



TITLE

**PARENTERAL NUTRITION MANAGEMENT**

SCOPE

Provincial: Acute Care

DOCUMENT #

HCS-217

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SPONSOR

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Health Professions Strategy and Practice (Nursing)

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Not applicable

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**NOTE:** The first appearance of terms in bold in the body of this document (except titles) are defined terms – please refer to the Definitions section.

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## OBJECTIVES

- To facilitate the safe management of **parenteral nutrition (PN)** by standardizing best practice within **Alberta Health Services (AHS) settings**.

## PRINCIPLES

- Management of PN is a complex therapy. A multidisciplinary approach including shared decision-making is necessary to provide safe, appropriate care to **patients**.
- PN is a **high-alert medication**. Compliance with the *AHS Management of High-Alert Medications* Policy and procedures is required.
- AHS is committed to patient safety and minimizing the risk of complications involving the care and management of the patient receiving PN.
- PN is to be provided at a **designated PN facility** (see Appendix A below) that meets the criteria in sections 1 to 4 of this policy. Some exceptions may apply to patients enrolled in an **AHS Home Parenteral Nutrition Program** who are admitted to an Acute Care facility (see section 5 below).
- The AHS provincial PN strategy includes the overarching requirements for the management of PN as established by this policy. It interconnects with the AHS Pharmacy Services *Parenteral Nutrition Policy Suite*, the AHS *Nutrition Support Manuals* and the AHS *Parenteral Nutrition Administration and Monitoring Policy Suite*.

## APPLICABILITY

Compliance with this document is required by all Alberta Health Services employees, members of the medical and midwifery staffs, Students, Volunteers, and other persons acting on behalf of Alberta Health Services (including contracted service providers as necessary), working in Acute Care.

## ELEMENTS

### 1. Professional Responsibility

- 1.1 **Health care professionals** shall have the knowledge, training, and specialized skills to prescribe, compound, dispense, administer or monitor PN as per scope of practice and role in an Acute Care facility providing PN.
- a) Refer to the applicable discipline-specific regulation under the *Health Professions Act (Alberta)* for the authorization to perform restricted activities. For example, Physicians, Pharmacists with Additional Prescribing Authorization from their College, Registered Dietitians with authorization from their College, and Nurse Practitioners may be **authorized prescribers** for PN.
    - (i) If PN is ordered by an authorized prescriber who does not meet the criteria in section 1.1 above, authorization and agreement to act as a consulting prescriber are required from another authorized prescriber who does meet this criteria.
  - b) Refer to the AHS Pharmacy Services *Parenteral Nutrition Policy Suite* for information on the specific roles and responsibilities of Pharmacists and Pharmacy Technicians.
  - c) Refer to the AHS *Parenteral Nutrition Administration and Monitoring Policy* for information on the specific roles and responsibilities of nursing staff.
- 1.2 Authorized prescribers shall:
- a) have access to and utilize the AHS *Nutrition Support Manuals*;
  - b) collaborate with a Registered Dietitian authorized to prescribe PN (if the authorized prescriber is not a Registered Dietitian) and a multidisciplinary team (if present) to ensure optimal nutrition supplementation; and
  - c) assess and monitor the patient's nutritional needs.
- 1.3 Regulated Pharmacy staff shall:
- a) complete the applicable Pharmacy PN education module(s);

- b) comply with the AHS Pharmacy Services *Independent Double-Check Guidelines*;
  - c) receive applicable training for and be able to demonstrate competency on any related technology (e.g., ABACUS, EXACTA-MIX), when working at a designated PN facility (see Appendix A below); and
  - d) comply with the AHS Pharmacy Services *Parenteral Nutrition Policy Suite*.
- 1.4 Nursing staff shall:
- a) have clinical competency in intravenous therapy management including vascular access devices (VAD);
  - b) complete the AHS Provincial Infusion Pump Education and/or site-specific practice setting education and training on infusion pumps;
  - c) receive PN education on administration and/or monitoring as per scope of practice;
  - d) demonstrate competency in PN administration and/or monitoring;
  - e) comply with the AHS *Parenteral Nutrition Administration and Monitoring Policy Suite*; and
  - f) comply with the AHS *Independent Double-Check* Guideline.

## 2. Ordering Parenteral Nutrition

- 2.1 An authorized prescriber's order is required for PN. Orders shall comply with the AHS *Medication Orders* Policy and procedures.
- 2.2 Authorized prescribers shall only use the appropriate standardized PN order set/form(s) and they must be completed electronically. No handwritten PN orders shall be accepted.
- 2.3 Authorized prescribers shall:
- a) review PN orders at least every seven (7) days, dependent on the patient's condition; and
  - b) communicate all changes to PN orders to the patient's health care team and document in the patient's health record.
    - (i) A new PN order set/form must be completed for any changes to the PN ingredients.
    - (ii) Orders for changes in the infusion rate shall be entered on the Patient Care Orders section of the patient's health record.

