Home Parenteral Nutrition
Good Practice Guidance for NHS Boards

Release: Final
Date: 10th January 2012

Lead: Deirdre Evans
   Director

Authors: Dr Janet Baxter
         Dr Alastair McKinlay
         on behalf of the HPN Network
         Ms Lyn Hutchison
         Miss Marie Richmond
         Mr David Steel
         Dr Mike Winter
         on behalf of National Services Division
Title: Home Parenteral Nutrition – Good Practice Guidance for NHS Boards (Commissioning Guidelines)

Author: HPN Network/NSD

Approver: Mrs Deirdre Evans

Owner: National Services Division

**Version History**

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Summary of changes</th>
<th>Changes marked</th>
</tr>
</thead>
<tbody>
<tr>
<td>V0.1</td>
<td>04 July 2011</td>
<td>First Draft</td>
<td></td>
</tr>
<tr>
<td>v.02</td>
<td>14th November</td>
<td>Revisions HPN Network</td>
<td></td>
</tr>
<tr>
<td>v.03</td>
<td>16th November</td>
<td>NSD</td>
<td></td>
</tr>
<tr>
<td>V0.4</td>
<td>9th December</td>
<td>Revisions HPN Network</td>
<td></td>
</tr>
<tr>
<td>V0.5</td>
<td>20th December</td>
<td>NSD</td>
<td></td>
</tr>
<tr>
<td>FINAL</td>
<td>10th January 2012</td>
<td>Revisions HPN Network</td>
<td></td>
</tr>
</tbody>
</table>

**Distribution**

<table>
<thead>
<tr>
<th>Name</th>
<th>Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSD SMT</td>
<td>NHS National Services Scotland</td>
</tr>
<tr>
<td>NMCN Home Parenteral Nutrition</td>
<td>NHS Tayside / NHS Scotland</td>
</tr>
<tr>
<td>Regional Directors of Planning</td>
<td>South East and Tayside, North of Scotland and West of Scotland Planning Groups</td>
</tr>
<tr>
<td>Chief Executives</td>
<td>All NHS Boards in Scotland</td>
</tr>
</tbody>
</table>

**References**

<table>
<thead>
<tr>
<th>Document title</th>
<th>Document file path</th>
</tr>
</thead>
</table>
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>4</td>
</tr>
<tr>
<td>1. Introduction</td>
<td>5</td>
</tr>
<tr>
<td>2. Background</td>
<td>6</td>
</tr>
<tr>
<td>3. Purpose Of The NHS Good Practice Guidance</td>
<td>6</td>
</tr>
<tr>
<td>4. Target Audience</td>
<td>7</td>
</tr>
<tr>
<td>5. Organisation Of HPN</td>
<td>7</td>
</tr>
<tr>
<td>5.1 Intestinal Failure</td>
<td>7</td>
</tr>
<tr>
<td>5.2 Home Parenteral Nutrition (HPN)</td>
<td>7</td>
</tr>
<tr>
<td>5.3 Multidisciplinary Team</td>
<td>8</td>
</tr>
<tr>
<td>5.4 Supply of HPN</td>
<td>8</td>
</tr>
<tr>
<td>5.5 Indications, Referral and Assessment</td>
<td>10</td>
</tr>
<tr>
<td>6. Good Practice</td>
<td>11</td>
</tr>
<tr>
<td>6.1 HPN</td>
<td>11</td>
</tr>
<tr>
<td>6.2 UK Services for Severe Intestinal Failure and Small Bowel Transplantation</td>
<td>12</td>
</tr>
<tr>
<td>6.3 Clinical Audit</td>
<td>12</td>
</tr>
<tr>
<td>7. References</td>
<td>14</td>
</tr>
<tr>
<td>8. Contact Details Of Clinicians With Expertise in HPN</td>
<td>15</td>
</tr>
<tr>
<td>APPENDICES</td>
<td></td>
</tr>
<tr>
<td>(i) Table of procedures and protocols with link</td>
<td>17</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

The purpose of this document is to help NHS Boards in Scotland understand their responsibilities in relation to patients who require Home Parenteral Nutrition (HPN) and to support the delivery of an appropriate level of specialist care.

