Guideline and Procedure

Paediatric Peripheral Intravenous Cannula Care

Sites where Guideline and Procedure applies	All Hunter New England Local Health District (HNE LHD) facilities providing intravenous clinical services to children and adolescents excluding neonates
This Guideline and Procedure applies to:	
1. Adults	No
2. Children up to 16 years	Yes
3. Neonates – less than 29 days	No
Target audience	All clinicians, in HNE LHD facilities where children and adolescents receive intravenous clinical care
Description	Provides evidence-based practice for the safe management of children and adolescents with an intravenous (IV) cannula.

Go to Procedure

Keywords	Intravenous (IV), cannula, paediatric, management
Document registration number	HNELHD GandP 2020 ???
Replaces existing document?	Yes
Registration number and dates of superseded documents	HNELHD GandP 17_16 from May 2017_July 2020.

Related Legislation, Australian Standard, NSW Ministry of Health Policy Directive or Guideline, National Safety and Quality Health Service Standard (NSQHSS) and/or other, HNE Health Document, Professional Guideline, Code of Practice or Ethics:

- PD2017_032:PCP 2 Clinical Procedure Safety (Levels 1, 2 and 3)
- PD2017_013: Infection Prevention and Control Policy.
- GL2018_013: Blood and Body Substances Occupational Exposure Prevention.
- HNELHD Pol18_03: Aseptic Technique for Level 1 to Level 2 Procedures Conducted in Clinical Settings.
- NSQHS Standards 1, 3 & 6, https://www.safetyandquality.gov.au/standards/nsqhs-standards
- ACI 2012 Standard 3 Preventing and Controlling Healthcare Associated Infections.
- NSW Health Policy Directive 2013_043 – Medication Handling in NSW Public Health Facilities
- RCHM 2020. Peripheral intravenous (IV) device management: SCHN Intravenous Cannulation and Venepuncture Procedure. 1/C/13:9077-01:02.

Prerequisites	All staff who insert intravenous peripheral short cannula must complete their hand hygiene and asepsis training as well as complete a yearly asepsis audit. Nursing staff need to complete additional training and competency assessment.
Guideline and Procedure note	This document reflects what is currently regarded as safe and appropriate practice. The guideline section does not replace the need for the application of clinical judgment in respect to each individual patient but the procedure/s **require mandatory compliance**. If staff believe that the procedure/s should not apply in a particular clinical situation they must seek advice from their unit manager/delegate and document the variance in the patient's health record.
Position responsible for the Guideline and Procedure and authorised by	Dr Paul Craven: CYPFS Director
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Date authorised	30 November 2020
This document contains advice on therapeutics	No
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Note: Over time links in this document may cease working. Where this occurs please source the document in the PPG Directory at: http://ppg.hne.health.nsw.gov.au/

RISK STATEMENT

IV devices are a potential source of healthcare associated infections. IV device related blood stream infections are associated with significant mortality, worsen the severity of the patient's underlying ill health, potentially prolong the period of hospitalization and increase the cost of care. (NHMRC page 140). Research has shown a direct correlation between the maintenance of asepsis with IV procedures and the risk of catheter associated infection. The correct management of infusions is the key to prevention of non-septic thrombophlebitis and thrombosis.

The aim of this document is to prevent and/or minimize adverse events associated with the management of peripheral intravenous cannula insertion, cannula securing and IV therapy by promoting safe and effective practice.

Risk Category: Clinical Care & Patient Safety

CLINICAL PROCEDURE SAFETY LEVEL

Every clinician involved in the procedure is responsible for ensuring the processes for clinical procedure safety are followed. The following level 1, applies to this procedure, click on the link below for more information:

https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/PD2017_032.pdf

Level 1 Procedure:

1. Single proceduralist
2. Does not involve procedural sedation or general/regional anaesthesia
3. Performed in wards, clinics, departments and radiology units.

Requirements:

Pre-procedure: STOP and confirm the following before commencing the procedure:

- Patient identification

- Procedure verification – procedure, confirm consent + site/side/level

- Allergy/adverse reaction check, including allergy to medical tapes

- Anticipated critical events

Post procedure

Document procedure in patient's health care record or radiology information system

- Add to clinical handover
- Label specimen/images if required

Level 1 Procedure

GLOSSARY

Acronym or Term	Definition
Infiltration	The accidental or unplanned administration of a non-vesicant drug or fluid into the tissue surrounding the venipuncture site.
Extravasation	The accidental or unplanned infiltration of a vesicant drug or fluid into tissue surrounding the venipuncture site.
Non-Vesicant	Is a solution or medication that doesn't cause blistering or severe tissue injury.
Vesicant	Any medication or solution with the potential to cause blistering and severe tissue injury. Vesicant medications & solutions reported to cause extravasation injury include: • Antimicrobials • Vasocompressive agents • Concentrated electrolyte solutions (i.e. TPN) • Cytotoxic agents • Hyperosmolar agent (i.e. high- concentration dextrose) • Radiographic contrast media • Phenytoin
IV	Intravenous
MHL	My Health Learning
PDR	Performance Development Review
PPE	Personal Protective Equipment
PICC	Peripherally inserted central catheter
CVAD	Central venous access device

