



<p>Team Name: Pharmacy and Therapeutics</p> <p>Team Lead: Director - Pharmacy</p> <p>Approved by: Regional Lead – Medical Services & Chief Medical Officer</p>	<p>Reference Number: CLI.6010.PL.003</p> <p>Program Area: Pharmacy and Therapeutics</p> <p>Policy Section: General</p>
<p>Issue Date: October 14, 2014</p> <p>Review Date: January 16, 2019</p> <p>Revision Date: January 25, 2024</p>	<p>Subject: Regional Parenteral Drug Monograph Manual and Use of Infusion SMART Pumps</p>

Use of pre-printed documents: Users are to refer to the electronic version of this document located on the Southern Health-Santé Sud Health Provider Site to ensure the most current document is consulted.

POLICY SUBJECT:

Regional Parenteral Drug Monograph Manual and Use of Infusion SMART Pumps

PURPOSE:

To promote safe medication practices through consistent policy in the Regional Parenteral Drug Monograph Manual.

BOARD POLICY REFERENCE:

Executive Limitation (EL-2) Treatment of Clients

POLICY:

- The Regional Parenteral Drug Manual is a reference to help guide healthcare professional in the use of parenteral drugs.
- The Regional Parenteral Drug Monographs are reflective of the Regional Formulary.
- Each drug may be administered parenterally by healthcare professionals as specified within their scope of practice.
- The healthcare professionals must follow the conditions and restrictions according to the drug monographs.
- Monographs will be reviewed and revised every three years and as deemed necessary.
- Continuous infusion of intravenous medications configured into the Pump Library must be administered using the corresponding Software feature.
- Requests for changes/deletions/additions to monographs shall be submitted to the Regional Pharmacy and Therapeutics Committee for approval.
- Ensure all infusions are administered correctly and safely by the most appropriate method and by qualified staff.
- Describe the process for the management of an infusion pump involved in an incident or close call.
- Define a process for reviewing/reporting trends/data collected by the SMART pump software.

DEFINITIONS:

Bolus - Medication/solution given over a short period of time; may be given by direct injection or gravity infusion. Also referred to as IV bolus, IV push or direct bolus.

Central Vascular Access Device (CVAD) - A device that permits access to the central vascular system. A catheter is inserted with the tip residing in the lower one-third of the superior vena cava, or above the level of the diaphragm in the inferior vena cava.

Compatibility - Capable of being mixed and administered without undergoing undesirable chemical and/or physical changes or loss of therapeutic action.

Continuous Intravenous Infusion - The continuous administration of a prescribed volume of solution or medication over an ordered period of time and/or at a specified rate of administration. Medications that are infused via an infusion pump or by gravity. Also referred to as IV infusion.

Dose Error Reduction System (DERS) - Dose error reduction systems (DERS) allow infusion pumps to warn users of prescriber calculation error, administration calculation errors, or miss-programming that would result in significant under- or over delivery of a drug, electrolyte, or other fluid. This is done by checking programmed doses against preset limits specific to a drug and to a clinical application or location. If the programmed dose is outside the limits, the pump alerts clinicians and can either require confirmation before beginning delivery (referred to as a soft limit) or not allow delivery at all (referred to as a hard limit).

Double Check - This is required for all medications that are *prepared/mixed by a nurse* dependent on the [Provincial High Alert Medication List](#).

Extravasation - Inadvertent leakage of an irritant drug into surrounding tissue, which may cause pain, necrosis and/or sloughing of tissue.

High Alert Double Check Sticker -



High Alert Medications - Are drugs with an identified risk of the likelihood of causing significant patient harm.

Incompatible - Incapable of being mixed or used simultaneously without undergoing chemical or physical changes or producing undesirable effects.

Intermittent Intravenous Therapy - Administration at prescribed intervals with periods of infusion cessation. Medication administration over a short period of time. Also referred to as IV intermittent.

Intramuscular (IM) - Injection into a muscle.

Intraosseous (IO) - Injection into the bone marrow cavity. This route is typically used on an emergency basis. All medications that are given intravenously are compatible via this route.

Intravenous (IV) - Injection into a vein.

Maximum Concentration - The highest concentration at which the medication may be administered safely. This may vary with the route of administration selected.

Maximum Rate - The fastest rate at which a medication may be administered safely.

Parenteral - Denoting any route other than the alimentary canal, i.e. IM, Subcut, IV.

PCA - Patient Controlled Analgesia

Preservative Free - Contains no added substance to inhibit bacterial contamination.

Reconstituted Product - The result of adding a suitable diluent in the proper volume to sterile solids of lyophilized powders.

Secondary - The administration of a second solution intermittently through a Y site attached to the primary administration set. Also known as piggy-back.

"SMART" (Safer Medication Administration Through Technology) Pumps - Infusion pumps with dose-checking technology (DERS) to help prevent potentially harmful errors in medication administration. The role of the smart pump technology is to "remember" the large number of "rules" (dosing limits and other clinical advisories) entered into the drug library and to apply those "rules" during pump programming, warning Health Care Practitioners about potential unsafe medication therapy. (reference prov. Safety Controls for high-alert medications).

Stability - The degree to which a product retains the physical, chemical and therapeutic properties that it possessed at the time of manufacture.

Subcutaneous (Subcut) - Medications given into the subcutaneous tissue either through an injection or infusion.

Umbilical catheter (UC) - A tube used to administer IV treatment to newborns through the umbilical stems found in birth.

