**Purpose**
Neonates in Special Care Nursery may require intravenous cannulation for the administration of fluids, medications and blood products. This guideline outlines the procedure for safe insertion using aseptic technique, management and removal of an intravenous cannula.

**Scope**
This guideline is applicable to all Nursing/Midwifery and Medical staff that are accredited to perform Paediatric intravenous cannulation at Peninsula Health.

**Responsibilities**

**Employer**
Peninsula Health acts to minimize risk by supporting adherence to Guidelines, occupational health and safety obligations and duty of care to staff and consumers through a comprehensive clinical governance system which includes the provision of and education in relation to evidence based Guidelines.

**Departmental**
The Executive supports Department Heads in the monitoring and evaluation of Guidelines. Providing the necessary infrastructure and resource to facilitate compliance with Guidelines and assisting the Department Heads to facilitate education and enforce compliance with Guidelines.

**Department Head/Manager**
Department Heads/Managers monitor compliance with Guideline via agreed evaluation methods and associated KPIs. Ensure all staff have easy access to relevant Guidelines and are kept informed of any updates or changes to Guidelines related to their employment and scope of practice. Facilitate education as appropriate in relation to the Guideline.

**Employee**
All employees must be familiar with and comply with Guidelines relevant to their employment and scope of practice.

**Indications**
Administration of intravenous medications
Continuous/bolus intravenous fluid administration
Administration of blood or blood products

**Guideline**
Consideration of the following must be undertaken:
- Assess the neonate to ensure it is safe to conduct the procedure and position allows access to all limbs
- Maintain the neonate in a neutral thermal environment, radiant warmer if necessary and ensure neonate is well oxygenated
- Administer Sucrose 24% or non-pharmacological techniques as appropriate for pain management
- Appropriate light source available
- **If cannulation is unsuccessful after 3 attempts**, the medical officer should report to the next upper level of expertise i.e. Registrar of Consultant
- **A new cannula is required for each insertion attempt**
- If contamination occurs during the procedure, discard the contaminated equipment and don another pair of sterile gloves after performing hand hygiene

**Equipment:**
- Clean trolley with basic dressing pack
- Sterile gloves
- Skin preparation solution (Chlorhexidine 0.5% in Alcohol 70%)
- 24g Insyte neonatal catheter
- Paediatric extension set with 1 smartsite for bolus medication or 2 smartsites for continuous infusion
- 2 X 2ml syringes (one for flushing cannula and one to prime extension set)
- 10ml ampoule 0.9% Sodium Chloride
- Blunt end drawing up needle
- Steristrips, Tegaderm occlusive dressing
- Tapes (Leukoplast)
- Padded splint
- Pathology tubes if required, extra blunt end drawing up needle and 2ml syringe
- Intravenous site scoring tool

For continuous infusion
- Infusion pump with appropriate infusion giving set
- Intravenous fluid as ordered on Intravenous Fluid Orders MR/015
- Label for intravenous lines

**Preferred sites for cannulation:**
- Hand: Dorsal arch veins, Cephalic vein
- Wrist: Volar aspect
- Cubital fossa
- Foot: Dorsal arch, Saphenous vein

**Procedure for insertion:**
- Perform hand hygiene
- Clean trolley surface with appropriate solution or wipes
- Open basic dressing pack and place sterile equipment onto surface so that equipment remains sterile
- Select the insertion site carefully
- Perform hand hygiene and don sterile gloves
- Assemble equipment that has been opened onto the dressing pack
• Draw up 0.9% Sodium Chloride into the 2 X 2ml syringes using the blunt end needle
• Prime the paediatric extension set
• Swab skin with the antiseptic solution. Allow to dry
• Apply tourniquet, using a piece of gauze

Identifying vein

• Pull skin taut, identify vein and enter skin at an angle and away from the vein
• Once through skin, reorient the needle tip and the vein and attempt to advance directly over the vein
• Aim to enter the vein on a straight stretch
• Advance in a stop-start fashion (flashback of often slow, sometimes reliance on a change of resistance is necessary to try to then advance the catheter)
• When blood appears, stop.
• Lift tip of needle slightly. Advance 1-2mm. Check if bleeding into chamber continues. If so, needle tip is still in vein. Holding base of needle steady, push catheter off needle with index finger of right hand and advance cannula up vein as far as it will easily go
• Release the tourniquet
• Flush with 0.9% Sodium Chloride to check patency
Securing the IV cannula

Without touching the insertion site, use 2 “vee” Steristrips around the end of the hub of the catheter and the insertion site

- Place the occlusive dressing (Tegaderm) over the hub of the catheter and the insertion site
- Attach the primed paediatric extension set
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Attaching the splint

- Splint the limb and tape to immobilise the joint above the insertion point. Tape loosely over fingers/toes leaving thumb free. Place another tape over the hub securing the extension set if appropriate

Procedure complete

(All photographs taken from Department of Health and Human Services, State Government of Victoria. (2015) Peripheral Intravenous (IV) catheter insertion for neonates, Neonatal ehandbook.)

