Local Guideline

John Hunter Children's Hospital
CHILDREN, YOUNG PEOPLE AND FAMILIES

NSW GOVERNMENT Health
Hunter New England Local Health District

Intravenous (IV) cannulation and care in NICU

Sites where Local Guideline applies	Neonatal Intensive Care and Special Care Nursery JHCH
This Local Guideline applies to:	
1. Adults	No
2. Children up to 16 years	No
3. Neonates – less than 29 days	Yes
Target audience	All neonatal clinicians inserting intravenous cannulae and/or caring for infants with an intravenous cannula
Description	Provides information to clinicians in NICU & SCN regarding insertion and management of intravenous devices
National Standard	Standard 8 Preventing & Managing Pressure Injury

Go to Guideline

Keywords	IV, venous, cannulation, extravasation, fluids, JHCH, NICU
Document registration number	JHCH_NICU_10.01
Replaces existing document?	Yes
Registration number and dates of superseded documents	JHCH_NICU_10.01 March 2013

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:

- Aseptic Technique for medium or Higher Risk Procedures Conducted in Clinical Settings
- NSW Health Kids & Families GL2015_008 Standards of Paediatric Intravenous Fluids
- NSW health Policy Directive PD 2017_013 Infection Control and prevention Policy
- NSW Health Policy Directive PD2017_032 Clinical Procedure Safety
- Medication Safety in HNE Health PD2013_043:PCP31

Prerequisites (if required)	To perform IV cannulation nursing staff require credentialing -see IV cannulation & Venepuncture in the Neonate 2017 Learning Package for process.
Local Guideline 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 Local Guideline and authorised by	Pat Marks. General Manager / Director of Nursing CYPFS
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Date authorised	30th January 2018
This document contains advice on therapeutics	No
Issue date	14th February 2018
Review date	14th February 2021

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/

PURPOSE AND RISKS

This local clinical procedure has been developed to provide instruction to health professionals and to ensure that the risks of harm to the child associated with insertion and management of an intravenous cannula are prevented, identified and managed.

The risks are:

- *Vascular damage*
- *Infection*
- *Extravasation*
- *Limb injury*

The risks are minimised by:

- *Credentialed clinicians to insert intravenous cannulas*
- *Clinicians having knowledge of IV cannulation and therapy management*
- *Clinicians seeking assistance if the therapy is outside their scope of practice*
- *Following the instructions set out in the clinical procedure*
- *Recognition of the common clinical signs of the risks of infiltration*
- *Correct aseptic technique when attending to IV therapy*

Risk Category: *Clinical Care & Patient Safety*

GLOSSARY

Acronym or Term	Definition
HPR	Hourly Patient Rounding
IVC	Intravenous catheter
Peripheral IV & Subcutaneous Cannula Care Plan	IV care plan to document insertion, removal & site checks
NVIP	Neonatal Visual Infusion Phlebitis

Staff Preparation

It is mandatory for staff to follow relevant: “Five moments of hand hygiene”, infection control, moving safely/safe manual handling, documentation practices and to use HAIDET for patient/carer communication: **H**and hygiene **A**cknowledge, **I**ntroduce, **D**uration, **E**xplanation, **T**hank you or closing comment.

Intravenous (IV) Cannulation and Care: One Page Summary and Checklist

(Ctrl+Click on **Coloured** words to jump to that section)

Technique

- Remember 5 moments of hand hygiene ☐
- Always consider pain relief ☐
- Minimise handling ☐
- Preferred sites - hands, forearm, feet, legs, scalp ☐
- Avoid antecubital fossa and great saphenous veins for long-line use ☐

Procedure

- Clean trolley ☐
- Prepare equipment ☐
- Administer pain relief ☐
- Cannulate site ☐
- Flush to ensure patency ☐
- Secure -
  - DuoDERM under hub ☐
  - Steri-Strip over the hub ☐
  - Attach mini luer lock extension ☐
  - Cover with transparent sterile adhesive ☐
- Attach micro-filter (labeled with time and date) ☐
- Secure to board with stretchy Elastoplast ☐
- Commence on fluids with pump for neonatal care ☐
- Documentation ☐

