Trust Guideline

Enteral Nutrition (enteral tube feeding) in the community and community hospitals

Clinical guideline

The guideline applies to staff in all services involved with the administration and/or management of enteral nutrition

Target Audience

LPT staff involved with the administration of enteral nutrition

Description of Guideline

These guidelines describe the placement and management of enteral feeding devices, and the administration of enteral nutrition (enteral tube feeds) in the community and inpatient settings

Related legislation, Standards, Professional Guidelines Codes of Practice or Ethics:

NMC The Code – Professional standards of practice and behaviour for nurses and midwives


Health and Care Professions Council Standards of Performance, Conduct and Ethics. January 2016


Keywords

Enteral nutrition, enteral tube feeding, nasogastric, NG, nasojejunal, NJ, gastrostomy, PEG, RIG, jejunostomy, PEGJ, button
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### CONSULTATION WITH KEY STAKEHOLDERS

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GUIDELINE SUMMARY

This document provides clinical guidelines for all LPT staff who are involved in the placement of enteral feeding tubes, or the management or administration of nutrition, fluid or medication via an enteral feeding tube, or who are training/supervising other individuals undertaking these tasks.

While not requiring mandatory compliance, staff must have sound reasons for not implementing standards or practices set out within the guideline, or for variance in practice.

INTRODUCTION
These guidelines have been developed to support staff and patients/carers within LPT in the safe placement of enteral feeding tubes/devices, and safe delivery of enteral nutrition.

Enteral nutrition refers to the delivery of a liquid enteral feed, which will normally contain protein, carbohydrate, fat, water, minerals and vitamins, directly into the stomach, duodenum or jejunum (NICE 2006) via an enteral feeding tube or device. In most cases, enteral feeds are prescribable, nutritionally complete products that are obtained in liquid or powder form, but in a small number of cases patients or carers choose to use liquidised food.

Enteral feeding devices include tubes and low profile devices (buttons). Enteral feeding devices may be placed non-surgically via the nostril (nasogastric) or percutaneously, through a surgical, radiological or endoscopic procedure into the stomach or jejunum. The terms ‘enteral nutrition’ and ‘enteral tube feeding’ are synonymous and used interchangeably in this document.

Parenteral nutrition (intravenous feeding) is outside the scope of these guidelines.

GUIDELINE AIM
The aim of the guideline is to promote safe practice related to enteral tube feeding. This includes the placement of enteral feeding devices in the community (where applicable), ongoing management of devices, and the administration of feeds and medication.

The guidelines impact on all staff who have involvement with patients receiving enteral nutrition in inpatient and community settings. This involves a diverse range of registered and unregistered staff.

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INTENDED OUTCOMES
The insertion and subsequent management of enteral feeding devices and the administration of enteral feeds, fluids and medication via the devices should be safe, effective and comfortable for the patient

- Staff will be aware of best practice related to enteral tube feeding
- Staff will be able to administer enteral feeds, medication and fluid for patients with enteral feeding devices, using appropriate procedures
- Relevant staff will be aware of the procedure for placement, replacement and removal of enteral feeding devices
- Staff will be aware of the infection prevention and control requirements relevant to enteral nutrition
- The potential for incidents relating to enteral tube feeding will be minimised

GLOSSARY

<table>
<thead>
<tr>
<th>ACRONYM OR TERM</th>
<th>DEFINITION</th>
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<tr>
<td>Aspiration</td>
<td>Withdrawal of fluid by suction using a syringe</td>
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<tr>
<td>Buried bumper</td>
<td>This occurs if the internal fixation device on a gastrostomy tube becomes embedded in the tissue, which prevents the tube from moving in and out within the tract. The tissue overgrowth can occlude the internal surface of the tube necessitating its replacement.</td>
</tr>
<tr>
<td>Button</td>
<td>A Gastrostomy feeding device, usually made of silicone, which lies flush with the skin and is held in place by a balloon or dome within the stomach</td>
</tr>
<tr>
<td>Cleaning</td>
<td>The process of washing equipment for re-use, using hot water containing detergent</td>
</tr>
<tr>
<td>Cooled boiled water</td>
<td>Water that has been freshly drawn from a drinking tap, boiled, and allowed to cool prior to use in a clean covered container.</td>
</tr>
<tr>
<td>Disinfection</td>
<td>The process by which micro-organisms are reduced to a safe level</td>
</tr>
<tr>
<td>Flushing</td>
<td>Passing defined amounts of sterile, cooled boiled, or freshly drawn drinking tap water down an enteral feeding tube using a syringe, to maintain tube patency, and contribute to a patient’s fluid requirements.</td>
</tr>
<tr>
<td>Freshly drawn drinking tap water</td>
<td>Water from a tap that has been allowed to run briefly before sufficient is collected for the procedure.</td>
</tr>
<tr>
<td>Gastrostomy feeding</td>
<td>Feeding via a tube or device that passes directly through the abdominal wall into the stomach</td>
</tr>
<tr>
<td>Jejunostomy feeding</td>
<td>Feeding via a tube that passes directly through the abdominal wall into a loop of the jejunum</td>
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### Nasogastric feeding

Feeding via a tube that passes via the nostril and oesophagus into the stomach

| **Percutaneous Endoscopic Gastrostomy (PEG)** | A tube placed through the abdominal wall into the stomach using an endoscope |
| **pH indicator paper/stick** | Paper or stick designed to measure the acidity of a liquid i.e. gastric aspirate |
| **port** | An aperture on an enteral feeding device |
| **Radiologically Inserted Gastrostomy (RIG)** | A tube placed through the abdominal wall into the stomach using radiological guidance |

**GUIDELINES**

1. **ENTERAL FEEDING DEVICES**

The most commonly used feeding tubes are nasogastric (NG) and gastrostomy tubes/devices, and these deliver nutrition to the stomach. NG tubes are recommended for short term use, while gastrostomy feeding may be preferable for patients who require enteral tube feeding for longer periods of time (Fogg, 2008). Some patients may, however, choose to continue to have a nasogastric tube.

Enteral feeds may also be delivered to the small bowel (jejunum) in certain clinical situations, via a jejunostomy feeding tube or a transgastric device.

Feeding routes should be considered on an individual basis by the relevant multi-professional team. For patients with Learning Disabilities the LPT Learning Disability services Safe Eating and Drinking Care Pathway (Draft at 30 September 2016) should be referred to.

1.1 **Nasogastric tubes**

Nasogastric (NG) tubes are available in different lengths and lumen diameters (French Gauge, FR or FG), which are selected as appropriate to the individual patient.

The majority of adult patients will require a tube of around 90cm length, whereas shorter tubes are available for infants and children, and optimal length for practicality should be assessed on an individual basis.

Fine bore tubes (FR 5, 6 or 8) are generally more comfortable than wide bore tubes, and should therefore be used where possible. Neonates and small children are likely to require a 5 or 6 FR tube, whereas an 8FR is appropriate for the majority of young people and adults.

There are two types of fine bore tubes available:
Polyvinyl Chloride (PVC), generally used for aspiration/drainage of stomach contents – for short...
term use up to 10 days (NNNG 2016)
Polyurethane (PUR) – long term use (greater than 10 days) for enteral feeding.

PUR is a softer material than PVC and is therefore more comfortable. Some PUR tubes will have a
guidewire to facilitate placement by stiffening the tube.

NG tubes should have measurement markings at 1cm intervals and be radio-opaque (NPSA 2011). X-ray confirmation of placement is not applicable in community hospitals or in the community, but any be undertaken if the patient is admitted to an acute hospital.

Individual manufacturers provide guidance regarding the length of time their devices can remain in situ, generally 1-6 months if functioning well, and staff should refer to the relevant manufacturer’s information. However, it may be desirable to replace NG tubes every 6 – 8 weeks in order to change from left to right nostril (or vice versa) to prevent irritation, if possible.

Placement of NG tubes may take place in an inpatient setting, or in certain circumstances (in the absence of contraindications) at the patient’s home. For placement and management of NG tubes see sections 4 and 6.

1.2 Naso-jejunal tubes

These may be placed under endoscopic or radiological guidance, and are of a longer length than NG tubes in order that they extend beyond the stomach into the jejunum. They are normally placed in an acute hospital setting, and may be used for patients experiencing persistent vomiting, or gastroparesis.

1.3 Gastrostomy tubes and devices

Gastrostomy tubes are normally made from PUR or silicone, and last for varying lengths of time depending on their construction and factors relating to individual patient.

A range of device types and placement options exists. Initial placement of a gastrostomy device is undertaken in a hospital setting endoscopically, radiologically, or surgically.

Gastrostomy devices are secured in the stomach either by the presence of a disc or an inflated balloon. Percutaneous Endoscopic Gastrostomy tubes (PEG) have an internal disc, and a length of external tubing to which feeding equipment is attached. An external fixation device prevents excessive inward movement. These devices may be in place from 6 months to several years, depending on manufacturer’s recommendations and individual circumstances.

Balloon retained gastrostomy (BRG) devices are secured by a balloon which is inflated with sterile or cooled boiled water, and will either have external tubing, as for a PEG, or can be ‘low profile’ devices (buttons) which are flush with the abdomen. BRGs usually need replacing on a 3-6 monthly basis as the balloon is likely to fail after this time. Replacement of a BRG can be undertaken in the patient’s home once the tract is fully healed

**Percutaneous Endoscopic Gastrostomy Tube (PEG) placement**

PEGs are placed using an endoscopic procedure carried out under general anesthetic for children, or sedation for adult patients.
Radiologically Inserted Gastrostomy (RIG) placement.
This may be used when an endoscopic procedure is not possible, and commonly utilises a balloon-retained gastrostomy (BRG) device

Surgical gastrostomy placement
Surgical placement is likely to be undertaken alongside other abdominal surgery, and a PEG or BRG-type devices can be utilised.

1.4 Jejunostomy or jejunal tubes

Jejunostomy tubes are placed surgically, directly into the jejunum. These tubes enter the jejunum directly, normally beyond the ligament of Treitz, and may be sutured into place externally. Jejunal extensions to gastric tubes may be placed by:
- passing a jejunal extension via an existing PEG tube of adequate diameter. This is referred to as a PEG-J
- utilising a balloon-retained gastrostomy device (button or tube) with trans-gastric tubing extending into the jejunum

2. METHODS OF ENTERAL TUBE FEEDING

Enteral feeds may be administered either as a continuous pump assisted feed (for up to 20 hours per day) or as intermittent boluses which may be carried out using an enteral feeding pump, or manually using a syringe. Decisions relating to the preferred feeding method(s) should be made on an individual basis, but unsupervised overnight feeding via nasogastric tube is not recommended. Bolus and pump feeding may be used in combination.

Liquidised food would be given via bolus feeding using a syringe, as intermittent or continuous pump feeding is unsuitable in this situation.

Overnight pump feeding is sometimes recommended where patients would prefer to be mobile during the day, or where there are issues around deprivation of liberty. However, bolus feeding may be more acceptable if the patient misses the routine of daily mealtimes, or where overnight feeding means they need to get out of bed several times to pass urine at night. Overnight feeding sometimes causes heartburn or acid reflux and an increased need to pass urine due to the fluid input. Patients’ upper bodies should be elevated to an angle of 30-45 degrees to avoid heartburn or acid reflux, if possible to do so. Consideration should be given to the use of a profiling bed particularly if the person is fed overnight or if there are issues with tissue viability.

Potential advantages and disadvantages of feeding methods

Pump assisted feeding

<table>
<thead>
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<th>Advantages</th>
<th>Disadvantages</th>
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<tr>
<td>Accurate control of flow rate</td>
<td>Feeding for prolonged periods may limit mobility</td>
</tr>
<tr>
<td>May improve tolerance if bolus feeds are poorly tolerated</td>
<td>Prolonged feeding may make personal care more difficult</td>
</tr>
<tr>
<td>More flexibility with feeding regimen</td>
<td>Deprivation of Liberty</td>
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### Bolus feeding

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
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<tbody>
<tr>
<td>Bolus feeding can mimic meal and snack times</td>
<td>More staff time involved</td>
</tr>
<tr>
<td>Less ‘high tech’</td>
<td>If large feed volumes are required boluses may be poorly tolerated</td>
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<tr>
<td>Promotes the normal appetite and hunger response for return to normal eating.</td>
<td></td>
</tr>
<tr>
<td>Stomach pH can return to normal periodically during the day</td>
<td></td>
</tr>
<tr>
<td>Promotes nurse/patient interaction. The extra time spent with the patient can be used to assess mental state on a regular basis</td>
<td></td>
</tr>
<tr>
<td>Paranoid patients should not suspect contamination as the supplement can be opened in front of them</td>
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### 3. GENERAL PRINCIPLES WHEN UNDERTAKING ENTERAL TUBE FEEDING

#### 3.1 Infection control

Microbial contamination of enteral feeds can be a cause of infection for the recipients of enteral nutrition, with potentially serious consequences which may include diarrhoea, vomiting, abdominal distension, colonisation of the gastro-intestinal tract and sepsis. The main routes via which contamination might occur include poor hand hygiene practice when handling feeds and feeding systems inappropriate cleaning or storage of reusable equipment, or exceeding hanging times for feeds (Anderton 2001)

#### Cleaning equipment

Enteral nutrition does not normally require sterile procedures. For the majority of patients, the processes require equipment to be clean. For most equipment items the following is required: Immediately after use -
• Wash all equipment items (separately from other household items) in warm water containing domestic washing up liquid
• Rinse in clean water
• Shake excess water from the equipment and air dry on clean paper towel
• Store in a clean container, separately from other household items

Manufacturer’s instructions should be referred to for specific details.