HPN is a critical intervention involving the intravenous infusion of nutrients and/or fluids and electrolytes to a group of patients with severe Intestinal Failure (IF). This can be caused by a number of underlying conditions which require care that is provided by a specialist multi-disciplinary team.

It is expected that NHS Boards will continue to support the provision of HPN for patients with severe Intestinal Failure through:

- Having a fully functional nutrition support team
- Following the evidence based procedures and protocols as defined within this document
- Liaison with National Procurement regarding the national contract for service delivery of home parenteral nutrition.
- Maintainance of an appropriate registry and collection of auditable information in relation to HPN patients.
1. INTRODUCTION

1.1 This guidance aims to inform and equip NHS Boards to support the continued delivery of high quality care for patients receiving Home Parenteral Nutrition as part of their clinical care pathway.

1.2 Home Parenteral Nutrition is provided to patients with Intestinal Failure (IF). IF occurs when there is reduced intestinal absorption so that macro nutrient and/or water and electrolyte supplements are needed to maintain health and/or growth. Under-nutrition and/or dehydration, which may be ultimately fatal, arise if no treatment is given.

1.3 This document applies only to patients requiring regular intravenous infusion of nutrition and/or fluid and electrolytes at home. These patients are at the most severe end of the spectrum of intestinal failure. Patients without IF, but unable to maintain normal oral food intake, may be treated with oral nutritional supplements or enteral tube feeding in the community. A number of patients will require parenteral nutrition on a temporary or prolonged basis in hospital if gut function prohibits successful nutrition support by enteral tube feeding.

1.4 When this is delivered at home, allowing a patient with ongoing intestinal failure to be discharged from hospital, this is referred to as Home Parenteral Nutrition (HPN). In 2010, the estimated prevalence of HPN in adults was 15-20 per million of the total population and in children was 16 per million of the paediatric population (<16 years).

1.5 Many patients will require HPN for the rest of their lives. In a minority of patients HPN may be used for a limited period because medical or surgical treatment improves the intestinal failure so that HPN is no longer necessary.

1.6 The most common indications and their underlying conditions are:

Indications for HPN include:
- Short bowel syndrome
- Small bowel fistula
- Intestinal obstruction
- Intestinal motility disorders

Underlying conditions:
- Crohn’s disease
- Small bowel ischaemia
- Radiation enteritis
- Surgical complications
- Enteric neuropathies or myopathies
- Enteric atresias
- Necrotising enterocolitis
2. BACKGROUND

2.1 Supporting a multidisciplinary approach to nutritional care has been cited as an essential by the National Patient Safety Agency as a reason for safe, supportive and effective practice for patients. All NHS Boards should provide access to nutritional services provided by nutrition support teams within their own or in neighbouring NHS Board hospitals. In addition, since 2001, support had been available from a designated National Managed Clinical Network for Home Parenteral Nutrition (HPN NMCN).

2.2 National Services Advisory Group (NSAG) considered a review of progress achieved by the HPN MCN over 2010/11 and while acknowledging the important work the network had achieved during its period of operation in improving the standards of HPN care within NHS Scotland, recommended the network should be de-designated from 31 December 2011. The recommendation included a requirement that a decommissioning plan should be developed and agreed, to support the continuation of good practice that had been achieved. This recommendation was accepted by the NHS Scotland Board Chief Executives Group.

3. PURPOSE OF NHS GOOD PRACTICE GUIDANCE

3.1 The network was designated, amongst other objectives, to establish appropriate guidelines, protocols and procedures. This work has been completed. At present there are a number of agreed policies and procedures setting out indications and procedures for appropriate use of HPN.

3.2 Patients who are suitable for receiving Home Parenteral Nutrition are a small minority of all those who require parenteral nutrition, however in light of their clinical vulnerability they must be treated according to best practice. Activity within an individual NHS Board can be low and this guide can be used to support the delivery of best practice, to ensure equity of access and that patient safety is maintained.

3.3 It is expected, despite the de-designation of the HPN MCN, that access to HPN will continue as before and the service will be maintained at a high standard. This guide is intended to support NHS Boards that may have a patient who is currently receiving this treatment or who is deemed suitable and is about to commence this treatment.