Care of Site

- Keep site visible - use transparent IV dressings ☐
- Observe regularly – for security, redness, swelling, leak, blanching ☐
- Check pump rate and volume infused in line with excellence ☐
- Respond to complications promptly ☐
  - Extravasation
  - Phlebitis
  - Leaking
  - Occlusion

Removal

- Maintain asepsis ☐
- Remove tape ☐
- Remove transparent sterile adhesive, and Steri-Strips ☐
- Withdraw cannula and apply pressure to site with sterile gauze ☐
- Observe for bleeding ☐
- Do not apply dressing ☐
- Document in notes ☐

Rationale

Cannulation is a common invasive procedure that is performed in the Neonatal Intensive Care Unit (NICU), with many neonates requiring intravenous (IV) access for the administration of fluids and/or medications during their stay. Many complications associated with IV cannulation are preventable and if diagnosed early major complications can be prevented. Studies have shown that a very low incidence of cannula infection or complication from peripheral intravenous cannulation is achievable in the neonate.

Outcomes

1. Intravenous cannulation will be undertaken by Medical Officers, Nurse Practitioners, and RNs who have completed the IV cannulation program.
2. The peripheral intravenous catheter will be inserted safely and in the appropriate site for the administration of IV fluids and medications.
3. There will be no significant compromise to circulation distal to the site.
4. The peripheral venous catheter will be inserted using aseptic technique, following the "5 moments" of hand hygiene standard.
5. All measures to minimise infant pain during the procedure will be undertaken including administering sucrose 25% oral solution or breast milk and other non-pharmacological settling techniques
6. The infant will experience minimal handling during the procedure.
7. The cannula site will be observed at least hourly for redness, swelling, blanching or pain and documented on IV care plan, hourly patient rounding form and flow chart
8. Reduction in morbidity and mortality associated with intravenous peripheral cannulation in the neonate.

Technique and procedure for intravenous cannulation

Top

IV site selection

Neonates have several IV sites available. Preferred sites for IV insertion include hands, forearm, feet, legs and scalp. A peripheral vein in an upper or lower limb is preferable. As insertion of IVs into scalp veins requires slightly different skills and is used less frequently, these are not to be inserted by nursing staff; if required should be inserted by medical staff or nurse practitioners. Only **2 attempts** at IV insertion before more experienced staff support must be requested.

Dorsum of the hand:

- Tributaries of the cephalic and basilic veins
- Dorsal venous arch
- AVOID the antecubital fossa as this vein is saved for the possible insertion of a peripherally inserted central line

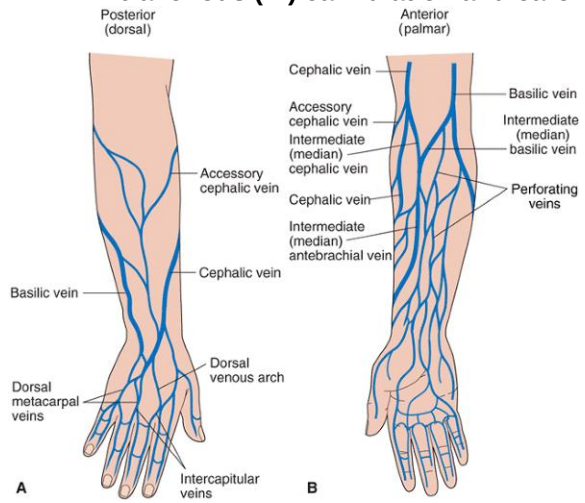

Figure 1 Veins in hands and arm (Ref: nurse.ayuda-por-favor.com.ar)

Calf and dorsum of the foot:

- Dorsal venous arch
- Medial and lateral marginal veins
- AVOID the great saphenous vein as this vein is saved for the possible insertion of a peripherally inserted central line