- 2.4 Authorized prescribers shall only order the type of PN that can be provided by the facility where the patient is receiving treatment.
- a) Contact the local/site Pharmacy for information on the type of PN that can be ordered.
- 2.5 PN standardized order forms and clinical decision support information shall be reviewed by the Provincial Parenteral Nutrition Steering Committee (PPNSC) at least every three (3) years to ensure they reflect current leading practice.
- 3. Medication Reconciliation**
- 3.1 When patients are admitted or transferred from another setting, medication reconciliation shall be completed in accordance with the *AHS Medication Reconciliation* Policy to ensure appropriate review, evaluation, and reconciliation of PN.
- a) A copy of the PN order is required for reconciliation of PN.
- 4. Provision of Parenteral Nutrition in Designated Facilities**
- 4.1 The pharmacy department of designated PN facilities (see Appendix A below) shall:
- a) have an appropriate sterile compounding facility and equipment to compound PN onsite (see section 4.2 a) to d) below); or
- b) transmit their PN orders to an AHS Pharmacy that meets the criteria for compounding PN (see section 4.2 a) to d) below). The receiving AHS Pharmacy shall compound the PN and deliver it to the originating site pharmacy on a daily basis.
- 4.2 Pharmacy departments with an appropriate sterile compounding facility for PN shall:
- a) ensure the compounding facility complies with the National Association of Pharmacy Regulatory Authorities (NAPRA) *Model Standards for Pharmacy Compounding of Non-Hazardous Sterile Preparations*, including but not limited to:
- (i) location of the primary engineering control (PEC) in a clean room that meets ISO Class 7 air quality standards; and
- (ii) preparation of PN occurs within a PEC that meets the ISO class 5 standards for air cleanliness;
- b) utilize computer software (e.g., ABACUS) that is specific to PN order entry including dosing and osmolarity calculations, ingredient limit checks and alerts, calcium/phosphate solubility graphs, and label printing for PN admixtures and lipid emulsions;

- c) have access to the ingredients and supplies required to compound PN (refer to AHS Pharmacy Services *Parenteral Nutrition* Policy Suite); and
  - d) be able to dispense the PN in accordance with the AHS Pharmacy Services *Parenteral Nutrition* Policy Suite.
- 4.3 Nursing staff must have access to the appropriate equipment and supplies to administer PN. Refer to the AHS *Parenteral Nutrition Administration and Monitoring* Policy Suite.

## 5. Admission of Patients in Home Parenteral Nutrition Programs to an Acute Care Facility

- 5.1 When patients enrolled in an AHS Home Parenteral Nutrition Program are admitted to an AHS Acute Care facility, the following criteria apply:
- a) **home PN admixtures** shall not be used in designated PN Acute Care facilities (see Appendix A below) that provide PN unless permitted (see section 5.2 below); and
  - b) a designated PN facility (see Appendix A below) shall be responsible for ordering and providing appropriate PN while the patient is admitted to the Acute Care facility.
- 5.2 Exceptions to section 5.1a) above are permitted with approval from the authorized prescriber in the following circumstances:
- a) children who are 18 years of age and under (as per facility process) may use their home PN admixture until the site Pharmacy can provide appropriate PN;
  - b) when the site Pharmacy cannot provide a PN admixture that meets the nutritional needs of the patient (e.g., home PN admixture includes an amino acid product that is not on the AHS Formulary), the patient may supply and administer their home PN admixture; or
  - c) when the patient is admitted to an Acute Care facility that does not provide PN and requires short-term acute care (i.e., not to exceed 10 days), the patient/**caregiver** may supply and administer their home PN admixture.
- 5.3 When patients are permitted to use their home PN admixture (per section 5.2 above), the following criteria apply:
- a) the authorized prescriber in the Acute Care facility shall:

- (i) communicate with the Home Parenteral Nutrition Program to discuss the PN order;
    - a copy of the home PN order shall be obtained and placed in the patient's health record as per site process;
  - (ii) provide an order indicating the patient may use home PN and to refer to the PN order on the patient health record; and
  - (iii) assess and monitor the patient's nutritional needs;
- b) the patient and/or caregiver shall:
- (i) bring the infusion pump, administration sets, supplies, additives, and home PN admixtures to the facility; and
  - (ii) administer the home PN admixture and any prescribed additives;
- c) the health care professional shall:
- (i) ensure the home PN admixture is labelled and stored appropriately, and not expired. Refer to the *AHS Management of Patient's Own Medications Policy and Procedure* and *AHS Provincial Parenteral Manual* for more information; and
  - (ii) document on the patient's health record as per the *AHS Management of Patient's Own Medications Policy and Procedure*.
- 5.4 When the patient and/or caregiver is no longer able to manage the preparation and administration of the home PN admixtures, the authorized prescriber shall notify the Home Parenteral Nutrition Program.
- a) For patients in a designated PN facility (see Appendix A below), the patient's nutritional needs shall become the responsibility of the site health care professionals and require PN dispensed by the facility.
  - b) For patients in a non-designated PN facility, the patient shall be transferred to an appropriate AHS facility that meets the patient's medical needs.