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GUIDELINE

Peripheral intravenous cannula are the most commonly used intravenous devices in hospitalized patients. They are used for short-term intravenous (IV) therapy (less than 7 days) with solutions that are unlikely to cause damage to peripheral veins. Paediatric peripheral intravenous cannula can remain in situ until no longer required (beyond 7 days) if there are no signs of extravasation or phlebitis present. If it is known that a patient will require prolonged therapy, then early insertion of a peripherally inserted central catheter (PICC), central venous access device (CVAD) or Powerwand is recommended as these have lower complication rates.
http://intranet.hne.health.nsw.gov.au/__data/assets/pdf_file/0005/196169/MASTER_Powerwand_guideline_final.pdf

General Principles:

1. Children should not experience unnecessary pain or anxiety. Employ developmentally appropriate distraction strategies. If available and appropriate, a referral to a Child Life Therapist may be required to assist with pre procedure preparation and during the procedure. Encourage and involve the child's parents/primary carer to assist with comfort and support therapeutic holding.
2. All procedures should be managed to ensure effective pain management. The administration of nitrous oxide may be considered, please refer to 'JHH_JHCH_0126 Nitrous Oxide Procedural Sedation in Paediatrics'
   http://intranet.hne.health.nsw.gov.au/__data/assets/pdf_file/0012/179697/JHH_JHCH_0126_Paediatric_nitrous_oxide_procedural_sedation.pdf
3. Intravenous cannula will not be reused following a failed insertion attempt.
4. All Intravenous cannulation will be accomplished using an aseptic, no touch technique, to minimise the risk of infection.
5. All IV fluids and drug doses are calculated by per kg of body weight.
6. The cannula insertion site and distal limb must remain visible at all times.

Site Selection:

Preferred sites: Dorsum of hands or feet (if non weight bearing):

- Avoid areas of phlebitis, infection, infiltration and previous cannula sites. If possible avoid limbs with these issues.
- Avoid flexor surfaces, areas with diminished sensation, legs and inner aspects of the arms
- In an emergency situation, any accessible site should be used, consider intraosseous (IO) insertion
- Move identification or arm bands to non-cannulated areas

Insertion of intravenous cannula into scalp veins require different skills and are used less frequently, therefore these are not to be inserted by nursing staff, and if required should be inserted by experienced medical staff or nurse practitioners. In an emergency cannulation should only be attempted for 60 seconds and then intraosseous access should be used.

Further information regarding insertion can be found in the Self-directed Learning Package 'Paediatric IV Cannulation' available on the HNELHD learning package website.

Insertion:

- The skin is to be cleaned with either 70% isopropyl alcohol, chlorhexidine and alcohol swabs.
- Use appropriate size cannula in babies this is 22 or 24 gauge cannula for routine cannulation. A larger gauge cannula may be necessary to administer drugs and fluids for resuscitation'.
- Insertion is to be accomplished using an aseptic, no touch technique. This plays a primary role in preventing infection. ***NB. Intravenous cannula must NOT be REUSED following a failed insertion attempt***.

PROCEDURE

This procedure requires mandatory compliance.

Staff Preparation:

- All clinical staff who cannulate must have completed initial and 5 yearly education for, Aseptic Technique: Foundation Skills (MHL Code: 400027445) and Hand Hygiene (MHL Code: 42063430).
- Prior to each staff annual PDR, a review concerning performance of medium or higher risk procedures is undertaken and discussed with the relevant manager. Necessary training compliance is examined at the time of PDR and a professional development plan agreed and documented. Note: alternative similar mechanisms for monitoring clinical competency are acceptable. This is in accordance with HNELHD Pol 18_03 Aseptic Techniques for Level 1 and Level 2 Procedures Conducted in Clinical Settings. http://intranet.hne.health.nsw.gov.au/__data/assets/pdf_file/0020/125174/HNELHD_Pol_18_03_Aseptic_Technique.pdf

- The five principles for aseptic technique are to be applied including:
  - Hand Hygiene and Bare-Below-Elbows
  - Correct use of Personal Protective Equipment (PPE)
  - Maintenance of Aseptic Fields and Technique
  - Environmental Control
  - Sequencing
- Complex patients must be identified and a senior clinician with paediatric experienced consulted before cannulation is attempted. These may include patient's with:
  - A bleeding disorder
  - Previous traumatic experiences
  - Conditions which make locating a vein or cannulation difficult

Patient Preparation:

- **Allay patients and parents/care givers fears**
- Provide parents/caregivers with a copy of the Factsheet 'The facts about drips' http://www.hnekidshealth.nsw.gov.au/site/content.cfm?page_id=680605&current_category_code=16117 see appendix 2
- Children should not experience unnecessary pain or anxiety
- All procedures should be managed to ensure effective pain management
- Consider the use of non-pharmacological age appropriate/developmentally appropriate distraction techniques e.g. toys from distraction box, singing, music etc. If available contact Child Life Therapist for assistance in developing a distraction plan in conjunction with the patient/family
- Consider the use of pharmacological methods e.g. sucrose, nitrous oxide, local anaesthetic creams
- Whenever possible IV cannulation should occur in the treatment room and not in the patients bed or where other children are present. This excludes PICU.
- A family member should be present to offer comfort and reassurance, where possible
- Appropriate therapeutic holding that may be required, should be discussed with the child and parents/carers
- Check for allergies including to medical tape
- There is a parent Fact Sheet available to provide additional written information for families which can be found on the HNEKids Health website 'Facts about Drips' http://www.schn.health.nsw.gov.au/files/factsheets/iv_-_the_facts_about_drips-en.pdf

Consent:

The proceduralist is responsible for:

- Confirming patient identification, procedure verification and where appropriate the correct site / side / level for the procedure.
- Valid consent for the procedure is obtained and documented in the clinical record. See NSW PD2017_032 for further information.

