Supplementary prescribing for registered dietitians

Dr Alison Culkin PhD, BSc, SP
Dietitian
St Mark’s Hospital

London Southbank University
October 2017
Registered Dietitians

- Dietitians are the only qualified health professionals that assess, diagnose and treat dietary and nutritional problems at an individual and wider public-health level.

- Work with both healthy and sick people. Dietitians use evidence based research on food, health and disease which they translate into practical guidance to enable people to make appropriate lifestyle and food choices.

- Regulated by the Health and Care Professions Council (HcPC)
What Dietitians Do...

What my FRIENDS think I do

What SOCIETY thinks I do

What my PATIENTS think I do

What DOCTORS think I do

What I think I do

What I ACTUALLY do
A bit about me

1993
- Qualified from North London University

1994-1996
- First job at Royal Hallamshire hospital, Sheffield

1998 to date
- Started at St Mark’s Hospital

2010
- Completed PhD at London Metropolitan University
St Mark’s Hospital

- The only hospital in the world to specialise entirely in intestinal and colorectal diseases
- National centre for intestinal failure, intestinal rehabilitation and home parenteral nutrition (HPN)
- Dedicated Intestinal Failure Unit (IFU)
Intestinal failure
Pathophysiological classification

- Intestinal dysmotility
- Mechanical obstruction
- Extensive small bowel mucosal disease
- Short bowel
- Intestinal fistula

5 major conditions

Functional classification

Type 1
- Self-limiting intestinal failure
- Acute post-operative ileus

Type 2
- Significant and prolonged PN support (>28 days)
- GI surgery complicated by EC fistulation

Type 3
- Chronic IF (long-term PN support)
- Short bowel Motility disorder

EC, enterocutaneous; GI, gastrointestinal; PN, parenteral nutrition

Parenteral Nutrition

- **Parenteral nutrition** (PN) is feeding intravenously, bypassing the usual process of eating and digestion.

- PN contains glucose, amino acids, lipids, fluid, vitamins, trace elements and minerals.
Role of the Intestinal Failure Dietitian

- Patient Assessment of nutritional status & requirements
- Monitoring
- Dietary management & education
- Formulation of Parenteral Nutrition
Supplementary prescribing for registered dietitians

A Big Mountain

- 2nd of March 2017 Passed course
- September 2016 Started SP course
- June 2016 London Southbank University approved by HCPC
- March to May 2016 Contacted all HEIs regarding SP for RDs
- February 2016 Ministers approval given
- 26th of November 2015 CMH approved
- 17th of September 2015 Presented to the CMH
- June 2015 Prepare for consultation at commission on human medicines (CMH)
- June 2015 460 responses to public consultation (only 7 rejected proposal)
- April 2015 Public engagement events
- February 2015 Public consultation
- September to December 2014 Preparation for the public consultation
- May 2014 Case of need proposal sent to NHSE
- April 2014 1st meeting for “case of need”
- Jan 2014 Email from Najia Qureshi asking for volunteers. PN case study requested
SP Roles for Dietitians

- Creon
- Fat soluble vitamins

- Phosphate binders
- Vitamin D

- Parenteral nutrition
- IV fluid & electrolytes

- OHA
- Insulin
Pre course Hoops

- Trust approval
- Create Clinical Management Plan
- Create a flow chart for Parenteral Nutrition
Review, Prescribing, Clinical screening, Validation and Ordering process for inpatients starting Parenteral Nutrition (PN) to support supplementary prescribing for registered dietitians at LNWH Trust

1) Receive referral via ICE and/or the IFU referral pathway

2) Assessment by MDT of appropriateness of PN

3) Assessment of nutritional status and calculation of requirements for PN by SP dietitian

4) Formulation of PN prescription by SP and PN Pharmacists

5) Prescribe PN, sign the prescription & writing in MDT notes by SP

6) Send the prescription to the PN Pharmacist for a clinical screen and validation of formulation

7) Pharmacy to add the prescription details to Datacomp or send to ITH Pharma for a stability check

8) Refer back to SP if any changes required to the prescription to ensure stability

9) If changes required PN pharmacist to endorse on PN prescription and SP to amend MDT notes

