



TITLE

PARENTERAL NUTRITION ADMINISTRATION AND MONITORING

SCOPE

Provincial: Acute Care

DOCUMENT #

HCS-218

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Pharmacy Services, Nutrition Services, and
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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 storage, administration, and monitoring of **parenteral nutrition (PN)** by standardizing best practice within **Alberta Health Services (AHS) settings** for adult, pediatric, and neonatal **patients**.

PRINCIPLES

Parenteral nutrition (PN) is a **high-alert medication**. Compliance with the *AHS Management of High-Alert Medications* Policy and related procedures is required.

AHS is committed to patient safety and minimizing the risk of complications involving the care and management of patients receiving PN.

Patients receiving PN are at a higher risk of infection.

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. Parenteral Nutrition (PN) Orders

- 1.1 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.

- 1.2 PN shall be ordered by an **authorized prescriber** using the appropriate standardized order set/form(s).
- 1.3 PN orders shall be carried out in accordance with the *AHS Medication Orders Policy and Procedures* and the *AHS Parenteral Nutrition Management Policy*.
 - a) A titration order is required from an authorized prescriber to make on-going rate adjustments.

2. Infection Control Measures

- 2.1 **Health care professionals** shall adhere to infection control measures including appropriate aseptic technique as required, to reduce the risk of contamination and infection that can occur through manipulation of PN, the vascular access device (VAD), and administration sets.
- 2.2 PN shall be stored in such a manner as to maintain appropriate temperature and reduce the risk of oxidation and contamination, as per the *AHS Provincial Parenteral Monographs* and/or manufacturer's recommendations.
- 2.3 Infection control measures shall include:
 - a) **hand hygiene** prior to any manipulation of the PN system as per the *AHS Hand Hygiene Policy and Procedure*;
 - b) a dedicated venous access line and/or lumen for PN should be used;
 - c) aseptic management of the vascular access device (VAD) in alignment with standard infusion therapy practice;
 - d) maintenance of the PN infusion as a closed system by avoiding disconnections for medication administration, diagnostic tests, or patient transfer;
 - e) infusion of all **lipid emulsions** and **amino acid dextrose solutions** through filters appropriate for the type of formulation;
 - f) priming of PN administration sets on the unit just prior to the time of infusion on the unit; and
 - g) **hang/infusion times** that are appropriate for the type of PN formulation.

3. Roles and Responsibilities

- 3.1 Administration of PN is a restricted activity. For specific conditions that apply to a profession's authorization to administer PN, please consult the applicable discipline-specific regulation under the *Health Professions Act (Alberta)*.

- 3.2 It is the responsibility of health care professionals who handle PN to self-identify learning needs and undertake appropriate measures to ensure ongoing and continual competency, as determined by AHS and specific work settings. PN shall be administered and/or monitored by a health care professional who has:
- a) clinical competency in intravenous therapy management including vascular access devices (VAD);
 - b) completed the AHS Provincial Infusion Pump Education and/or site-specific practice setting education and training on infusion pumps;
 - c) received PN education on administration and/or monitoring as per scope of practice; and
 - d) clinical competency in PN administration and/or monitoring.

4. Independent Double-Check

- 4.1 Health care professionals, working within their scope of practice, shall perform the **independent double-check** for PN prior to administration as per the AHS *Independent Double-Check* Guideline.

5. Administration

- 5.1 PN shall be administered to the patient with appropriate equipment and in accordance with the safe practices and equipment policies (including but not limited to the AHS *Provincial Parenteral Monographs*, AHS *Infusion Pumps for Medication & Parenteral Fluid Administration* Policy, AHS *Invasive Infusion Line and Tubing Verification* Policy, AHS *Parenteral Nutrition Administration and Monitoring* Procedures and AHS *Parenteral Nutrition Management* Policy).
- a) Di-ethylhexyl-phthalate (DEHP)-free equipment is required for administration of all lipid emulsions and any amino acid dextrose solution tubing that may be connected to this equipment.
- 5.2 Provision of PN in Acute Care facilities shall be in accordance with the AHS *Parenteral Nutrition Management* Policy.
- a) Health care professionals shall be aware of their roles in administration and monitoring, including when patients in the Home PN Program are admitted to Acute Care.
- 5.3 Regular monitoring and ongoing assessment of patient health needs and the integrity of PN solutions and/or the delivery system (tubing / infusion pump) is required. For more information, see the AHS *Parenteral Nutrition Administration and Monitoring* Procedures.

6. Patient Education

- 6.1 The health care professional shall provide education on PN administration and monitoring to the patient and/or family/caregiver.

7. Documentation

- 7.1 Documentation of PN administration and monitoring shall be done in accordance with legal, regulatory, and AHS (provincial, Zone or site) policy and procedure requirements for handwritten or electronic records.

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.

Amino acid dextrose solution means a complex formulation of dextrose, amino acids, electrolytes, minerals, vitamins and trace elements.

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.

Hand hygiene means practices which remove micro-organisms, with or without soil, from the hands (refers to the application of alcohol-based hand rub or the use of plain/antimicrobial soap, and water hand washing).

Hang/infusion time means the period of time beginning with the flow of a fluid to the patient through an administration set and catheter and ending with the completion of the infusion.

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.

Independent double-check means a verification process whereby a second health care professional conducts a verification of another health care professional's completed task. The most critical aspect is to maximize the independence of the double-check by ensuring that the first health care professional does not communicate what they expect the second health care professional to see, which would create bias and reduce the visibility of an error.

Lipid emulsion means mixture of one (1) or more fats for intravenous use. Lipid emulsions are available in different types and volumes.

Parenteral nutrition (PN) means 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 lipids/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.

REFERENCES

- Alberta Health Services Governance Documents:
 - *Adult Parenteral Nutrition Administration and Monitoring Procedure* (#HCS-218-01)
 - *Do Not Use List of Abbreviations, Symbols, and Dose Designations For Medication-Related Documentation Policy* (#PS-08)
 - *Hand Hygiene Policy and Procedure* (#PS-02)
 - *Independent Double-Check Guideline* (#PS-60-01)
 - *Infusion Pumps for Medication & Parenteral Fluid Administration Policy* (#PS-70)
 - *Invasive Infusion Line and Tubing Verification Policy* (#PS-15)
 - *Management of High Alert Medications Policy* (#PS-46)
 - *Medication Orders Policy and Procedures* (#PS-93)
 - *Medication Reconciliation Policy* (#PS-05)
 - *Neonatal Parenteral Nutrition Administration and Monitoring Procedure* (#HCS-218-02)
 - *Parenteral Nutrition Management Policy* (#HCS-217)
 - *Patient Identification Policy* (#PS-06)
 - *Pediatric Parenteral Nutrition Administration and Monitoring Procedure* (#HCS-218-03)
- Alberta Health Services Resources:
 - *Provincial Parenteral Monographs*
- Non-Alberta Health Services Documents:
 - *Clinical Standards: Parenteral Nutrition Ordering, Order Review, Compounding, Labelling, and Dispensing, 2014* (American Society for Parenteral and Enteral Nutrition [ASPEN])
 - *Health Professions Act* (Alberta)
 - *Parenteral Nutrition Safety Consensus Recommendations, 2014* (American Society for Parenteral and Enteral Nutrition [ASPEN])

VERSION HISTORY

Date	Action Taken
Click here to enter a date	Optional: Choose an item
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