ALERT

If the first cannulation attempt is unsuccessful, only one more attempt should be made then referral to a more experience clinician must be considered. Document in the clinical record.

Equipment:

- Basic dressing pack
- Cannula (gauge appropriate for age and use)
- 2ml syringe- x 2 if collecting bloods
- Luer lock extension set (T piece of J loop)
- Bung to be placed on the end of the extension set to create a closed circuit, aseptic technique must be used to secure the bung.
- 10ml amp 0.9% sodium chloride
- Sterile Steri-strips™
- Transparent sterile adhesive dressing for example Tegaderm® or Opsite®
- 12.5mm leucoplast
- 2.5cm Leukoplastic elastic™
- Appropriate sized disposable arm board (Parker arm boards HIMF 529332 to 503412 are available in HNELHD)
- Chlorhexidine 2% in Alcohol 10%™ swab or 70% isopropyl alcohol
- Disposable single patient use tourniquet
- Tubifast® 'sock'

Procedure for Insertion:

Ensure that there are adequate appropriate staff present to enable the proceduralist to be assisted and the patient/family to be supported.

1. Clean the IV trolley with alcohol wipe/solution prior to opening equipment. Allow the alcohol to air dry before placing equipment on the clean surface
2. Maintain asepsis, procedural sequencing and standard precautions throughout procedure
3. Prepare equipment including, priming/flushing the extension set and bung with 0.9% sodium chloride
4. Identify target site, ensuring vessel is a vein and not an artery (remove topical anaesthetic if used)
5. Consider the comfort of the infant/child and instigate appropriate holding and distraction techniques, see hyperlink to Children's Hospital at Westmead 'Being Kind to Kids: a guide to facilitating painful or distressing procedures in children.'

   https://www.schn.health.nsw.gov.au/files/attachments/supporting_children_through_painful_and_distressing_procedures1.pdf
6. Apply tourniquet
7. Clean the skin with the Chlorhexidine 2% in Alcohol 10%™ swab or 70% isopropyl alcohol and allow to dry. Do not palpate the vein after cleaning.
8. Ensure cannula is in the 'bevel up' position. Hold the skin and vein taut and insert cannula into the vein at a shallow angle and slowly advanced into the vein. Checking for a 'flash' of blood into the hub of the cannula. If successful, slowly advance the cannula 1-2 mm along the line of the vein, then advance the cannula (over the stylet) until resistance is felt or the hub of the cannula reaches the skin (the stylet should not be re-inserted into the cannula due to risk of dislodging the cannula tip)
9. Release tourniquet
10. Apply pressure to the vein, well above the insertion site and remove stylet and connect primed extension set and gently flush the cannula to check patency
11. Secure cannula as follows:
    a. Place a Steri-strip™ under the cannula hub (adhesive side up), and cross over the hub to secure. Repeat with a second Steri-strip™ ensuring that the insertion site remains visible
    b. Cover insertion site and hub of cannula with a transparent sterile adhesive dressing e.g. Tegaderm® or Opsite®

c. Stabilize the limb to an arm board using the stretchy Elastoplast®, making sure all fingers/toes are visible (see below for more information)

12. Commence fluids or apply a flushed luer lock bung
13. Reassure patient and family/carer if in attendance
14. Ensure ID bands are replaced on unaffected limb if they were removed for the procedure
15. Document cannula insertion in clinical record and in bedside notes as per local clinical practice
16. Observe cannula insertion site and skin integrity at pressure points, at least hourly, and report any abnormalities. Document on the hourly rounding form and commence IVC care plan, which is to be filled out once per shift (see appendix 1). In PICU, use flow chart.
17. Educate patient/family/carer about ongoing care and maintenance of the cannula and pressure-injury risk management that is required (including hourly inspections) and to report any signs of pain, swelling, redness or leaking fluid at the site or the limb. Update the nursing care plan to reflect any change in pressure-injury risk.
18. Dispose and clean all equipment including sharps carefully and appropriately

Considerations for dressing and cannula stabilisation:

Key points for securing and dressing a peripheral intravenous cannula: ensure

- **It is secure**
- **The cannula insertion site is always visible**
- **Tapes are not too tight or restrictive**
- **The child can't remove the cannula**

Example of correct cannula dressing and cannula stabilisation.

