

	Policies & Procedures Title: INTRAVENOUS AND/OR PERIPHERAL SALINE LOCK INSERTION AND MAINTENANCE ID Number: 1118
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DEFINITIONS

Flushing – Injection of a solution into the intravenous (IV) catheter/cap to prevent mixing of incompatible solutions and clean the catheter of blood or fibrin buildup.

Turbulent flush technique – A method of flushing using a “stop-start” technique which “scrubs” the inside of the catheter lumen, preventing the build-up of fibrin or medication residue.

1. PURPOSE

- 1.1 To minimize the risks of infection and other complications associated with the insertion and maintenance of intravenous catheters.

2. POLICY

2.1 Who may start IV

- RN/RPN/GN competent in IV starts (NICU-Level 2 orientated RN only)
- Nursing Students under direct RN/GN/RPN/LPN/GPN supervision
- LPN/GPN who have successfully completed the IV/Blood Administration Course
- Home Intravenous Therapy Program (HITP) – RN’s only

- 2.2 A prescriber order is required to start an IV except in an emergency situation or for restarts.

2.3 Special Considerations

- 2.3.1 Maximum of 2 insertion attempts per nurse, then consult more experienced personnel.
- 2.3.2 Site will be monitored visually every shift or point of care contact (refers to Home Care visit), Pediatrics: q1h when IV fluid is infusing and when patient complains of pain or tenderness at IV site or has an unexplained fever.
- 2.3.3 Hand hygiene will always be performed as per policy before and after palpating catheter insertion sites as well as before and after inserting, replacing, accessing or repairing an IV catheter or dressing an IV site.

- 2.3.4 The nurse will attempt to aspirate the catheter for blood return to assess catheter function prior to use.
- 2.3.5 Direct luer lock connections will be used for continuous infusions.
- 2.3.6 Continuously running solutions containing medications (e.g. heparin, insulin) must run on the primary port (A) of the IV pump.
Note: All Chemotherapy must be infused on secondary port (B).
- 2.3.7 IV bags and syringes with medication added by nurse must have a medication label completed and attached.
- 2.3.8 Pediatric areas - IV pump must be used with all IV infusions. All IV bags and syringes must be labeled, even if no medication is added.

2.4 IV site preparation

- 2.4.1 Chlorhexidine 2% or Chlorhexidine 2%/Alcohol 70% will be used to cleanse site.
Note: For infants under 2 months, use Alcohol 70%.
Note: Antiseptic must be allowed to air dry on insertion site before catheter insertion.
- 2.4.2 Pediatric areas: a topical anaesthetic cream may be applied (prescriber order required) before IV insertion to manage pain. See product instructions.

2.5 IV site dressing

- 2.5.1 Sterile, transparent, semi permeable dressing is recommended.
- 2.5.2 Sterile gauze dressing will be used with sterile tape to secure hub (e.g. Steri-strips) when a patient is diaphoretic or if site is bleeding or oozing until resolved.
- 2.5.3 Dressing will be replaced when damp, loosened or visibly soiled or when IV site changed.
- 2.5.4 The date and time of IV insertion will be written on the dressing.
- 2.5.5 Pediatric IV taping procedure:
 - 2.5.5.1 Use a transparent, semi permeable dressing to secure catheter.
 - 2.5.5.2 Keep site visible – do not tape over.
 - 2.5.5.3 Tape fingers/toes and wrist/ankle to IV board (if using). Leave one end of tape doubled over for easy removal.
 - 2.5.5.4 Use double sided tape then cover with single sided tape to secure arm/leg to the arm board (NICU: may deaden the tape with cotton ball to protect the skin).
 - 2.5.5.5 Use an IV site protector (i.e. IV House®) to protect the IV site.
 - 2.5.5.6 Use tubular gauze or a thin cotton sock to cover site or over arm/foot board if required. Do not use gauze bandage wrap.
 - 2.5.5.7 No scissors to be used when removing tape or arm/footboards.
 - 2.5.5.8 Check tape/arm boards every shift and change q48-72h (except tape at IV site).

2.6 Flushing

2.6.1 The IV catheter will be flushed prior to use to assess catheter function.

2.6.2 The IV catheter will be flushed following access using turbulent flush technique to maintain patency.

Note: *Prior to accessing any port or cap, clean the surface with an alcohol swab for 15 seconds using friction and a twisting motion.*

2.6.3 Adults: 3mls 0.9% sodium chloride every 24 hours and prn following each use.

Pediatrics: 1-2 mls of 0.9% sodium chloride q6h & prn.

Note: *PICU: 0.5–1 ml 0.9% sodium chloride pre and between medication(s) then 1-2 ml 0.9% sodium chloride following medication.*

Neonates: 0.5 mls (or double catheter & extension amount) 0.9% sodium chloride every 4-6 hours.

2.7 IV site change

2.7.1 Adults: site will be changed every 96 hours or as soon as possible when aseptic technique during insertion cannot be ensured or with signs of phlebitis or infection or when dysfunctional.

Pediatrics: site will be changed only when dysfunctional.

2.8 Tubing & Solution Change

2.8.1 Continuous use tubing, secondary sets & add-on devices (ie. medication filters, bridges, adapters) will be changed every 96 hours, with IV site change or immediately if contamination or system integrity suspected

Note: *Certain medications require more frequent tubing/filter changes. Refer to IV Medication Reference Manual.*

2.8.2 Lipid and all Parenteral Nutrition (PN) solutions, filter, adapters & tubing will be changed every 24 hours.

2.8.3 Blood & blood products - as per "Blood, Blood Components and Plasma Protein Products - Administration of" policy.

2.8.4 All tubing will be labeled with the date & time it was started, date & time to be discarded or changed, and initials of caregiver.