3.4 This guidance provides NHS Boards with advice and support on how they might manage these services from December 2011 in order to continue to drive up the quality of care provided to patients.
4. **TARGET AUDIENCE**

This guidance is written for all NHS Boards.

- NHS Board Chief Executives
- NHS Board Medical Directors
- NHS Board Directors of Planning
- NHS Board Lead for Gastroenterology
- NHS Board Lead for Gastrointestinal surgery services
- NHS Board Lead for Vascular and General Surgery
- NHS Board Lead for Biochemical medicine services
- NHS Board Directors of Pharmacy
- NHS Board Lead for Nutrition and Dietetics
- Chairs of NHS Board Nutritional Care Groups
- NHS Board Clinical Lead for Nutrition Support
- Directors of Regional Planning
- Lead for Regional Cancer Networks (SCAN, NoSCAN and WoSCAN)
- Lead for Regional Paediatric Gastroenterology networks
- Scottish Government

5. **ORGANISATION OF HPN**

5.1 **Intestinal Failure**

5.1.1 Patients with intestinal failure (IF) cannot absorb all the nutrients (fat, protein and carbohydrate, minerals, vitamins and water) needed to sustain life i.e. to support normal weight in adults and to support normal growth and development in children.

5.1.2 Many diseases may cause the small intestine to malfunction and some may also require surgical resection with loss of length of the small bowel. Nutrient absorption may become seriously impaired and fluid losses, in the form of diarrhoea or stomal effluent, can become life threatening. When the remaining functional capacity of the gut is inadequate to meet the nutritional requirements of the patient, nutrition has to be provided by the intravenous (parenteral) route, initially in hospital and subsequently at home if patient recovers sufficiently to return to their community. This is called Home Parenteral Nutrition (HPN).

5.2 **Home Parenteral Nutrition (HPN).**

HPN is a complex unlicensed drug treatment which requires management by an expert multidisciplinary team led by a clinician with experience and expertise in nutrition support and IF (gastroenterologist, surgeon or biochemist; dietitian, nutrition nurse specialist and pharmacist, SHPN MCN, 2007) and with access to support such as clinical psychology and social work. Correct patient training in the HPN procedures and protocols,
particularly the aseptic management of the central venous access device, is essential to avoid life threatening complications such as septicaemia.

5.3 Multidisciplinary Team

5.3.1 The Home Parenteral Nutrition Clinical Standards 2007 advise to ensure co-ordination and appropriate management of a patient within a multi professional team, it is essential that there is a named lead consultant in each hospital who regularly reviews the patient’s clinical condition together with the other members of the team. From a paediatric perspective the UK recommendation is that a skilled multi-disciplinary nutrition support team led by a clinician with nutrition support and IF expertise should manage children with IF.

5.3.2 A number of additional guideline documents were developed by the Scottish Managed Clinical Network for HPN for care of adult and paediatric patients. These are listed in Appendix 1, and may be downloaded using the following link to the relevant page of the NHS Education Scotland Managed Knowledge Network (http://www.knowledge.scot.nhs.uk/child-services/communities-of-practice/home-parenteral-nutrition/policies-and-guidelines.aspx). This is discussed further in Section 6 of this guide.

5.3.3 The recommended Nutritional Support Team for HPN patients is as follows:-

- Consultant clinician with an interest in HPN or Intestinal Failure, or a declared subspecialty interest in clinical nutrition.
- Nutrition nurse specialist.
- Dietitians with an interest in intravenous nutritional support and membership of the Parenteral and Enteral Nutrition (PEN) group of the British Dietetic Association (BDA)
- A pharmacist with training in formulation of Parenteral Nutrition.
- It is recommended the patients have access to clinical psychology and other support mechanisms such as patient support group PINNT (Patient on Intravenous and Nasogastric Nutrition Therapy). Patients should be provided with the website address and have access to PINNT information leaflets. These are available from PINNT, PO Box 3126, Christchurch, Dorset BH23 2XS. www.pinnt.com

5.4 Supply of HPN

5.4.1 The decision that a patient requires HPN is made following discussion between the clinician managing the underlying condition and the relevant nutrition support team. Given the complexity of the treatment and the potential complications, it is essential that these decisions are made by multi disciplinary teams with appropriate expertise of HPN and Intestinal Failure.