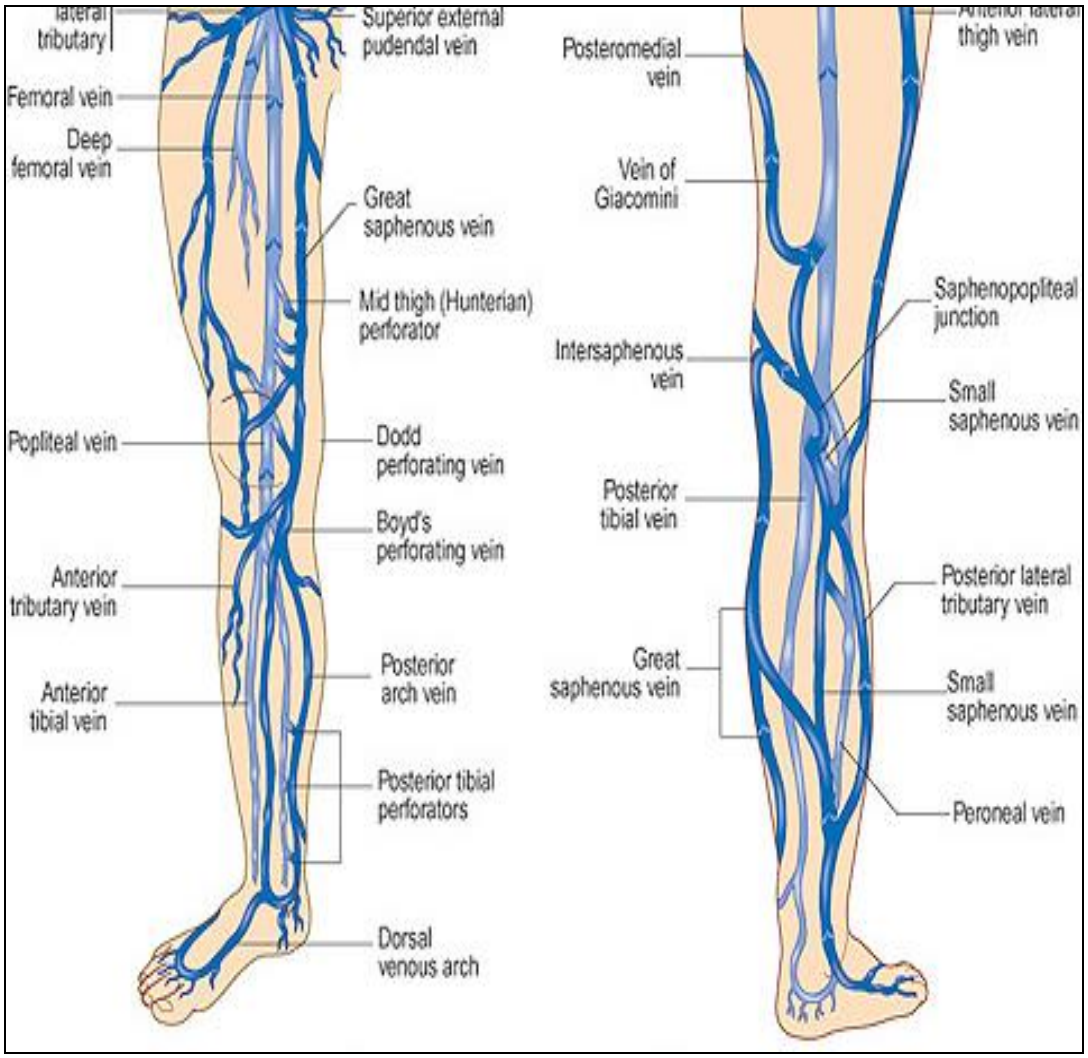

Figure 2 Vessels in leg and foot (Ref: https://redbacteria.wordpress.com/)

Procedure

Top

Equipment:

- Basic dressing pack
- 24g cannula (Angiocath, Insyte-N or Neoflon)
- 2mL syringe- x 2 if collecting bloods
- Luer lock extension set
- Micro filter
- 10mL ampoule sodium chloride 0.9% (normal saline)
- Sterile Steri-Strips
- Transparent sterile adhesive dressing for example Tegaderm or OPSITE
- 12.5mm leucoplast
- 2.5cm Leukoplast tape
- Appropriately sized arm board
- Chlorhexidine 0.5%

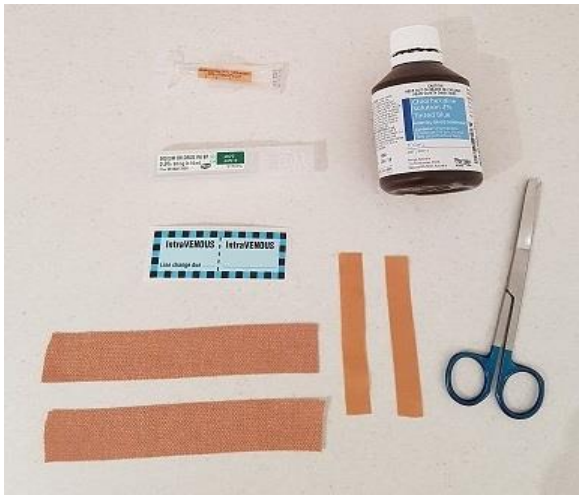

Figure 5: Non-sterile equipment


Figure 6: Sterile set up

Clean the IV trolley with alcohol wipe prior to opening equipment

1. Prepare equipment by flushing the extension set and filter with sodium chloride 0.9%
2. Maintain asepsis and universal precautions throughout procedure
3. Identify target site, ensuring vessel is a vein and not an artery (veins fill towards the heart, artery fills away from the heart).
4. Consider the comfort of the infant, and the use of sucrose.
5. Clean the skin with chlorhexidine solution in two consecutive applications and allow to dry for 30 seconds.
6. Insert cannula into the vein, and slowly advance into the vein, checking for blood in the hub of the cannula. If successful, slowly advance the cannula whilst the stylet is removed, until resistance is felt or the hub of the cannula reaches the skin. For further information regarding insertion technique, refer to the Intravenous Cannulation and Venipuncture Learning Package.
7. Gently flush the cannula to ensure patency.
8. Secure cannula as follows:

a. Place a small piece of DuoDERM if necessary (may use thin or thick depending on position under the hub)
b. Place a Steri-Strip under the cannula hub, and cross over the hub to secure. Repeat with a second Steri-Strip.

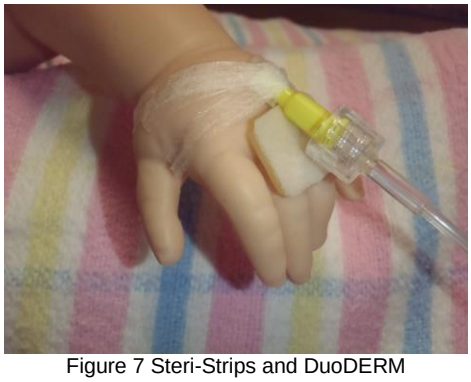

Figure 7 Steri-Strips and DuoDERM

c. Attach mini Luer lock extension set to hub of cannula.
d. Attach microfilter to end of extension set – label IV fluid chart with date and time the filter is to be changed.
e. Cover insertion site and hub of cannula with a transparent sterile adhesive dressing e.g. Tegaderm® or Opsite®.
f. Stabilise limb to an armboard using the stretchy Elastoplast, making sure all fingers/toes are visible.
g. Secure IV filter to the baby's arm using the non-stretch Leukoplast.
h. Ensure the filter is labelled with the date and time inserted, and when it is to be changed.
i. Record on IV Care Plan date of insertion and site.

