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**The Investigation of Parenteral Nutrition-  
Aotearoa (IPNA) – setting up the 1st phase of  
a clinical audit of the delivery of parenteral  
nutrition (PN) in New Zealand (NZ)**

**Sue Larsen 2012**

**The Investigation of Parenteral Nutrition-  
Aotearoa (IPNA) – setting up the 1st phase of  
a clinical audit of the delivery of parenteral  
nutrition (PN) in New Zealand (NZ)**

**A thesis presented in partial fulfilment of the  
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**Sue Larsen 2012**

## Abstract

Nutrition support administered as Parenteral Nutrition (PN) is given to patients that have a non-functioning gut. Parenteral nutrition is the administration of nutrients and fluids into the venous system and is potentially associated with life-threatening complications. It is therefore essential that the care and management of PN is co-ordinated by clinicians that have the specialist knowledge and expertise to ensure it is given safely and appropriately.

This is a Phase one regional pilot study which aims to examine the current standard of PN care in hospitals in New Zealand using a clinical audit process. A secondary aim is to identify if any remediable factors are found in the care of patients receiving PN which can then be used to improve patient care, focussing on the following themes:

- Indication for PN
- Type of PN
- Prescribing PN
- Catheter choice, insertion and care
- PN associated complications
- Nutrition teams

Six local hospitals from four large district health boards covering a population of 1.64 million were enrolled. Included were adult, paediatric (<16yrs), and neonates (<1yr) patients receiving PN in hospital during the period of Jan 1st to June 31st 2011. Patients receiving PN in the home were excluded, even if they were admitted into hospital within the study period.

620 cases of PN use (288 adult, 68 paediatric, 264 neonates) were identified within the study period. 151 cases (70 adult, 17 paediatric, 64 neonates) were purposely selected for expert peer review. There were, 66 adults (94%), 7 paediatric (41%), 49 neonates (76%) questionnaires returned, of these, de-identified clinical records were also available for 100% of the adult and 41% of the neonate cases for expert review.

Data for 66 adults (34 male: 32 female) were returned and peer reviewed by advisor assessors however only 65 completed advisor assessor questionnaires were returned.

The results of the adult cases examined showed that only 12.7% of cases were deemed to involve Good Practice- defined as the standard for which advisors would consider being acceptable and in accordance to the recommended guidelines. Sixty five per cent of cases demonstrated that there was room for improvement in the care provided. Nineteen per cent of cases examined were considered to be of a less than satisfactory standard.

A limitation of this study included lack of sufficient paediatric/neonate experts available for peer review.

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## **List of Abbreviations**

ADHB – Auckland District Health Board

AuSPEN – Australasian Society of Parenteral and Enteral Nutrition

BAPEN – British Society of Parenteral and Enteral Nutrition

BMI – Body Mass Index

CMDHB – Counties Manakau District Health Board

CPG- Clinical Practice Guidelines

CRP – C-reactive protein

CT – Computed Tomography

CVC – Central venous catheters

ESPEN – European Society of Parenteral and Enteral Nutrition

ESPGHAN - European Society of Paediatric Gastroenterology, Hepatology and Nutrition

GI – Gastro-Intestinal

ICU/HDU – Intensive Care Unit/High Dependency Unit

IPNA – Investigation of Parenteral Nutrition-Aotearoa

NCEPOD – National Confidential Enquiry into Patient Outcome and Deaths

NDHB – Northlands District Health Board

NHS – National Health System

NICE – National Institute of Clinical Excellence

NSN – Nutrition Support Nurse

NST – Nutrition Support Team

NZ – New Zealand

NZD – New Zealand Dollars

NZNO- New Zealand Nursing Organisation

NZSG – New Zealand Society of Gastroenterologist

Osm – Osmolarity

PDSA – Plan-Do-Study-Act

PICC – Peripherally Inserted Central Catheter

PN – Parenteral Nutrition

PPN- Peripheral Parenteral Nutrition

RCS – Royal College of Surgeons

RFS – Re-feeding syndrome

SIGN – Scottish Intercollegiate Guidelines Network

SIRS – Systemic Inflammatory Response Syndrome

UK – United Kingdom

USD – United State Dollars

WDHB – Waitemata District Health Board