5.4.2 The specialist feed, equipment (infusion pump, back pack, trolley, fridge, drip stand etc.) and dry stock (dressings, syringes etc.) are currently delivered by an independent home healthcare provider (BUPA Healthcare)
under a contract managed by National Procurement on behalf of NHS Scotland. The HPN contract will require periodic renewal led by National Procurement (NP) who will coordinate a Clinical Advisory Panel (CAP). The CAP should include appropriate expertise – in particular clinicians who prescribe HPN; nutrition nurse specialist; pharmacist and dietitian with expertise in HPN. The NP CAP should include representation from the nutrition support teams who prescribe HPN in Scotland.

5.4.3 All patients receiving HPN under the National Contract remain under the clinical care of consultant medical staff within their individual NHS Board. Prescription of HPN remains the responsibility of the Nutrition Support Team responsible for the patient’s clinical care.

5.4.4 The Nutrition Support Team at NHS Board level is responsible for confirming that the home environment is suitable for home treatment, and that patients/carers are competent to undertake home care, although this may be carried out in conjunction with the HPN supplier.

5.4.5 The NHS Board is responsible for ensuring that the patient or their family (for children) has given informed consent to receive a Home Care Service and should be in possession of a consent letter from the patient giving permission for their name, address and phone number to be shared. This is then issued to the Homecare Services provider. The supplier will advise the NHS Board of any significant changes noted in the patient or their home circumstances.

5.4.6 The Independent provider will have in place a written protocol for seamless transfer of patients onto their service at commencement of contract and for transfer of patients to another contract if required. A copy of this should be submitted with the tender response in reference to contract implementation. The provider issues patient information/literature which has been agreed by the HPN service provider/Clinical Advisory Panel.

5.4.7 The Independent home healthcare provider is contracted to provide start-up support. This consists of a person to person contact by their designated representative to the patient/carer 1-2 weeks prior to the first home delivery. This is to confirm an estimated date and time for initial delivery of supplies. This may also include a home visit if deemed appropriate by the nutritional support team, to identify exact patient requirements. Prior to initiation of a homecare service all equipment and sundries required to deliver parenteral nutrition must be in place in the patients’ home.

5.4.8 Training of patients/carers remains the responsibility of the Nutrition Support Team at NHS Board level and will be designed according to individual requirements. In certain circumstances training, for instance in some paediatric care, a shared care approach is indicated. The patient may remain under the care of their own NHS Board for monitoring, but the specialist advice for intestinal failure and HPN will be managed by a tertiary centre.
5.5 Indications, Referral and Assessment

5.5.1 The decision to initiate HPN should be taken by a consultant with expertise and training in the management of IF and the use of all modalities of nutritional support, supported by a constituted nutrition support team. Where a NHS Board does not have such expertise ‘in house’ a referral to a unit with appropriate expertise should be made.

5.5.2 Adult Patients should be recommended for HPN as per agreed criteria.

- All patients who are considered for entry into a HPN programme should have documented IF, which if untreated would lead to deteriorating nutritional and/or fluid status.
- Except in cases of short bowel syndrome with SI length of < 50cm, patients should have undergone an adequate trial of enteral nutrition.
- Patients with documented nutritional failure but no diagnosis should be assessed by a clinician with an interest in and experience with IF.
- Training for HPN for up to a month requires the patient or their family/carer to be physically able to cope.
- The ability of the patient or their family/carer to co-operate and preferences should be taken into account when assessing for HPN. An assessment should be made of the appropriateness of the domestic circumstances.
- Provision should be made to review cases and need for HPN at regular intervals.