10) Stability confirmed by ITH or LNWH Trust aspets

11) Pharmacy order PN

IFU = Intestinal Failure Unit, MDT=multidisciplinary team, SP=supplementary prescriber

Agreed with Uche Meade St Mark's pharmacy manager

Date 6/7/2016 Nutrition & Dietetic Department
The Course
Post course Hoops

- Trust approval
- Clinical Management Plan reapproval
## Clinical Management Plan

Clinical management plan for supplementary prescribing for registered dietitians at London Northwest Healthcare Trust (LWNHT)

<table>
<thead>
<tr>
<th>Name of Patient:</th>
<th>Patient medication sensitivities/allergies:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient identification e.g. ID number, date of birth:</td>
<td>Medical history:</td>
</tr>
<tr>
<td>Current medication:</td>
<td>Independent Prescriber(s): Simon Gabe Contact details: Alison Cullin Contact details:</td>
</tr>
<tr>
<td>Supplementary Prescriber(s):</td>
<td>Condition(s) to be treated: Intestinal failure</td>
</tr>
<tr>
<td>Aim of treatment:</td>
<td>Medicines that may be prescribed by SP: BNF Section 9.3: Intravenous Nutrition:</td>
</tr>
<tr>
<td>All parenteral nutrition (PN) used at London Northwest Healthcare Trust (including commercially available PN, “standard” PN commercially made specifically for London Northwest Healthcare Trust and tailored bags for individual patients)</td>
<td>Preparation: Nutrition &amp; Fluids IV fluids, amino acids, glucose, lipid emulsions, sodium, potassium, calcium, magnesium, phosphate, vitamin and trace element preparations, IV Micronutrients IV vitamin preparations, Oral electrolytes, bicarbonate vitamin and trace element preparations, Oral hydration solutions (ONS).</td>
</tr>
<tr>
<td>Indication: Intestinal failure</td>
<td>Specific indications for referral back to the IP: Adverse effects or intolerance to PN</td>
</tr>
<tr>
<td>Dose schedule: Quantity of nutrition, fluid, electrolytes &amp; micronutrients to be prescribed following a full nutritional assessment: Examples of doses below: Nitrogen 0.3g/kg/d Glucose 6.7g/kg/d Lipid 1g-3g/kg/d Sodium 0.5-1.6mmol/kg/d Potassium 0.7-1.5mmol/kg/d Calcium 0.5-1.2mmol/kg/d Magnesium 0.2mmol/kg/d Phosphate 0.4-0.8mmol/kg/d Fluid 5-50ml/kg/d Bicarbonate Vitamins 1-2vials/d (e.g. Cerroni, Solvito and Vitalp) Trace elements 1-2vials/d Vitamin D 1500-50000U/d Vitamin and trace element supplementation as per Trust guidelines or manufacturers guidance ORS 0.5-1.5/d</td>
<td></td>
</tr>
<tr>
<td>Anti-secretory Pretroca pump inhibitors, H2 antagonists Intestinal failure Oral Lansoprazole 15-40mg bd Omeprazole 20-40mg od bid Ranitidine 150mg bd/300mg od iv Pantoprazole 40-80mg od Esomeprazole 20-40mg od Ranitidine 50mg tds</td>
<td></td>
</tr>
<tr>
<td>Any serious concerns regarding fluid and electrolyte complications</td>
<td></td>
</tr>
<tr>
<td>Anti-motility Loperamide, codeine phosphate Intestinal failure Loperamide 2mg qts increasing to a maximum of 24mg clds Codeine 30mg qts to a maximum of 40mg clds</td>
<td></td>
</tr>
<tr>
<td>Any serious concerns regarding fluid and electrolyte complications</td>
<td></td>
</tr>
<tr>
<td>Pancreatic enzymes Creon Intestinal failure resulting in pancreatic insufficiency To be determined by diet history. Dose range from 10,000 to 40,000 units before meals and snacks</td>
<td></td>
</tr>
<tr>
<td>Any serious concerns regarding fluid and electrolyte complications</td>
<td></td>
</tr>
<tr>
<td>Bile acid sequestrants Colestipol Intestinal failure associated diarrhoea 4g a day</td>
<td></td>
</tr>
<tr>
<td>Any serious concerns regarding fluid and electrolyte complications</td>
<td></td>
</tr>
<tr>
<td>Anti-emetic Ondansetron Nausea 4-8mg bd Any serious concerns regarding nausea</td>
<td></td>
</tr>
<tr>
<td>Anti-septic Fist lock Taurolidine 1ml 70% Ethanol 1ml Any concerns relating to catheter e.g. catheter related bloodstream infection</td>
<td></td>
</tr>
<tr>
<td>Feed supplements</td>
<td>Nutritional supplements</td>
</tr>
<tr>
<td>Esome related malnutrition</td>
<td>Esome related malnutrition</td>
</tr>
<tr>
<td>As determined following a full nutritional assessment</td>
<td>As determined following a full nutritional assessment</td>
</tr>
<tr>
<td>Any serious concerns regarding fluid and electrolyte complications</td>
<td></td>
</tr>
<tr>
<td>Any serious concerns regarding fluid and electrolyte complications</td>
<td></td>
</tr>
</tbody>
</table>


