ENTERAL FEEDING POLICY

To be read in conjunction with the Nutrition Policy

Included within this policy are:-

- Guidelines for insertion and checking nasogastric tubes
- Guidelines for early detection of complications after insertion of a gastrostomy
- Guidelines for the prevention and treatment of adults at risk of developing refeeding syndrome.

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Amendments Review of Policy to comply with Somerset Partnership NHS Trust Policy and Procedural Requirements

Document objectives: To promote good clinical practice and support all patients, including paediatric patients in consultation with their legal guardians, who are receiving enteral tube feeding in the primary care setting.

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1. **INTRODUCTION**

1.1 Enteral feeding is commonly used in patients suffering from swallowing difficulties (dysphagia), resulting from neurological disease or malignancy, and in those patients with poor nutritional status and/or increased nutritional requirements. Enteral feeding can be administered in a hospital setting (acute or community care), in nursing care facilities (and in certain circumstances residential care facilities) and in patients’ own homes.

1.2 Enteral feeding, although a useful tool in improving patient outcomes and care can have a severe impact on quality of life. It is therefore important that all measures are taken to ensure that the delivery of enteral feeding is smooth, with minimal disruptions to everyday life and with as few complications as possible. Feeding regimens should be tailored to meet the patients’ nutritional needs, tolerance to the feed and to fit in with the patient’s lifestyle and social environment.

2. **PURPOSE & SCOPE**

2.1 This document lays out current advice on managing enteral feeding in Somerset, based wherever possible on evidence and current best practice. It is intended as both a benchmark of the care a patient can expect to receive, as well as assistance for nursing and care staff involved in the management of enteral feeding.

2.2 This policy should be read in conjunction with the Nutrition and Hydration Policy.

2.3 This policy applies to all staff within Somerset Partnership NHS Foundation Trust including temporary, locum, bank and agency staff.

2.4 This policy does not cover the administration of medication through an enteral feeding device.

3. **DUTIES AND RESPONSIBILITIES**

   **The Trust Board, via the Chief Executive** is responsible for ensuring the Trust has a policy to promote safe and best practice in relation to enteral feeding and there are effective and adequately resourced arrangements for the fulfilment of these policy requirements.

   The **Lead Director** is the **Director of Nursing and Patient Safety** with devolved responsibility for the implementation of this policy.

   The **Clinical Lead Dietitian in Enteral Feeding** is responsible for ensuring there is a well-defined process for provision of enteral feeding within the Trust, as well as training and competency assessment for patients in the community.
The **Learning and Development Team** is responsible for provision of Trust training programmes and maintaining the electronic staff record of training.

**Ward Managers and Team Leaders** are responsible for ensuring that staff that care for patients needing enteral feeding are competent and compliant with the policy.

**Best Practice Groups** are determined and managed by the relevant operational directorate and may be service specific, or based on a care pathway. They have responsibility for supporting the Trust clinical audit plan, by identifying the auditor and supervisor, and the monitoring and implementation of clinical audit recommendations. Responsibilities also include developing clinical audit standards as required.

The **Somerset Home Enteral Tube Feeding Team** (HETF) have a duty of care to patients in Somerset who receive Home Enteral Tube Feeding and are responsible for those patients discharged into the community with a feeding tube.

**All clinical staff** that care for patients receiving enteral feeding are responsible for following the practices and procedures set out in this policy. They are responsible for ensuring they are appropriately trained and assessed as competent.

### 4. EXPLANATIONS OF TERMS USED

4.1 **Percutaneous Endoscopic Gastrostomy (PEG):** A feeding tube inserted into the stomach via an endoscope or surgically.

4.2 **Jejunostomy tube:** A feeding tube inserted into the small bowel.

4.3 **Radiologically Inserted Gastrostomy (RIG):** A feeding tube inserted into the stomach under x-ray guidance.

4.4 **Balloon/button gastrostomy device:** Feeding tubes kept in place by a water filled balloon in the stomach.

4.5 **Nasogastric tube:** A short term feeding tube inserted via the nose and into the stomach.

4.6 **Nasojejunal tube:** A short term feeding tube inserted via the nose and into the small bowel.

4.7 **Percutaneous Endoscopic Gastrostomy with Jejunal extension (PEGJ):** A feeding tube inserted into the stomach via an endoscope or surgically with an additional feeding tube inserted into the PEG ending in the small bowel.
5. GENERAL PRINCIPLES OF MANAGING/ ADMINISTERING ENTERAL FEED

Consent

5.1 Prior to instigating any form of enteral feeding, informed consent must be obtained from the patient; where the patient lacks capacity the medical team must use principles of working in the patients’ best interest regarding decisions on the provision of enteral feeding. Please see the Consent and Capacity to Consent Policy for more information.