5.5.3 Paediatric referral

- There are four centres with the facilities and expertise to provide paediatric (<16 years of age) HPN. They are:-
  - The Royal Hospital for Sick Children, Yorkhill, Glasgow
  - The Royal Hospital for Sick Children, Edinburgh
  - Tayside Children’s Hospital, Ninewells, Dundee
  - Royal Aberdeen Children’s Hospital, Foresterhill, Aberdeen

5.5.4 HPN in patients with cancer

Some patients who have gastro-intestinal obstruction secondary to malignancy may be suitable for HPN but the following points should be considered carefully:

- Insufficient or impaired intake of oral diet / enteral tube feeding
- Willingness of the patient to consider HPN
- An expected survival of more than 3 months
- An awareness of the underlying diagnosis and likely prognosis
- The presence of family / home support
None of these recommendations are mandatory, and the assessment of patients with advanced malignant disease for HPN is recognised as being a particularly difficult clinical decision. For this reason, the advice of a clinician with expertise in IF is strongly recommended.

6. GOOD PRACTICE

6.1 Home Parenteral Nutrition

This document cannot replace appropriate training and expertise in nutritional support and the reader is referred to guidelines from:

- BAPEN (British Association for Parenteral and Enteral Nutrition);
- ESPEN (European Society for Clinical Nutrition and Metabolism) and
- NICE (National Institute for Clinical Excellence)
- Health Improvement Scotland has been working on a number of guidelines with the Improving Nutritional Care Programme.

A number of additional guideline documents were developed by the Scottish Managed Clinical Network for HPN for care of adult and paediatric patients. These are listed below and in Appendix 1, and may be downloaded using the following link to the relevant page of the NHS Education Scotland Managed Knowledge Network (http://www.knowledge.scot.nhs.uk/child-services/communities-of-practice/home-parenteral-nutrition/policies-and-guidelines.aspx)

1. Guidelines for the selection of patients for home parenteral nutrition
2. Assessment of patients planned for HPN
3. The management of central venous access devices (CVAD) for patients on HPN.
4. Monitoring of patients on HPN
5. Trace element and micronutrient monitoring of patients receiving HPN
6. Management of suspected catheter-related bloodstream infection in HPN patients
7. Prevention, diagnosis and management of thrombotic complications of central venous access

NOTE: These documents are current at December 2011; They are accessible on the NHS Scotland Managed Knowledge Network website by utilising your Athens password.
6.2 Access to UK specialist services for Severe Intestinal Failure and for Small Bowel Transplantation

6.2.1 A small number of patients with IF will require very specialist input beyond the care available at NHS Board regional specialist level in NHS Scotland.

6.2.2 A service for patients with Severe Intestinal Failure was nationally designated (on a UK basis) in 1998. It is designed to treat adult patients with the most severe cases of intestinal failure. This service is delivered in two IF centres: - St Mark’s Hospital at Harrow, Middlesex and Salford Royal NHS Foundation Trust, Manchester.

6.2.3 The major conditions covered by this service include:

- Severe and/or fistulating Crohn’s disease
- Short bowel syndrome after massive intestinal resection for mesenteric vascular catastrophe
- Patients suffering from complications of severe pancreatitis
- The after-effects of therapy for malignancy
- Other conditions in which the intestine has ceased to function (e.g. pseudo-obstruction)

6.2.4 There is also a UK designated specialist service for the very few patients who require assessment for Small Bowel Transplantation, the transplant surgery, and thereafter life-long follow-up. This service is offered for adults in 2 centres Cambridge University Hospitals NHS Foundation Trust, and Oxford Radcliffe Hospitals NHS Trust.

6.2.5 Where the referral is for clinical assessment for possible Small Bowel Transplantation all referrals are reviewed by NASIT (National Adult Small Intestinal Transplant) Forum. This group advises on whether an individual patient will be accepted for possible transplant. Transplant capacity is commissioned in line with estimated organ availability.

6.2.6 For children, there is an increased need for intestinal and liver transplantation due to complications of IF, including IF-associated liver disease. Assessment and transplantation services are offered for children in 2 centres Birmingham Children’s Hospital NHS Foundation Trust and Kings College Hospital NHS Foundation Trust.

6.2.7 Access to specialist IF care in England (see above) is by clinical referral from the Consultant in a recognised specialist Nutritional Support Team. It is assumed that any patient referred will have been assessed and managed in line with best practice and will have benefited from regional as well as local expertise within NHS Scotland. The decision to refer a patient for specialist opinion to a centre in England is however one for the clinical team.