- The cannula is secured to allow for maximum observation of the site and the distal limb, the dressing must be kept secure, clean dry and intact
- A sterile transparent dressing provides best protection from infection and allows for visual inspection
- A saline primed extension T piece or J loop is attached via the luer-lock and taped down to reduce tug on the cannula
- A Tubifast® 'sock' may be applied, but ensure that the peripheral digits remain visible at all times and circulation is not impaired. Limbs with peripheral cannula insitu are not to be covered or restrained using full arm (wrap around) splints or bandages. Any dressing or support strapping must be applied to allow the cannula site and limb to be easily inspected every hourly without disrupting the dressing and support strapping.
- *NB: wooden tongue depressors are not to be fashioned into splints for infants or children due to a confirmed infection risk. Use approved paediatric arm boards available from District stores.*
- *Limbs with a peripheral intravenous cannula insitu should be secured to an impervious approved splint (arm board), above and below the joint closest to the cannula site, to immobilize the limb. When using an arm board ensure this is positioned and strapped to the limb and digits in a neutral position. The tape to secure the arm board should be dabbed with cotton wool over the areas in

contact with the skin to allow for a gentle removal. Leave the ends sticky to attach to the arm board. Inspect the arm board at least daily and change if soiled by blood or fluid.

- Paediatric cannula are to remain insitu until no longer required or if signs of extravasation or phlebitis appear.
- The cannula, tape and arm boards are sources of potential pressure-related injury and the skin should be monitored hourly
- No child should be discharged with a peripheral cannula insitu, without consultation with the Admitting Medical Officer. If this occurs it must be documented in the clinical record and on all discharge papers.

* Paediatric arm board information:

HIMF	Item Description	Supplier	Unit of Purchase	Supplier item Code	Cost aprox.
503412	Arm Board, 50x175mm, Paediatric, Foam, Aluminium, insert available in 7 sizes.	Parker Healthcare Pty Ltd	Each	APM604	$2.98

IV Armboards - APM604

Paediatric IV Arm Board® with flexible aluminum insert
Size: 178mm x 51mm (Pack of 15) (Al)(Foam)

APM604

Documentation: Insertion and ongoing care: please see appendix 1

- After insertion all the following must be documented in the patient's clinical record by the proceduralist:
  - Verbal consent details
  - Date and time of cannulation
  - Reason for cannulation
  - Who performed the cannulation
  - What clinical area was the procedure performed in (i.e. ED/ treatment room)
  - Number of attempts for cannulation (successful and failed)
  - Pain and anxiety reduction strategies used including therapeutic holding
  - Any blood samples obtained
  - Position/location of the cannula/s
  - Size (gauge) and type of cannula/s inserted
  - Dressing and securement and appearance of the site/s at insertion time
  - Any adverse events during the procedure
  - Patient/family/carer education provided
- Continuous IV fluids or flushes need to be charted to maintain the patency of the cannula
  - If continuous fluids are not necessary 0.9% sodium chloride flushes 2–10 mL every 4–6 hours is recommended, using a pulse pause regime. Patient weight, daily fluid requirements and clinical condition will be taken into account when deciding the amount of flush to use.
  - Minimum flow rate to maintain patency (5-10mL/hr) taking into consideration the infant/child's weight and daily fluid requirements.
- Hourly visual inspections of peripheral Intravenous cannula insertion site are required. This includes:
  - Signs of extravasation, infiltration, or infection (i.e. swelling, redness, pain, fluid leakage or heat) at the insertion site and fluid tracking direction
  - Skin integrity at any of the potential pressure-injury risk points including the cannula hub, tapes and arm board
  - Documentation of the inspection must occur (i.e. IV care plan, fluid balance chart or PICU flowchart)

- The site and skin integrity should also be inspected by the handing-over and receiving nurses as part of the clinical handover each shift and documented as part of the handover process
- Comment must be made in the patient's medical record a minimum of each shift regarding the condition of the cannula site and limb. This may be made by both/either nursing and medical staff. This should include:
    - Site appearance including the presence of any signs of extravasation, infiltration, blood or infection
    - Appearance of extremities distal to the cannula site
    - Ability to freely move the extremities
    - Condition of dressing
    - Skin integrity at all potential pressure points
    - Any care provided to the cannula or site
- If there are any concerns regarding the IV cannula the Medical Officer must be notified immediately

Maintenance of IV patency:

There is very little evidence to support one method over others to maintain patency. The following points all contribute to reducing the risks associated with IV cannulas.

- Either continuous IV fluids or regular 0.9% sodium chloride flushes are to be given to reduce the risk of IV cannula blockage. Mobility needs of the child need to be considered in this decision-making. However if using regular 0.9% sodium chloride flushed strict aseptic technique must be followed every time a flush is administered, ensuring 'scrub the hub' and waiting for the bung to dry before accessing the peripheral cannula.
- All fluids should be infused using an IV pump (with the exception of platelets) and if possible a paediatric infusion pump which has a pre-set reduced pressure alarm setting should be used .Otherwise IV pump pressure readings should be checked hourly (at the same time as the IV cannula site) and the "high-pressure alarm" limit reduced if possible. It should not require greater then 70mmHg of pressure to pump IV fluid (which is equivalent to gravity)
- If an infusion pump alarms "occlusion" the IV site should always be visually inspected closely.
- Prior to the administration of any intravenous medications the cannula site is to be inspected, and the patency of the cannula confirmed
- All IV medications are to be administered according to paediatric medication administration guidelines, when possible, as the dilution recommendations are associated with the medication's pH and level of vein irritation. Ensure the medication is well mixed in the diluent fluid.
- Syringe drivers can be used to administer IV medications especially in infants < 10kg. Min flow with syringe driver 1-2 ml/hr
- Infusion burettes are to be used with giving sets when IV infusions are required. Only 1 or 2 hours of IV fluid is to be placed in the paediatric burette at any given time
- Continuous IV lines should not be disconnected from either the cannula or the pump, even for short periods and if disconnected they should be discarded and a new IV line and fluid bag connected.
- *NB: Blood collection for blood pathology should not routinely be obtained via a peripheral intravenous cannula (other than immediately after insertion – current research does not support the drawing of any blood samples from the intravenous cannula primarily because of haemolysis of blood). If a cannula is being used for blood sampling only then the largest gauge cannula should be used.*

