one minute). In neonates, especially extremely low birth weight babies, a tourniquet is not recommended
- Place arm below heart level to encourage venous filling
- Palpate the site to check for rebound elasticity -press lightly with one finger and release
- Choose the appropriate vein

Preparation

- Decontaminate hands using alcohol hand rub/gel, allow to dry
- Apply non sterile gloves, (apron and face protection if required)
- Open sterile gauze using the packaging for a sterile field
- Place disposable non sterile sheet (optional) under the infant's arm
- Disinfect the site, using skin disinfectant –(0.5% -1% Chlorhexidine Aquous Solution /70% impregnated alcohol wipes / 2% Chlorhexidine in 70% Alcohol) according to age
- Disinfect in a circular motion from insertion site outwards (5-10cms diameter)
- Place the used alcohol wipes in the kidney dish
- Allow to air dry, do not repalpate the site

Venepuncture Procedure

- Open and assemble the appropriate blood collection set
- Use your non dominant hand to achieve skin traction
- Hold the blood collection set between your thumb and index finger
- Position the needle-facing bevel upwards
- Insert the needle of the blood collection set, directly above the vein, through the skin (angle 10-30 degrees)
- When the needle punctures the vein, observe for flashback in the chamber of the blood collection set (butterfly system only). The flashback is not evident when using a tube holder and 21/22 gauge needle (Vacuum method)

- Decrease the angle between the needle and the skin
  - When using the tube holder and needle (Vacuum method), anchor the tube holder securely, using your thumb and index finger. Using your thumb, gently but firmly push the blood collection bottle onto the interior needle and allow the blood collection bottle to fill to the appropriate level
  - When using the monovette aspiration system, pull the plunger back slowly until the blood bottle is filled
  - When using the butterfly system, draw a discard bottle first, as air from the blood collection tubing will cause under filling of the bottle
- When multiple blood tests are required, ensure the blood tests are taken in the proper order of draw
- Loosen and release the tourniquet
- Invert bottles gently four to five times to mix appropriately, Do Not shake bottles
- Apply sterile gauze over the puncture site, and remove the needle activating the needle safety device
- Place the blood collection set into the sharps box
- Maintain digital pressure on the puncture site to prevent blood leakage
- Arm can be elevated while applying pressure to prevent haematoma formation but do not bend the arm
- Discard the blood contaminated gauze in the kidney dish
- Apply sterile dressing or child friendly plaster over the puncture site
- Remove gloves and face protection if applicable and discard into kidney dish
- Carry out effective hand hygiene for a minimum of 15 seconds (Alcohol hand rub/gel)

After Care

- Inform the parents/legal guardian of potential complications and advise to report same
- Ensure the infant is in a comfortable position and reassure, offering a child friendly reward as appropriate
- Apply gloves and ensure blood collection bottles and requisition forms are correctly labelled. New gloves are required for the safety of the Health Care Worker and to prevent contamination of the requisition forms
- Place all blood collection bottles and forms into the Biohazard bag
- Bring tray with used items to the dirty utility
  - Dispose of healthcare risk and non risk waste appropriately
  - Clean and disinfect the clinical tray and kidney dish if reusable
  - Clean and disinfect reusable eye shield as per manufacturer's instructions if applicable
  - Remove gloves and apron and carry out appropriate hand hygiene for a minimum of 15 seconds
- Arrange for blood samples to be transported to the laboratory
- Document the procedure, communicate and inform relevant staff

Appendix iii
Venepuncture Procedure-Child

The venepuncture procedure follows aseptic principles using a non touch technique.

In undertaking the procedure, it is important that only the equipment required is brought to the bedside. This is to ensure that cross-contamination does not occur, increasing the risk to other patients.

Equipment required should be based on an assessment of the child and is as follows:

Venepuncture Procedure – Child – List of Equipment	
• A clean clinical tray • Small kidney dish for Healthcare Risk Waste (placed in tray) • Sharps container (large enough to accommodate the blood collection system) • Disposable non sterile sheet – (optional in case of blood spillage) • *Personal Protective Equipment (e.g., 2 pairs of well fitting non-sterile gloves, protective plastic apron, safety goggles/visor/mask with eye shield) • Skin disinfectant (70% impregnated alcohol wipes or 2% Chlorhexidine in 70% alcohol when supply available • Alcohol hand rub/Gel	• Clean tourniquet • Topical anaesthetic agent if prescribed • **Required blood collection set • **Required blood specimen bottles • Blood requisition forms (fully completed with child details) • A biohazard bag for transport of specimens • Sterile gauze – (to apply pressure and absorb blood spillages) • Sterile child friendly plaster/band aid • Reward as agreed with child and parent e.g. sticker, or certificate
* As per Standard Precautions the use of a plastic apron and/or face protection should be assessed by each Healthcare Worker based on the risk of blood splashing or spraying during the procedure.	
**Range and type of equipment may vary depending on local organisational policy.	