Documentation

5.2 All care relating to enteral feeding must be documented in the patient’s record in the appropriate care plan. Some patients may carry a hospital passport which will inform staff of the patient’s wishes and likes when they are well. The care plan should reflect how the patient wants to be treated when they have their enteral feed. This may include times, environment and other factors. The care plan should also give more informed details of how the feed should be administered.

Home Management Plan

5.3 When a patient is discharged home with enteral feeding in place, a management plan must be put into place by the discharging team. This must include information for the patient/carer about what to do in the event that it is not possible to obtain aspirate (if applicable) and if the tube should become displaced or blocked. It should also include arrangements for routine replacement or removal of the tube once the tube has reached the end of the period that the manufacturers recommend the tube is left in situ. It is the responsibility of the discharging Trust which has instigated treatment to ensure that a home management plan is in place prior to discharge and that the patient has been discharged to the appropriate service.

Patient information:

5.4 On discharge patients should receive a copy of their feeding regimen and a copy of their care plan. This is the responsibility of the discharging Trust.

5.5 Patients receive relevant written literature to support them or their carers in appropriate care of the feeding tube. This is given to the patient/carer during their first visit by the Nutricia Nurse.

Positioning of patient during feeding

5.6 When feeding into the stomach (nasogastric and gastrostomy tubes), patients should be in a semi-recumbent position for feeding (i.e. 45 degrees).

5.7 If the patient is unable to maintain this position, or when feeding overnight, they should be well propped up with 2 to 3 pillows.
5.8 The above measures should not be necessary for patients receiving enteral feeding into the small bowel (PEGJ and jejunostomy tubes).

5.9 If the patient shows any signs of shortness of breath (more than usual), sudden pallor and/or increased heart rate, stop the feed immediately and contact the patient’s GP or call for emergency services, depending on severity.

**Checking feed prior to administration**

5.10 Before administering feed, nursing staff, carers or the patient (depending on who manages enteral feeding) should check that the feed they are about to administer is within the expiry date and that it is the feed recommended by the Dietitian.

5.11 The feed should be checked by observation through the bottle/pack for signs of curdling. If curdling is observed, another pack should be used and the curdled pack reported to the enteral feed delivery company/ dispensing pharmacy.

5.12 The bottle/pack should be gently tilted back and forth (not shaken) before opening.

**Maintaining feeding tube patency (flushing the tube)**

5.13 All feeding tubes should be flushed before and after administration of feeds/boluses, before and after administration of medications and in between each medication if multiple medications are taken, with freshly drawn tap water or cooled, boiled water (see “Water use”, section 11.17).

5.14 A 50ml syringe should be used. It may be necessary to use smaller volume syringes to draw up and administer some medications (see “Administering medications via a feeding tube”, see under Appendix D).

5.15 Unless otherwise indicated the tube should be flushed with at least 30ml before and after feed and before and after medication. Unless otherwise indicated at least 10ml water should be used between medications, if several are taken. Please advise the Dietitian of medications that are taken on review/prior to discharge, particularly if the patient is taking several medications or is fluid restricted.

5.16 For fluid restricted patients, please ensure the flushing volumes are as prescribed by the medical practitioner, Dietitian, specialist or nutrition nurse.

5.17 Due to the narrow lumen of jejunostomy tubes and the possible complications of tube blockages (laparotomy for replacement), these tubes should be flushed every 4 hours during the day, and during the night if in residential/nursing care facilities. It is felt that the impact on quality of life does not justify
5.18 Adopting a turbulent flow flush technique (“push-pause” flushing) can discourage feed and medication precipitation, thus reducing the risk of feeding tube occlusion. This may be particularly advisable in older, deteriorating feeding tubes.

5.19 If a blockage is suspected, i.e. if resistance is felt, do not force the water into the tube as this may damage the tube, but refer to “Tube Blockages” (Appendix C).

Mouth care

5.20 It is extremely important to keep the mouth, teeth and gums clean and free from infection.

5.21 Mouth care must be carried out at least twice daily.

5.22 Teeth and gums should be brushed using a soft toothbrush and a small amount of toothpaste. The brush should be held at a 45 degree angle and consist of short, horizontal strokes and last for at least two minutes. Dentures, if worn, should also be brushed.

5.23 If it is safe to do so, the patient should rinse their mouth out with a small amount of clean water or mouthwash, spitting out the solution once rinsed.

5.24 Patients should sit or stand upright for this, particularly if they suffer from swallowing disorders.

5.25 If it is difficult or unsafe for the patient to rinse their mouth due to swallowing difficulties, consider the use of oral suction.

5.26 Apply lip balm to ensure that the lips remain moist.

5.27 If at any time the patient complains of a sore mouth, bleeding gums or blistered tongue or mouth area, the GP should be contacted for advice.