9. Commence fluids or apply a flushed luer lock bung as ordered and document.
10. Reassure parents if in attendance.
11. Observe cannula insertion site and tip at least hourly and report any abnormalities.
12. If cannulation unsuccessful only 1 further attempt permitted-total of 2 attempts before requesting expert to insert cannula.

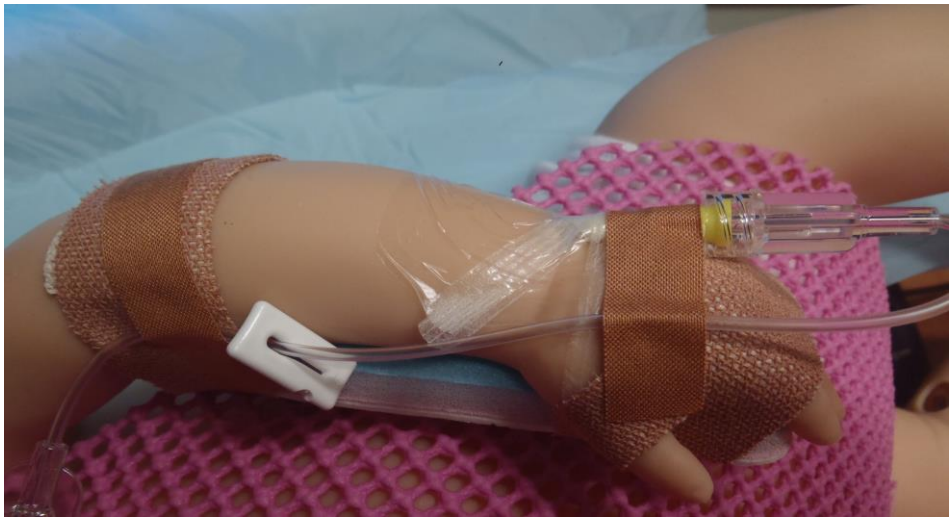

Figure 8 Taping of IV cannula

Care of IV cannula, lines and site

Top

- Ensure the cannula is taped for security and allows maximum observation of site
- Use transparent IV dressings, Steri-Strips, and non-stretchable tape (Leukoplast)
- Observe the IV cannula hourly, at a minimum, for secure placement, and for changes in the site around the cannula insertion and the fluid tracking direction, in line with HPR.
- Check IV cannula site at least hourly for redness, swelling, blanching and pain, and report and record a description of these observations and changes in condition. Use the NVIP to document and follow directions for any changes noted.
- Ensure the cannula site is not covered with clothing or blankets to allow for observation of the site;
- Regularly (hourly) check the infusion pump for the correct infusion rate and pumping action
- When administering medications or changing lines follow 'scrub the hub' aseptic technique-Refer to CPG 'Aseptic Technique in NICU'.
- Pressure limits are pre-set for IV infusion pumps- pressure readings should be checked regularly. Settings may require changing temporarily if frequent alarms due to occlusion from infant flexing limb and affecting flow. Vigilance observing site should be exercised if pressure settings changed.
- Only use an infusion pump suitable for neonates. Do not use an adult infusion pump.

Documentation

- The *Peripheral IV & Subcutaneous Cannula care plan HNE029200* (IV care plan) is the record for IV insertion, assessment, management and cessation and must be completed by the staff siting the IV, caring for the IV and removing the IV. Once a shift staff must sign the IV care plan to identify their assessment of IV (the IV care plan eliminates the need to document shift by shift assessment in the progress notes)-see Appendix 1
- Skin score at IVC site (NVIP) must be attended hourly and documented on patient's flowchart-see Appendix 2
- Staff must sign the Hourly Patient Rounding form to document that the patient needs have been assessed, including IVC assessment –see Appendix 3
- Complications and management of IV issues must still be documented in progress notes.