Frequency of review and monitoring by: Supplementary prescriber: 
- Daily Monday to Friday to maintain nutritional fluid, electrolyte and micronutrient status |
- The following parameters will be monitored: weight, biochemistry, fluid balance, body fluid, respiratory rate, temperature, urine output, skinfold thickness and mid arm muscle circumference plus hand grip strength for functional capacity |

Process for reporting AEs: 
- Notify independent medical prescriber |
- Documentation in patient’s medical notes |
- If indicated, report via the NABRA Suspected Adverse Drug Reactions Yellow Card scheme |
- Complete the Trust’s Data forms |

Shared record to be used by IP and SP: 
- To be filled in patient’s medical notes |
- PN prescription to be kept on the ward in the PN folder until completed and then file in patient’s medical notes |
- Outpatient prescriptions, electronic unsigned copies kept on secure shared drive, signed originals sent to homecare provider, signed copies kept in St Mark’s pharmacy office |

Agreed by Independent prescriber(s) Signature: Date | Agreed by supplementary prescriber(s) Signature: Date | Date agreed with patient/carer Name: Simon Gabe Names: Alison Cullin
Case

66 year old female lives with husband

PMH Depression, chronic headaches

<table>
<thead>
<tr>
<th>Date</th>
<th>Surgical history</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 2017</td>
<td>Road traffic collision: Laparotomy for small bowel &amp; mid ileal injury: Small bowel resection &amp; sigmoid colostomy.</td>
</tr>
<tr>
<td>July</td>
<td>High output stoma &gt;4L/d on Parenteral Nutrition via Peripherally Inserted Central Catheter (PICC)</td>
</tr>
<tr>
<td>August</td>
<td>Transferred to St Mark’s for surgical review and home parenteral nutrition</td>
</tr>
</tbody>
</table>

*Staphlococcus Epidermidis in PICC so removed*

Started on Teicoplanin but changed to Vancomycin due to resistance

Maintained on IV fluid & electrolytes until central venous catheter (CVC) inserted
Assessing nutritional status

- Assessment of weight
- Body mass index (BMI)
- % Weight loss
- Mid upper arm circumference (MUAC)
- Tricep skinfold thickness (TST)
- Mid arm muscle circumference (MAMC)
- Grip strength
Weight can be deceptive.....

<table>
<thead>
<tr>
<th>Kg</th>
<th>Ascites</th>
<th>Oedema</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>2.2</td>
<td>1.0</td>
</tr>
<tr>
<td>Moderate</td>
<td>6.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Severe</td>
<td>14.0</td>
<td>10.0</td>
</tr>
</tbody>
</table>
Anthropometry
Measurement of the body or its parts

- Mid-arm circumference (MAC)
- Triceps skin fold thickness (TST)
- Mid-arm muscle circumference (MAMC)

Provide information on the amount and rate of change in body energy stores and protein mass
Handgrip dynamometry

Anthropometry & biochemistry

- **BMI 29.4 kg/m² (overweight)**
  - Height 167 cm
  - Weight 82kg

- **% weight loss 32%**
  - Lost 38kg on slimming world prior to RTC

- **Body Composition & Functional Capacity**
  - Mid arm circumference 25-50th
  - Tricep skinfold thickness 5-10th
  - Mid arm muscle circumference 75-90th
  - Handgrip 16kg <85% normal