Venepuncture Procedure - Child

Prior to Procedure

- Confirm indication for the procedure, checking requisition forms for specific blood tests required
- Disinfect a clean clinical tray using 70% alcohol (or equivalent as per local guidelines)
- Collect the appropriate equipment and inspect it's integrity

At the Bedside

- Carry out hand hygiene for a minimum of 15 seconds
- Check the child's identification, confirming same with child and parent, legal guardian or family
- Explain the procedure as appropriate to age and understanding and check for allergies
- Discuss pain relief (Pharmacological and non pharmacological methods)
- Obtain informed consent with parent or legal guardian
- Ensure the child is comfortable, using minimal clinical holding or distraction therapies as required
- Request assistance from other health care workers or family as required
- Apply the tourniquet (5/6cms above chosen site) and tighten slowly (Do not leave on for longer than one minute)
- Ask the child to open/close fist if able and keep fist closed or place arm below heart level to encourage venous filling
- Palpate the site to check for rebound elasticity -press lightly with two fingers and release
- Choose the appropriate vein

Preparation

- Decontaminate hands using alcohol hand rub /gel, allow to dry
- Apply non sterile gloves, (apron and face protection if required)
- Open sterile gauze using the packaging for a sterile field
- Place disposable non sterile sheet (optional) under the child's arm
- Disinfect the site, using skin disinfectant –(70% impregnated alcohol wipes or 2% Chlorhexidine in 70% alcohol)
- Disinfect in a circular motion from insertion site outwards (5-10cms diameter)
- Place the used alcohol wipes in the kidney dish
- Allow to air dry, do not repalpate the site

Venepuncture Procedure

- Open and assemble the appropriate blood collection set
- Use your non dominant hand to achieve skin traction
- Hold the blood collection set between your thumb and index finger
- Position the needle, facing bevel upwards
- Insert the needle of the blood collection set, directly above the vein, through the skin (angle 10-30 degrees)

- When the needle punctures the vein, observe for flashback in the chamber of the blood collection set (butterfly system only). The flashback is not evident when using a tube holder and 21/22 gauge needle (Vacuum method)
- Decrease the angle between the needle and the skin
    - When using the tube holder and needle (Vacuum method), anchor the tube holder securely, using your thumb and index finger. Using your thumb, gently but firmly push the blood collection bottle onto the interior needle and allow the blood collection bottle to fill to the appropriate level
    - When using the monovette aspiration system, pull the plunger back slowly until the blood bottle is filled
    - When using the butterfly system, draw a discard bottle first, as air from the blood collection tubing will cause underfilling of the bottle
- When multiple blood tests are required, ensure the blood tests are taken in the proper order of draw
- Loosen and release the tourniquet
- Invert bottles gently four to five times to mix appropriately, Do Not shake bottles
- Apply sterile gauze over the puncture site, and remove the needle activating the needle safety device
- Place the blood collection set into the sharps box
- Maintain digital pressure on the puncture site to prevent blood leakage
- Arm can be elevated while applying pressure to prevent haematoma formation but do not bend the arm
- Discard the blood contaminated gauze in the kidney dish
- Apply sterile dressing or child friendly plaster over the puncture site
- Remove gloves and face protection if applicable and place in the kidney dish
- Carry out effective hand hygiene for a minimum of 15 seconds (Alcohol hand rub /gel)

After Care

- Inform the child and parents/legal guardian of potential complications and advise to report same
- Ensure the child is in a comfortable position and reassure, offering a child friendly reward as appropriate
- Document the procedure, communicate and inform relevant staff
- Apply gloves and ensure blood collection bottles and requisition forms are correctly labelled. New gloves are required for the safety of the Healthcare Worker and to prevent contamination of requisition forms
- Place all blood collection bottles and forms into the biohazard bag
- Bring tray with used items to the dirty utility
    - Dispose of healthcare risk and non risk waste appropriately
    - Clean and disinfect the clinical tray and kidney dish if reusable
    - Clean and disinfect reusable eye shield as per manufacturer's instructions if applicable
    - Remove gloves and apron, and carry out appropriate hand hygiene for a minimum of 15 seconds
- Arrange for blood samples to be transported to the laboratory
- Document the procedure, communicate and inform relevant staff