Complications

1. Infiltration and extravasation *(see LG Extravasation of IV in NICU:JHCH_NICU_10.02*). Extravasation is a serious complication of peripheral IV cannulas in infants and needs to be managed accordingly to avoid morbidity.
1. Phlebitis
2. Leaking
3. Occlusion

Removal of peripheral intravenous cannulae

Outcomes:

1. The peripheral venous catheter will be removed safely.
2. The infant will experience minimal handling and discomfort during the procedure.
3. To be free from cannula related sepsis

Procedure for Removal of IV Cannula Top

1. Maintain asepsis and universal precautions throughout procedure.
2. Remove adhesive tape carefully.
3. Gently remove transparent adhesive dressing and Steri-Strips.
4. When catheter is free of restraint, carefully withdraw and apply pressure to site with sterile gauze.
5. Observe site for bleeding – do not apply dressing.
6. Document removal on IV care plan

References

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Appendices

Appendix 1 Peripheral IV & Subcutaneous Cannula Care Plan
Appendix 2 Neonatal Visual Infusion Phlebitis Score
Appendix 3 Patient Care Essentials Rounding Care Plan

Appendix 4 Safety Alert Extravasation of IV fluids: Care of cannula site in neonates and children

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Approved by
NICU Operational, Planning & Management Committee 17/01/2018
JHCH Clinical Quality & Patientcare Committee 28/01/2018

Feedback

Any feedback on this document should be sent to the Contact Officer listed on the front page.

Appendix 1 Peripheral IV & Subcutaneous Cannula Care Plan Page 1

HUNTER NEW ENGLAND LOCAL HEALTH DISTRICT

Facility: ____________________

HNE029200

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

HSMR90

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.

BINDING MARGIN – DO NOT WRITE

PIVC/ S/C insertion record

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

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

	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

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

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

	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

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

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

	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 1 Peripheral IV & Subcutaneous Cannula Care Plan Page 2

HUNTER NEW ENGLAND LOCAL HEALTH DISTRICT

Facility: _____

CENTRAL VENOUS ACCESS DEVICE (CVAD) 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

HNE029200

DEVICE INFORMATION

CVAD Type: ☐ Central ☐ PICC ☐ Vascath/Permacath ☐ Hickman ☐ TIVAD/Implantable Port ☐ UVC ☐ UAC

Insertion site: ☐ Subclavian ☐ Internal jugular ☐ External jugular ☐ Femoral ☐ Cubital fossa ☐ Upper arm ☐ Umbilical Vein/Artery

Position: ☐ Left ☐ Right External Catheter Length on Insertion: cm. Upper Arm Circumference on insertion (PICC only): cm

SHIFT ASSESSMENT

Initial items have been assessed each shift

Date	/ /			/ /			/ /			/ /			/ /			/ /		
	AM	PM	ND	AM	PM	ND	AM	PM	ND	AM	PM	ND	AM	PM	ND	AM	PM	ND
Time																		
IV admin set labelled																		
Dressing intact																		
Insertion site assessed*																		
CVAD secured and intact																		
External catheter length (cm)																		
Integrity of CVAD catheter																		

OTHER CVAD INTERVENTIONS: Dressing/IV admin set/non-coring needle changes as per HNELHD guidelines. Initial when changed

Dressing changed																		
IV admin set/s changed																		
Non-coring needle changed																		
For **PICCs:** Arm circumference (cm) if swelling suspected																		

REMEMBER TO SCRUB THE HUB FOR 15 SECONDS AND ALLOW TO DRY BEFORE ACCESSING CVAD

REMOVAL

☐ Removal authorised and documented by a medical officer in the patient's health care record

Reason for removal: ☐ No longer required ☐ Accidental removal ☐ Blocked ☐ Leaking ☐ Suspected Infection ☐ Other:

Removal date: Time:

Removed by: Signed: Designation:

Tip intact: ☐ Yes ☐ No Tip cultured: ☐ Yes ☐ No

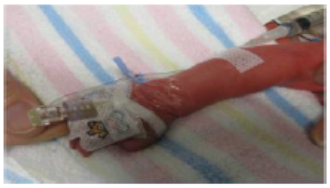
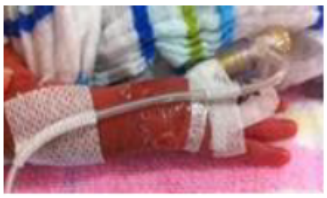
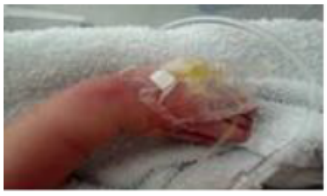
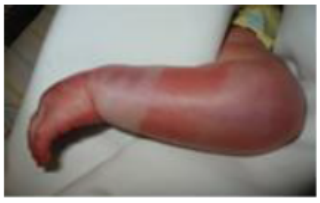
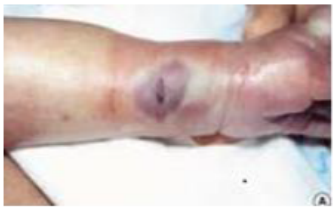
***Includes evidence of inflammation, haematoma, excessive accumulation of blood or moisture under dressing. If any of these are present or catheter length is different to documented insertion length please inform treating team and document in patient progress notes.**

Page 2 of 2

BINDING MARGIN – DO NOT WRITE

Appendix 2 Neonatal Visual Infusion Phlebitis Score

Neonatal Visual Infusion Phlebitis Score (N.V.I.P. Score) adapted from Jackson I.V Therapy and care phlebitis scale (PIVC Score on NICU Observation chart)

	I.V. site appears healthy	0	No signs of phlebitis. Continue to observe
	**One of the following evident**: Baby grimaces & withdraws limb / signs of discomfort when site touched Slight redness near I.V. site	1	Possible 1st signs of phlebitis. OBSERVE CLOSELY / consider resiting cannula
	**Two of the following evident**: Baby grimaces & withdraws limb / signs of discomfort when site is touched Erythema •Swelling	2	Early stages of phlebitis. Notify MO Stop infusion Resite Cannula. Document.
	**All of the following is evident**: Baby grimaces & withdraws limb / signs of discomfort when site touched Erythema •Induration (hardening)	3	Early stages of phlebitis. Notify MO. Stop infusion Follow Extravasation CPG Resite Cannula. Document. Complete IIMS
	**All of following is evident & EXTENSIVE** Baby grimaces & withdraws limb / signs of discomfort when site touched Erythema Induration (hardening) Blistering, necrosis or ulceration	4	Advances stage of phlebitis. **Notify MO. Stop infusion.** **Follow Extravasation CPG** **Document. Complete IIMS** CONSIDER TREATMENT

Score **every hour** for all cannulas Score for 24 hours after removal if redness is evident and for 12 hours if there are no signs of phlebitis. Insert a photo into the clinical record and continue to document progressive photos for any severe extravasation. Obtain permission from the parents for photos.

Appendix 3 Patient Care Essentials Rounding Care Plan

Health
Hunter New England
Local Health District

PATIENT CARE ESSENTIALS ROUNDING CARE PLAN

ESSENTIAL ASSESSMENTS

	M	L	ND
Resuscitation equipment			
Medical devices			
Identification			
Medications/fluids			

EXCELLENCE
Every patient. Every time.

Patient care essentials to be assessed every hour. Initial in space that patient has been visualised and care essentials considered. If patient absent, mark 'A' in the assessment column.