Certain items can be cleaned in a domestic dishwasher, in accordance with manufacturer’s information.

In certain situations disinfection or sterilising of equipment is required. These include equipment used for
• All infants up to the age of at least 6 months
• Certain infants from 6-12 months of age, where they are deemed susceptible to infection. However the requirement to disinfect or sterilise equipment should be considered in the contact of the ‘lifestyle’ of the infant, whether or not they are eating solid food, drinking un-boiled tap water etc.
• Patients receiving feeds into the jejunum.

Refer to manufacturer’s information for appropriate disinfecting or sterilising methods.

**Hand Hygiene**
Hand hygiene is the single most important procedure in the prevention and control of infection (CREST 2004). Effective hand hygiene is therefore crucial in preventing contamination of enteral feeds. Prior to handling enteral feeds or related equipment, hands should be washed thoroughly with liquid soap and water. Patients or family members should dry their hands on a clean towel or paper towels. Staff members should use paper towels.

Staff and carers should put on non-sterile disposable nitrile gloves and aprons before preparing feeds, assembling feeding systems and undertaking any subsequent handling of the system. Refer to LPT Infection Prevention and Control Policy

Family members in the patient’s own home do not require gloves and aprons.

### 3.2 Storage of feeds

**Sterile feeds**
Sterile, liquid ready to hang, unopened feeds should be stored in a cool dry place, (5 – 24°C) out of sunlight and away from sources of heat. If used for continuous feeding, once attached to a feed administration (giving) set, it can remain at room temperature for up to 24 hours. Otherwise, once opened, any feed not used immediately should be refrigerated in a sealed container and used within 24 hours of opening.

**Non sterile feeds**
The ingredients (liquid or powder) from which non-sterile feeds are made should be stored in accordance with manufacturers’ guidelines, both before and after opening. Refer to individual manufacturers’ guidelines for the length of time a product can be kept once opened. Discard any opened product not used within this time.
Once mixed, non-sterile feed (e.g. infant formula or modular feeds) should be stored refrigerated in a sealed container, and used within 24 hours of mixing. Any feed not used within this time must be discarded (NICE 2003).

In care homes, schools, respite organisations etc., feed should be labelled with the client’s name, and the date and time of opening or mixing, to ensure it is not kept in excess of 24 hours.

3.3 Assembling equipment and preparing feeds
Preparation of feeds and feeding equipment should take place on a designated clean surface, away from food items, pets, insects etc. (Anderton 2001). Surfaces should be cleaned as per hospital policy in inpatient areas, or using hot water containing domestic washing up liquid in patients’ homes.

Where possible, the use of a sterile, ready to hang feed is recommended to avoid decanting feeds. If decanting to an empty reservoir is needed, a ‘no touch’ technique is required to avoid contamination. Care must also be taken not to touch any parts of the feeding equipment that will come into contact with the enteral feed, and that equipment does not come into contact with the floor, clothing or other surfaces.

Packs or bottles of feed should be checked before opening and discarded if there are signs of damage, or if the expiry date (on the outer casing of the individual pack) has passed.

For modular feeds (i.e. those made up from separate ingredients where no ‘ready to hang’ option is available), ingredients should be mixed using cooled boiled water. Utensils, jugs etc. used for mixing feeds should be washed thoroughly in hot water containing domestic washing up liquid or cleaned in a domestic dishwasher, rinsed in clean water, air dried on clean paper towel, and stored (inverted where appropriate, without stacking). Disinfecting or sterilising of utensils is also required for infants up to 6 months of age, and in certain other circumstances (See 3.1). A no touch technique is required for decanting modular feeds into enteral feeding reservoirs, if this is necessary.

3.4 Feed hanging times
Where feed is administered as a continuous feed, the time over which this can be hung at room temperature will vary depending on whether it is a sterile or non-sterile feed.

Sterile feeds (including both ‘ready to hang’ and decanted sterile feeds)
These can be hung at room temperature for 24 hours

Non-sterile feeds
The recommended hanging time for non-sterile feeds in the hospital environment is 4 hours. Minimising hanging times reduces the risk of bacterial growth if any contamination has occurred during mixing. However it is recognised that this is not socially acceptable or practical in the home environment, particularly where a feed is administered overnight, and for this reason it is common practice to extend the hanging time to a maximum of 12 hours. Staff should consider individual circumstances, and recommend hanging times shorter than 12 hours if feasible.
3.5 Warming feeds prior to administration
Warming feed is not generally recommended. However, if patients or families choose to warm feeds prior to bolus administration, the feed must be discarded if not used immediately – never retained for later administration.

Feed for continuous administration must not be warmed.

Feeds may be warmed, if required, by standing the container in a jug of warm water and checking the temperature (as for a baby bottle) before administering. Caution is required if a microwave is used, due to the potential for uneven heating.

3.6 Water for flushing tubes
Enteral feeding tubes should be flushed before and after administration of feed or medication, using sterile water, freshly drawn drinking tap water, or cooled boiled drinking tap water. Sterile or cooled boiled drinking tap water should be used for:

- Infants up to 6 months of age. As a general principle, the use of cooled boiled water for flushing tubes is no longer needed once they are drinking un-boiled water, and parents are no longer disinfecting any feeding equipment other than bottles and teats.
- Certain infants from 6-12 months of age. It may be desirable to continue to boil water for flushing tubes for some infants who may be susceptible to infection. However where parents are no longer boiling water for drinking, and the infant is taking solid food, the use of boiled water in preference to freshly drawn drinking tap water is at variance with this.
- Immuno-compromised patients (NICE 2012) – applies to patients with a T cell loss, or neutrophil count less than 1000. Advice to be taken from medical staff. These patients should also use ‘single use’ syringes.
- Patients receiving feeds into the jejunum

Bottled mineral water is not recommended for making up feeds or flushing feeding tubes particularly in the case of infants, as concentrations of electrolytes may be unsuitable.

If using cooled boiled water – sufficient water may be boiled to use over a 24 hour period. This must be kept in a clean, covered container, and any remaining water discarded after 24 hours. In care home, school or respite settings, the container should be labelled with the date and time of filling. Containers should be washed daily in hot water containing domestic washing up liquid, and rinsed.

3.7 Equipment
ENFit

A new international standard (ISO80369-3) for the design of enteral feeding tubes and the feed administration sets, syringes and extension sets which attach to them is being introduced during 2016-2017.

The new design, known as ENFit, is intended to achieve global standardisation of enteral feeding equipment, and ensure incompatibility with all other systems.

There will be a prolonged period when both ENFit and non-ENFit equipment is in use, and adaptors
have been made available to enable connection of ENFit ancillary items to non-ENFit tubes, and vice versa. ENFit applies both to single use and single patient use.

All staff involved with ordering, managing or administering enteral nutrition will need to be aware of the differences between ENFit and non-ENFit equipment, in order to avoid problems with incompatibility of equipment items and interruption to the administration of feed, fluid and medication

**Duration of use**
Manufacturers’ information should be referred to, to determine whether items are for ‘single use’ or ‘single patient use’, and if the latter, the acceptable time over which use may continue.

**3.8 Position of patients receiving an enteral feed**
Whenever possible the patient should be in an upright position whilst having their feed, and remain in this position for at least 30 minutes afterwards unless their individual care plan states otherwise. If unable to sit upright, the upper body should be elevated to an angle of at least 30 degrees to reduce the risk of aspiration.

**3.9 Oral hygiene**
It is particularly important that oral hygiene is not overlooked where clients who are nil by mouth. They are more prone to bacterial overgrowth, as lack of saliva and reduced swallowing has been shown to increase gastric pH (O'May et al.,2003), also oral colonisation per se may increase risk of pneumonia in people who are already prone to aspiration and chest infections (Heyland, 1998).

**4. ENTERAL FEEDING DEVICE PLACEMENT AND REMOVAL**

**4.1 Nasogastric tube placement and confirmation of position**

NPSA/2011/PSA002 states that a misplaced nasogastric or orogastric tube, not detected prior to feeding, is a ‘never event’. It is essential that all practitioners undertaking nasogastric tube feeding or the placement of nasogastric tubes are competent to check the correct placement of the tube in accordance with the procedure laid out below.

**Procedure for the insertion of nasogastric tubes**
The term ‘patient’ within this document is used to denote child, young person or adult.

Nasogastric tubes may be placed by:
Staff in certain community hospitals
Home Enteral nutrition service dietitians for adult patients in their own homes
The Diana Childrens community nursing service for children in their own homes
Adult Eating Disorders Unit

**Resources required for the insertion of a nasogastric tube**

- Personal Protective Equipment (PPE)
- Non sterile powder-free nitrile gloves and disposable plastic apron
- Nasogastric Tube (Radio – opaque with externally visible length markings).
- PVC (for short term use or gastric drainage)
- Polyurethane (for longer term use)
- Adhesive tape – hypoallergenic or other appropriate fixing device
- pH indicator paper, CE marked and intended by the manufacturer for human gastric aspirate, (with colour measuring result scale for that paper).
- Syringes – ENFit type 5ml, 10ml, 20ml or 60ml (depending on the tube type/individual patient)
- Water - sterile, cool boiled or freshly drawn drinking tap (this can be a carers/parents preference in the home setting, though for infants, cool boiled water or sterile water should be used)
- Clinical waste facilities, this may be household waste within the patient’s home.
- Tissues
- Clean surface, J tray or bowl
- Alcohol wipes within inpatient settings
- Glass of water and straw if the individual is not nil-by-mouth (and age appropriate). For young children a dummy may be appropriate.

**Process for passing a Nasogastric Tube by appropriately trained staff**

For initial insertion ensure there is support and documentation of agreement from the relevant medical professional or Advanced Nurse Practitioner (ANP). This should be revisited in the event of tube displacement for patients in community hospitals.

Check there are no contra-indications to passing a nasogastric tube.

Contraindications include:
- Anatomical deformity
- Trauma
- Patients with maxillofacial disorders, surgery or trauma
- Oropharyngeal or Oesophageal tumours or surgery
- Oesophageal varices
- Laryngectomy
- Clotting disorders or problems which may cause bleeding
- Cervical spine injuries

Nasogastric tubes may be inserted by:
- A registered health care professional who has undergone appropriate training and is deemed competent.
- A healthcare practitioner in training under supervision by a Registered competent healthcare professional.
- Family members may also be trained to place nasogastric tubes for patients at home

**Process**

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| 1 | Check the patient’s ability to consent  
If there is any doubt, a mental capacity assessment will be required.  
If the patient is unable to consent, ‘best interests’ must be explored, involving the medical team, next of kin, and staff involved in the patients care |
| 2 | Explain the procedure to patient/carer providing appropriate information about the procedure and potential risks involved, ensure informed consent and reduce anxiety. Verbal consent should be documented in the notes. |
3 Preparation for the procedure
   a) A suitable environment should be identified
   b) Arrange a signal by which the patient can communicate if he or she wishes the procedure to stop, to enable them to have some control over the procedure and reduce anxiety.
   c) Arrange for appropriate monitoring for respiratory distress or pallor to take place throughout the procedure, to ensure early detection of problems or complications
   d) Choose an appropriate size and type of tube
   e) Determine the most appropriate position for the patient depending on the age and ability to co-operate. Adults and older children may sit upright with support to the back of the head. Young children and infants can lay down, wrapped in a sheet or a blanket. Promotes compliance, holds the child/infant still and prevents child pulling tube out. RCN (2010),

   **Note: the head should not be tilted backwards**
   If the patient is unconscious, place into a safe position by laying them on their side.
   f) If appropriate, ask the patient if they have a preferred nostril for tube placement. Ensure that the chosen nostril is free of debris

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<thead>
<tr>
<th>4</th>
<th>Preparation of equipment</th>
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<tbody>
<tr>
<td>a)</td>
<td>Wash hands with liquid soap and running water. Dry hands thoroughly, with single use disposable paper towel. Put on single use non-powdered nitrile gloves and disposable plastic apron.</td>
</tr>
<tr>
<td>b)</td>
<td>Assemble all required equipment on a clean surface</td>
</tr>
<tr>
<td>c)</td>
<td>If passing a tube with a guidewire, ensure the guide wire moves freely within the tube and it is not kinked or protruding from the end of the tube. This will help ensure easy withdrawal of the guide wire once the tube is in-situ, and to avoid any damage which may be caused by a protruding guidewire.</td>
</tr>
<tr>
<td>d)</td>
<td>Measure the length of the tube to be inserted using the NEX measurement (place exit port of tube tip at nose. Extend the tube to the earlobe, and then to the xiphisternum (or vice versa), as per the illustration below) Note the length of the tube required using the markings on the tube, to obtain an indication of the length of tubing that will be needed to reach the stomach</td>
</tr>
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[Diagram of the NEX measurement]