6.2.8 As with all cross border referrals the Consultant will advise the NHS Board of residence for the patient (through the relevant NHS Board Safe-Haven) that there is a need to make such a referral. The NHS Board will in turn advise National Services Division, and provision will be made to ensure
there is no delay to confirmation that funding is available to the relevant NHS Trust in England. Where the referral is for a UK commissioned service NHS Scotland is recharged costs and where the referral is for ad hoc specialist care the NHS Trust in England will require prior authorisation of funding.

6.2.9 Should there be concern regarding a delay in provision of specialist care in NHS England this should be raised with the unit to whom the patient was referred. If there is still no improvement the details of the concern should be advised to the Medical Director of NSD who will challenge the NHS Trust in partnership with NSCT (the UK commissioners).

6.3 Clinical Audit

To assist with planning and performance management of the HPN service, NHS Boards are recommended to maintain a register of patients receiving HPN and collect and monitor the following audit information, as a minimum, through their local clinical governance reporting structures.

- Central venous catheter insertions
- Frequency of catheter-related complications
- Treatment of catheter-related complications
- Hospital re-admission rates

National recording of HPN is carried out by the British Artificial Nutrition Survey. All patients discharged from hospital on HPN should be recorded with BANS. It is recommended that nutrition teams should register with e-BANS www.e-BANS.com. A username and password will be provided on registering. National reporting is undertaken by BANS on annual basis and appears as a report on the BANS and BAPEN websites www.bapen.org.uk.
7. REFERENCES


8. Contact Details Of Clinicians With HPN Expertise

These are the clinicians that currently provide Adult HPN Care.

<table>
<thead>
<tr>
<th>NHS Board</th>
<th>Lead Clinician</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS Ayrshire &amp; Arran</td>
<td>Dr Suzanne MacKenzie, Consultant Chemical Pathologist, Crosshouse Hospital Kilmarnock</td>
<td><a href="mailto:suzanne.mackenzie@aapct.scot.nhs.uk">suzanne.mackenzie@aapct.scot.nhs.uk</a></td>
</tr>
<tr>
<td>NHS Borders</td>
<td>Refer to NHS Lothian</td>
<td></td>
</tr>
<tr>
<td>NHS Dumfries &amp; Galloway</td>
<td>Shared care arrangement with Yorkhill Hospital, Glasgow (paediatrics) Western General Edinburgh or Glasgow Royal Infirmary (adults)</td>
<td></td>
</tr>
<tr>
<td>NHS Fife</td>
<td>Dr Arindam Sengupta, Consultant Gastroenterologist, Queen Margaret Hospital</td>
<td><a href="mailto:asengupta@nhs.net">asengupta@nhs.net</a></td>
</tr>
<tr>
<td>NHS Forth Valley</td>
<td>Dr Richard Burnham, Consultant Gastroenterologist, Forth Valley Royal Hospital, Larbert</td>
<td>Newly in post – not confirmed as HPN provider yet</td>
</tr>
<tr>
<td>NHS Grampian</td>
<td>Dr Bernie Croal, Consultant Chemical Pathologist, Dr Bill Simpson, Consultant Chemical Pathologist Aberdeen Royal Infirmary, Dr Kevin Deans, Consultant Chemical Pathologist, Dr Alastair McKinlay, Consultant Gastroenterologist, with special interest in HPN</td>
<td><a href="mailto:bernie.croal@nhs.net">bernie.croal@nhs.net</a> <a href="mailto:bill.simpson@nhs.net">bill.simpson@nhs.net</a> <a href="mailto:kevindeans@nhs.net">kevindeans@nhs.net</a> <a href="mailto:a.mckinlay@nhs.net">a.mckinlay@nhs.net</a></td>
</tr>
<tr>
<td>NHS Greater Glasgow &amp; Clyde</td>
<td>Dr Ruth McKee, Consultant Surgeon, Glasgow Royal Infirmary, Dr Anne Cruickshank, Consultant Chemical Pathologist, Southern General Hospital, Dr Marek Dominiczak, Consultant Chemical Pathologist Gartnave General Hospital</td>
<td><a href="mailto:ruth.mckee@nhs.net">ruth.mckee@nhs.net</a> <a href="mailto:anne.cruickshank@ggc.scot.nhs.uk">anne.cruickshank@ggc.scot.nhs.uk</a> <a href="mailto:marek.dominiczak@ggc.scot.nhs.uk">marek.dominiczak@ggc.scot.nhs.uk</a></td>
</tr>
<tr>
<td>NHS Highland</td>
<td>Dr Hazel Younger, Consultant Gastroenterologist, Raigmore Hospital, Inverness</td>
<td><a href="mailto:hazel.younger@nhs.net">hazel.younger@nhs.net</a></td>
</tr>
</tbody>
</table>
NHS Lanarkshire  Refer to NHS Greater Glasgow & Clyde