Changing of IV giving sets and IV fluids:

- IV giving sets, IV fluids, burettes (and filters if required) are to be changed with every new cannula insertion
- Intravenous solutions must be changed every 24 hours
- Intravenous lines (but not necessarily cannula) must be changed every 96 hours
- IV giving sets must be changed if contamination occurs and / or after blood products, lipids have been infused or where the line change is recommended by the manufacturer
- Line labelling needs to comply with the PD2016_058 'Managing User Applied Labelling of Injectable Medicines, Fluids and Lines.'

http://intranet.hne.health.nsw.gov.au/__data/assets/pdf_file/0005/171734/PD2016_058_PCP_1_Managing_User-applied_Labelling_of_Injectable_Medicines_Fluids_and_Lines.pdf

Infiltration and extravasation management:

Indications

Early identification and intervention at the first sign or symptom of infiltration or extravasation is crucial, in order to circumvent any adverse outcomes.
The following signs can indicate whether an injury has occurred and can be classified into stages to guide the treatment
These stages can be as a result of either a vesicant or non-vesicant medication/solution.

- **Stage I**: The intravenous device flushes with difficulty. Discomfort at site, but no indication of injury.
- **Stage II**: Minimal inflammation with redness and discomfort at site. Pulse and perfusion normal distal to access site.
- **Stage III**: Moderate inflammation on top of and underneath access site. Discomfort and blanching at site with cool skin. Pulse and perfusion normal distal to access site.
- **Stage IV**: Severe inflammation on top of and underneath access site. Discomfort and blanching at site with cool skin. Evidence of skin breakdown and or necrosis. Decreased or absent pulse and perfusion distal to access site.

Infiltration of a non-vesicant (non-irritant- see glossary page 3)

If there are signs of an inadvertent administration of a non-vesicant (non-irritant) medication or solution into the surrounding tissue, then the following actions should be taken:

1. Cease the infusion
2. Confirm the infiltration with an experienced member of staff
3. Explain the infiltration to the patient/parent/care giver
4. Notify the Medical Officer and set up for replacement IV cannulation if required
5. Remove the cannula
6. Elevate the limb, complete a pain assessment and administer analgesia if pain apparent
7. Explain the infiltration to the patient / parent / caregiver
8. Document the removal and site condition in the medical record and IV care plan
9. Adjust the fluid balance chart
10. Continue to observe the site and report any changes

Extravasation of a vesicant (irritant- see glossary page 3)

If there are signs of an inadvertent administration of a vesicant (irritant) medication, or a solution which is capable of causing blistering or tissue necrosis into the surrounding tissue, the following actions should be taken.

1. Immediately cease the infusion
2. Confirm the extravasation with an experienced member of staff.
3. Explain the extravasation to the patient/parent/caregiver
4. Seek expert medical advice prior to the removal of the cannula
5. Attempt to withdraw as much fluid from the cannula as possible prior to removal
6. Following advice, remove the cannula using aseptic technique
7. Mark the area of inflammation with a marking pen
8. Elevate the limb 30°, record pain score using pain scale and administer analgesia if required (consider medical photography if possible)
9. Medical staff may initiate an antidote (see below) and timely administration is a key factor
10. Surgical or plastics consultation may be required
11. Document the removal and site condition in the clinical record
12. Adjust the fluid balance chart
13. Complete an IIMs notification - under "Incident type" select "Medication/IV fluid"

Procedure for extravasation of a vesicant:

There are a range of treatment methods when managing the event of an extravasation to prevent scarring and injury. Common ones used are hyaluronidase, sodium chloride 0.9% flushes, and phentolamine. It is recommended to control pain during this procedure, using affective pain relief. Behavioural techniques e.g. distraction strategies should be considered as an important component of pain relief in conjunction with pharmacological interventions. Overall, there is insufficient evidence to support the routine use of local anaesthetics after extravasation. Additionally, there may be some difficulty in administering local anaesthetics, particularly if there is local inflammation/swelling.