<p>| e) | Lubricate the tip of the tube with water, if manufacturers information recommends this, to assist the easy passage of the tube and prevent trauma |</p>
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<th>Page</th>
<th>Text</th>
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| 5    | Tube placement  
   a) Ask, or assist the patient to adopt the position agreed as above, with head tilted slightly forwards  
   b) Insert the rounded end of the tube into identified nostril and slide it backwards along the floor of the nasopharynx.  
   c) Advance the tube gently via the nasopharynx to the oesophagus, asking the patient (if able) to swallow. If appropriate offer a drink to aid this process. Continue to advance the tube gently each time the patient swallows, until the anticipated required length of tube has been inserted. Infants could be encouraged to swallow by using a dummy if appropriate. Swallowing action facilitates passage of the tube through the oesophagus, and closes the glottis, helping avoid inadvertent placement of the tube in the bronchus.  
   d) Hold, or lightly secure the tube in place with tape until its position has been confirmed. Adjustment of tube position may be needed |
| 6    | Confirmation of correct tube position  
   Confirmation of correct tube position is undertaken by aspiration of stomach contents and measurement of pH using pH indicator paper. Tube position must be confirmed on placement and at the time of using the tube, on every occasion.  
   pH in the “safe range” or x-ray are the only acceptable methods of confirming initial placement of a nasogastric tube  
   Stomach contents are acidic and (if unaffected by medication or the presence of food/enteral feed) have a pH of around 3-4. Bronchial secretions (from healthy lungs) are expected to have a pH of 7.38 – 7.42.  
   Never confirm correct tube position by  
   - auscultation (the ‘whoosh’ test)  
   - use of litmus paper  
   - referring to results of a previous x-ray carried out in an acute hospital  
   These are not reliable methods of confirmation of position  
   Process for confirmation of correct tube position:  
   a) Gently push 5-10ml (or an age-appropriate amount for infants and children) of air down the tube using an appropriately sized syringe, to ensure no fluid accumulated during tube placement is present, which may give a false reading.  
   b) Withdraw the syringe plunger, to aspirate fluid for testing (2-5ml is adequate). If no fluid is obtained, try advancing the tube by a few cm, and then withdrawing in 2cm increments, re-trying to aspirate at each step  
   c) Place the aspirate onto the pH indicator strip or paper on a clean dry surface and check for an acidic reaction. A pH of 5.5 or below is required to confirm a correct placement of the tip of the tube. |
| 7    | If the tube has a guidewire, remove this by applying gentle traction, while supporting the tube to ensure it does not move. Some manufacturers recommend flushing the tube with water (to activate a lubricant in the inner lumen of the tube) prior to this, to facilitate guidewire removal. **It is essential that flushing is not carried out until position of the tube has been correctly confirmed. NPSA/2012/RRR001**  
   If resistance is felt while removing the guidewire, try withdrawing the tube a few centimeters and then repositioning it. If the guidewire cannot be withdrawn, the tube will need to be removed |
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<tr>
<td>8</td>
<td>Secure the tube in place after confirmation of correct position, using a suitable dressing or tape</td>
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<tr>
<td>9</td>
<td>If the tube is licensed for repassing on the same patient, store the guidewire in the original tube packaging</td>
</tr>
<tr>
<td>10</td>
<td>Remove gloves and apron and dispose of all waste appropriately</td>
</tr>
<tr>
<td>11</td>
<td>Wash and dry hands thoroughly.</td>
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</tbody>
</table>
| 12 | Complete documentation in patient’s record to include:  
  Date and time of insertion / reinsertion.  
  NEX measurement.  
  Nostril used on insertion / reinsertion.  
  External length (using cm marking) at nostril once secured.  
  Aspirate obtained yes/no  
  pH of aspirate obtained  
  Name of person inserting tube  
  Appendix 1 provides a proforma, if required |
| 13 | **Note** – any unused tube identified as being in the lung must be removed immediately |
**Confirmation of correct placement of nasogastric tube**

1. **Insert tube as per instructions in “Nasogastric tube placement and confirmation of position”**.

2. **If the tube has more than one port, ensure these are closed with the exception of the port to which the syringe is being attached. Using a 60 ml enteral syringe, syringe 5-10 ml AIR (or smaller volume depending on age of patient) into stomach and aspirate gastric contents slowly**

3. **No aspirate. Re-check tube length, and check all ports sealed and airtight. Re-aspirate**

4. **No aspirate**

5. **If swallow intact and patient not NBM, offer an age-appropriate drink (for adults or older children, pineapple or orange juice will provide a suitable pH in addition to increasing volume of fluid in stomach). Re-aspirate**

6. **No aspirate**

7. **Reposition patient on left side. Re-aspirate**

8. **No aspirate**

9. **Flush the tube with air as this may alter the position of the tube within the stomach. Re-aspirate**

10. **No aspirate**

11. **Consider advancing tube by 2-10 cm, (depending on age) then withdraw slowly, re-aspirating at 1 cm increments**

12. **No aspirate**

13. **2 – 5 ml aspirate obtained**

14. **Test with pH indicator strip or paper**

15. **pH 6 or above**

16. **If swallow intact, patient not NBM, and age appropriate, ask the patient to drink pineapple or orange juice, or other acidic drink. Re-aspirate**

17. **pH6 or above**

18. **pH 5.5 or below**

19. **Consider retrying after 10-20 minutes**

20. **pH 6 or above**

21. **pH 5.5 or below**

22. **Correct position of tip of NG tube is confirmed**

23. **DO NOT FEED. Discuss with more experienced practitioner. Consider removing and replacing tube unless contraindicated**

24. **DO NOT FEED. Discuss with more experienced practitioner. Consider removing and replacing tube unless contraindicated.**

25. **No aspirate**

26. **Retry after 15-20 minutes**

27. **Flush tube with sterile, cooled boiled or freshly drawn drinking tap water and remove guide wire if present (if not already removed)**

28. **Document in notes and on NG insertion sheet**

29. **Commence feeding**
4.2 Problems in confirming nasogastric tube position

If difficulties are experienced in confirming tube position by aspiration, try the following:

Problem - Unable to withdraw any fluid via the tube:

<table>
<thead>
<tr>
<th>Action/check</th>
<th>Rationale</th>
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<tbody>
<tr>
<td>Check the length of tube visible is the same as usual.</td>
<td>If more tubing is visible than normal the tip of the tube may not be in the stomach and the tube may need replacing.</td>
</tr>
<tr>
<td>If the tube appears to be taped in the usual place, try the following, as appropriate.</td>
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<tr>
<td>- change the position of the person onto his/her left side, or encourage activity, and try again</td>
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<tr>
<td>- if the person requiring feed is able to drink safely, and not 'nil by mouth' offer a drink to increase the volume of fluid in the stomach (an acidic drink e.g. pure orange or pineapple juice will also assist with lowering the pH) and try again. If, despite repeated attempts, the above are unsuccessful, it may be necessary to change the tube. Contact the person responsible for the tube replacement.</td>
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</table>

Problem - The pH of the fluid is above 5.5: DO NOT USE THE TUBE

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<tr>
<th>Action/check</th>
<th>Rationale</th>
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<tbody>
<tr>
<td>If the person with the tube has recently had a meal or a feed, wait for up to an hour if time permits, and try again. If the pH is still above 5.5, seek advice.</td>
<td>Recent food, drinks or feeds may have altered the gastric pH</td>
</tr>
<tr>
<td>Check medication regime. Is the patient receiving antacid medication? If so, check with the pharmacist to ascertain whether the timings of the medication can be altered to assist with obtaining an acidic aspirate at the required times If the medication has recently been given, wait up to an hour if time permits, and try again. If the pH is still above 5.5, seek advice</td>
<td>Certain medications e.g. some antacids may increase the pH of the stomach contents (i.e. make them less acidic). If you have any queries, please discuss this with dietitian or your pharmacist. Antacid medications have times of ‘peak’ action which it may be possible to alter</td>
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<tr>
<td>Action/check</td>
<td>Rationale</td>
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<tr>
<td>Check that the tube is not ‘looped’ at the nostril and that it is correctly</td>
<td>If the tip of the tube is not far enough into the stomach, air may be</td>
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<tr>
<td>secured to the face</td>
<td>drawn into the syringe</td>
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<tr>
<td>Check that all ports on the tube are closed securely (where there is more</td>
<td>Air may be drawn into the syringe via the second port</td>
</tr>
<tr>
<td>than one port)</td>
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<tr>
<td>Change the patient’s position e.g. lie on left side</td>
<td>By lying on the left side, this may ‘pool’ gastric secretions which may</td>
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<tr>
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<td>improve chance of aspiration.</td>
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<tr>
<td>If the patient is able to eat and drink safely, offer a drink (e.g. orange</td>
<td>To increase the volume of stomach contents and facilitate aspiration</td>
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<tr>
<td>or pineapple juice)</td>
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<tr>
<td>Advance the tube beyond the usual measurement marking, then withdraw, re-</td>
<td>This may facilitate repositioning of the tip of the tube in the pool of</td>
</tr>
<tr>
<td>aspirating at 1-2 cm intervals</td>
<td>gastric contents</td>
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**IMPORTANT – NEVER USE THE TUBE IF YOU ARE UNSURE OF THE POSITION**

**Problem – air, not fluid, is drawn into the syringe**
Problem – resistance is felt when attempting to aspirate via the tube

<table>
<thead>
<tr>
<th>Action/check</th>
<th>Rationale</th>
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<tbody>
<tr>
<td>Check that the tube is secured with the usual measurement marking at the nostril, and withdraw to the usual position if necessary</td>
<td>If the tube has been advanced too far, this may cause it to kink or coil in the stomach, or pass into the small bowel</td>
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<tr>
<td>‘Flush’ tube with air (5-10ml for adults, or as appropriate to age)</td>
<td>If the tip of the tube is adjacent to the stomach wall, this may move the tube to aid aspiration</td>
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Risk assessment where pH is above 5.5

Some patients, despite appropriate actions above, regularly have a gastric pH higher than 5.5 (e.g. those having regular medication which affects gastric pH). If they are unable to eat or drink (and a temporary reduction in pH therefore cannot be achieved through provision of an acidic drink), a risk assessment may be appropriate in individual circumstances, to determine whether or not to feed via the tube. This should be agreed with relevant senior/medical staff, and is not applicable on initial tube placement. The NPSA state that ‘in circumstances where the initial placement was appropriately confirmed, and there is no reason to suspect displacement since, the only practical method of determining if the tube remains correctly placed prior to each administration of medications or feed may be through external observation of the tube’

The following factors may also be considered if the pH is routinely above 5.5:
- Is there any reason to suspect the tube may not be correctly positioned (e.g. vomiting, vigorous coughing, length of visible tubing not the same as usual)?
- Is the pH reading comparable with the usual readings for the individual patient?
- Has the patient recently had antacid medication (if so, is it possible to change the timings of these in future)?
- Does the aspirate resemble gastric contents? **Note** – appearance of aspirate should not be interpreted as an indication of correct positioning
- What is the volume of aspirate obtained? (If very small, this could be residual fluid from the tube)
- Are there any signs of respiratory distress? **Note** – absence of respiratory distress is not an indicator of correct positioning

If a decision is made to proceed with feeding based on the knowledge acquired from the above enquires, seek a second opinion from an experienced colleague before progressing, and document the rationale for the decision in the patient’s notes. A small volume of water (5-10mls) should initially be given cautiously via the tube, prior to administering the normal pre-feed ‘flush’ or enteral feed, observing the patient throughout.

Stop immediately if there are any signs of coughing or respiratory distress, **though it should be noted that the absence of these symptoms does not confirm correct tube positioning.** If there are no problems, proceed to administer the feed as planned.
If reassurance is not gained from the enquiries above, consider replacing the tube, or re-aspirate the tube after 15-20 minutes.