Date:_ __/___/___	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
I have assessed all the 3 P's																								
The following required care was attended (*initial only the care attended, otherwise leave blank)*																								
Parents																								
Position																								
Physical inspection																								
Is there anything I can do for you? (patient/carer)																								

HAI^{2}DET^3: **H**and Hygiene, **A**cknowledge, **I**ntroduce/**I**dentify, **D**uration, **E**xplanation, **T**hank you/**T**idy up/**T**ime

Nursing Clinical Handover – *Nurse initial that patient/carer was involved in handover. If patient unable to be involved put 'U' and initial and document reason in Medical Records.*

Time	Patient/Carer involvement	Printed name, initial & designation (Nurse finishing shift)	Printed name, initial & designation (Nurse on shift)	PATIENT ID

Appendix 4 Safety Notice Extravasation of Fluids

NSW HEALTH

Safety Notice
SN:013/07

21 September 2007

Distributed to:

- Chief Executives
- Directors of Clinical Governance
- Directors of Clinical Operations

Action required by:

- Directors of Clinical Governance

For response by:

- No response to the Quality and Safety Branch required

We recommend you also inform:

- Directors of Clinical Services
- Area Directors of Nursing
- Nurses
- Medical practitioners

Deadline for completion of action
Not applicable

Quality and Safety Branch
NSW Department of Health
Tel. 02 9391 9200
Fax. 02 9391 9556
Email
quality@doh.health.nsw.gov.au

www.health.nsw.gov.au/quality/sabs/register.html

Extravasation of IV fluids

Care of the cannula site in neonates and children

Background

Recent incidents have highlighted the need to ensure appropriate care of venous cannula sites, especially in neonatal and paediatric patients.

Two young children experienced extravasation—the infiltration of a substance that causes blistering of tissue from an intravenous line into the surrounding tissue—in association with a peripheral cannula. One child experienced swelling from the shoulder to the fingertips with cyanosis of the right thumb and subsequent development of blisters on the arm. The second child required surgery following the development of swelling and blistering of the arm.

Care of the peripheral venous cannula site

Simple steps to follow when caring for a peripheral venous cannula site of neonates and children include the following:

- Use limbs in preference to the scalp, with upper limbs in preference to lower limbs.
- Ensure a nurse is available to assist with cannulation and taping.
- Ensure the cannula is taped for security and allows maximum observation of the site.
- Use transparent IV dressings, steristrips, and non-stretchable tape (leukoplast).
- Regularly observe the IV cannula for secure placement, and for changes in the site around the cannula insertion and the fluid tracking direction. Direct observation is required.
- Check the IV cannula site hourly for redness, swelling, blanching and pain, and record a description of these observations.
- Ensure the cannula site is not covered with clothing or blankets to allow for observation of the site.
- Regularly check the infusion pump for the correct infusion rate and pumping action.
- Set appropriate pressure limits for pumps that have this functionality. The pressure should be checked regularly.
- Ensure the infusion pump is appropriate for neonates and children. Do **not** use an adult infusion pump.

Further reading

Hadaway LC. Preventing and managing peripheral extravasation. *Nursing* 2004;34(5):66-67.

McCullen KL, Pieper B. A Retrospective Chart Review of Risk Factors for Extravasation Among Neonates Receiving Peripheral Intravascular Fluids. *Journal of Wound, Ostomy and Continence Nursing* 2006;33:133-139.

Suggested Actions by Area Health Services:

1. Ensure that this Safety Notice is distributed to all relevant stakeholders.
2. Review peripheral cannula site practices.

1 of 1

Implementation, monitoring compliance and audit

1. Approved clinical guideline will be uploaded to the PPG and communication of updated 'Intravenous (IV) cannulation and care in NICU' clinical guideline to NICU staff will be via email and message on the HUB.
2. All staff performing IV cannulation require credentialing -see IV cannulation & Venipuncture in the Neonate 2017 Learning Package for process and recorded on HETI
3. Incident investigations associated with this Guideline and Procedure will include a review of process.
4. The Guideline and Procedure will be amended in line with the recommendations.
5. The person or leadership team who has approved the Guideline and Procedure is responsible for ensuring timely and effective review of the Guideline and Procedure.
6. Evaluation will include a review of the most current evidence as well as a consideration of the experience of Neonatal staff at JHCH in the implementation of the Guideline and Procedure.
7. Annual audit completed by NICU alongside JHH Infection Control department.