Usual Concentration - Concentration of a drug where there would be minimal discomfort and optimal effect.

IMPORTANT POINTS TO CONSIDER:

- The Regional Parenteral Drug Monograph Manual is the region's main resource. Other sources can be used as a backup in extreme cases when a monograph is not available.
- Photocopying monographs to create smaller groups of monographs in certain areas is a safety concern and is not acceptable. This practice makes it impossible to ensure that all monographs are kept up to date when changes are made e.g. policies, strengths, vial sizes, etc. If there is a need to have a binder in an area that doesn't have one, contact the pharmacy department to request a complete binder.

PROCEDURE:

Nursing considerations:

- A nurse may administer drugs parenterally after receiving orientation to the Regional Parenteral Drug Monograph Manual and Use of Infusion SMART Pumps.
- Prior to administering a drug, the nurse shall check the drug monograph paying particular attention to the proper dilution, rate and route of administration, precautions, potential adverse effects, additional notes and nursing considerations.
- All monographs bearing a High Alert Double Check sticker will follow the [Safety Controls for High-Alert Medications, Provincial Clinical Standard](#)
- The drug monograph with a red border in the Administration section would indicate restrictions to either certain areas/professions.
- The nurse who prepares and adds a drug to the primary intravenous container/minibag must also initiate administration of the solution.
- The nurse, who prepares a drug for administration by the direct bolus route, shall administer the drug.



- The nurse must appropriately label the primary container/minibag with a red medication label stating the following:
 - Patient name
 - Drug name
 - Drug dose
 - Date and time of administration
 - Signature of the nurse who added the drug
 - The above information must also be documented on **one** or more of the following;
 - Integrated Progress Notes(IPN)/Nurses Notes(NN)
 - Vital Signs Record
 - Medication Administration Records (MAR)
 - 24 hour Fluid Balance Record
- If the drug is prepared by pharmacy, the nurse shall check the label for the following information:
 - Drug name
 - Drug dose
 - Name and volume of diluent
 - Expiry date
- Parenteral products shall be visually examined for particulate matter before and after preparation for administration. Hanging intravenous solutions should be inspected periodically for the formation of precipitates or for changes in color.
- The following, if unknown, shall be checked with a pharmacist:
 - The compatibility of two or more drugs to be added to the same intravenous solution.
 - The compatibility of a drug with a particular intravenous solution.
 - The compatibility of a drug injected into the tubing of an established intravenous infusion.
 - The compatibility of more than one drug mixed in a syringe.

IV drug monographs:

- **Unavailability:** In the event that a Parenteral Drug Monograph is not available the following steps shall be taken:
 - Access the WRHA Adult/Pediatric Drug Monographs on the portal and determine if a monograph is available through this source. If a monograph is not available through this source, or if after accessing the WRHA monograph, questions remain then proceed to second bullet.
 - Contact the pharmacist to obtain a temporary monograph and drug information from a reputable source.
 - If drug is considered to be warranted as an addition to the Regional Parenteral Drug Monograph Manual refer to the Formulary Addition/Deletion Request Form.
 - If an interim monograph is unavailable the prescriber ordering the drug will be responsible for administration of the first dose and subsequent doses, pending monograph availability.
- **Modification:** In the event that a discrepancy has been found within the Regional Parenteral Drug Monograph either due to changes in practice, new policy, standing orders/protocols and/or any modifications the following steps shall be taken:
 - Consult pharmacist or physician if clarification is needed before administration.
 - Complete the Regional Parenteral Drug Monograph Modification Form .
 - Notify your immediate supervisor/designate (*if applicable*).
 - Fax completed form to the Regional Pharmacy & Therapeutics Committee's contact as indicated on the form.
- **Online Access:** The Regional Parenteral Drug Monographs can also be found on the internal portal service (intranet) under Programs and Services - Pharmacy - Drug Monographs.

Use of Infusion SMART Pumps:

- Clinical operation of IV pumps are restricted to direct care providers who have received standardized competency training as identified at a minimum every two years
- Administration of infusions requires direct care providers to verify and follow these clinical principles;
 - Correct client
 - Correct medication, concentration and dose
 - Correct rate of administration
 - Correct pump settings
 - Correct time
 - Correct administration set
 - Use of Independent double checks for high-alert medications
 - Mandatory use of the DERS feature for administration of all medications listed in the drug library.
 - Programming of pump overriding soft or hard limits requires additional actions as listed in the Safe Medication Administration policy CLI.4110.PL.015.
- SMART pump software reports are generated and reviewed at minimum twice a year and/or if a pump is involved in an incident or close call. Reports are used to understand infusion trends and identify opportunities for improvement for pump education and or the drug library.
- Pump operation follows the manufacturer's instructions.

REFERENCES:

Brandon Adult Parenteral Drug Monographs

Brandon Pediatric Parenteral Drug Monographs

Compendium of Pharmaceuticals and Specialties The Canadian Drug Reference for Health Professionals
CPS 2010

Pereira JL, Associates. The Pallium Palliative Pocketbook: a peer-reviewed, referenced resource. 1st Cdn ed. Edmonton, Canada: The Pallium Project 2008

Sick Kids. Drug Handbook and Formulary. The hospital for sick children. Toronto, ON, CAN 2013/2014
Uptodate <http://www.uptodate.com/contents/search>. Accessed 2010

WRHA Parenteral Drug Manual (Adults)

WRHA Parenteral Drug Manual (Pediatric)

Safe Medication Administration [CLI.4110.PL.015](#)