4.3 Procedure for the removal of a nasogastric tube

**Resources required for the removal of a nasogastric tube.**

Personal protective equipment - non sterile powder-free nitrile gloves and disposable plastic apron

Clean receptacle into which a re-usable tube can be placed, if required. (i.e. if tube is licensed for single patient use, with cleaning information provided by the manufacturer)

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<tr>
<td>1</td>
<td>Explain the procedure to the patient to obtain consent and reduce anxiety.</td>
</tr>
<tr>
<td>2</td>
<td>Wash and dry hands, put on non-sterile nitrile gloves and disposable plastic apron.</td>
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<tr>
<td>3</td>
<td>Gently remove the fixation tape and withdraw the tube outwards through the nostril. Ensure the tube is intact and document the removal.</td>
</tr>
<tr>
<td>4</td>
<td>If the tube is licensed for ‘single use’, it should be disposed of in accordance with LPT Policy. Tubes licensed for single patient use may be cleaned according to manufacturer’s instructions. Once clean, it can be re-inserted as long as the tube remains in good condition. Refer to manufacturers guideline for the appropriate duration of use</td>
</tr>
<tr>
<td>5</td>
<td>Dispose of all waste in accordance with LPT policy, and wash hands</td>
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<tr>
<td>6</td>
<td>Complete documentation in patient’s records</td>
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4.4 Replacing a balloon retained gastrostomy device

**Resources:**

- Appropriate sized gastrostomy tube or button
- Cooled boiled drinking tap water or sterile water for balloon inflation
- Water for flushing the device – sterile, freshly drawn or cooled boiled drinking tap water
- Extension set if required
- Appropriate sized syringes to fit balloon port and feeding port of the device or extension set
- pH indicator strip or paper, and colour match chart
- Water soluble lubricating gel
- Hand washing equipment
- Sterile dressing pack containing sterile gloves, apron, gauze, waste bag and sheet to create sterile field
- Sterile water or saline for cleaning stoma area, if required
**Process**

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<tr>
<th>Step</th>
<th>Description</th>
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<tbody>
<tr>
<td>1.</td>
<td>Explain the procedure to the patient as relevant to the individual, to obtain consent and cooperation. If the patient is a child, the parent should be involved as appropriate to their age and development, and the involvement of a play specialist may be beneficial.</td>
</tr>
<tr>
<td>2.</td>
<td>Gather all equipment required for the procedure and prepare the environment.</td>
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<tr>
<td>3.</td>
<td>If the patient has a button device, assess the length of the indwelling device in a standing/lying and sitting position (If there has been a significant change in weight, a longer or shorter button may be needed to avoid damage to the skin from a tight device, or excessive movement if the device is too long. This can be judged visually, or the stoma can be re-measured to gauge the length required). If the patient has a tube, check the cm marking adjacent to skin level or above the external fixation device. This knowledge is required to ensure that when the new device is placed, sufficient length of tubing is passed to avoid balloon inflation within the tract.</td>
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<tr>
<td>4.</td>
<td>Establish the position which will be adopted for the device to be changed (usually lying flat if possible), to facilitate replacement of the device.</td>
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<tr>
<td>5.</td>
<td>Wash hands with liquid soap and water, and dry thoroughly using disposable paper towels.</td>
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<td>6.</td>
<td>Open the sterile dressing pack, and open out the sterile sheet, to create a sterile field. Using the waste disposal bag to pick up the individual contents of the pack, separate these on the field.</td>
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<tr>
<td>7.</td>
<td>Place the tray from the pack on a separate surface, to use for non-sterile items.</td>
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<td>8.</td>
<td>Put a piece of pH indicator paper on the tray, ensuring the colour match chart is visible, but not on the tray, to avoid contamination of the chart.</td>
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<tr>
<td>9.</td>
<td>Position the waste bag in a suitable place, separate to the sterile field.</td>
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<tr>
<td>10.</td>
<td>Open the outer packaging containing the balloon retained device and tip the device onto the sterile field using a no touch technique, to avoid contamination.</td>
</tr>
<tr>
<td>11.</td>
<td>Open the syringe packaging and tip the syringe onto the sterile field using a no touch technique, to avoid contamination.</td>
</tr>
<tr>
<td>12.</td>
<td>Tear open the pack of water soluble lubricating gel and squirt the gel onto one of the pieces of sterile gauze, in preparation for lubricating the end of the device or tube.</td>
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<tr>
<td>13.</td>
<td>Put on the apron and gloves from the sterile pack.</td>
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<tr>
<td>14.</td>
<td>Draw up the appropriate amount of cooled boiled drinking tap water or sterile water in a syringe (as per manufacturer’s instructions, appropriate to the balloon size). Insert the syringe into the balloon port and inflate the balloon, checking for leakage,</td>
</tr>
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</table>
to ensure balloon inflates without leaking.

If using a gastrostomy tube, ensure the external fixation device moves freely along the length of the tube, and position it temporarily nearer to the distal end of the tube than will ultimately be required, to facilitate correct positioning of the new tube and fixation device.

| 15. | Lubricate the tip of the device using the water soluble gel, to minimise discomfort during placement, and place it on the sterile field. |
| 16. | Assess the stoma site for any redness, soreness, leakage or signs of infection, to provide appropriate advice on management of the stoma if necessary. |
| 17. | Using an appropriate syringe, remove the water from the balloon of the indwelling gastrostomy device, to enable removal. Ensure that all the water is withdrawn as failure to fully deflate the balloon would cause pain and discomfort. |
| 18. | Apply gentle pressure to remove the old gastrostomy device. Inspect the balloon to check that it has been removed intact and then dispose of the device into the waste bag. |
| 19. | Clean the stoma if necessary using sterile water and gauze. |
| 20. | Insert the new device into the stoma site. **Do not use force to insert the tube**. |

If the device is a tube, insert the tube further into the stoma than required, based on the measurement noted prior to removal of the old tube, to avoid inflation of the balloon within the stoma.

**If force is required to insert a new device, trauma can result. There is a potential to penetrate the abdominal cavity. If feeding is resumed, peritonitis can result. It is essential to check correct placement of the balloon retained gastrostomy.** (NPSA signal 1329) (NNNG 2016)

Monitor for bleeding, pain or leakage from the stoma site following the procedure, to ensure prompt identification of any complications. Advise the patient, parent or carer that they should seek medical advice in the event of the above after tube changes.

| 21. | Hold the gastrostomy tube in place and inflate the balloon with an appropriate syringe containing cooled boiled drinking tap water or sterile water, to prevent it falling out. Water volume required is usually 5mls but refer to manufacturer’s instructions. **Do not use air.** |

If using a gastrostomy tube, gently withdraw this until the balloon can be felt to come into contact with the stomach wall, and slide the external fixation device into a comfortable position against the patient’s skin. Check that the cm marking against the abdomen is as anticipated, when compared with the tube that has been removed. Adjustment may be needed once the patient is in a sitting position.
22. Confirm correct position of the device within the stomach:
Aspirate 2 – 5mls of gastric fluid from the feeding port (using an extension set if required) using a 50ml enteral syringe, and place the fluid on to a pH indicator strip or paper. A value of 5.5 or less is required to confirm correct placement.

If no aspirate obtained, try the following:
- Alter the position of the patient, to achieve a position where the tip of the device is within the pool of gastric secretions. If using a tube, try advancing the tube further into the stomach to achieve the above
  - If able to drink safely, offer an acidic drink e.g. fresh orange juice to increase the volume of fluid in the stomach
  - Advance the tube temporarily within the stoma (withdrawing it to the correct position as above once an aspirate has been obtained)

If aspirate obtained but pH is too high, try the following:
- If able to drink safely, offer an acidic drink e.g. fresh orange juice to achieve a temporary reduction in pH of stomach contents
- Re-try later

(Note – antacid medications or recent administration of enteral feed increase the pH of the stomach contents. For planned changes, consider timings of medication doses and feeds when arranging the tube change)

**Do not use the tube for feeds, medication or water until correct placement has been confirmed**

23. Once placement confirmed, flush the device with sterile, freshly drawn, or cooled boiled drinking tap water (using an extension set if required) to prevent stomach contents remaining in the device.

24. Put all waste into the waste bag.

25. Remove gloves and aprons and dispose of them into the waste bag. This can be disposed of in the domestic waste, in the home situation.

26. Wash hands with liquid soap and water, dry thoroughly with disposable paper towels.

27. Document device details, position confirmation, and any further relevant information in patient records.
5 ADMINISTRATION OF FEEDS VIA ENTERAL FEEDING TUBES/DEVICES

5.1 Administration of bolus feed and/or fluid via an enteral feeding tube

Resources
- Enteral syringe(s) of appropriate size(s)
- (Bolus gravity sets may be required for specific patients)
- Supply of feed
- pH indicator paper or strip (for nasogastric tubes only) and colour match chart
- Water in accordance with feed plan
- Personal protective equipment non sterile powder free nitrile gloves, disposable plastic apron
- Nutritional plan from dietitian
- Appropriately trained carer

1 Check Dietitian’s information for type of feed and feed requirements. Collect and prepare all equipment required in clean area. Check feed type and expiry date – if feed expired or has been open for longer than 24 hours then discard. Shake the feed to disperse any sediment.

2 Explain the process to the patient and obtain consent. If the patient is unable to give valid consent refer to their care plan for ‘consent’

3 Wash hands with liquid soap and running water. Dry hands thoroughly, with disposable paper towel. Put on powder-free disposable nitrile gloves and plastic apron

4 Check the tube
   - Nasogastric tubes should be secured correctly and there should be no pressure damage to the nostril. If it is not secured adequately consider cleaning the skin with an alcohol wipe (note patient’s allergies) to remove grease from the skin before replacing the dressing/tape
   - Gastrostomy devices may have more than one port. The carer must ensure they are aware of the correct port for administering feed or fluid.

5 Confirm correct position of the tube - Nasogastric tubes only:
   ** Administering feed through a misplaced nasogastric tube is defined as a ‘never event’ – See NPSA/2011/PSA002 and NPSA/2012/RRR001**

   Confirm correct position of tube, to ensure it has not become misplaced since previous use.
   a) Undertake a visual check of the tube position by comparing the length of visible tube with details from the patient’s records
   b) Aspirate 2-3mls* of gastric contents using a 60ml enteral syringe and testing on pH paper. The result should be pH 5.5** or below.
   * unless otherwise specified in patient’s care plan

   ** Note In some individuals it is recognised that there will always be a reading greater than pH 5.5 as a result of their condition. In these cases a risk assessment
may be done if agreed appropriate (not on initial tube placement), and the rationale for continuing to administer feeds or other fluids will be documented in the patient’s record.

  c) Document results of aspirate testing in notes

Once it has been safely determined that the tube is in the correct position feeding may
Commence, following feed plan.

**During feed administration, the position of the tube should be re-checked**

- On recommencement of feeds following an interruption,
- Following episodes of vomiting, retching or coughing spasms (the absence of coughing does not rule out misplacement or migration);
- Where there is suggestion of tube displacement (for example, loose tape or portion of visible tube appears longer);
- In the presence of any new or unexplained respiratory symptoms or reduction in oxygen saturation.

<table>
<thead>
<tr>
<th>6</th>
<th>Ensure the patient is positioned correctly for feeding, in an upright position or with the upper body elevated to a minimum of 30° angle, to reduce the risk of reflux, regurgitation and aspiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Flush the tube with sterile, freshly drawn drinking tap water or cooled boiled drinking tap water (type and amount as advised by the dietitian)</td>
</tr>
</tbody>
</table>
| 8 | If feeding using a syringe with a plunger:
  - Draw up the required amount of feed in to the syringe and attach the syringe to the tube.
  - Gently push the plunger to administer the feed slowly.
  - Repeat as necessary to complete the feed |
| If gravity feeding using a syringe:
  - Using an appropriate sized syringe (e.g. 60ml), remove the plunger from the syringe and attach the ‘chamber’ to the tube.
  - Pour an appropriate quantity of feed into the syringe.
  - Hold the syringe and allow the feed to run through the tube. If the feed is running too slowly, raise the syringe a little. If running too quickly, hold the syringe at a lower level.
  - Repeat as necessary to complete the feed |
| If using a syringe and the feed does not run through the tube, try using the plunger gently to administer the feed (see above) |
| In specific situations, if using a bolus gravity set:
  - Close the roller clamp on the tubing
  - Pour an appropriate quantity of feed into the syringe
  - ‘Prime’ the tubing to remove air, by opening the roller clamp until the feed has reached the end of the tubing
  - Attach the tubing to the tube
  - Open the roller clamp again, and allow the feed to run through the tube. If the feed is running too quickly, hold the syringe at a lower level, or partially close the roller clamp |
Ensure that feed does not run in too quickly. A complete feed should usually take at least 20 minutes (e.g. for adults: 50ml feed should be given over 5 minutes, and for children, please discuss timings of feeds with your dietitian)

9 Once the prescribed quantity of feed has been given, flush the tube as above. Record amounts given (if appropriate).

10 Remove the syringe and replace the cap on the feeding tube.

11 Store any unused feed in the refrigerator. Label with date and time and use within 24 hours or discard. Clean and store equipment items as per manufacturer’s information, and dispose of waste in accordance with Trust Policy. Wash hands thoroughly.

5.2 Administration of a pump assisted feed via an enteral feeding tube

Pump Feeding / Continuous Feeding

Resources
Supply of appropriate giving sets
Supply of feed
pH indicator strips or paper (nasogastric tubes only)
Enteral syringe(s) of appropriate sizes
Water in accordance with feed plan
Nutritional plan from dietitian
Personal protective equipment non sterile powder free nitrile gloves
disposable plastic apron
Pump and stand
 Appropriately trained carer

1 Check Dietitians prescription for type of feed and feed requirements. Collect and prepare all equipment required in clean area. Check feed type and expiry date – if feed expired or has been open for longer than 24 hours then discard. Shake the feed to disperse any sediment.

2 Explain the process to the patient and obtain consent. If the patient is unable to give valid consent refer to their care plan for ‘consent’

3 Wash hands with liquid soap and running water. Dry hands thoroughly, with disposable paper towel. Put on powder-free disposable nitrile gloves and plastic apron

4 Check the tube
- Nasogastric tubes and naso-jejunal tubes should be secured correctly and there should be no pressure damage to the nostril. If it is not secured adequately consider cleaning the skin with an alcohol wipe (note patient’s allergies) to remove grease from the skin before replacing the dressing/tape
• Gastrostomy devices and PEGJ devices may have more than one port. The carer must ensure they are aware of the correct port for administering feed or fluid.

5 Confirm correct position of the tube - Nasogastric tubes only:

** Administering feed through a misplaced nasogastric tube is defined as a ‘never event’ – See NPSA/2011/PSA002 and NPSA/2012/RRR001**

Confirm correct position of tube, to ensure it has not become misplaced since previous use.

a) Undertake a visual check of the tube position by comparing the length of visible tube with details from the patient’s records

b) Aspirate 2-3mls* of gastric contents using a 60ml enteral syringe and testing on pH paper. The result should be pH 5.5** or below.

