Approved by Quality & Patient Care Committee
20 August 2020

INTRAVENOUS LINE MANAGEMENT

This Local Operating Procedure is developed to guide safe clinical practice in Newborn Care Centre (NCC) at The Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this Local Operating Procedure.
Using this document outside the Royal Hospital for Women or its reproduction in whole or part, is subject to acknowledgement that it is the property of NCC and is valid and applicable for use at the time of publication. NCC is not responsible for consequences that may develop from the use of this document outside NCC.

INTRODUCTION

Intravenous (IV) fluids can have serious and even fatal consequences if not prescribed and administered correctly. The management of intravenous lines includes safe insertion, administration of fluids and medications, monitoring of the insertion site and safe removal.

1. AIM

- To ensure safe administration of IV therapy

2. PATIENT

- Neonates

3. STAFF

- Medical and nursing staff

4. EQUIPMENT

- Volumetric infusion pump and administration set including in-line burette
- Syringe driver and extension line attached to syringe

5. CLINICAL PRACTICE

Set up

1. Perform essential safety checks prior to commencement of IV therapy and/or medication administration via a cannula.
2. Check IV fluids before administration with another Registered Nurse for:
   - Patient's name
   - Medical Record Number on fluid/medication order and on ID band
   - Correct order written clearly and legibly using approved abbreviations only
   - Signature of medical officer
   - Correct IV fluid strength and expiry date
   - Correct IV rate
   - Correct IV route
   - Discolouration of IV fluids or foreign particles (discard contaminated bags)
3. Perform hand hygiene.
4. Ensure that the IV access is patent, dressing intact and the condition of the site is checked with the Visual Infusion Phlebitis (VIP) score (Table 1).
5. Scrub the hub with 2% chlorhexidine gluconate in 70% isopropyl alcohol for 30 seconds and allow to dry (repeat) prior to attaching appropriate device to IV access.
6. Label administration sets with the date of commencement.
7. Check that 'Maximum Pressure' on the access device is set at 75mmHg and the 'Volume Limit' is set at the same amount as the 'Set Rate'.

INTRAVENOUS LINE MANAGEMENT cont'd

Table 1

Visual Infusion Phlebitis (VIP) Score[1]	
Site appears healthy	0
Slight redness near site, signs of discomfort when touched	1
Erythema, swelling, signs of discomfort at site	2
Pain signs at site, erythema, induration	3
Extensive signs of pain at site, erythema, induration	4
Extensive signs of pain at site, erythema, induration , fever	5

Change of administration set (burette, infusion set, filter and any extension line)

8. Change after 48 hours or if new IV fluids are prescribed.
9. Ensure IV fluids are promptly changed and administered when new IV fluids are prescribed.
10. Change if giving set becomes contaminated or leaking.
11. Label the new administration set with an intravenous label and document on patient's observation chart and eMR.
12. Ensure fluid prescription is double signed by Registered Nurse.

Additives

13. Medications administered as an IV infusion must be inserted into a burette of an infusion set or in a syringe for use in a syringe driver. The most appropriate method should be selected depending on volume of diluent required and intended rate of delivery.
14. Ensure the following are completed at commencement of IV therapy:
    - All additives to be checked with another Registered Nurse as per medication protocol
    - Perform hand hygiene
    - Scrub the hub of the burette with 2% Chlorhexidine gluconate in 70% isopropyl alcohol for 30 seconds and allow to dry (repeat) prior to accessing the burette with additives
    - Rotate to mix solution
    - Do not add more than one drug to a burette unless specifically ordered by a medical officer
    - Check compatibility
    - Attach a completed drug label detailing the drug, dose, diluent, volume of diluent, date, time and signature of the nurse and the staff who double checked

Bolus medications

15. Ensure the following are completed at commencement of IV therapy:
    - Check with another registered nurse all bolus injections as per medication protocol
    - Check compatibility
    - Perform hand hygiene
    - Scrub the hub of the access port with 2% Chlorhexidine gluconate in 70% isopropyl alcohol for 30 seconds and allow to dry (repeat) prior to administering bolus IV medication
    - Check and assess the IV site with the Visual Infusion Phlebitis (VIP) score (Table 1)
    - Administer the medication

Maintenance of capped cannulas

16. Flush IV cannula that has no continuous infusion with prescribed 0.9% sodium chloride every 6 hours.
17. Flush IV cannula that has no continuous infusion with prescribed 0.9% sodium chloride pre and post medication administration.