6 TYPES OF FEED

6.1 There are many different types of formula or enteral feed that are suitable to be given via an enteral feeding tube. The most common type of feed is a whole protein feed. There are many variations on this including feeds with fibre, feeds without fibre, semi-elemental feeds and feeds that are nutritionally complete in certain volumes.

6.2 The type of feed chosen will be decided by the discharging dietitian in liaison with the patient and or carers. This will depend on a number of factors including the patients’ nutritional requirements, clinical condition and the aim of feeding.
6.3 **Blended or blenderized diet (BD) given by feeding tube:**

Blended diet (BD) describes administering liquidised food via an enteral feeding tube. Although this practice is not a new concept, its popularity does appear to be increasing in the UK. BD is not supported by the current best practice guidance. In Somerset there are a number of paediatric patients who choose to use this method, either on its own or in conjunction with commercial tube feed formulations. In the UK it is recommended (Use of Liquidised Food with Enteral Feeding Tubes, Policy statement of the British Dietetic Association May 2013) that commercially prepared nutritionally complete formulations are administered in line with tube manufacturer's guidance, following a full dietetic assessment and review process.

6.4 Where families choose to use BD, either with or without commercial tube formulations, a risk assessment should be completed by the parent and healthcare professional (usually the managing dietitian). The Parenteral and Enteral Nutrition Group (PENG) of the British Dietetic Association (BDA) have devised a ‘Risk Assessment Template for Enteral Tube Administration of Liquidised Diet’. This can be accessed at www.PENG.org.uk and it should be completed by the multidisciplinary (MDT) team to aid safe practice guidance and indicates points of risk to consider.

7 **TYPES OF TUBES, THEIR INDICATIONS AND CARE**

7.1 Enteral feed can be provided by several different routes either into the stomach or the small bowel. Providing enteral feed into the stomach is the most common method of administering feed.

**Tubes that feed into the stomach**

7.2 The principle of administering enteral feed into the stomach is the same regardless of the type of tube used. The stomach acts as a reservoir and larger volumes of feed and water, as well as feeding rates when fed via a pump, can be used. The drawbacks include vomiting/regurgitation, particularly with certain medical conditions and when the patient is unwell and/or frail.

7.3 **Nasogastric (NG) tubes**

**NG FEEDING IS A HIGH RISK PROCEDURE.** Misplacement and use of a nasogastric tube in the pleura or respiratory tract where the misplacement of the tube is not detected prior to commencement of feeding, flush or medication administration is a **NEVER EVENT**, because of the potential harm and even death that could result from this action. Please see the Serious Incidents Requiring Investigation Policy for more information.
Checking the correct placement of the NG tube prior to feeding must only be carried out by staff who are trained and competent in this procedure, and in accordance with the March 2011 NPSA Alert on the misplacement of NG tubes. Please see Section 13 for more information on training and assessment of competence. Please also refer to the protocol for the insertion and checking of NG tubes (Appendix F and Appendix H), and competency assessments (Appendix G and I). Therefore patients requiring NG tubes as part of their care must only be cared for in specific inpatient areas, where staff have appropriate training and assessment of competence. This information is available in the Admission, Transfer and Discharge Policy.

NG tubes are often used for short-term enteral feeding, or if the patient is thought to be at high risk for endoscopy. A PVC or polyurethane tube is inserted, without anaesthesia, through the nose and into the stomach. All NG tubes must be radio-opaque with clear external length markings, compliant with the NPSA March 2011 Alert on the misplacement of NG tubes.

7.4 **Before administration of any feed, medications or water via the NG tube**

The position of the tube must be checked to confirm that it is in the stomach by checking the pH of gastric aspirate. The pH paper must be CE marked for gastric aspirate - blue litmus paper must not be used. (Please refer to the protocol for the insertion and checking of NG tubes - Appendix F and H).

Each time a NG tube is inserted or the position is checked, this must be documented on the Nasogastric Tube position record (Appendix J).

If the position of an NG tube requires checking by X-ray, interpretation of the position on the X-ray must only be undertaken by staff who are specifically trained and competent in this procedure. In most cases this will need to be undertaken in an acute Trust.

7.5 PVC tubes can normally be left in situ for 7 to 10 days. Polyurethane tubes can be left in situ for 1 to 3 months, depending on the manufacturer's recommendations.

7.6 All syringes used to test NG tube position by aspirating the tube should be single use and disposed of as clinical waste (Please see the Healthcare Clinical Waste Policy).

**Percutaneous Endoscopic Gastrostomy tubes (PEGs) and surgical gastrostomies**

7.7 The most commonly used gastrostomy tubes in Somerset are the Fresenius (Freka) and Merck (Corflo) PEG tubes, which are inserted with endoscopic guidance. These can also be inserted surgically.