* unless otherwise specified in patient’s care plan

** Note In some individuals it is recognised that there will always be a reading greater than pH 5.5 as a result of their condition. In these cases a risk assessment may be done if agreed as appropriate (not on initial tube placement), and the rationale for continuing to administer feeds or other fluids will be documented in the patient’s record.

c) Document results of aspirate testing in notes

Once it has been safely determined that the tube is in the correct position feeding may commence, following feed plan.

**During feed administration, the position of the tube should be re-checked**

• On recommencement of feeds following an interruption,
• Following episodes of vomiting, retching or coughing spasms (the absence of coughing does not rule out misplacement or migration);
• Where there is suggestion of tube displacement (for example, loose tape or portion of visible tube appears longer);

In the presence of any new or unexplained respiratory symptoms or reduction in oxygen saturation.

6 Ensure the patient is positioned correctly for feeding, in an upright position or with the upper body elevated to a minimum of 30° angle, to reduce the risk of reflux, regurgitation and aspiration

7 Flush the tube with sterile, freshly drawn drinking tap water or cooled boiled drinking tap water (type and amount as advised by the dietitian)

8 Connect the giving set to the pack or reservoir of feed, and insert the giving set into the pump

9 Prime (expel air from) the giving set

10 Programme the pump to deliver feed at the rate documented on the nutritional plan, and programme a total volume if required

11 Attach the giving set to the patient’s enteral feeding tube, and commence feeding

12 Monitor the patient throughout the feeding period. If patient is left unattended at any time,
ensure they are within ear-shot at all times (e.g. via baby monitor). Overnight feeding via a nasogastric tube is not recommended.

| 13 | On completion of the feed, flush the tube with sterile, freshly drawn drinking tap water or cooled boiled drinking tap water (type and amount as advised by the dietitian). Replace the cap on the enteral feeding tube |
| 14 | Record the volume of feed given if appropriate |
| 15 | Store any unused feed in the refrigerator, or leave the pack of feed connected to the giving set at room temperature with the end cap replaced. If disconnected, label with date and time of opening. Use feed within 24 hours of opening, or discard. Clean and store equipment items as per manufacturer’s information, and dispose of waste in accordance with Trust Policy. Wash hands thoroughly |

### 6. CARE REQUIREMENTS RELATING TO ENTERAL FEEDING TUBES/DEVICES

#### 6.1 General care

Aims of enteral feeding tube care are:
- to maintain correct position of the tube/device,
- maintain patency of the tube/device,
- promote healing of the tract and integrity of the skin around the tube where applicable
- to prevent ‘buried bumper’, (in the case of PEG tubes) where the internal retention device becomes embedded in the stomach wall.
- To prevent infection

On discharge from an acute hospital, staff receiving a patient with an enteral feeding tube should be provided with details of the tube/device type, date of insertion, and any other relevant information. For newly placed tubes, there are specific management requirements. The majority of patients in the community or community hospitals are discharged from UHL. UHL post placement guidance for new devices can be found at:


#### 6.2 Tube care – all tube and device types

| 1 | **Consent:**  
| | Explain all processes to the patient and obtain consent. If the patient is unable to give valid consent refer to their care plan for ‘consent’ |
| 2 | **Infection prevention and control:**  
| | Before any procedure, Wash hands and dry using clean paper towel. Put on powder-free nitrile disposable gloves and disposable plastic apron |
On completion of procedures, after ensuring that the patient is comfortable, remove gloves and apron, dispose of in accordance with Infection Prevention and Control Policy, and wash hands.

<table>
<thead>
<tr>
<th>3</th>
<th>‘Flushing’ tubes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To maintain patency, tubes should always be flushed using cooled boiled drinking tap water, freshly drawn drinking tap water or sterile water in accordance with the nutritional plan, before and after feed/medication administration (and between medicines if more than one is needed), or daily if the tube is not in use.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>Use of clamps:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure that any clamping devices are left unclamped between use, as repeated clamping in the same place will cause indentation and may ultimately damage the tube. If clamping is essential, ensure the position of the clamp is changed regularly.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5</th>
<th>Oral hygiene:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure that oral hygiene is maintained. Plaque deposits can build up even if all nutrition is being administered via the Percutaneous Endoscopic Gastrostomy tube</td>
<td></td>
</tr>
</tbody>
</table>

### 6.3 Care requirements for an established percutaneous endoscopic gastrostomy (e.g. Freka or Corpak) (2 weeks post insertion or as directed by the discharging hospital)

For care requirements of a newly placed PEG, the care regimen provided by the discharging hospital must be followed.

**In the first 3 days after insertion of a new gastrostomy, if there is leakage of fluid around the tube, pain on feeding, or new bleeding STOP THE FEED IMMEDIATELY and contact the hospital where the tube was placed**

**In the event of a traumatic removal of an enteral feeding tube there is always the potential for feed to leak into the peritoneal cavity. It is essential to seek urgent medical advice. See NPSA Signal reference number 1329.**

In addition to the general requirements above (6.2) there are specific daily care requirements for PEG tubes, as follows:

<table>
<thead>
<tr>
<th>1</th>
<th>Prevention of buried bumper:</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the first 2 weeks post placement, see link to UHL policy in 6.1, or refer to guidance from relevant discharging hospital</td>
<td></td>
</tr>
<tr>
<td>After the PEG has been in situ for the length of time specified by the discharging hospital the following should be undertaken:</td>
<td></td>
</tr>
<tr>
<td>Loosen the external fixation device, and free the tubing from the device. Gently advance the tube by approximately 2cm, and rotate it through 360 degrees</td>
<td></td>
</tr>
<tr>
<td>Withdraw the tubing gently, until the internal fixation device can be felt against the</td>
<td></td>
</tr>
</tbody>
</table>
stomach wall, then re-secure the external fixation device onto the tubing, leaving approximately 5mm between the fixation device and the skin. Correct positioning is important to prevent both leakage and buried bumper, in addition to minimising discomfort and the potential for skin breakdown.

2 Stoma care:

While the fixation device is moved away from the skin as above, clean around the stoma site with non-perfumed hypoallergenic soap and fresh tap water, using a cloth that is kept for this purpose only, or gauze that does not shed fibres. (NNNG 2013). Dispose of waste in accordance with LPT Infection Prevention and Control Policy overarching Policy July 2015

It is important also to clean the back of the external fixation device to prevent soreness and infection. Dry thoroughly

Check stoma site for signs of swelling, leakage, redness, irritation, skin erosion or soreness. If present, consider reporting to medical staff / GP. Swab the site and send for culture and sensitivity if bacterial/fungal infection is suspected.

Do not use creams/ointments or powders around the tube or stoma, unless medically prescribed. Some creams will cause the tube to deteriorate, and powders may accumulate in the stoma.

3 Maintaining patency:

Gastric tubes can usually be flushed with sterile, freshly drawn drinking tap water or cooled boiled drinking tap water, type and volume as per the nutritional plan.

4 Comfort:

If patient complains of pain at tube site, check that the external fixation device has not been positioned too tightly against the skin. Seek advice from the discharge contact from acute hospital or GP in the absence of an obvious cause of discomfort.

6.4 Care requirements related to an established balloon retained gastrostomy tube (2 weeks post insertion or as directed by the discharging hospital)

For care requirements of a newly placed balloon retained gastrostomy device, the care regimen provided by the discharging hospital must be followed.

Where abdominal traction sutures (or T fasteners) are used, these should be removed at day 14 post placement (UHL June 2016)

In addition to the general requirements above (6.2) there are specific daily care requirements for balloon retained devices, as follows:
1 **Tube care:**

Once the gastrostomy device has been in situ for the length of time stated by the discharging hospital, and any T fasteners have been removed, it is important to check the volume of water in the balloon on a weekly basis. Correct inflation of the balloon prevents the tube falling out. Ideally this process should be carried out using a two person technique, in order that a second person ensures the tube is not dislodged during the procedure:

- Check the volume of water required
- Move the external fixation disc away from the skin, and advance the tubing by approximately 2cm. This helps to avoid accidental displacement when the balloon is deflated
- Using an empty IV 5ml syringe, withdraw all the water from the balloon, noting the volume
- Using a second syringe pre-filled with the required volume of sterile, or cooled boiled water, re-inflate the balloon
- Withdraw the tube until the balloon can be felt in contact with the stomach wall
- Slide the fixation disc until it is positioned comfortably against the skin

2 **Stoma care:**

While the fixation device is moved away from the skin as above, clean around the stoma site with non-perfumed hypoallergenic soap and fresh tap water, using a cloth that is kept for this purpose only, or gauze that does not shed fibres. (NNNG 2013). Dispose of waste in accordance with LPT Infection Prevention and Control Policy

It is important also to clean the back of the external fixation device to prevent soreness and infection. Dry thoroughly.

Rotate the tube through 360 degrees within the stoma on a daily basis, to prevent it adhering to the skin

Check stoma site for signs of swelling, leakage, redness, irritation, skin erosion or soreness. If present, consider reporting to medical staff / GP. Swab the site and send for culture and sensitivity if bacterial/fungal infection is suspected.

Do not use creams/ointments or powders around the tube or stoma, unless medically Prescribed. Some creams will cause the tube to deteriorate, and powders may accumulate in the stoma.

3 **Maintaining patency:**

Gastric tubes can usually be flushed with sterile, freshly drawn drinking tap water or cooled boiled drinking tap water, type and volume as per the nutritional plan.

4 **Comfort:**

If patient complains of pain at the site, refer to the discharge contact from the acute hospital or GP in the absence of an obvious cause of discomfort.
6.5 Care requirements related to an established percutaneous endoscopic gastrostomy with jejunal extension tube (PEGJ tube) (2 weeks post Insertion or as directed by the discharging hospital)

For care requirements of a newly placed PEGJ, the care regimen provided by the discharging hospital must be followed.

In addition to the general requirements above (6.2) there are specific daily care requirements for PEGJ devices, as follows:

<table>
<thead>
<tr>
<th></th>
<th>Prevention of buried bumper:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Loosen base plate/external fixation device.</td>
</tr>
<tr>
<td></td>
<td>Push the tube in 1 - 2cm. <strong>Do not rotate the tube</strong></td>
</tr>
<tr>
<td></td>
<td>Pull the tube back until internal fixation device can be felt on the stomach wall then re-fix the external fixation device on the skin leaving approximately 5mm of movement</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Stoma care:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Clean around the stoma site with non-perfumed hypoallergenic soap and fresh tap water, using a cloth that is kept for this purpose only, or gauze that does not shed fibres. (NNNG 2013). Dispose of waste in accordance with LPT Trust Infection Prevention and Control Policy</td>
</tr>
<tr>
<td></td>
<td>It is important to clean the back of the external fixation device to prevent soreness and infection</td>
</tr>
<tr>
<td></td>
<td>Dry thoroughly</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Maintaining patency:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>The jejunal tube within this device must be flushed with sterile, or cooled boiled water. Freshly drawn drinking tap water may be used for the gastric port, if preferred. Refer to the nutritional plan for the type and volume of water</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Comfort:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>If patient complains of pain at site, check that the external fixation device has not been positioned too tightly, but refer to the discharge contact from acute hospital or GP in the absence of an obvious cause of discomfort.</td>
</tr>
</tbody>
</table>

6.6 Daily care process for an established jejunostomy tube (2 weeks post insertion or as directed by the discharging hospital)

For care requirements of a newly placed jejunostomy tube, the care regimen provided by the discharging hospital must be followed.

In addition to the general requirements above (6.2), there are specific daily care requirements for jejunostomies, as follows:
1 Tube care:
Jejunostomy tubes must not be rotated
Follow manufacturer’s guidance relating to the external fixation device

2 Stoma care:
Clean around the stoma site with non-perfumed hypoallergenic soap and fresh tap water, using a cloth that is kept for this purpose only, or gauze that does not shed fibres. (NNNG 2013). Dispose of waste in accordance with LPT Infection Prevention and Control Policy.
If the tube is secured using tape this will need replacing on a daily basis.
It is important to clean the back of the external fixation device, if present
Gently dry thoroughly and allow to ‘air’ dry for a few minutes

3 Maintaining patency:
Flush the tube with sterile, or cooled boiled water as per the nutritional plan provided by the dietitian

4 Comfort:
Any sutures at the stoma site and the external fixation device should be checked regularly.
If patient complains of pain at the site, refer to the discharge contact from the acute hospital or GP in the absence of an obvious cause of discomfort.

7 USE AND RE-USE OF EQUIPMENT
7.1 Giving sets
Giving sets are single use for up to 24 hours
If used with a sterile feed (ready to hang or decanted) – use for up to 24 hours.
If the patient requires more than one pack of feed during a 24 hour period, a second pack can be connected to the existing giving set, observing the usual ‘no touch’ precautions. If there is a break in the feeding period, disconnect the giving set from the patient’s tube and cover the end with the cap provided. Leave the other end connected to the empty pack until the second pack is required.
If used with non-sterile feeds - a new giving set is required for each feeding period

7.2 Reservoirs
Reservoirs manufactured for enteral feeding are for single use, for up to 24 hours.
If used with sterile feeds, decant sufficient volume to avoid opening the reservoir during the
feeding period, and use for up to 24 hours.

If used with non-sterile feeds, use a new reservoir for each feeding period.