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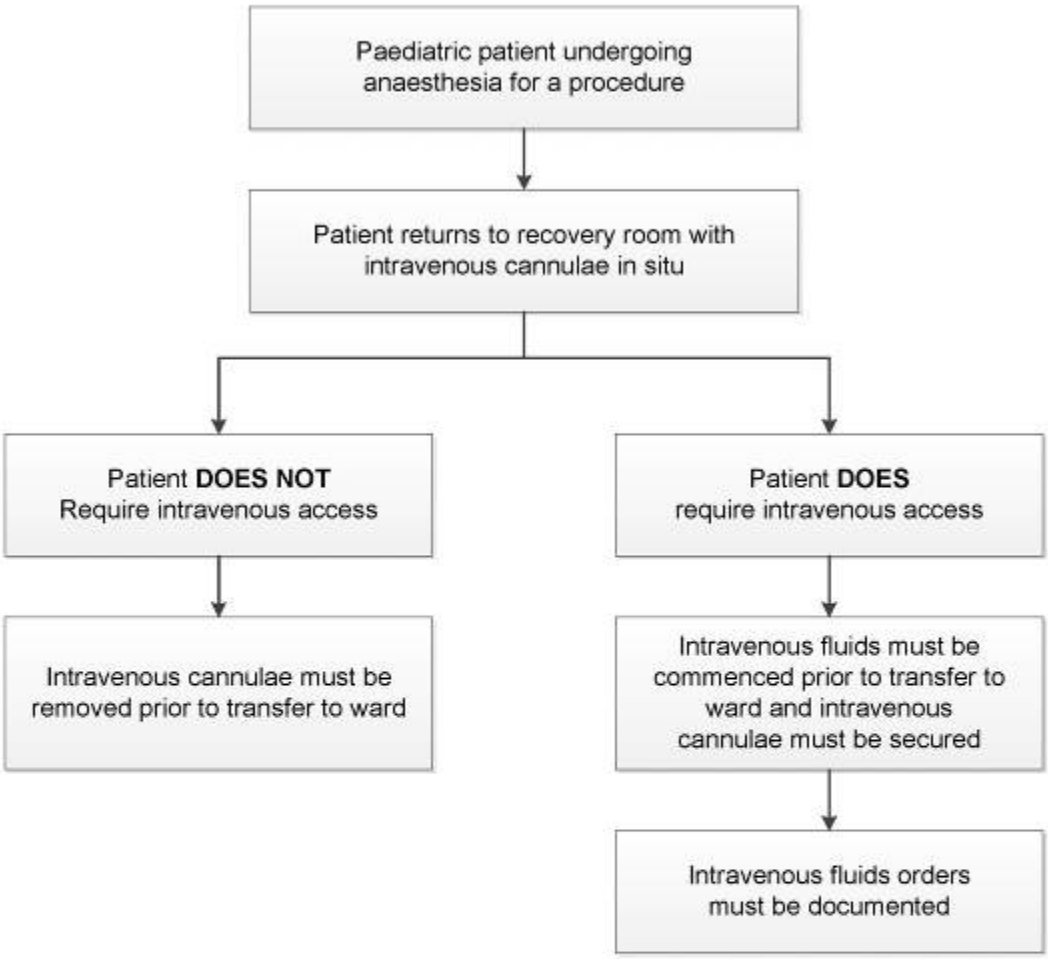
The use of heat packs are not recommended in the event of cannula infiltration or extravasation, due to the risk of thermal injury.

Management of intravenous cannula in paediatric patients' post-anaesthetic:

There are some identified risks associated with the post-anaesthetic environment. Most importantly for small infants and children any residual medications especially muscle-relaxants that may remain in a cannula and extension tubing can be of significant quantity to potentially cause harm. Below is the flow chart outlining recommendations concerning intravenous cannula in paediatric patients after a procedure requiring anaesthetic. The overriding principle is to ensure that there is no residual medication remaining within the cannula prior to leaving the recovery environment and the supervision of the anaesthetist.

Intravenous access for paediatric patients undergoing anaesthesia



John Hunter Children's Hospital

Procedure for removal of IV cannula

There is no evidence to support routine replacement of paediatric intravenous cannula unless clinically indicated. Possible reason would include, infiltration, extravasation phlebitis, occlusion, dislodgment and migration and intravenous access no longer required.

1. Perform hand hygiene and maintain asepsis and standard precautions throughout procedure
2. Prepare the patient and care giver.
3. Remove adhesive tape carefully. If available use Uni-Solve ™ / Niltac™ or Remove™ adhesive remover wipes
4. Gently remove transparent adhesive dressing and steri-strips™
5. When catheter is free of restraint, carefully withdraw and apply pressure to site with sterile gauze
6. Observe site for bleeding – do not apply dressing
7. After bleeding has ceased apply a simple dressing to the cannula insertion site and leave in situ for 24 hrs.
8. Document removal on procedure (i.e. patient's clinical record, IV Care Plan)

Implementation and monitoring compliance

Dissemination of this guideline and procedure:

- This document will be communicated through the CE News and will be available on the PPG Directory.
- Communication will occur across the Children Young People & Families Network (CYPF) including VMO's via email by
- General Managers of the Acute and Primary and Community Networks are responsible to distribute to all clinicians providing care to children and young people
- Clinicians must recognise their own accountability and level of expertise for all aspects of peripheral intravenous cannulation insertion and management
- Rural Paediatric CNCs will provide additional support and on-site education as part of their routine clinical role.