7.8 These tubes have both an internal and an external fixator (or fixation device). The internal fixator of the Fresenius Freka PEG is a solid disc and therefore...
cannot normally be pulled through the tract to be removed, which should be
done under endoscopic guidance. The internal fixator of the Merck Corflo tube
is an air-filled disc, which is deflated when the end is removed and can then be
removed through the stoma by traction.

7.9 The most commonly used sizes are 9FG (yellow and white end) and 15FG
(blue and white end) Fresenius Freka PEGs and 12FG and 16FG Merck
Corflo PEGs (the size is printed on the side of the tube).

**General principles of caring for a PEG tube.**

7.10 **Patients are at risk of developing complications within the first 72 hours of having a gastrostomy fitted.** Nursing staff, carers or the patient
(depending on who is managing the PEG tube should be aware of the
warning signs, stop feeding immediately if these occur and seek urgent
medical help. Please refer to the Guidelines for the early detection of
complications following insertion of a gastrostomy (Appendix H).

**Radiologically Inserted Gastrostomy (RIG) tubes**

7.11 Other methods of inserting a tube into the stomach include inserting a tube
under radiological guidance, when the stomach cannot be accessed
endoscopically, known as a Radiologically Inserted Gastrostomy (RIG) tube.
The most commonly used RIG tubes in Somerset are the Merck Corflo
balloon gastrostomy tubes (usually a 12Fr or 14Fr) or a Freka gastro tube
(ballon 15Fr). The principles of care for RIG balloon gastrostomy tubes are
the same as for balloon retained devices (see section 8).

7.12 Cook-Wilson tubes (model Wills-Oglesby) are seldom used in Somerset. The
Cook-Wilson tubes do not come with clamps and are secured internally by
the internal section of the tube being coiled into a “pigtail”, which is locked
into place by a cotton thread and secured by a rubber sleeve on the external
section of the tube, near the RIG end. They can be prone to displacement, if
not cared for correctly, and particularly when they have been in situ for a
longer period.

7.13 **RIG tubes should not be advanced nor rotated.**
Although the tube has no clamp, the tube should nonetheless **not be bent** to
prevent backflow, as this may result in damage to the tube.

7.14 **For Cook-Wilson tubes: Under no circumstances** should the string, which
is secured by the rubber sleeve, be cut, as this **will** result in release of the
internal “pigtail” and displacement of the tube.

7.15 When the tube is initially placed, there will (normally) be a blue anchoring
suture in close proximity to the exit point of the tube. This suture anchors the
internal T-bar in place, pulling the stomach up to the abdominal wall, allowing
a stoma tract to form. This suture should be cut after 10-14 days, to release
the T-bar, but **this should only be done in the hospital environment,**
normally by a Nutrition Team, Specialist Nurse or the team who originally
placed the RIG tube.
7.16 **Under no circumstances should a Foley catheter be used to replace a gastrostomy tube,** as advised by the Medical and Healthcare Products Regulatory Agency (MHRA).

8 BALLOON RETAINED DEVICES

8.1 PEG and RIG tubes sometimes need replacing. They are often replaced with a balloon gastrostomy device. These are tubes inserted into the stomach and kept in place internally by a water-filled balloon; the principle is the same as a urinary catheter. These can have an integral external tube and (occasionally) a clamp and look similar to a standard gastrostomy tube.

8.2 Alternatively, balloon retained gastrostomy devices can appear as a **low profile device (or “button”),** which require extension sets before attaching to a syringe or giving set for feeding and flushing. They do not have an external fixator, as they are retained in situ by careful measuring of stoma length and selection of a device with a snug fit. These devices contain an internal anti-flow mechanism, preventing backflow of gastric contents, and so do not have a clamp either.

9 TUBES THAT FEED INTO THE SMALL BOWEL (JEJUNUM)

Other methods of enteral feeding include feeding direct into the small bowel. This method of feeding is used if there is a problem with the stomach and feed cannot be absorbed properly or there are issues with vomiting. There are 3 main types of tubes that feed into the bowel, nasojejunal tubes, PEGJ (PEG tubes with a jejunal extension) and a jejunostomy tube.

**Nasojejunal tubes**

9.1 Position of nasojejunal tubes should be performed following placement and before the patient is discharged home.

9.2 Position of nasojejunal tubes can only be performed by radiography.

9.3 Whilst at home, the healthcare professional/ carer/ patient should check the position of the nasojejunal tube against the nostril using the gradient markers on the tube or by marking the original position with an indelible marker before administration of any feed, medications or fluids.

9.4 Do not use the tube for feed, medications or fluids if it is suspected that the tube has become dislodged and/ or the tube has moved according to the gradient markers or the marked position.

9.5 Patients should be discharged with a management plan and the patient/ carers should be clear on how to proceed in the event of tube displacement.