The use of baby bottles for smaller volumes of sterile or non-sterile feed is common practice, and these may be washed (and disinfected if necessary) using normal infant feeding guidelines.

7.3 Enteral syringes
Enteral syringes used in hospital inpatient settings are ‘single use’ and therefore unsuitable for cleaning, whereas those in the home environment are for ‘single patient use’ and should be cleaned using hot water containing domestic washing up liquid, in accordance with manufactures’ instructions.

For infants under 6-12 months (depending on individual circumstances) enteral syringes should also be disinfected using either a disinfectant solution or steam sterilising, as per manufacturers’ instructions. Disinfecting is also required for patients feeding into the jejunum.

7.4 Connectors
Connectors should be used only when essential, and cleaned/stored between uses (where appropriate) using hot water containing domestic washing up liquid, rinsed and stored as for ‘single patient use’ syringes.

For infants under 6-12 months (depending on individual circumstances) connectors should also be disinfected using either a disinfectant solution or steam sterilising, as per manufacturers’ instructions. Disinfecting is also required for patients feeding into the jejunum.

7.5 Extension sets
These are typically ‘single patient use’ and should be washed using hot water containing domestic washing up liquid, rinsed and stored as for ‘single patient use’ syringes. Both ends of the extension set should be thoroughly cleaned, and any excess water shaken from the tubing prior to storage. Refer to manufacturer’s information.

For infants under 6-12 months (depending on individual circumstances) extension sets should also be disinfected using either a disinfectant solution or steam sterilising, as per manufacturers’ instructions. Disinfecting is also required for patients feeding into the jejunum.

7.6 Equipment in other care settings
Where single patient use equipment is used in settings such as care homes, schools, respite settings etc., care must be taken to adhere to the ‘single patient use’ requirement. This will necessitate cleaning each client’s equipment separately from that used for other clients, and potentially labelling syringes with an indelible pen, and/or storing each client’s equipment in a clean labelled container designated for that individual.

7.7 Retrieval of equipment from patients’ homes
When a patient discontinues enteral feeding at home, some items may be retrieved and returned to the HENS equipment supplies. Others require disposal.

**Enteral feed pumps and stands**
These are the property of the contracted home delivery company, and should be collected by the company directly from the family where possible, not returned to the HENS office. The company is responsible for cleaning all pumps in accordance with agreed protocol, prior to re-issue. If it is necessary to return these items to the HENS office, put the pump and stand in a large carrier bag to avoid contamination of car or office surfaces.

**Ancillary items**
The sealed, clean contents of unopened boxes of ancillaries may be returned to the HENS office for use, following the procedure below:

a) Prior to bringing items into the office:
Open a carrier bag,
Put on gloves,
Fully open the box of ancillaries,
Remove gloves and transfer the contents of the box to the carrier bag, without touching the outside of the box,
Transport ancillaries to the office in the carrier bag

b) Once in the office,
Remove the supplies from the carrier bag, and store.
Discard the carrier bag

8 **ADMINISTRATION OF MEDICATION VIA ENTERAL FEEDING TUBES**

This section must be read in conjunction with the Leicestershire Medicines Code, including sections on the Administration of medicines, and Covert Administration of Medicines

Additional information can be obtained from BAPEN guidelines - Drug administration via Enteral Feeding Tubes (2004)

The vast majority of medicines are not licensed for administration via an enteral feeding tube. However, for some individuals this is the only route that they can safely receive medicines. In the first instance advice should be sought from the pharmacist to ensure that the correct preparation is available to administer via an enteral tube. See the ‘Selection ladder’ below. It may be possible to obtain liquid preparations for enteral administration.

If the patient is prescribed more than one medication there should be a separate flush of cooled boiled drinking tap/sterile water or freshly drawn drinking tap water between each medication in addition to a flush before and after medication.

It is important to check drug/feed interactions before commencing drug administration as the actions of some drugs are affected by feed. It may be necessary to cease a feed 30 minutes prior to the administration of certain drugs. For further information, contact the
Principles for the administration of medication via enteral feeding tubes

1. Carry out a comprehensive medication review to ensure that only essential medications are given.
2. Check the medication is available in a suitable preparation for administration via enteral feeding tube.
3. An Enteral syringe of appropriate size for the dose of medication must be used. IV syringes must not be used for this purpose.
4. If a suitable preparation is unavailable, refer to the selection ladder below.
5. Follow the LMC chapter on administration of medicines in community.
6. Ensure that a flush of cooled boiled water, freshly drawn drinking tap water or sterile water as indicated on nutritional plan is administered before and after each mediation to be given via enteral feeding tube.
7. Medicines must not be added to feed.
8. Where an enteral feeding device has more than one port, ensure the correct port for medication administration is identified. Caution is needed where a patient has a PEGJ (which has both a gastric and jejunal port).
9. Where a patient has a jejunostomy tube, check with a pharmacist that medication is suitable for administration directly into the small bowel.
10. Some viscous medication may need dilution to facilitate administration.

Selection ladder

1. Use commercially formulated liquids where available — formulation studies will have been done to maximise stability.
2. If not available use soluble/dispersible tablets.
3. If neither of the above are available, seek pharmaceutical advice on whether the tablets may be safely crushed, or the capsule opened and the contents dissolved.

Do not crush the following formulations:

- Coated tablets – The coatings can cause the suspension to be ‘gritty’ and may lead to tube blockages.
- Sustained release tablets (labelled S/R or M/R) – The slow release characteristics may be lost and toxic level of medication may result.
- Hard gelatine capsules – The capsule shell will not form a suspension, and is likely to block the tube.
- ‘Spansules’- sustained release capsules – The slow release characteristics may be lost.

9. TROUBLE SHOOTING GUIDE FOR ESTABLISHED GASTROSTOMY AND NASOGASTRIC TUBES

<table>
<thead>
<tr>
<th>Complication</th>
<th>Potential causes</th>
<th>Suggested actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blocked tube</td>
<td>Inadequate flushing causing feed or medication to become ‘clogged’ in tube</td>
<td>- Check tube not trapped or clamps closed</td>
</tr>
<tr>
<td></td>
<td>- Flush tube regularly to prevent this, before and after all feeds and medications, and between medication if multiple medications are required at the same time</td>
<td>- Attempt to instill 10-15mls water as used for flushes using a 60ml oral / enteral syringe. Leave for a few minutes before trying to flush the tube again</td>
</tr>
<tr>
<td></td>
<td>- Follow guidelines for giving medication via tubes, to avoid this</td>
<td>- If this fails, instill 10-15mls soda water or 1 teaspoon of bicarbonate of soda in 15ml of water (as used to flush tube). Leave for a few minutes before trying the tube again.</td>
</tr>
<tr>
<td></td>
<td>- For consistent blocking contact seek advice regarding possible cause of blockage</td>
<td>- Massage the blockage to help it disperse by gently rolling the tube between thumb and forefinger.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Instill a solution of pancreatic enzymes (contact pharmacy for advice)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Try unblocking the tube by flushing with warmed water as used for flushes, using a gentle push / pull motion on the plunger of a 60ml oral / enteral syringe to help dislodge the blockage (White &amp; Bradnam 2007). Do not use a smaller size syringe as this will exert too much pressure and could cause the tube to rupture.</td>
</tr>
</tbody>
</table>

Do not:
- use acidic solutions e.g. cola or juice, as this may lead to further feed coagulation.
- use excessive force as this can rupture the tube.
- use a guide wire to attempt to unblock a blocked tube

If unsuccessful, contact HENS, dietitian, Diana Service, UHL children’s Daycare or Emergency Department, as appropriate to the age of the patient.
<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balloon failure in a balloon retained gastrostomy</td>
<td>- Age of tube&lt;br&gt;- Excessive volume of water in the balloon&lt;br&gt;- Medications&lt;br&gt;- Persistent retching, vomiting or coughing</td>
<td>Leave tube in situ until replacement tube available. Tape in place to retain in stoma. Contact HENS, Diana Service (if patient is in their care) or Emergency Department. If balloon failure leads to tube falling out:  &lt;ul&gt;  - If appropriately trained, insert replacement balloon retained gastrostomy tube,&lt;br&gt;  - If not trained to replace the tube, insert temporary tube if this has been provided, and contact Diana Service/ HENS, attend Hospital, or contact carer to have new tube inserted.&lt;br&gt;  - If neither of the above possible, apply a dry dressing to stoma site and contact Diana Service or HENS, attend hospital or contact carer.  &lt;/ul&gt; <strong>This is not a medical emergency but prompt action is required to avoid closure of the stoma, which may occur within 2 – 4 hours.</strong></td>
</tr>
<tr>
<td>Bleeding, soreness or ulceration visible in the nasal cavity (NG tubes)</td>
<td>Nasogastric tube trauma, pressure damage from tube on nostril</td>
<td>Review position of tube and fixation tape, and seek medical advice</td>
</tr>
<tr>
<td>Constipation</td>
<td>Inadequate fluid/dehydration&lt;br&gt;Inadequate fibre&lt;br&gt;Medications&lt;br&gt;Motility disorders</td>
<td>- Ask dietitian / HENS to review feed/fluid regime.&lt;br&gt;  - Administer laxatives as prescribed.&lt;br&gt;  - Consider medication as a cause&lt;br&gt;  - Start a Bristol stool chart.&lt;br&gt;  - Give extra water as flushes (liaise with dietitians / HENS) providing that the patient is not on restricted fluids.</td>
</tr>
<tr>
<td>Damage to replaceable adapter, fixation plates</td>
<td>Poor technique when applying syringes, inaccurate syringe use, patient / carer ‘pulling’ at connections</td>
<td>- If trained, replace relevant connections –&lt;br&gt;  - If not appropriately trained or replaceable parts not available contact HENS / dietitian</td>
</tr>
<tr>
<td>Condition</td>
<td>Potential Causes</td>
<td>Recommendations</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Dehydration                                    | Inadequate fluid intake  
Increased fluid losses  
e.g. diarrhoea, stomal losses, vomiting | - Ensure that all prescribed fluids are given and documented.  
- Discuss with GP / doctor / ANP.  
- Liaise with dietitians / HENS regarding fluid requirement calculations to determine if there is a need for additional fluid.  
- Monitor fluid balance. |
| Diarrhoea (Some patients who are enterally fed may have looser stools due to a liquid diet) | Antibiotics, Laxatives  
Sorbitol content of drugs  
Bolus feeding or too rapid infusion rate  
Malabsorption  
Overflow diarrhoea  
as a result of constipation  
Bacterial or viral infection  
Poor hygiene procedures  
Hyperosmolarity of feed | - Review antibiotic therapy.  
- Stop laxatives, if appropriate.  
- Ask GP / doctor / ANP to review drugs.  
- Ask dietitian / HENS to review feeding rate and feed type  
- Start a Bristol stool chart.  
- Liaise with infection control nurse, if appropriate.  
- Review hygiene procedures  
- Provide reassurance to patient and use barrier cream. |
| Dry mouth                                      | Inadequate / infrequent mouth care                                               | - Soft paraffin, commercial lip salves can be used on lips.  
- Water based gels or sterile lubricating jelly can be used to lubricate tongue and inside of the mouth – caution in patients who are nil by mouth.  
- Crushed ice, ice cubes, sugar-free gum can be suggested if there is no risk of aspiration.  
- Artificial saliva may be prescribed by a doctor or dentist.  
**Not recommended:**  
- Lemon and glycerin swabs – lemon is acidic which harms soft tissues and teeth.  
- Sucking sweets as this can lead to dental decay. |
| Difficulty in managing oral secretions          | Poor swallow  
Poor lip seal  
Disease progression | - Seek medical advice if necessary |
<p>| Feed pump alarming                             | See manufacturer’s instructions                                                  | See manufacturer’s instructions |</p>
<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
<th>Measures</th>
</tr>
</thead>
</table>
| Leakage around gastrostomy or jejunostomy stoma | Tube displaced Stoma site enlarged Delayed gastric emptying                  | - If balloon retained gastrostomy, check balloon water volume  
N.B. Follow manufacturer's guidelines, i.e. maximum volume in balloon  
If continual leakage occurs, seek advice From HENS/Diana service  
- Check position of fixation device ensuring good fit to skin.  
- Assess effect on stoma site i.e. irritation and treat accordingly.  
- Check the tube has not become displaced into the fistula tract (this can be done by checking that it is moving freely in/out and around in the tract).  
- Contact dietitian / HENS Diana Service / GP / doctor / Tissue Viability for advice on appropriate creams and dressings. A barrier cream may be beneficial in protecting the skin from the effect of acid fluid leakage  
Note: occasional slight leakage is not clinically significant.  
If the tube is newly placed please refer back to the clinician who placed the tube. |
| Nausea, bloating, vomiting         | Too rapid infusion rate  
Constipation  
Delayed gastric emptying  
Hyper/hypoglycaemia  
Other causes unrelated to enteral feeds | - Reduce feed rate or discontinue feed and refer to GP / doctor / ANP  
- Ask dietitian / HENS to review feeding regimen.  
- Treat constipation.  
- Administer anti-emetics as prescribed / use of prokinetic drugs.  
- Ensure head of bed is elevated by 30 degrees.  
- Check blood glucose when nauseous. |
| Pain and discomfort around stoma   | Acute pain could result from tube displacement  
External fixation disc too tight  
Infection at site, abscess  
Poor hygiene  
Leakage of acidic stomach contents onto the skin | - Check that external fixation disc is not over tightened. Do not loosen a device in a newly formed stoma without first consulting the dietitian.  
- Obtain swab for microbiology culture and sensitivity if red / oozing.  
- Administer analgesics as prescribed.  
- Monitor temperature six hourly.  
- If the tube is a gastrostomy and has |
<table>
<thead>
<tr>
<th>Condition</th>
<th>Symptom Description</th>
<th>Management</th>
</tr>
</thead>
</table>
| Regurgitation Pulmonary aspiration            | Patient lying flat Delayed gastric emptying Tube displacement                          | - Monitor for breathlessness and temperature, which may indicate feed in the lung – if evident discontinue feed and refer to GP / doctor  
- Slow feed rate  
- Check tube position.  
- Elevate head of bed by 30 degrees. (Bed should already be elevated)  
- Check for constipation  
- Refer to GP / doctor  
- Other measures to improve gastric motility such as pro-kinetic agents (e.g. Metoclopramide) may be useful. |
| Respiratory changes (with NG tube) cyanosis, unexplained confusion, hypoxia, respiratory distress, or chest infection | Nasogastric tube has become displaced                                                  | Stop feed and seek urgent medical advice  
Monitor for tachycardia, tachypnea or dyspnea, and pyrexia  
Check NG tube position |
| Skin integrity compromised (NG tube) by adhesive or tube pressure | Nasogastric tube taped to tightly to nostril causing pressure damage  
Overuse of tape to secure nasogastric tube to face                               | - Check tape and consider replacing type of tape used  
- Consider whether NG should be changed to other nostril to allow healing  
- Consider the use of a Hydrocolloid dressing under the tube to reduce the risk of pressure |
| Stoma site sore/red                           | Over-granulation Infection  
Irritation due to leakage of gastric fluid  
External fixation device not correctly positioned Poor fitting tube                | - Review skin hygiene procedures.  
- Ensure external fixation device is in the correct position.  
See 'leakage around stoma site  
- If exudates present swab and contact GP / doctor for appropriate medical advice.  
- Contact dietitian / HENS / Diana service/ |
<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
<th>GP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trapped wind</td>
<td>This can be done prior to every feed if necessary but never following a feed / medication</td>
<td>- Open gastrostomy tube – If you have a button you will need to attach the correct extension set. Sit the patient upright or turn onto their right side. <strong>Do not press on the stomach as this may damage the balloon retainer</strong>&lt;br&gt;- Allow any trapped wind to be vented in this way for approximately 5 – 10 minutes.&lt;br&gt;- Remove any extension tubing and close the gastrostomy tube.</td>
</tr>
<tr>
<td>Trauma on reinsertion of balloon retained gastrostomy</td>
<td>Excessive force used&lt;br&gt;Tube not reinserted soon enough after removal of previous tube</td>
<td><strong>Do not use tube</strong>&lt;br&gt;Seek medical advice to ensure that the tube is correctly placed before commencing feeding – this may require an x-ray. See NPSA signal 1329</td>
</tr>
<tr>
<td>Tube is pulled out</td>
<td>Tube removed with trauma. i.e. pulled out with retention device intact</td>
<td><strong>If the tube is a balloon retained tube, trauma could still result if the balloon is still intact and so medical advice is required</strong></td>
</tr>
<tr>
<td>Tube splits</td>
<td>Excessive force in use or unblocking&lt;br&gt;Age of tube&lt;br&gt;Repeated use of clamp</td>
<td>- For PEGs it may be possible to shorten the tube and replace the adaptor – see manufacturers guidelines&lt;br&gt;- For balloon gastrostomy, the tube may need replacing. Contact HENS, ED or person identified as competent to replace the gastrostomy.</td>
</tr>
<tr>
<td>Unable to aspirate gastric content for NG tube</td>
<td>Tube may not be correctly positioned</td>
<td>See section 4.2</td>
</tr>
<tr>
<td>Vomiting of blood / blood stained fluid</td>
<td>Possible gastric irritation caused by pressure from the tip of the tube in the stomach&lt;br&gt;NG tube trauma&lt;br&gt;Other cause unassociated with enteral feeding</td>
<td><strong>Do not use the tube</strong>&lt;br&gt;Seek medical advice.</td>
</tr>
</tbody>
</table>
10 MONITORING
10.1 Monitoring of inpatients on enteral tube feeding