2.8.5 IV solutions must be changed at least every 96 hours, with tubing changes and with IV site changes

Note: *Medication additives and specific solutions may require more frequent changes due to stability; refer to specific policies and references.*

2.9 Pump Pressures/Alarm

- 2.9.1 Pediatric areas: Defaulted to 2 PSI. Patient and IV pump pressures will be charted as per unit policy.
Neonates: IV pump pressure will be noted at start of infusion and limit set accordingly. Changes in PSI will be checked hourly.
Adults: Pump pressures default setting - 10 PSI.

2.10 LPN/GPN Role – IV Therapy

Note: Refer to Appendix A.

3. PROCEDURES

Note: Refer to Perry, Potter & Ostendorf 2014 Clinical Nursing Skills & Techniques 8th Edition.

- 3.1 Insertion of a Peripheral Intravenous Catheter: pages 697 - 708
- 3.2 Changing Solutions, Regulating Intravenous Flow Rate, Changing Infusion Tubing, Discontinuing Short Peripheral Intravenous Access: pages 708 - 724.
- 3.3 **Document**
- Insertion and ongoing care of IV on appropriate record every shift and prn
 - Care of site, date of site change and location of site on the care plan
 - Reason for failing to re-establish new IV site as indicated
 - Date IV was established on the IV dressing
 - Solution type and volumes on a fluid balance sheet.
 - Medications added to solution on medication administration record.

4. REFERENCES

American Heart Association (2012) PALS Provider Manual

Association for Professional in Infection Control and Epidemiology – Grota, P. (2014) APIC Text in Infection Control & Epidemiology. 4th Edition. Wash, USA: Chapter 24 –Intravascular Device Infections

Centers for Disease Control and Prevention (2011). Guidelines for the Prevention of Intravascular Catheter – Related Infections. <http://www.cdc.gov/hicpac/bsi/bsi-guidelines-2011.html>

College of Physicians and Surgeons of Saskatchewan -Laboratory Quality Assurance Program (2004) Transfusion Guidelines for Hospitals in Saskatchewan.

Competency Profile for Licensed Practical Nurses of Saskatchewan, Version 2 (July 11, 2005): Saskatchewan Association of Licensed Practical Nurses and Alberta Health and Wellness Health Workforce Planning Branch, Edmonton.

The Hospital for Sick Children. Nursing Student Orientation. Module 2: Clinical Care: Pediatric IV Therapy. Retrieved April 25, 2013 from the World Wide Web:
<http://www.sickkids.ca/nursing/education-and-learning/nursing-student-orientation/module-two-clinical-care/paediatric-iv-therapy/index.html>

Infusion Nurses Society (2011) Infusion nursing standards of practice. Journal of Infusion Nursing. 34(1S).

Perry, A. G., Potter, P. A & Ostendorf, W. R. (2014). Clinical Nursing Skills & Techniques. 8th Edition. St. Louis, Missouri. Elsevier Mosby.

Registered Nurses Association of Ontario, (2005). Care and maintenance to reduce vascular access complications. Toronto: Author.

Registered Nurses Association of Ontario, (2008). Care and maintenance to reduce vascular access complications: Guideline supplement. Toronto: Author.

RELATED POLICIES

Infection Prevention & Control Manual

<https://www.saskatoonhealthregion.ca/about/Pages/Policies-IPC.aspx> Hand Hygiene #20-20

SHR Nursing Policy and Procedure Manual

<https://www.saskatoonhealthregion.ca/about/Pages/Policies-Nursing-Manual.aspx>

Blood, Blood Components and Plasma Protein Products – Administration of # 1141

Chemotherapy Drugs for Cancer Treatment – Administration and Precautions # 1065

Chemotherapy Drugs for Non-Cancer Treatment – Administration and Precautions # 1180

Parenteral Nutrition (PN) – Adult Units Administration and Maintenance # 1078

SHR IV Medication Reference Manual

<http://inonet.sktnhr.ca/pharmaceuticalservices/Pages/SHRIVMedicationReferenceManual.aspx>

Appendix A

LPN Role – Intravenous and/or Peripheral Saline Lock Insertion and Maintenance

Competency	Education Courses the LPN has completed	
	Has <u>not</u> completed the IV/Blood Administration Course	Has completed the IV/Blood Administration Course
Observe the infusion site for signs of infiltration and inflammation and record observations	√	√
Set up IV bag and tubing including priming infusion line	√	√
Observe, regulate and record the rate of flow of IV solutions	√	√
Change an IV solution bag and/or refill the buretrol	√	√
Observe and regulate primary and secondary infusions	√	√
Trouble shoot IV pump alarms	Press "silence" on pump and report	√
Change a peripheral intravenous site dressing	√	√
Discontinue IV infusion and catheter from a peripheral venous site	√	√
Monitor and discontinue heparin and saline locks	√	√
Initiate peripheral infusion line upon physician's order	no	√
Flush saline lock	no	√
Prepare and administer medications for infusion as per medication order	no	√
IV Push Medications on targeted units only. LPNs/GPNs must receive IV push medication certification	*no	√

*** NOTE: LPNs not certified to give IV medications push/direct must administer them at intermittent rate as described in the IV Medication Reference Manual**