



Parenteral Nutrition Guideline

1. Purpose

Parenteral Nutrition (PN) provides a life-sustaining option for patients with impaired gastrointestinal function where oral intake or enteral nutrition (EN) is not possible. As EN is considered the preferred option if oral intake is not suitable, PN should only be used in clinical situations when it is not possible to meet an individual's nutritional requirements orally or enterally and this is predicted to last for at least 5-7 days.

At Bunbury Hospital, clinicians have access to both central PN (CPN) and peripheral PN (PPN). This procedure aims to outline the clinical indications and specific patient types in which PN might be required for at Bunbury Hospital, the process for prescribing and initiating PN at Bunbury Hospital, and the clinical governance of PN, including the multidisciplinary team (MDT) roles and responsibilities.

This document is intended to be used in conjunction with WACHS [Adult Total Parenteral Nutrition Procedure](#) and the WACHS [Adult Peripheral Parenteral Nutrition Procedure](#) and as such this document does not cover contraindications, administration, monitoring, or ceasing/weaning of PN.

2. Procedure

2.1 Clinical indications for Parenteral Nutrition

PN is indicated when the gastrointestinal tract is not functional or accessible. Conditions that may require PN at Bunbury Hospital include:

- impaired absorption:
 - short bowel syndrome
 - volvulus
 - high output intestinal fistula or stoma
 - small bowel mucosal disease: radiation or chemotherapy induced enteritis
- mechanical bowel obstruction
 - stenosis or strictures
 - inflammatory disease
 - severe adhesive disease
 - obstructive mass in any location along the GI tract
- requirement for bowel rest
 - ischaemic bowel
 - severe pancreatitis
 - chylous fistula
- motility disorder
 - post operative ileus
 - pseudo-obstruction

2.2 Process for initiating Central Parenteral Nutrition

CPN is managed by the Intensive Care Unit (ICU) team for ICU patients, and the ICU outreach team for patients outside of ICU. Initiation of CPN outside of ICU requires

communication between the treating team, ICU outreach and dietitian. To initiate CPN, the following steps should occur:

1. treating team and ward dietitian discuss suitability of PN for the patient, considering the indications and contraindications outlined in the WACHS [Adult Total Parenteral Nutrition Procedure](#)
2. treating team completes referral to the ICU outreach team via mobile number 0477 802 828 and eReferral
3. treating team completes referral for insertion of triple lumen Peripherally Inserted Central Catheter (PICC) via eReferral (Unit: Anaesthesia > PICC Service)
4. dietitian completes nutrition assessment, calculates patient's nutritional requirements, determines a suitable PN starting rate, target rate and recommended PN bag and documents this on the [MR60.1.11 WACHS Adult Total Parenteral Nutrition Form](#)
5. ICU outreach team prescribes PN on the [MR60.1.11 WACHS Adult Total Parenteral Nutrition Form](#)
6. ICU outreach team will review daily and prescribe PN daily as required, in consultation with the treating team and dietitian.

2.3 Process for initiating Peripheral Parenteral Nutrition

Unlike CPN which is managed by the ICU outreach team, PPN is managed by the patient's treating team. To initiate PPN, the following steps should occur:

1. treating team and dietitian discuss suitability of PPN for the patient, considering the indications and contraindications outlined in the WACHS [Adult Peripheral Parenteral Nutrition Procedure](#)
2. dietitian completes nutrition assessment, calculates patient's nutritional requirements, determines a suitable PPN starting rate and target rate and documents this on the [MR 60.1.14 WACHS Adult Peripheral Parenteral Nutrition Form](#)
3. PPN is prescribed by the treating team on the [MR 60.1.14 WACHS Adult Peripheral Parenteral Nutrition Form](#)
4. PPN is reviewed daily by the treating team and dietitian.

2.4 Parenteral Nutrition formula

Bunbury Hospital stocks three different 3-compartment bags of PN solutions: PeriOlimel N4-600E, Olimel N7-960E and Olimel N9-840E. The prefixes N4, N7 and N9 refer to the nitrogen content in g/L. These are sourced from the pharmacy department. The ward dietitian can assist in determining the appropriate PN bag for a patient.