Monitoring of compliance will occur through already established auditing that is the responsibility of the individual sites including:

- Hand Hygiene and asepsis audits
- HNE LHD QARS Intravenous Access Devices Audit

CONSULTATION WITH KEY STAKEHOLDERS

Consultation via CYPF Clinical Safety and Quality Committee
JHH PICU
Infection prevention Service

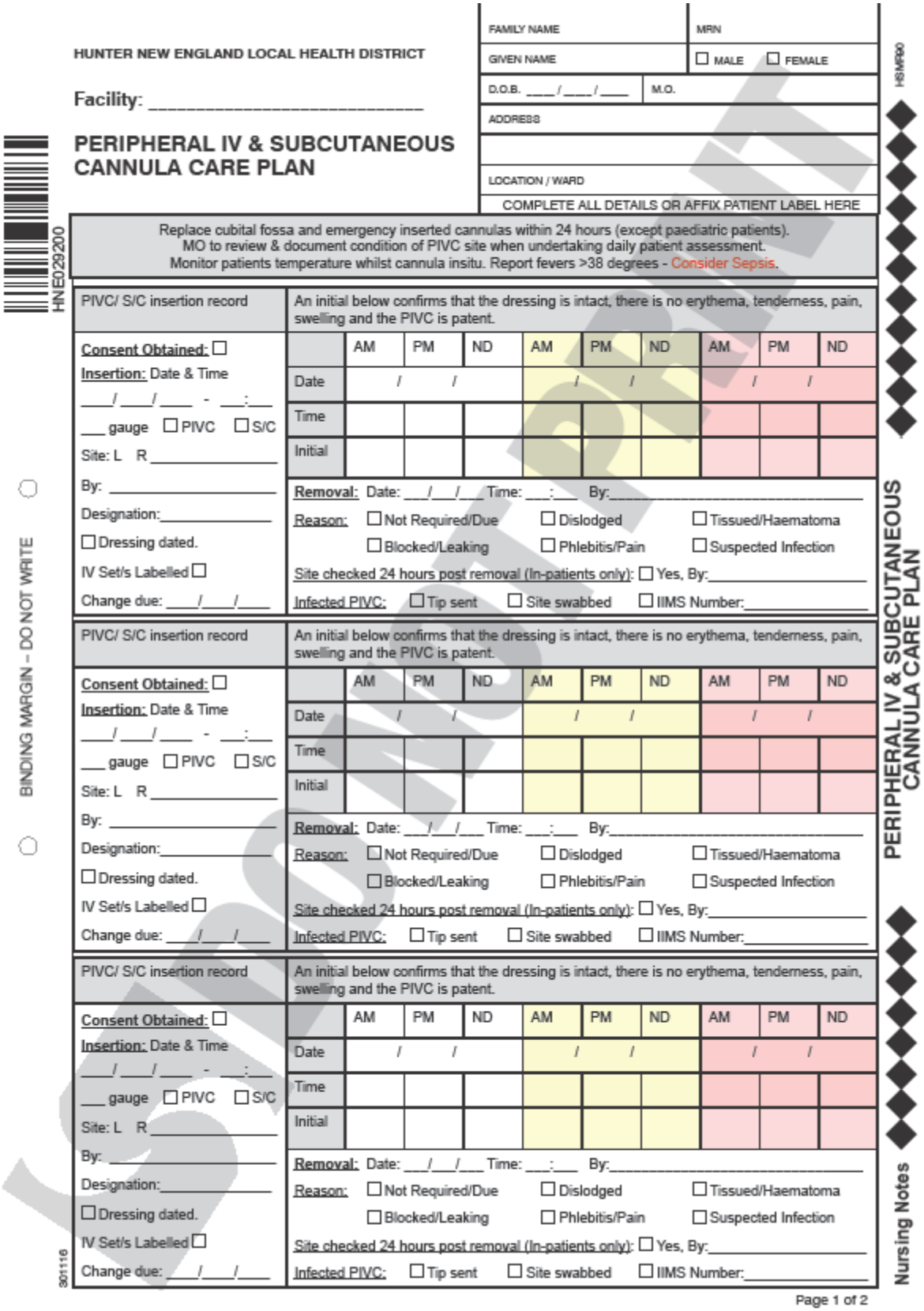
APPENDICES

1. 'Peripheral IV & Subcutaneous Cannula Care Plan'
2. Factsheet 'The facts about drips.'

Feedback

Any feedback on this document should be sent to the contact officer listed on the front page.

APPENDIX 1



HUNTER NEW ENGLAND LOCAL HEALTH DISTRICT

Facility: _____

PERIPHERAL IV & SUBCUTANEOUS CANNULA CARE PLAN

FAMILY NAME | MRN

GIVEN NAME | ☐ MALE ☐ FEMALE

D.O.B. ___/___/___ | M.O.

ADDRESS

LOCATION / WARD

COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE

HSMF60

HNE029200

BINDING MARGIN – DO NOT WRITE

Replace cubital fossa and emergency inserted cannulas within 24 hours (except paediatric patients).
MO to review & document condition of PIVC site when undertaking daily patient assessment.
Monitor patients temperature whilst cannula insitu. Report fevers >38 degrees - Consider Sepsis.

PIVC/ S/C insertion record

An initial below confirms that the dressing is intact, there is no erythema, tenderness, pain, swelling and the PIVC is patent.