- **Micronutrients**
  - Full micronutrient screen on admission

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WCC</strong></td>
<td>9.8</td>
</tr>
<tr>
<td>Sodium</td>
<td>140</td>
</tr>
<tr>
<td>Potassium</td>
<td>3.8</td>
</tr>
<tr>
<td>Urea</td>
<td>3.7</td>
</tr>
<tr>
<td>Creatinine</td>
<td>35</td>
</tr>
<tr>
<td>CRP</td>
<td>16.1↑</td>
</tr>
<tr>
<td>Bilirubin</td>
<td>4</td>
</tr>
<tr>
<td>Alk Phos</td>
<td>134↑</td>
</tr>
<tr>
<td>ALT</td>
<td>15</td>
</tr>
<tr>
<td>Albumin</td>
<td>28↓</td>
</tr>
<tr>
<td>Adj Ca</td>
<td>2.56</td>
</tr>
<tr>
<td>Magnesium</td>
<td>0.74</td>
</tr>
<tr>
<td>Phosphate</td>
<td>1.41</td>
</tr>
</tbody>
</table>
Clinical & dietary

- Observations normal
- Mobilising
- Output between 1.6-2.3L/day
- 500ml oral fluid restriction
- Eating low fibre diet ~500kcal & 25g protein
Requirements-Energy

Main components of energy expenditure are:

- Basal metabolic rate (BMR)
- Metabolic stress
- Activity
- Diet induced thermogenesis
Calculation of basal metabolic rate

Standard formulae used based on sex, age and weight

Henry/Oxford Equations

<table>
<thead>
<tr>
<th>Age</th>
<th>Females</th>
<th>Males</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-30</td>
<td>$13.1W + 558$</td>
<td>$16.0W + 545$</td>
</tr>
<tr>
<td>30-60</td>
<td>$9.74W + 694$</td>
<td>$14.2W + 593$</td>
</tr>
<tr>
<td>60-70</td>
<td>$10.2W + 572$</td>
<td>$13.0W + 567$</td>
</tr>
<tr>
<td>70+</td>
<td>$10.0W + 577$</td>
<td>$13.7W + 481$</td>
</tr>
</tbody>
</table>

Metabolic stress

- Equations determine BMR in health
- Patients have altered requirements due to:
  - Surgery
  - Injury
  - Infection
  - Inflammation
- Stress response
  - $\uparrow$ Temperature
  - $\uparrow$ WCC
  - $\uparrow$ CRP & $\downarrow$ albumin
  - $\uparrow$ Urea
Combined factor for activity & diet induced thermogenesis

<table>
<thead>
<tr>
<th>Activity Status</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedbound immobile</td>
<td>10%</td>
</tr>
<tr>
<td>Bedbound mobile/sitting</td>
<td>15-20%</td>
</tr>
<tr>
<td>Mobile on the ward</td>
<td>25%</td>
</tr>
</tbody>
</table>
Adjust for weight change

- Only in metabolically stable not stressed patients
- During metabolic stress unlikely to gain lean body mass
  - Avoid overfeeding
- Can add or subtract 400-1000Kcal/day if weight change required
Requirements- Nitrogen

Requirements increased during:

- Sepsis & stress
- Large losses from stoma/fistula

<table>
<thead>
<tr>
<th></th>
<th>g/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>0.17 (0.14-0.2)</td>
</tr>
<tr>
<td>Hypermetabolic</td>
<td></td>
</tr>
<tr>
<td>5 - 25%</td>
<td>0.2 (0.17-0.25)</td>
</tr>
<tr>
<td>25 – 50%</td>
<td>0.25 (0.2-0.3)</td>
</tr>
<tr>
<td>&gt;50%</td>
<td>0.3 (0.25-0.35)</td>
</tr>
<tr>
<td>Depleted</td>
<td>0.3 (0.2-0.4)</td>
</tr>
</tbody>
</table>

Requirements – Fluid & electrolytes

British Consensus Guidelines on Intravenous Fluid Therapy for Adult Surgical Patients

GIFTASUP

Jeremy Powell-Tuck (chair), Peter Gosling, Dileep N Lobo, Simon P Allison, Gordon L Carlson, Marcus Gore, Andrew J Lewington, Rupert M Pearse, Monty G Mythen

On behalf of 1BAPEN - a core group of BAPEN, 2the Association for Clinical Biochemistry, 3the Association of Surgeons of Great Britain and Ireland, 4the Society of Academic and Research Surgery, 5the Renal Association and 6the Intensive Care Society.