NHS Lothian  Dr Alan Shand, Consultant Gastroenterologist, Western General Hospital
              alan.shand@luht.scot.nhs.uk

NHS Orkney  Refer to NHS Grampian

NHS Shetland  Refer to NHS Grampian

NHS Tayside  Dr John Todd, Consultant Gastroenterologist,
             Dr Nigel Reynolds, Consultant Gastroenterologist, Ninewells Hospital
             jtodd@nhs.net
             nigel.reynolds@nhs.net

NHS Western Isles  Referred to NHS Greater Glasgow

**Paediatric Care**

HPN may be provided by the four paediatric tertiary centres. Each has a multi professional Nutrition Support Team. These are the clinicians that currently provide paediatric HPN care.

<table>
<thead>
<tr>
<th>NHS Board</th>
<th>Lead Clinician</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS Grampian</td>
<td>Dr Mike Bisset, Consultant Paediatric Gastroenterologist</td>
<td><a href="mailto:michael.bisset@nhs.net">michael.bisset@nhs.net</a></td>
</tr>
<tr>
<td></td>
<td>Dr Sabari Loganathan, Consultant Paediatric Gastroenterologist</td>
<td><a href="mailto:s.loganathan@nhs.net">s.loganathan@nhs.net</a></td>
</tr>
<tr>
<td>NHS Greater Glasgow &amp; Clyde</td>
<td>Dr Diana Flynn, Consultant Paediatric Gastroenterologist</td>
<td><a href="mailto:diana.flynn@ggc.scot.nhs.uk">diana.flynn@ggc.scot.nhs.uk</a></td>
</tr>
<tr>
<td></td>
<td>Dr Andrew Barclay, Consultant Paediatric Gastroenterologist</td>
<td><a href="mailto:ab207s@clinmed.gla.ac.uk">ab207s@clinmed.gla.ac.uk</a></td>
</tr>
<tr>
<td>NHS Lothian</td>
<td>Professor David Wilson, Consultant Paediatric Gastroenterologist</td>
<td><a href="mailto:d.c.wilson@ed.ac.uk">d.c.wilson@ed.ac.uk</a></td>
</tr>
<tr>
<td></td>
<td>Dr David Mitchell, Consultant Paediatric Gastroenterologist</td>
<td><a href="mailto:david.mitchell@luht.scot.nhs.uk">david.mitchell@luht.scot.nhs.uk</a></td>
</tr>
<tr>
<td>NHS Tayside</td>
<td>Dr Dagmar Kastner, Consultant Paediatric Gastroenterologist</td>
<td><a href="mailto:dagmar.kastner@nhs.net">dagmar.kastner@nhs.net</a></td>
</tr>
</tbody>
</table>
Appendix 1

Procedures and protocols for Home Parenteral Nutrition (HPN) are available on the Managed Knowledge Network Child Services Community of Practice page for HPN.


Each protocol refers to both adult and paediatric practice.

Disclaimer: These documents were prepared by the Scottish HPN MCN and were current in December 2011. It is the responsibility of the end user to ensure care when implementing. Local policies and procedures must be in place and maintained up to date to cover these areas.

- Guidelines for the selection of patients for home parenteral nutrition
- Assessment of patients planned for HPN
- The management of central venous access devices (CVAD) for patients on HPN.
- Monitoring of patients on HPN
- Trace element and micronutrient monitoring of patients receiving HPN
- Management of suspected catheter-related blood stream infection in HPN patients
- Prevention, diagnosis and management of thrombotic complications of central venous access