**Percutaneous Endoscopic Gastrostomies with a jejunal extension (PEGJ)**
9.6 Another method of feeding into the bowel is by inserting a tube into the bowel through a PEG tube with a jejunal extension (PEGJ). A jejunal extension is inserted through an existing or a new PEG tube. The internal fixator (bumper) of the PEG tube therefore ends in the stomach as normal, but the internal tube is longer and extends into the jejunum. These tubes are sometimes used in patients who experience frequent vomiting. The jejunal extension does frequently coil back into the stomach and these tubes are therefore not a permanent solution. The onset of vomiting, where this had previously been resolved, may indicate that the tube has coiled back into the stomach and should be X-rayed to confirm jejunal extension position, or as agreed in the individual patient’s management plan.

9.7 The PEGJ tube should be advanced into the tract and pulled back at least weekly, but not rotated, as rotating the tube could result in increased risk of the jejunal extension coiling back into the stomach. All other care remains as per normal PEG site care.

Jejunostomy tubes

9.8 One method of feeding into the bowel is by surgically inserting a jejunostomy tube directly into the bowel. These tubes tend to be narrower than gastrostomy tubes (9FG) and thus more prone to blockages. The tube currently used in Somerset is the Fresenius jejunostomy tube, which in appearance is similar to the Fresenius Freka PEG, but can be distinguished by the white end and external fixator.

9.9 The tube is not fixed internally and is held in place by the external fixator and sutures only and should therefore not be advanced nor rotated. This could lead to displacement of the tube.

10 OFF-LABEL USE OF MEDICAL DEVICES

10.1 The Medical and Healthcare Regulatory Agency (MHRA) stipulates that the use of a device off-label (uses for a purpose other than those intended by the manufacturer) and the modification of medical devices by the user, exposes users and patients to unknown and therefore unacceptable risks, and may have legal and ethical implications. Examples of this include the use of Foley catheters as enteral feeding tubes or to maintain stoma patency. In these circumstances, responsibility for the device rests with the user and their employing healthcare Trust, not the manufacturer of the device, transferring liability for failure of the particular device to the individual and/or institution. The Nutricia Nurses are unable to support the use of a device off-label, for example, a foley catheter being used for enteral feeding.

10.2 If patients are discharged into primary care with devices in situ that are not licensed as enteral feeding devices by their manufacturers, community and nursing home staff should be aware of this advice and report such instances through their relevant clinical governance channels.
11 INFECTION CONTROL

11.1 Please refer to the following policies:

- Infection Control Policy
- Hand Hygiene Policy
- Aseptic and Clean Dressing Technique Policy
- Medical Device Policy

All staff must adhere to the above policies when caring for patients receiving enteral feeding.

Storing and preparing feed and equipment

11.2 Unopened feed and equipment (giving sets, syringes, spare tubes and parts, etc.) should be stored in a cool, dry place. The temperature in the storage area should not drop below 8 degrees C or rise above 25 degrees C.

11.3 Feed should not be stacked next to radiators.

11.4 Feed should not be stored in cupboards that are warm.

11.5 In the winter months, when it is likely to freeze, feed should not be put in outside storage rooms.

11.6 If more than one patient requires enteral tube feeds in a care facility, then their prescription feed and equipment should be managed and stored separately and not interchanged.

11.7 Stock should be rotated to ensure that old stock is used first.

11.8 Never use feeds that have expired past the best before date.

11.9 The date and time of opening a feed should be clearly recorded on the feed container.

11.10 Opened packs of sterile feeds administered via a pump, should be discarded after 24 hours.

11.11 Decanted feed should be decanted into a sterile container using aseptic technique and discarded after 24 hours.

11.12 Reconstituted feed which is kept at room temperature should be decanted into a sterile container and discarded after 4 hours. In the event that it is absolutely necessary to use reconstituted feed overnight without disturbing patient and/ or carer sleep, the rationale for this should be documented in the patient’s care plan. Reconstituted feed that has been decanted into a sterile
container can be stored on the top shelf of a fridge at below 8 degrees C until required and for up to a maximum of 24 hours, whichever is the shortest.

11.13 Packs of enteral feed intended for bolus feeding should be accessed by using a bolus adaptor.

11.14 Aseptically opened packs of enteral feed (i.e. using a bolus adaptor) can be stored on the top shelf of a fridge at below 8 degrees C for up to 24 hours.

11.15 The giving set or bolus adaptor should not be disconnected from the pack of feed. If it is necessary to disconnect the feed, for example for physiotherapy or personal hygiene, the giving set should be disconnected from the patient’s feeding tube, rather than from the pack of feed.

11.16 When it is necessary to disconnect the giving set from the patient’s feeding tube, such as for flushing water or administering medication, the dust-cap should be replaced, and the giving set hung away from the floor, but not higher than the pack of feed (i.e. not over the pump).

**Water use**

11.17 Patients with feeding tubes ending in the stomach (PEG, RIG, balloon gastrostomy and nasogastric tubes) should flush their tubes with freshly drawn tap water. Freshly drawn tap water should also be used for administering medications.