Consent Obtained: ☐
Insertion: Date & Time
___/___/___ - ___:___
___ gauge ☐ PIVC ☐ S/C
Site: L R _____
By: _____
Designation: _____
☐ Dressing dated.
IV Set/s Labelled ☐
Change due: ___/___/___

	AM	PM	ND	AM	PM	ND	AM	PM	ND
Date	/ /			/ /			/ /		
Time									
Initial									

Removal: Date: ___/___/___ Time: ___:___ By: _____
Reason: ☐ Not Required/Due ☐ Dislodged ☐ Tissued/Haematoma ☐ Blocked/Leaking ☐ Phlebitis/Pain ☐ Suspected Infection
Site checked 24 hours post removal (In-patients only): ☐ Yes, By: _____
Infected PIVC: ☐ Tip sent ☐ Site swabbed ☐ IIMS Number: _____

PIVC/ S/C insertion record

An initial below confirms that the dressing is intact, there is no erythema, tenderness, pain, swelling and the PIVC is patent.

Consent Obtained: ☐
Insertion: Date & Time
___/___/___ - ___:___
___ gauge ☐ PIVC ☐ S/C
Site: L R _____
By: _____
Designation: _____
☐ Dressing dated.
IV Set/s Labelled ☐
Change due: ___/___/___

	AM	PM	ND	AM	PM	ND	AM	PM	ND
Date	/ /			/ /			/ /		
Time									
Initial									

Removal: Date: ___/___/___ Time: ___:___ By: _____
Reason: ☐ Not Required/Due ☐ Dislodged ☐ Tissued/Haematoma ☐ Blocked/Leaking ☐ Phlebitis/Pain ☐ Suspected Infection
Site checked 24 hours post removal (In-patients only): ☐ Yes, By: _____
Infected PIVC: ☐ Tip sent ☐ Site swabbed ☐ IIMS Number: _____

PIVC/ S/C insertion record

An initial below confirms that the dressing is intact, there is no erythema, tenderness, pain, swelling and the PIVC is patent.

Consent Obtained: ☐
Insertion: Date & Time
___/___/___ - ___:___
___ gauge ☐ PIVC ☐ S/C
Site: L R _____
By: _____
Designation: _____
☐ Dressing dated.
IV Set/s Labelled ☐
Change due: ___/___/___

	AM	PM	ND	AM	PM	ND	AM	PM	ND
Date	/ /			/ /			/ /		
Time									
Initial									

Removal: Date: ___/___/___ Time: ___:___ By: _____
Reason: ☐ Not Required/Due ☐ Dislodged ☐ Tissued/Haematoma ☐ Blocked/Leaking ☐ Phlebitis/Pain ☐ Suspected Infection
Site checked 24 hours post removal (In-patients only): ☐ Yes, By: _____
Infected PIVC: ☐ Tip sent ☐ Site swabbed ☐ IIMS Number: _____

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PERIPHERAL IV & SUBCUTANEOUS CANNULA CARE PLAN

Nursing Notes

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APPENDIX 2

Please double click on factsheet to view full document.

FACTSHEET

This fact sheet is for education purposes only. Please consult with your doctor or other health professionals to make sure this information is right for your child. If you would like to provide feedback on this fact sheet, please visit www.schn.health.nsw.gov.au/parents-and-carers/fact-sheets/feedback-form

The facts about drips

What is a drip?

A drip is also sometimes known as a cannula or IV. It is a short, small plastic tube that is put into your child's vein using a needle. The plastic tube is then left in so that fluids and medicines can be given directly into the blood via the vein. It can also sometimes be used to take blood samples.

Why would my child need a drip?

The drip will allow your child to be given fluid or medicines directly into a vein quickly and for up to several days. It is usually used when children are too sick to swallow fluids and medicines, or when the medicine can only be given this way.

How is it put in?

The doctor or nurse may put a local anaesthetic patch on the skin first to numb the area where the needle is to be put. It takes about 30-60 minutes for the patch to work. If the drip needs to be put in urgently there may not be time to wait for the local anaesthetic to work.

A tourniquet (elastic belt) is put around your child's arm or leg. Your child will need to be still while a small needle is put into a vein. Once the needle is in the vein, the 'sharp' part of the needle is removed and a plastic tube is left in the vein. The plastic tube will be held in place with tape and bandages and a padded board placed to keep the closest joint still.

A child's veins are quite small and several veins may need to be tried to get the drip in place. Putting the drip in can hurt, but once the sharp part is removed the plastic tube does not cause pain. The area may however be uncomfortable.

If possible, blood tests are taken from the needle at the time of putting it in. At times not enough blood is able to be collected from the needle. If that happens, a separate blood test may need to be taken.

What happens after the drip is put in?

Long tubing or syringes can then be attached to the drip and fluids and medicines can be given. Often the long tubing will be put into a special (IV) pump on a drip stand that will control the amount of fluid that will go in. Most of the time the long tubing will stay connected and your child will need to take the drip pump and stand wherever they go. The nurses will explain and show you how to do this.

Your doctor will discuss with you how long the drip will need to stay in for. This will depend on why it is being put in, and how quickly your child gets better.

What problems can occur?

Drips can become blocked, leak or become infected. The nurses will need to regularly check the drip and the area around the drip (cannula). The nurses will look for redness, swelling, leakage and pain at the drip site. If any problems occur the drip may need to be put in again in another spot. At times a bruise may form when the needle is taken out of the vein, this will soon fade.

If you are worried please ask the nurses to check your child's drip.

the children's hospital at Westmead
The Sydney Children's Hospitals Network

SYDNEY CHILDREN'S HOSPITAL RANDWICK
The Sydney Children's Hospitals Network

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