Assessment of IV site

18. Inspect the IV insertion site, including above the insertion site and the extremities of the limb.
19. Use the VIP score to record observations.
20. Check pump pressure and volume infused every hour for continuous infusion. Record on observation chart.
21. Assess for local infiltration and extravasation of intravenous fluid and report to medical officer.

INTRAVENOUS LINE MANAGEMENT cont'd

Management

22. Ensure the IV access is securely taped allowing for maximum observation of insertion site.
23. Use transparent IV dressings, tape (Elastoplast) and arm board (refer to Peripheral Intravenous Cannula Insertion and Dressing).
24. Avoid swaddling or covering the IV limb with linen or blanket.
25. Observe the IV access hourly for:
    - Secure placement
    - Changes in the site around the cannula insertion and the fluid tracking direction
    - Leakage from the giving set or from IV access
    - Redness, swelling, blanching and pain
26. Record observations and changes in condition by using VIP score
27. Check the infusion pump hourly for:
    - correct infusion rate
    - pump pressure
    - presence of infusion fluid in burette
28. Document the presence of any atypical findings or complications and any actions taken in eMR (IIMS should be completed for all IV extravasations).
29. Daily documentation in the designated section of the NCC Observation Chart should include:
    - Insertion time
    - Position of intravenous access (eg. right cubital fossa)
    - Number of days
    - Removal

Removal of PIVC

30. Confirm with medical staff prior to removal.
31. Perform hand hygiene before procedure.
32. Provide oral sucrose for pain relief if required.
33. Use adhesive remover to soak Elastoplast for easy removal.
34. Place a sterile cotton wool ball on insertion site.
35. Remove the cannula and apply gentle pressure on the site until bleeding stops.
36. Apply a small piece of sterile cotton wool on site and secure with a small tegaderm if bleeding is intermittent.
37. Monitor the site and remove dressing at the next care time.
38. Document removal on the observation chart, eMR and NICUS database.

5. DOCUMENTATION

- eMR
- NCC Observation Chart
- NICUS database

6. RELATED POLICIES/PROCEDURES/CLINICAL PRACTICE LOP

- NSW Ministry of Health Guideline GL2015_008 – Standards for Paediatric Intravenous Fluids: NSW Health (second edition). Date of Publication 31 August 2015.
- NSW Ministry of Health Policy Directive PD2013_043 – Medication Handling in NSW Public Health Facilities. Date of Publication 27 November 2013.
- NSW Ministry of Health Policy Directive PD2010_034 – Children and Adolescents – Guidelines for Care in Acute Care Settings. Date of Publication 2 June 2010.
- NSW Ministry of Health Policy Directive PD2016_058 – User-applied Labelling of Injectable Medicines, Fluids and Lines. Date of Publication 22 December 2016.
- NCC Neonatal Nursing Guideline – Peripheral Intravenous Cannula Insertion and Dressing
- NCC Neonatal Medical Guideline – Extravasation and infiltration injuries prevention and management

INTRAVENOUS LINE MANAGEMENT cont'd

7. RISK RATING

- Low

8. NATIONAL STANDARD

- Standard 1 Clinical Governance
- Standard 3 Preventing and Controlling Healthcare-Associated Infection
- Standard 4 Medication Safety
- Standard 5 Comprehensive Care
- Standard 6 Communicating for Safety

9. ABBREVIATIONS AND DEFINITIONS OF TERMS

NCC	Newborn Care Centre	VIP	Visual Infusion Phlebitis
IV	Intravenous		

10. REFERENCES

1. Jackson A. Infection control--a battle in vein: infusion phlebitis. Nurs Times. 1998;94(4):68-71.

11. AUTHOR

Primary	25/7/2018	S Wise (Nursing Co-Director), E Jozsa (CNE)
Revised	23/7/2020	NCC LOPs Committee

REVISION & APPROVAL HISTORY
July 2018 Primary Document Created (amalgamation of three existing NCC LOPs: Intravenous Fluids – Nursing Guideline 1; Intravenous Fluids – Nursing Guidelines 2; Intravenous Medication – Administration Nursing Staff)
July 2020 Revised and Approved NCC LOPs Committee (LOP original title, "Intravenous Therapy")
FOR REVIEW: 2025