Monitoring is important to ensure administration of nutrition support is effective and safe, and
to detect and treat any complications. Individual monitoring plans will take into consideration
the underlying diagnosis of the patient and route of feeding.
In addition to the monitoring required which is specific to the route of feeding (e.g.
confirming position of the nasogastric tubes prior to use), the following general monitoring is
required for all patients on enteral tube feeds. This only refers to inpatients not short break
care unless there are clinical indications that there are problems with tolerance.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency</th>
<th>Rationale</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hydration status - assess by the following:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Urine output - colour/frequency</td>
<td>Daily</td>
<td>To monitor hydration status</td>
<td>Nurse</td>
</tr>
<tr>
<td>1.2 Thirst</td>
<td>Daily</td>
<td></td>
<td>Nurse</td>
</tr>
<tr>
<td>1.3 Skin turgor</td>
<td>Daily</td>
<td></td>
<td>Nurse</td>
</tr>
<tr>
<td>1.4 Mucous membranes</td>
<td>Daily</td>
<td></td>
<td>Nurse</td>
</tr>
<tr>
<td>1.5 Fluid balance charts</td>
<td>Daily</td>
<td></td>
<td>Nurse</td>
</tr>
<tr>
<td>1.6 Blood biochemistry (urea, creatinine, sodium, potassium)</td>
<td>As indicated by clinical assessment</td>
<td></td>
<td>Doctor</td>
</tr>
<tr>
<td>2. Nutrient intake from oral and enteral nutrition,</td>
<td>Daily</td>
<td>To ascertain whether nutritional requirements are being met, and allow alteration of feed/diet as indicated</td>
<td>Nurse and dietitian</td>
</tr>
<tr>
<td>2.1 fluid balance charts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2 oral fluid/food charts as appropriate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Nutritional status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1 Weight/BMI</td>
<td>On admission, and weekly thereafter, or as requested by the dietitian</td>
<td>To assess nutritional status and see if nutritional needs are being met. Revision of nutrition plan if required.</td>
<td>Nurse (Dietitian for proxy measures e.g. mid upper arm circumference)</td>
</tr>
<tr>
<td>3.2 Proxy measure if Unable to weigh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Gastrointestinal (GI) function (nausea, diarrhoea, constipation, abdominal distension) (establish frequency and consistency of stools using Bristol stool chart)</td>
<td>Daily</td>
<td>To assess feed tolerance</td>
<td>Nurse/Dietitian</td>
</tr>
<tr>
<td>5. Medication chart</td>
<td>Daily / when medications are reviewed/</td>
<td>To ensure preparation and route of absorption is appropriate for tube type.</td>
<td>Doctor/Pharmacist/Dietitian</td>
</tr>
<tr>
<td>6.</td>
<td>Patient’s appearance / basic observations such as: Temperature, pulse, respiration In accordance with nursing protocol</td>
<td>Depending on clinical condition as per clinical assessment</td>
<td>To help assess overall condition To observe for changes in clinical condition which may relate to route and type of feed</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>7</td>
<td>Enteral feeding tube – parameters as relevant to the specific device, may include position, insertion site, tube integrity, balloon water volume, fixation device position, rotating tube etc</td>
<td>As relevant to specific device</td>
<td>To maintain safety, comfort, and tube /skin integrity, as applicable</td>
</tr>
</tbody>
</table>

Other parameters/more intensive monitoring may be required for individual patients (particularly new patients commencing enteral feeds). The Dietitian will liaise with the ward medical/nursing teams to discuss monitoring on an individual basis.

Further information is available from NICE - Nutrition support in adults (2006), and BAPEN

### 10.2 Monitoring patients at home on enteral tube feeding

The HENS team is responsible for ongoing nutritional monitoring for patients receiving enteral tube feeding at home. Monitoring will be undertaken as a combination of telephone contact and visits, and frequency will vary according to individual circumstances, but may range from weekly to a maximum of 6 monthly.

The following will be monitored at routine contacts:

- Anthropometry as applicable to age and individual circumstances
- Nutritional and fluid requirements and current intake (oral and enteral if applicable)
- Appropriateness of current feed method(s) to individual circumstances
- Gastro-intestinal function and feed tolerance
- Tube management (and stoma care where relevant), identifying and advising appropriate interventions if needed
- Equipment and enteral feed supplies – requirements and arrangements
Changes in social situation that may necessitate involvement of different carers, or regimen changes (BAPEN)

The HENS team will liaise with other agencies involved with feed administration, to ensure ongoing communication regarding enteral nutrition regimen and requirements.

11 INITIATING ENTERAL TUBE FEEDS IN COMMUNITY HOSPITALS, AND THE COMMUNITY

All patients due to commence enteral tube feeding within LPT hospitals should be referred to the dietician for assessment of requirements and design of a feeding regimen. The dietician will review the patient within 2 working days from date of referral. Ideally enteral tube feeding should not commence until the dietician has assessed the patient. When selecting the type of feed to be given, consideration should be made to the patient’s beliefs and cultural needs to avoid causing distress.

The following information will be required:
Weight (if possible)
Height
BMI (kg/m²)
Record of dietary intake (if applicable)
Weight history (i.e. weight change over the past 3-6 months)

The above information will enable calculation of fluid and nutritional requirements, and determine risk of re-feeding problems on initiating feeding.

12 RE-FEEDING SYNDROME

12.1 Background information

Re-feeding syndrome is defined by Solomon and Kirby (1990) as severe fluid and electrolyte shifts and related metabolic complications in malnourished patients undergoing re-feeding.

Re-feeding problems encompass life-threatening acute micronutrient deficiencies, fluid and electrolyte imbalance, and disturbance of organ function and metabolic regulation that may result from over-rapid or unbalanced nutrition support. They can occur in any severely malnourished individuals, but are particularly common in those who have had very little or no food intake, including overweight patients who have eaten nothing for protracted periods.

Enteral tube feeding can precipitate re-feeding problems, which can be exacerbated if the products do not include adequate vitamins, phosphate or electrolytes (NICE, 2006).

Prior to initial feeding tube insertion the risk of re-feeding syndrome should be assessed as per local guidelines. For more information on re-feeding syndrome see NICE Guidelines 32.
12.2 **Identification of re-feeding risk**

Any individual, who has had little or no food for 5 days or more, has a history of weight loss, low BMI, history of alcohol abuse or requires certain drugs will be at risk of re-feeding problems on starting enteral feeds.

The following guidance may be utilised, or in specific circumstances the Management of Really Sick Patients with Anorexia Nervosa (MARSIPAN) guidance may be deemed more appropriate for inpatients under the care of the Adult Eating Disorders Service.

Refer to joint medical and nursing checklist for identifying potential risk factors for development of re-feeding problems - Appendix 2.

12.3 **Criteria for identifying adult patients at risk of developing re-feeding problems**

<table>
<thead>
<tr>
<th>Level of risk</th>
<th>Criteria to determine risk</th>
<th>Commencing feeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>At risk</td>
<td>Little or no food for more than 5 days (but does not fall into the high risk category)</td>
<td>Nutrition support should be introduced at no more than 50% of requirements for the first two days, before increasing feed rates to meet full needs if clinical and biochemical monitoring reveal no re-feeding problems. Refer to Dietitian prior to commencing feeds. If Dietitian unavailable use the starter regimen for patients at risk of re-feeding problems see 13.2</td>
</tr>
</tbody>
</table>
| At High risk  | **ONE or more of the following:**  
- BMI less than 16 kg/m²  
- unintentional weight loss greater than 15% within the last 3-6 months  
- little or no nutritional intake for more than 10 days  
- low levels of potassium, phosphate or magnesium prior to feeding  
- **Or TWO or more of the following:**  
  - BMI less than 18.5 kg/m²  
  - unintentional weight loss greater than 10% | **Patients at high risk require:**  
- Provision of oral Thiamine 200 – 300mg daily, vitamin B compound strong 1 or 2 tablets, three times a day (or full dose daily intravenous vitamin B preparation, if necessary), and a multivitamin and trace element supplement once daily  
- Supplementation of potassium, phosphate and magnesium from the onset of feeding, according to blood levels.  
- Initiation of enteral feeds at 10kcal/kg, increasing intake slowly over 4-7 days  
- Regular biochemical monitoring with further supplementation of potassium, phosphate and magnesium as determined by blood levels  
Refer to Dietitian prior to commencing |
within the last 3-6 months
☐ little or no nutritional intake for more than 5 days
☐ a history of alcohol abuse
☐ drugs including insulin, chemotherapy, antacids or diuretics

feeds. The dietitian can advise on re-feeding risk but cannot initiate the inpatient prescription (except some dietitians covering the stroke units). The medical team and Advanced Nurse Practitioners will need to monitor blood biochemistry.
If Dietitian unavailable use the guidelines for patients at high risk of re-feeding problems (see 13.3)
Agree with medical staff if the patient can be safely managed in a community hospital. The patient will need to be referred back to UHL/acute hospital if unsafe to manage in the community and this needs recommending by medical staff.