Appendix iv
Potential Complications for the Venepuncture Procedure

Venous Spasm	**Venous spasm is a sudden involuntary contraction of the vein, resulting in temporary cessation of blood flow in the vein.**
Cause	• Venous spasm is caused by fear and anxiety and is usually stimulated by cold infusates and mechanical or chemical irritation
Signs	• Expressions of pain (verbal or non verbal) such as facial expressions or crying • Cramping • Numbness above the venepuncture site
Prevention	• Explain the procedure to reduce fear and anxiety
Treatment	• Gently massage or warm the limb and retry • Slow down the process of venepuncture (there is no need to remove the needle). • Wait for the vein to relax before proceeding

Haematoma	**Haematoma is the formation of a painful and hard swelling at the venepuncture site.**
Cause	• Leakage of blood at the site of the venepuncture, may collect as a haematoma • Inappropriate use of a small fragile vein, or too large a needle • Excessive probing to find the vein • Removing the needle prior to releasing the tourniquet • The needle going all the way through the vein • The needle only partially entering the vein, allowing leakage
Signs	• Expressions of pain (verbal or non verbal) such as facial expressions or crying, loss of mobility or reluctance to move the affected limb • Swelling, discolouration or coolness of the area adjacent to the puncture site.
Prevention	• Selection of appropriate equipment for the size of the vein • Skilled technique
Treatment	• Release the tourniquet, remove the needle and apply pressure until haemostasis has been achieved • Elevate the limb and apply a cool compress if necessary, avoiding an ice burn • Apply a pressure dressing if bleeding is persistent • Explain what has happened and request that staff are informed if the area becomes more painful as the haematoma may be pressing on a nerve • Do not reapply the tourniquet to the affected limb • Request a medical review, if required • Monitor, treat as prescribed and document in the nursing care plan • Report the occurrence of this complication, as per local organisational policy

Phlebitis	Phlebitis is an acute inflammation of the intima of a vein (Dougherty, 2008).
Cause	• Localised infection or irritation of the vein caused by the introduction of the venepuncture needle (mechanical phlebitis)
Signs	• Expressions of pain (verbal or non verbal) such as facial expressions or crying • Loss of mobility or reluctance to move the affected limb • Redness, inflammation, or purulent ooze at the venepuncture site
Prevention	• Early detection is crucial, with regular monitoring required • In children, the site should be monitored more frequently as they are at increased risk due to their small vessels
Treatment	• Observe and monitor the venepuncture site • Assess the degree of phlebitis • Take a swab of the site for culture and sensitivity • Clean and apply a dressing, to the affected area and administer analgesia as prescribed • Report the incident of this complication • Treat as prescribed and document the care given

Nerve Injury	Nerve injury is an inadvertent injury to the nerve.
Cause	• Inappropriate selection of the venepuncture site • Poor technique
Signs	• Pain described as an 'electrical shock' or a 'pins and needles' sensation • Crying • Loss of mobility or reluctance to move the affected limb
Prevention	• Appropriate clinical assessment • Appropriate site selection • Skilled technique
Treatment	• Release the tourniquet, remove the needle and apply gentle pressure • Explain and reassure the child about what has occurred • Advise that any symptoms of altered sensation may persist for a few hours • Arrange a medical review, if required • Monitor, treat as prescribed and document in the nursing care plan • Finally, report the occurrence of this complication, as per local organisational policy

Arterial Puncture	**The inadvertent puncture of the artery is another complication associated with venepuncture.**
Cause	• Inappropriate selection of the venepuncture site • Poor technique
Signs	• Presence of bright red blood • Expressions of pain (verbal or non verbal) such as facial expressions or crying
Prevention	• Appropriate clinical assessment • Appropriate site selection • Skilled technique
Treatment	• Release the tourniquet, removing the needle immediately and apply pressure until haemostasis has been achieved • Explain and reassure regarding what has happened • Request that a member of staff is informed if bleeding recurs from the puncture site, if pain continues or if there is increasing swelling or bruising • Arrange a medical review • Monitor, treat as prescribed and document in the nursing care plan • Report the occurrence of this complication, as per local organisational policy

Needle Stick Injury	**A needle stick injury (percutaneous inoculation injury) is an inadvertent puncture of the skin with a potentially contaminated needle.**
Cause	• Inadvertent puncture of the skin during the venepuncture procedure
Signs	• Pain • Bleeding • A visible puncture of the skin of the nurse or midwife
Prevention	• The application of Infection Prevention & Control and Health and Safety Policy will support safe practice
Treatment	• Encourage the wound to bleed freely (do not suck the wound) • Wash the affected area with liquid soap under running water • Apply a waterproof dressing over the affected area • Report the incident to your line manager • Record the incident accordingly by completing the relevant incident form • Submit the incident form to your risk manager or line manager • For follow-up and advice, contact your Occupational Health Dept and/or the Accident and Emergency Dept as per local organisational policy