11.18 Patients with feeding tubes ending in the bowel (jejunostomy, PEGJ tubes and nasojejunal tubes) should flush their tubes with cooled, freshly boiled water (see box below). Cooled, freshly boiled water should also be used for administering medications.

11.19 Where it is necessary to use reconstituted feeds, these should be mixed using cooled, freshly boiled water (see box below) or sterile water from a freshly opened container.

11.20 Once bottles of sterile water are opened, any remaining water should be discarded and a fresh bottle opened for the next administration. Bottles of water should never be accessed using a non-sterile syringe and re-used later.

11.21 Only sterile water for injection should be used for inflating balloon gastrostomy tubes.

<table>
<thead>
<tr>
<th>Preparation of cooled, boiled tap water</th>
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<tr>
<td>Empty kettle and fill with fresh water and boil. Once boiled and cooled, decant water into a clean container, i.e. a plastic jug/bottle with lid and store in refrigerator separated from raw foods at 8 degrees C or below for a maximum of 24 hours. If it is to be used for hydration, decant into a sterile reservoir.</td>
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12 HOME ENTERAL TUBE FEED (HETF) SERVICE AND DISCHARGES INTO THE COMMUNITY

12.1 Somerset provides a dietetic service to monitor patients receiving Home Enteral Tube Feeding. Enteral feed and equipment can be delivered by the company that supplies enteral feed in Somerset. At 1st April 2015, the delivery service is provided by Homeward, a subsidiary of Nutricia Clinical Care. Homeward also provide a company nurse, the Homeward Nurse, to support patients when discharged and provide patient reviews.

12.2 The patient should be registered with Homeward for deliveries of feed and equipment. The patient should be discharged with at least 7-14 days supply of these items, depending on individual arrangements with discharging acute Trusts. It is the responsibility of the discharging hospital to ensure that this is in place prior to discharge, including gaining agreement on funding any other items required for the purpose of enteral feeding, such as replacement gastrostomy tubes.

12.3 Once discharged, and referral to the Somerset Home Enteral Tube Feeding Service is received and accepted, the patients will be reviewed triaged and subsequently reviewed as per the Policy Review Document. The Referral Form is found in Appendix O. Incomplete referrals with missing information will be returned and review delayed. Please fax referrals to 01749 836556 (safe haven) or send via first class mail. Alternatively referrals can be emailed to HEFTservice@sompar.nhs.uk encrypted if required.

12.4 Homeward also provides a nursing service for all patients. The Homeward Nurse can visit the hospital prior to discharge to provide initial training if required, or alternatively the destination nursing care facility. Five working days notice, by phone, is required to access this service. He or she will also visit the patient at home within 10 working days of discharge or notice (if notice is given after discharge), to ensure that the patient and/or carers are coping at home. It is the responsibility of the discharging hospital to ensure training is provided to the patient, carers and/or other nursing staff prior to discharge, to prevent failed discharges. Please note that for indemnity purposes, patients should be registered with Homeward to access Homeward Nurse care.

12.5 The Homeward Nurse can provide initial training for paediatric patients on the use of the feeding pump, whether to a care home, respite centre, school and/or the parents/ carers, providing notice is given as above. The Homeward Nurse is trained to replace NG tubes and balloon gastrostomy tubes in paediatric patients. The initial training prior to discharge is the responsibility of the discharging Trust and follow-up support the discharging/ managing paediatric nursing service (i.e. Children’s Community Nursing service, Lifetime Nurses), according to local agreement.
13. **Training Requirements**

13.1 All staff who are required by their role to undertake any element of enteral feeding must have received the appropriate training and assessment of competence in the element they undertake.

**Nasogastric tube insertion and position checking**

13.2 It is imperative that all staff who are required to place, and check the position of a nasogastric tube receive appropriate training based on the NPSA 2011 guidance. They must also be assessed as competent in this skill by a designated assessor. Please see appendix M for the competency assessments for nasogastric tube insertion and checking the position of a nasogastric tube.

13.3 Competence in nasogastric placement and checking the position of a nasogastric tube must be reassessed every two years.

14 **EQUALITY IMPACT ASSESSMENT**

14.1 All relevant persons are required to comply with this document and must demonstrate sensitivity and competence in relation to the nine protected characteristics as defined by the Equality Act 2010. In addition, the Trust has identified Learning Disabilities as an additional tenth protected characteristic. If you, or any other groups, believe you are disadvantaged by anything contained in this document please contact the Equality and Diversity Lead who will then actively respond to the enquiry.

15 **MONITORING COMPLIANCE AND EFFECTIVENESS**

15.1 All complaints, feedback and DATIX incidents related to this policy will be monitored by the Nutrition and Hydration best Practice Group. The group will identify good practice, any shortfalls, action points and lessons learnt, and feedback to the relevant clinical teams. The Medical Devices group will monitor any incidents related to the feeding pumps.