<table>
<thead>
<tr>
<th>Not at risk</th>
<th>patients who do not fall into the ‘at risk’ or ‘high risk’ categories</th>
<th>Introduce feeds in accordance with information in the ward nutrition resource folder</th>
</tr>
</thead>
</table>

NICE 2006, UHL 2016, PEN Group 2011

13 COMMENCING ENTERAL TUBE FEEDS FOR ADULT INPATIENTS

13.1 Adult patients not at risk of re-feeding problems

- Refer to ward Dietitian
- Commence Nutrison 1.0 feed at 25ml/hour for 10 hours
  Observe for diarrhoea, nausea or vomiting, or signs of abdominal distension.
- If tolerating feeds, increase rate to 50ml/hour for 10 hours
- Consider total fluid requirements; adjust IV fluids if necessary if the person is receiving IV fluids
- Observe for diarrhoea, nausea or vomiting, or signs of abdominal distension.
- Give 4 hour break from feed
- If tolerating feeds, continue at 50ml/hour for 20 hours
- Give a 4 hour break from feeds
- Continue feeds as per regimen from relevant dietitian

13.2 Adult inpatients at risk of re-feeding problems (i.e. has not eaten for 5 days or had enteral feed for 5 days)

Initiating feeds in this situation may be undertaken in LPT and community hospitals only where appropriate medical input is available

- Refer to ward Dietitian
- Check urea and electrolytes, including magnesium and phosphate to identify low levels of potassium, magnesium and phosphate. If depressed refer to Appendix 2.
with medical input it is decided to continue to treat in community hospitals, bloods should be checked daily until normalised and the following will need to be prescribed immediately before and during the first 10 days of feeding: oral thiamine, vitamin B compound strong and a balanced multivitamin / trace element supplement.

- Commence feed at 25ml per hour for 20 hours
  - Consider total fluid requirements; adjust IV fluids if necessary
  - Observe for diarrhoea, nausea or vomiting, or signs of abdominal distension.

- Give 4 hour break from feed

- If tolerating feeds, recommence at 25mls per hour for 20 hours

- Check serum biochemistry 24 - 48 hours after commencing feeds, for levels of potassium, phosphate and magnesium. If the levels are depressed, the relevant medical practitioner should be contacted and asked to correct. Potassium, magnesium and phosphate should be monitored every 24 hours until corrected.

- Give 4 hour break from feed

- Increase feeds as per regimen from ward Dietitian if biochemistry normal (Review biochemistry as clinically indicated) (UHL, 2016)

13.3. Adult inpatients at high risk of re-feeding problems (see 12.3)

Commencing feeds for patients at high risk of refeeding syndrome in LPT must not take place in the absence of facilities for regular biochemical monitoring, and appropriately qualified individuals to interpret results and arrange corrective medication in a timely way, if required.

A medical decision is required, based on clinical condition, to determine if the patient should be referred back to UHL/acute hospital to initiate enteral feed safely. This is strongly advised if the patient has other clinical symptoms e.g. cardiac failure, pulmonary oedema or dysrhythmias. The patient should only be transferred back to the LPT settings when their bloods have normalised.

If a decision is taken to commence feeds in LPT inpatient settings:

- Refer to ward Dietitian
- Check urea and electrolytes, including magnesium and phosphate to identify low levels of potassium, magnesium and phosphate. If depressed refer to Appendix 2. If, with medical input it is decided to continue to treat in community hospitals, bloods should be checked daily until normalised and the following will need to be prescribed immediately before and during the first 10 days of feeding: oral thiamine, vitamin B compound strong and a balanced multivitamin / trace element supplement.
• Commence feed to provide a total of 10kcal/kg, over a 20 hour period
  o Consider total fluid requirements; adjust IV fluids if necessary
  o Observe for diarrhoea, nausea or vomiting, or signs of abdominal distension.

• Give 4 hour break from feed

• Check serum biochemistry 24 hours after commencing feeds, for levels of potassium, phosphate and magnesium. If the levels are depressed, the relevant medical practitioner should be contacted and asked to correct. Potassium, magnesium and phosphate should be monitored every 24 hours until normalised and stable, and any increase in feeds should be dependent on trends in biochemistry.

14. COMMENCING ENTERAL TUBE FEEDS IN THE COMMUNITY

In certain circumstances it is desirable to commence enteral tube feeds for patients at home. These patients should be referred to the HENS team, and a decision made regarding appropriateness of this in liaison with the relevant medical team and the other agencies involved. Actions and considerations required where there is risk of re-feeding syndrome are as for inpatient settings. A nutritional regimen will be individually calculated by the managing dietitian.

15. RE-ESTABLISHING ORAL FEEDING/STOPPING ENTERAL TUBE FEEDS

The decision to attempt oral feeding for an individual who has previously been nil by mouth should be made as a Multi-disciplinary team involving Speech and Language therapy to ensure that the patient is safe to swallow. Not all patients will be able to return to oral nutritional intake. Information is available from Speech and Language Therapy about oral tastes.

It is vital that the Dietitian is contacted before tube feeding is reduced / ceased so that an assessment of the adequacy of oral food and fluid can be obtained.

The transfer from enteral tube feeding to oral feeding should ideally be a ‘weaning process’. The following measures can be taken:

1. Nursing staff should record all oral dietary and fluid intakes to enable the dietitian to reassess this regularly.

2. The patient should be encouraged to take prescribed supplements regularly.

3 Once enteral tube feeds have been stopped, monitoring of weight and oral intake should continue to ensure nutritional status does not deteriorate.
4 An enteral feeding tube should only be removed once the multi-professional team members are confident that it is no longer required

16. DISCHARGING PATIENTS ON ENTERAL TUBE FEEDING

Patients who are on an established enteral feed and are being discharged to their own home or a care home need to be referred to the Home Enteral Nutrition Service (HENS) for pre-discharge arrangements and ongoing management and monitoring of their enteral feed. Children may also require referral to the Diana Service. Patients should be referred to the HENS at least 5 working days before discharge using the HENS referral form (see appendix 3). The HENS team will arrange training for the patient or their carer if needed, and ensure arrangements are made for provision of a pump (if required), enteral feeds and equipment for use at home. For the majority of patients, this will involve a 3rd party home delivery company.

Once home, it is important that enteral feeding regimens are compatible with individual circumstances, taking into account the patient’s daily routine, their ability to manage and any support needed, in addition to nutritional aims.

Where a patient is no longer using their gastrostomy tube but is discharged prior to its removal, a referral to the HENS is still required to ensure the patient is provided with appropriate syringes to flush the tube daily, and has a contact telephone number in case of any problems with the tube. Communication should take place to ensure all teams are aware of arrangements for remove of the tube

17. USE OF BILE DRAINAGE BAGS

There may be individuals who require enteral tube feeding who access Learning Disability services and require the use of a bile drainage system. It is important to recognise that bile is necessary to maintain a healthy body and that it may be necessary to replace the bile that has been drained.

A protocol for use of such a system will be written in conjunction with Dietetic and medical staff and will require a detailed care plan. The reintroduction of bile into the body that has been drained off will be the responsibility of the qualified nurse in accordance with the individuals care plan.

18. IMPLEMENTATION PLAN

The Guideline will be approved at the LPT Patient Safety Group, and the final version circulated to key staff for sharing with teams. These teams include:

Nutrition & Dietetics
Community Nursing (adult and children)
Community hospital Inpatient staff – via the LPT Nutrition Steering Group
Adult Eating Disorders
CAMHS inpatients
Roles and responsibilities of staff are highlighted in the associated Policy document. Newly appointed staff will be made aware of the guidance during their induction, where relevant.

The guideline will be available to all relevant staff via the LPT website.

19. SUGGESTED FURTHER READING/INFORMATION


Nutricia website – accessed at: www.nutriciafloicare.com

Nutrition and dietetic service website – accessed at: www.lnds.nhs.uk


20. DOCUMENTS TO BE READ IN CONJUNCTION WITH THESE CLINICAL GUIDELINES

LPT Adult Nutrition and Hydration Policy for Hospital Inpatient use (April 2015)

LPT Adult Nutrition and Hydration Policy for Community Use (December 2015)

LPT Learning Disability services Safe Eating and Drinking Care Pathway (Draft)

21. REFERENCES

Anderton A. (2001) *Microbial Contamination of Enteral Tube Feeds – How can we reduce the risk?* Trowbridge UK: Nutricia

British Association for Parenteral and enteral Nutrition (BAPEN). Available at: http://www.bapen.org.uk/nutrition-support/enteral nutrition

Fogg L (2008) *Home Enteral feeding part 1; An overview,* British Journal of
Community Nursing. Vol 12, No.6 pg 247-252


Leicestershire Medicines Code Available at: www.lmsg.nhs.uk

LPT Deprivation of Liberty safeguard Policy (August 2015)

LPT Equality, Diversity and Human Rights Policy (September 2016)


LPT Infection Prevention and Control Policy for Cleaning and Decontamination of equipment, medical devices, and the environment (July 2015)

LPT Infection Prevention and Control Policy for Hand Hygiene in Community Services, Inpatient Facilities and Primary Care (September 2015)

LPT Administration of Liquidised diet via gastrostomy buttons
Families, Young People and Children’s division (April 2015)

LPT Medical Devices Policy (October 2015)

LPT Workwear and PPE Policy (July 2015)


National Nutrition Nurses Group

- Good Practice Consensus Guideline, Exit Site Management for Gastrostomy Tubes in Adults and children (2013).
- Changing of a Balloon Gastrostomy tube (BGT) into the stomach for adults and children (2016)
- Safe insertion and Ongoing Care of Nasogastric Feeding Tubes in Adults

Available at: www.nnng.org.uk


National Patient Safety Agency (NPSA) NPSA/2012/RRR001 Harm from flushing of nasogastric tubes before confirmation of placement. Available at www.nrls.npsa.nhs.uk/alerts

at www.nrls.npsa.nhs.uk/alerts

National Patient Safety Agency (NPSA) NPSA/2010/RRR010 Early detection of complications after gastrostomy. Available at: http://www.nrls.npsa.nhs.uk/resources/


RCN (2010) Restrictive physical intervention and therapeutic holding for children and young people


Appendix 1 Form to document placement of nasogastric tube (NPSA/2011/PSA002)

Name.......................................................... Date of birth..............................

NHS no..........................................................

Manufacturer and Type of device..............................................................

Date .......................................................... Time ...........................................

Replaced by ..........................................................

Consent obtained Yes/No

Document details of device below or attach sticker

Reference........................................ Tube passed to
LOT................................................... ............. cm
Expiration........................................ Right/left nostril (delete)
Length.................................
FG..................................................

Aspirate obtained Yes/No

pH of aspirate .........................

Comments

Name........................................

Signature
................................................................

Date........................................

Retain form with Dietetic or nursing record
Appendix 2

Joint medical and nursing checklist for assessing if patient at risk of re-feeding problems
To be filed in medical notes
To be used in conjunction with guidelines for commencing enteral feeds

Nursing Assessment
Weight
Height
BMI less than 18.5 \(\rightarrow\) RISK

Weight loss in last 6 months? no yes More than 10% \(\rightarrow\) RISK

When did the patient last eat? More than 5 days \(\rightarrow\) RISK

Medical Assessment (tick boxes)

Pre-feeding biochemistry
Is potassium less than 3.0? no yes \(\rightarrow\) RISK
Is phosphate less than 0.8? no yes \(\rightarrow\) RISK
Is magnesium less than 0.7? no yes \(\rightarrow\) RISK

Is patient on Insulin? no yes \(\rightarrow\) RISK
Is patient on diuretic? no yes \(\rightarrow\) RISK
Is patient on antacid? no yes \(\rightarrow\) RISK
Does patient consume excess alcohol? no yes \(\rightarrow\) RISK

If yes to any risk factors, 12.3 to identify risk level

Not at risk \(\rightarrow\) Follow guidelines 13.1

At risk \(\rightarrow\) Follow guidelines 13.2

At High risk \(\rightarrow\) Follow guidelines 13.3
Appendix 3  Referral form – Home Enteral Nutrition

<table>
<thead>
<tr>
<th>Hospital:</th>
<th>Ward &amp; Ext Number:</th>
<th>Ward Dietitian:</th>
<th>Ext Number:</th>
<th>Bleep:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Sticker:</td>
<td>Hospital Consultant (include initials and specialty):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NHS Number:</td>
<td>M / F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surname:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forename:</td>
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<td></td>
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<tr>
<td>Address:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postcode:</td>
<td>Lives alone: Y / N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Birth:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone Number:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight History (include dates):</td>
<td>Date Tube Sited:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height:</td>
<td>Enteral Feeding Route (Please circle):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ PEG □ RIG □ NG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ NJ □ Jejunostomy □ Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current BMI:</td>
<td>Manufacturer/Size:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Discharge Destination:</td>
<td>Communication difficulties:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Name of Carer/Care Agency/Care home:</td>
<td>Preferred language:</td>
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<td></td>
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</tr>
<tr>
<td>Telephone number:</td>
<td>Interpreter needed: Y / N</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis/Medical History/Treatment:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Feeding Regimen/Method of feeding:</td>
<td>Nil By Mouth: Y / N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other information (eg: bowels habits, swallowing ability, oral intake, feed tolerance issues, relevant medications, allergies):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed date of discharge:</td>
<td>Date of referral:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Print Name:</td>
<td>Signature:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Updated 3 December 2015