It is important to note that these PN bags contain insufficient levels of vitamins and trace elements to meet individual patient requirements. As Bunbury Hospital does not compound or make additions to PN bags, the vitamins and trace elements must be prescribed separately on the MR 170A Medication Chart and delivered via a separate cannula.

Imprest:

- surgical ward: N4, N7, N9 and light protective overpouches
- ICU/HDU: N7, N9 and light protective overpouches.

While the use of the light protective overpouches is not deemed necessary in non-compounded bags, the different colours enables differentiation between CPN and PPN. The silver light protective overpouch is to be used for CPN bags, and the black light protective overpouch is to be used for PPN bags

**ATTENTION**

Olimel ® N7-960E and Olimel ® N9-840E have a high osmolarity (1310-1360mOsm/L) and must NOT be administered peripherally. These are central PN bags.

Olimel N4-600E has a lower osmolarity (760mOsm/L) and therefore can be administered through a peripheral vein. This is a PPN bag.

3. Roles and Responsibilities

The **Treating Team** is responsible for:

- completing referral to ICU outreach (unless the treating team is ICU) and dietitian for commencement of CPN
- completing referral to PICC Service
- prescribing PPN, in consultation with dietitian
- ordering relevant blood tests
- charting electrolyte replacement
- charting weekly 2mg phytomenadione vitamin K1
- charting multivitamin (Cernevit) and trace element (Adult Trace Element [ADTE]) solution (both as intravenous preparations).

ICU and the **ICU Outreach Team** are responsible for:

- prescribing CPN daily
- daily medical review of patient with particular attention to signs of sepsis, line status, fluid balance.

The **Dietitian** is responsible for:

- assisting ICU and treating team in decision-making as to whether PN is appropriate
- completing full nutritional assessment
- assessing for malnutrition
- estimating nutrition requirements
- determining risk of refeeding syndrome
- recommending PN bag, starting rate and target rate
- monitoring nutritional status of patient
- transitioning feeding once oral or enteral intake commences.

Note: Dietitians at Bunbury Hospital are available Monday to Friday including most public holidays, as well as Sunday mornings. To contact a dietitian on a public holiday or weekend, please call the Bunbury Hospital Switch Board (9722 1000).

The **Pharmacist** is responsible for:

- reviewing medications and anticipating drug-drug interactions, drug-nutrient interactions and medications that may adversely affect a patient's electrolytes and blood glucose levels (BGL)
- liaising with pharmacy department regarding PN supplies.

Nurses are responsible for:

- administering PN following WACHS Procedures
- ensuring PN solution is covered with light protective overpouch while solution is hanging (silver for CPN bags and black for PPN bags)
- monitoring BGL as per WACHS Procedures

- completing 4 hourly observations
- completing strict Fluid Balance Chart
- monitoring for signs of sepsis, line status
- completing daily weight.

All staff are required to comply with the directions in WACHS policies and procedures as per their roles and responsibilities. Guidelines are the recommended course of action for WACHS and staff are expected to use this information to guide practice. If staff are unsure which policies procedures and guidelines apply to their role or scope of practice, and/or are unsure of the application of directions they should consult their manager in the first instance.

4. Monitoring and Evaluation

Monitoring of compliance with this document is to be carried out by relevant heads of department (ICU, Surgical, Dietetics) using review of CIMS data relevant to Bunbury Hospital.

Evaluation of the use of PN at Bunbury Hospital will be conducted with a biannual clinical audit of all PN patients lead by the Head of Department – Dietetics and Nutrition.