Intravenous fluid therapy in adults in hospital

Issued: December 2013

NICE clinical guideline 174

guidance.nice.org.uk/cg174

- 25-30ml/kg/d of water
- 1mmol/kg/d of sodium & potassium


https://www.nice.org.uk/guidance/cg174
NICE fluid guidelines

Vomiting and nasogastric tube loss
Gastric fluid contains:
- 20–60 mmol Na⁺/l
- 14 mmol K⁺/l
- 140 mmol Cl⁻/l
- 60–80 mmol H⁺/l.
Excessive loss causes a hypochloremic (hypokalaemic), metabolic alkalosis. Correction requires supplemental K⁺ and Cl⁻.

‘Pure’ water loss (eg fever, dehydration, hyperventilation)
Mainly insensible water loss (ie relatively low electrolyte content); results in potential hyponatraemia.

Biliary drainage loss
- 145 mmol Na⁺/l
- 5 mmol K⁺/l
- 105 mmol Cl⁻/l
- 30 mmol HCO₃⁻/l

Diarrhoea or excess colostomy loss
- 30–140 mmol Na⁺/l
- 30–70 mmol K⁺/l
- 20–80 mmol HCO₃⁻/l

Jejunal loss via stoma or fistula
- 140 mmol Na⁺/l
- 5 mmol K⁺/l
- 135 mmol Cl⁻/l
- 8 mmol HCO₃⁻/l

Pancreatic drain or fistula
- 125–130 mmol Na⁺/l
- 8 mmol K⁺/l
- 56 mmol Cl⁻/l
- 85 mmol HCO₃⁻/l

High volume ileal loss via new stoma, high stoma or fistula
100–140 mmol Na⁺/l
4–5 mmol K⁺/l
75–125 mmol Cl⁻/l
0–30 mmol HCO₃⁻/l

Lower volume ileal loss via established stoma or low fistula
50–100 mmol Na⁺/l
4–5 mmol K⁺/l
25–75 mmol Cl⁻/l
0–30 mmol HCO₃⁻/l

Inappropriate urinary loss (eg polyuria)
Na⁺/l and K⁺/l very variable, so monitor serum electrolytes closely. Match hourly urine output (minus 50 ml) to avoid intravascular depletion.

Ongoing blood loss (eg melena)

https://www.nice.org.uk/guidance/cg174
Case: estimated requirements

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Calculation</th>
<th>Requirement</th>
<th>PN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>Henry &amp; 0% SF 25% &amp; AF -500</td>
<td>1260kcal</td>
<td>800Kcal</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>0.17/kg</td>
<td>14g</td>
<td>12.85g</td>
</tr>
<tr>
<td>Sodium</td>
<td>1-1.5mmol/kg + losses</td>
<td>382-423mmol</td>
<td>40mmol</td>
</tr>
<tr>
<td>Potassium</td>
<td>1-1.5mmol/kg</td>
<td>82-123mol</td>
<td>70mmol</td>
</tr>
<tr>
<td>Calcium</td>
<td>0.1-0.15mmol/kg</td>
<td>8-12mmol</td>
<td>6mmol</td>
</tr>
<tr>
<td>Magnesium</td>
<td>0.1-0.2mmol/kg</td>
<td>8-16mmol</td>
<td>10mmol</td>
</tr>
<tr>
<td>Phosphate</td>
<td>10/1000kcal</td>
<td>18mmol</td>
<td>20mmol</td>
</tr>
<tr>
<td>Fluid</td>
<td>30ml/kg +losses</td>
<td>4710ml</td>
<td>1500ml</td>
</tr>
</tbody>
</table>