## 6. Reporting and Learning System (RLS)

- 6.1 Reporting of adverse events, close calls, and hazards with PN from preparation to administration and inclusive of equipment and products into the **Reporting and Learning System (RLS)** is highly encouraged as per the *AHS Reporting of Clinical Adverse Events, Close Calls and Hazards Procedure*. Reports will be used for the purposes of organizational learning and improvement.

## DEFINITIONS

**Alberta Health Services (AHS) settings** means any environment where treatment/procedures and other health services are delivered by, on behalf of or in conjunction with, Alberta Health Services.

**Authorized prescriber** means a health care professional who is permitted by Federal and Provincial legislation, their regulatory college, Alberta Health Services, and practice setting (where applicable) to prescribe medications.

**Caregiver** means an informal caregiver such as a family member or other natural person who contributes to and is involved in the caretaking responsibilities of the patient.

**Designated PN facility** means an acute care facility where the pharmacy provides PN either by obtaining a compounded PN from a compounding pharmacy or by compounding PN on site either by custom compounding or by adding to purchased premixed PN. The designated PN facility must adhere to the criteria outlined in this policy for all multidisciplinary staff working with PN.

**Health care professional** means an individual who is a member of a regulated health discipline, as defined by the *Health Disciplines Act* (Alberta) or the *Health Professions Act* (Alberta), and who practices within scope and role.

**High-alert medication(s)** means medications that bear a heightened risk of causing significant patient harm when used in error.

**Home PN admixture** means a 3-in-1 formulation, also known as a total nutrient admixture (TNA) that includes amino acids, dextrose electrolytes, vitamins, minerals, trace elements and lipid emulsion in a single bag. This is provided by an external private company for the Home Parenteral Nutrition Program.

**Home Parenteral Nutrition Program** means intravenous nutrition for patients at home who cannot get the nutrition they need by eating or being fed through a tube.

**Parenteral nutrition (PN)** means an intravenous provision of nutritional needs for a patient who is unable to take appropriate amounts of nutrition enterally; typical components include carbohydrates, proteins, and/or lipid/fats, as well as additives such as electrolytes, vitamins, and trace elements.

**Patient** means all persons who receive or have requested health care or services from AHS and its health care providers and also means, where applicable:

- a) a co-decision-maker with the person; or
- b) an alternate decision-maker on behalf of the person.

**Reporting and Learning System (RLS)** means the electronic software program designated by AHS to report patient related events resulting in adverse events, close calls or hazards.

**REFERENCES**

- Appendix A: *Designated AHS Parenteral Nutrition Facilities*
- Alberta Health Services Governance Documents:
  - *Consent to Treatment/Procedure(s) Policy Suite (#PRR-01)*
  - *Independent Double-Check Guideline (#PS-60-01)*
  - *Management of High-Alert Medications Policy (#PS-46)*
  - *Management of Patient's Own Medications Policy and Procedure (#PS-98)*
  - *Medication Orders Policy and Procedures (#PS-93)*
  - *Medication Reconciliation Policy (#PS-05)*
  - *Parenteral Nutrition Administration and Monitoring Policy Suite (#HCS-218)*
  - *Parenteral Nutrition Policy Suite (Pharmacy Services) (#13.02.01)*
  - *Reporting of Clinical Adverse Events, Close Calls and Hazards Procedure (#PS-95-04)*
- Alberta Health Services Resources:
  - *Independent Double Check Guidelines (Pharmacy Services)*
  - *Provincial Adult Nutrition Support Manual*
  - *Provincial Neonatal Nutrition Support Manual*
  - *Provincial Parenteral Manual*
  - *Provincial Pediatric Nutrition Support Manual*
- Non-Alberta Health Services Documents:
  - *Health Professions Act (Alberta)*
  - *Model Standards for Pharmacy Compounding of Non-Hazardous Sterile Preparations (National Association of Pharmacy Regulatory Authorities [NAPRA])*

**VERSION HISTORY**

Date	Action Taken
August 23, 2018	Non-substantive change
<a href="#">Click here to enter a date</a>	Optional: Choose an item



## APPENDIX A

## Designated AHS Parenteral Nutrition Facilities

## Calgary Zone:

Alberta Children's Hospital  
Foothills Medical Centre  
Peter Lougheed Centre  
Rockyview General Hospital  
South Health Campus Hospital  
Calgary Production Pharmacy

## Edmonton Zone:

Royal Alexandra Hospital  
Lois Hole Hospital for Women  
Glenrose Rehabilitation Hospital  
Sturgeon Community Hospital, St. Albert  
University of Alberta Hospital  
Mazankowski Alberta Heart Institute  
Stollery Children's Hospital  
Grey Nuns Community Hospital  
Misericordia Community Hospital  
Cross Cancer Institute  
Fort Saskatchewan Community Hospital, Fort Saskatchewan  
Leduc Community Hospital, Leduc

## Central Zone:

Red Deer Regional Hospital  
St. Mary's Hospital, Camrose

## North Zone:

Northern Lights Regional Health Centre, Fort McMurray  
Queen Elizabeth II Hospital, Grande Prairie

## South Zone:

Chinook Regional Hospital, Lethbridge  
Medicine Hat Regional Hospital, Medicine Hat