15.2 A brief of any audits carried out will be provided to staff to raise awareness through ‘What's on @ Sompar’ newsletter.

16 **COUNTER FRAUD**

16.1 The Trust is committed to the NHS Protect Counter Fraud Policy – to reduce fraud in the NHS to a minimum, keep it at that level and put funds stolen by fraud back into patient care. Therefore, consideration has been given to the inclusion of guidance with regard to the potential for fraud and corruption to occur and what action should be taken in such circumstances during the development of this procedural document.
17 RELEVANT CARE QUALITY COMMISSION (CQC) REGISTRATION STANDARDS

17.1 Under the Health and Social Care Act 2008 (Regulated Activities) Regulations 2014 (Part 3), the fundamental standards which inform this procedural document, are set out in the following regulations:

Regulation 9: Person-centred care
Regulation 10: Dignity and respect
Regulation 11: Need for consent
Regulation 12: Safe care and treatment
Regulation 13: Safeguarding service users from abuse and improper treatment
Regulation 14: Meeting nutritional and hydration needs
Regulation 15: Premises and equipment
Regulation 16: Receiving and acting on complaints
Regulation 17: Good governance
Regulation 18: Staffing
Regulation 19: Fit and proper persons employed
Regulation 20: Duty of candour
Regulation 20A: Requirement as to display of performance assessments.

17.2 Under the CQC (Registration) Regulations 2009 (Part 4) the requirements which inform this procedural document are set out in the following regulations:

Regulation 18: Notification of other incidents

17.3 Detailed guidance on meeting the requirements can be found at http://www.cqc.org.uk/sites/default/files/20150311%20Guidance%20for%20providers%20on%20meeting%20the%20regulations%20FINAL%20FOR%20PUBLISHING.pdf

Relevant National Requirements

17.4 NICE Guidance: Infection Control; Prevention of healthcare associated infection in primary and community care June 2003
17.5 National Patient Safety Agency: Patient Safety Alert; Reducing the harm caused by misplaced nasogastric feeding tubes March 2011
17.6 NICE Guidance: Nutrition Support in adults; oral nutrition support, enteral tube feeding and parenteral nutrition February 2006
17.7 National Patient Safety Agency: Promoting safer measurement and administration of liquid medicines via oral and other enteral routes 2007

18 REFERENCES, ACKNOWLEDGEMENTS AND ASSOCIATED DOCUMENTS

18.1 References

This policy has been produced from the references listed below and input from experienced colleagues. It consists of a combination of recommendations from government and other formal bodies, clinical evidence, where available, and best practice. Any comments on this document are gratefully accepted.


12. NPSA/ 2007/ 19 – Promoting safer measurement and administration of liquid medicines via oral and other enteral routes.

13. NPSA 22/ 02/ 2005 – Advice to the NHS on reducing harm caused by the misplacement of nasogastric feeding tubes.


19 Yeovil District Hospital Foundation NHS Trust. Refeeding Syndrome Guidelines 2008


21 Taunton and Somerset NHS Foundation Trust. Refeeding Syndrome Guidelines July 2006

22 British Dietetic Association Use of liquidised food with enteral feeding tubes, Policy Statement of the BDA October 2014

23 The Parenteral and Enteral Nutrition Group (PENG) of the British Dietetic Association Risk Assessment Template for Enteral Tube administration of liquidised diet 2014

18.2 Cross reference to other procedural documents

- Consent and Capacity to Consent to Examination and Treatment Policy
- Development & Management of Procedural Documents
- Early detection of complications following insertion of a gastrostomy
- Healthcare Clinical Waste Policy
- Infection Prevention and Control Policy
- Learning Development and Mandatory Training Policy
- Medical Devices Policy
- Nasogastric Feeding Tubes Protocol
- Nutrition Policy
- Privacy, Dignity and Respect Policy
- Re Feeding Guidelines
- Record Keeping and Record Management Policy
- Risk Management Policy and Procedure
- Staff Training Matrix (Training Needs Analysis)
- Untoward Event Reporting Policy and procedure

18.3 All current policies and procedures are accessible in the policy section of the public website (on the home page, click on ‘Policies and Procedures’). Trust Guidance is accessible to staff on the Trust Intranet.

19 APPENDICES

19.1 For the avoidance of any doubt the appendices in this policy are to constitute part of the body of this policy and shall be treated as such. This should include any relevant Clinical Audit Standards.

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APPENDIX A

TYPES OF TUBES, THEIR INDICATIONS AND CARE

1  PERCUTANEOUS ENDOSCOPIC GASTROSTOMY TUBES (PEGS) AND SURGICAL GASTROSTOMIES

The most commonly used gastrostomy tubes in Somerset are the Fresenius (Freka) and Merck (Corflo) PEG tubes, which are inserted with endoscopic guidance. These can also be inserted surgically.