SF = stress factor, AF = activity factor
# Medications

<table>
<thead>
<tr>
<th>Medication &amp; route</th>
<th>Dose</th>
<th>Frequency</th>
<th>Relevant side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dalteparin S/C</td>
<td>5000 units</td>
<td>od</td>
<td>Hyperkalaemia</td>
</tr>
<tr>
<td>Ondansetron po</td>
<td>4mg</td>
<td>bd</td>
<td>Hypotension, diarrhoea</td>
</tr>
<tr>
<td>St Mark’s oral rehydration solution po</td>
<td>1L</td>
<td>Daily</td>
<td>Palatability</td>
</tr>
<tr>
<td>Loperamide po</td>
<td>16mg</td>
<td>qds</td>
<td>Dry mouth, dizziness, nausea, vomiting</td>
</tr>
<tr>
<td>Codeine phosphate po</td>
<td>60mg</td>
<td>qds</td>
<td>Anorexia, dry mouth, nausea, vomiting, sweating, tachycardia, urinary retention</td>
</tr>
<tr>
<td>Omeprazole po</td>
<td>40mg</td>
<td>bd</td>
<td>Diarrhoea, nausea, vomiting, dizziness, dry mouth, taste disturbances, hyponatraemia, hypomagnesaemia</td>
</tr>
<tr>
<td>Paracetemol po</td>
<td>1g</td>
<td>prn</td>
<td>Malaise</td>
</tr>
</tbody>
</table>
Management

- New central venous catheter inserted
- Gastrointestinal mapping for future surgery
  - 60cm from DJ flexure to jejunostomy
  - 40cm of ileum
  - No obstruction in large bowel
## Micronutrient management

<table>
<thead>
<tr>
<th>Micronutrient</th>
<th>Result</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin D (&gt;50)</td>
<td>18</td>
<td>300,000 units IM</td>
</tr>
<tr>
<td>Selenium (0.8-1.4umol/L)</td>
<td>0.45</td>
<td>500 micrograms IV 3/7</td>
</tr>
<tr>
<td>Zinc (8-17umol/L)</td>
<td>16.4</td>
<td>None</td>
</tr>
<tr>
<td>Copper (11-22umol/L)</td>
<td>18.4</td>
<td>None</td>
</tr>
<tr>
<td>Vitamin A (0.77-3.95umol/L)</td>
<td>0.55</td>
<td>100,000 units IM</td>
</tr>
<tr>
<td>Vitamin E (9.5-41.5umol/L)</td>
<td>20.0</td>
<td>None</td>
</tr>
<tr>
<td>Vitamin B12 (197-771pg/ml)</td>
<td>363</td>
<td>None</td>
</tr>
<tr>
<td>Folate (3.9-20.0ng/ml)</td>
<td>&gt;20</td>
<td>None</td>
</tr>
<tr>
<td>Ferritin (13-150ng/ml)</td>
<td>610</td>
<td>None</td>
</tr>
<tr>
<td>CRP (0-5mg/L)</td>
<td>22.4</td>
<td></td>
</tr>
</tbody>
</table>
Progress - weight

- PN started
- ↓ Na & Fluid
- ↑ Na & Fluid
Urea & Urine Sodium

**Urea (mmol/L)**

- 30-Aug: 1
- 06-Sep: 2
- 13-Sep: 9
- 20-Sep: 10
- 27-Sep: 8

**Urine Sodium (mmol/L)**

- 06-Sep: 140
- 11-Sep: 120
- 13-Sep: 130
- 17-Sep: 100
- 19-Sep: 80
- 24-Sep: 90
- 01-Oct: 120
Conclusion

Patient with short bowel requiring HPN

Overweight & overloaded
- Appropriate PN

Dietary advice
- High energy, protein, fat & salt, low fibre diet
- Corrected micronutrient deficiencies

Quality of life
- Overnight feeding

Future surgery planned
- Maintain nutritional status
Acknowledgements

Najia Qureshi
BDA Policy Officer
(Prescribing & Regulation)

Helen Ward
Lucy Arora

Funding
Dietitians Managers

Dr Simon Gabe
Consultant
Gastroenterologist

London South Bank University

St Mark's Hospital