- Document the procedure including the size of the cannula, site of insertion and by whom inserted in the neonate’s medical record

- For IV continuous infusion, 2 staff to check the 5 rights of medication administration, label the infusion fluid bag with bradma label, date and time of commencement of infusion

- Commence the infusion at the prescribed rate
Observations
Cannula not for continuous infusion:
- Check at least 4 hourly for signs of phlebitis/extravasation, signs of infection, integrity of connections and record on the observation chart
- Check and maintain patency by flushing with 0.5ml of 0.9% Sodium Chloride 6 hourly and before and after medication administration

Cannula for continuous infusion:
- Check hourly as above and record on observation chart
- Hourly recording of set rate, volume infused and progressive total on Neonatal Observation chart
- Reset volume to be infused (VTBI) to hourly amount each hour
- When continuous infusion ceases and cannula to remain in situ, remove infusion giving set and continue care for cannula not for continuous infusion
- Prior to accessing smartsite ports, perform hand hygiene, clean with 70% alcohol swab for 15 seconds, allow to dry for 30 seconds and maintain the principles of aseptic technique

At commencement of each shift:
- Check site and integrity of all intravenous cannulas
- For continuous infusions, check intravenous fluids, infusion rate and duration against the intravenous fluids medical order

Changes to fluids and giving sets
- Intravenous bags/syringes are to be changed 24 hourly and labelled with neonate’s bradma, date and time of commencement
- All intravenous giving sets are to be changed every 72 hours from commencement – or on resiting the intravenous cannula
- Intravenous giving sets should be changed following infusion of blood or blood products

Resiting intravenous cannula
Cannulas only need to be replaced when they fall out, show signs of phlebitis, infiltration, extravasation or become occluded

Removal of intravenous cannula
- Perform hand hygiene and don non-sterile gloves
- Gently remove tapes from neonate’s skin
- Gently position a sterile cotton wool ball over the insertion site and withdraw the cannula
- Apply gentle pressure over the site until bleeding stops
- Discard all used equipment as appropriate
- Observe insertion site for bleeding
- Cover site with sterile cotton wool and tape or band-aid
- Document removal on the Neonatal observations chart and Special Care Nursery Flow Chart
Complications
- Phlebitis
- Cellulitis
- Sepsis
- Tissue necrosis
- Air embolus
- Tenderness
- Inflammation

It is the responsibility of all Peninsula Health staff involved in the assessment, investigation, planning, care delivery or treatment of a patient irrespective of the care situation to ensure they are providing the right care to the right patient at all times by positively identifying the patient prior to any consultation.

The three approved identifiers at Peninsula Health are patient name (family and given), date of birth and Unit Record (UR) number. In the absence of a UR number or when a new patient is being registered, the patient address can be used until a UR number is assigned. To correctly identify a patient, the patient or representative should be asked to state their full name (family and given) and date of birth and always check this against the patient identification band and/or labelled documentation.

Aseptic technique is a set of key principles and practices performed under carefully controlled conditions with the goal of minimising contamination of a vulnerable site by infectious organisms. This procedure must be performed in a sequence that ensures efficient, logical and safe practice, allowing the protection of key sites and parts at all times. Key parts are sterile and this must be maintained by use of appropriate sterile fields, hand hygiene and where a key part must be touched sterile gloves must be employed.

Evaluation
Effectiveness of this guideline will be monitored and evaluated through:

Regular document revision every 2 years and review of relevant VHIMS/RiskMan Reports

Key Aligned Documents
Peninsula Health Policy - Hand Hygiene and Aseptic Technique – Infection prevention and Control Unit
Peninsula Health Policy - Medication Management – Pharmacy
Clinical Practice Guideline - Intravenous Therapy Nursing Management
Clinical Practice Guideline – Pain Management for Neonates using Oral Sucrose
Clinical Practice Guideline – Standard and Transmission Based Precautions

Key Legislation, Acts & Standards
N/A
Guideline title  INTRAVENOUS CANNULATION/THERAPY FOR NEONATES
Department  SPECIAL CARE NURSERY

References

Appendix

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