5. References

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McClave SA, Taylor BE, Martindale RG, Warren MM, Johnson DR, Braunschweig C, et al. Guidelines for the Provision and Assessment of Nutrition Support Therapy in the Adult Critically Ill Patient: Society of Critical Care Medicine (SCCM) and American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.). JPEN J Parenter Enteral Nutr. [Internet]. 2016. [accessed 10 April 2025]; 40(2):159-211. Available from: <https://pubmed.ncbi.nlm.nih.gov/26773077/>

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Baxter Professional [Internet]. [place unknown]: Olime/PeriOlime Australian Product Information. [accessed 10 April 2025]. Available from: <https://www.baxterprofessional.com.au/media/5486>

6. Definitions

Term	Definition
Parenteral Nutrition	Parenteral nutrition (PN) is the infusion of an intravenous nutrition formula into the bloodstream. This may be via central or peripheral access.
Central Parenteral Nutrition	Central parenteral nutrition (CPN) is the infusion of a highly osmolar nutrition formula through a central venous catheter. CPN is likely to meet 100% of estimated nutrition requirements.
Peripheral Parenteral Nutrition	Peripheral Parenteral Nutrition (PPN) is the infusion of a lower osmolarity intravenous solution into a peripheral vein. Due to its lower concentration and restrictions in flow rate, PPN is unlikely to meet an individual patient's nutrition requirements. PPN is intended for short term (5-7 day) use only.

7. Document Summary

Coverage	Bunbury Hospital
Audience	Medical officers, dietitians, nurses and pharmacists involved in parenteral nutrition
Records Management	Health Record Management Policy
Related Legislation	Health Services Act 2016 (WA)
Related Mandatory Policies/Frameworks	<ul style="list-style-type: none"> • MP 0038/16 Insertion and Management of Peripheral Intravenous Cannulae in Healthcare Facilities Policy • Clinical Governance, Safety and Quality Framework • Public Health Framework
Related WACHS Policy Documents	<ul style="list-style-type: none"> • Adult Peripheral Parenteral Nutrition Procedure • Adult Total Parenteral Nutrition procedure • Peripheral Intravenous Cannula (PIVC) Guideline • Central Venous Access Devices (CVAD) and Long Peripheral Venous Catheter (PVC) Management Clinical Practice Standard • Clinical Observations and Assessments Clinical Practice Standard (physiological, neurovascular, neurological and fluid balance) • High Risk Medications Procedure • Medication Prescribing and Administration Policy • Nutrition Screening, Assessment and Management Procedure
Other Related Documents	Nil
Related Forms	<ul style="list-style-type: none"> • MR 60.1.6 Dietetics Subjective Global assessment • MR 60.1.7 Dietetics Patient Generated Subjective Global Assessment PG-SGA • MR60.1.11 WACHS Adult Total Parenteral Nutrition Form • MR 60.1.14 WACHS Dietetics - Adult Peripheral Parenteral Nutrition Form • MR 144 WACHS Fluid Balance Work Sheet • MR156A Insulin Subcutaneous Order and Blood Glucose Record - Adult • MR 170A Medication Chart • MR179A WACHS Central Venous Access Device (CVAD) Insertion and Assessment Record
Related Training	Available from MyLearning : <ul style="list-style-type: none"> • WACHS LMS - Peripheral Intravenous Cannulation Insertion
Aboriginal Health Impact Statement Declaration (ISD)	ISD Record ID: 4271
National Safety and Quality Health Service (NSQHS) Standards	1.03, 1.07, 1.27, 4.04, 4.13, 4.14, 4.15, 5.27, 5.28, 5.5

<u>Aged Care Quality Standards</u>	Nil
<u>Chief Psychiatrist's Standards for Clinical Care</u>	Nil
<u>Other Standards</u>	Nil

Document Control

Version	Published date	Current from	Summary of changes
2.00	30 July 2025	30 July 2025	<ul style="list-style-type: none"> inclusion of PPN information updated from Procedure to Guideline removal of Time Frame and Contraindications (now included in WACHS Adult Total Parenteral Nutrition Procedure and WACHS Adult Peripheral Parenteral Nutrition Procedure) addition of dietetics weekend service

Approval

Policy Owner	Executive Director South West
Co-approver	Executive Director Clinical Excellence Executive Director Nursing and Midwifery Services Chief Operating Officer
Contact	Head of Department – Dietetics and Nutrition
Business Unit	WACHS-SW, Bunbury Hospital, Allied Health
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