General principles of caring for a PEG tube

Nursing staff, carers or the patients should always wash their hands before and after any intervention (see “Hand washing”).

1.1 The patient should have a 4 hour period in every 24 hours where no feed or water is administered, to allow the stomach to return to an acidic pH, which may help prevent bacterial translocation.

1.2 The stoma should be left undressed, unless oozing. There is no need to dress the site, unless oozing is staining clothing, or a dressing is recommended to treat a particular condition. This may help prevent infection by allowing air to the site.

1.3 Avoid using creams (unless prescribed for a specific condition by a medical doctor, specialist/ nutrition/ district nurse) and talcum powder on the site as they can irritate the skin and give rise to infection. Creams can also reduce the effectiveness of the external retention device (fixator) and affect the tube material itself.

1.4 Tube parts should be kept clean to prevent degradation of the material and reduce the potential for microbial contamination of residual feed and secretions.

a. Fresenius Freka PEG ends, clamps and fixation plates can be cleaned in the bath/shower, by using gauze, a clean cloth, a cotton bud or a clean toothbrush.

b. Merck Corflo parts can be cleaned in the same way and the external fixation device should be undone and cleaned inside weekly using the methods described above.

1.5 Lost or broken replaceable parts (PEG ends, clamps and external fixation devices) should be replaced with the spares the patient will be provided with. These parts should NOT be replaced merely because they require cleaning.

1.6 The patient can bath or shower once the site has healed (normally 2-3 weeks).
1.7 Swimming is also permissible, but it is advisable to cover the site with a waterproof dressing. The tube end and clamp should also be applied before bathing, showering and swimming.

1.8 For the first 14 days post gastrostomy tube insertion:

- Leave the external fixation device in situ.
- Clean the skin around the stoma site and under the retention device daily with sterile water or saline using gauze and ensure the skin is then dried thoroughly.
- Report any inflammation or oozing from the site to the GP or Nutrition Nurse.

1.9 After 14 days post gastrostomy tube insertion:

- Release the external fixation device daily (weekly for Merck PEG tubes) in order to clean the skin around the stoma site thoroughly.
- Clean the site daily with lint-free gauze or a clean towel and a mild solution of soapy water and rinse, or use sterile water, and dry thoroughly.
- Before replacing the external fixation device, the tube should be advanced and rotated to prevent the internal fixator becoming embedded in the gastric mucosa, known as “Buried Bumper Syndrome”. The tube should be rotated a full 360 degrees and advanced 3-4 cm into the tract, before being pulled back to rest against the internal gastric wall. The tube should not be pulled back tight, to prevent ulceration of the gastric mucosa.
- Merck tubes should be rotated daily and advanced weekly when the external fixator is undone for cleaning. Fresenius tubes should be rotated and advanced daily.
- The external fixation device should be replaced to lay 0.2-0.5cm away from the abdominal wall.
- Report any inflammation or oozing from the site to the GP or Nutrition Nurse.

2 RADILOGICALLY INSERTED GASTROSTOMY TUBES (RIGS)

2.1 Other methods of inserting a tube into the stomach include inserting a tube under radiological guidance, when the stomach cannot be accessed endoscopically, known as a Radiologically Inserted Gastrostomy (RIG) tube. The most commonly used RIG tubes in Somerset are the Merck Corflo balloon gastrostomy tubes (usually a 12Fr or 14Fr) or a Freka gastro tube (balloon 15Fr). The principles of care for RIG balloon gastrostomy tubes are the same as for balloon retained devices (see section 8).

2.2 Cook-Wilson tubes (model Wills-Oglesby) are seldom used in Somerset. The Cook-Wilson tubes do not come with clamps and are secured internally by the internal section of the tube being coiled into a “pigtail”, which is locked into place by a cotton thread and secured by a rubber sleeve on the external
section of the tube, near the RIG end. They can be prone to displacement, if not cared for correctly, and particularly when they have been in situ for a longer period.

**General principles of caring for a RIG tube**

1.3 Nursing staff, carers or the patient (dependent on who is managing the RIG tube) should always wash their hands before and after any intervention (see “Hand washing”).

1.4 The patient should have a 4 hour period in every 24 hours where no feed or water is administered, to allow the stomach to return to an acidic pH.

1.5 The site should be cleaned daily with lint-free gauze or a clean towel and a mild solution of soapy water and rinsed or use sterile water, and dry thoroughly.

1.6 The stoma should be left undressed, unless oozing. There is no need to dress the site, unless oozing is staining clothing, or a dressing is recommended to treat a particular condition. This may help prevent infection by allowing air to the site.

1.7 Avoid using creams (unless prescribed for a specific condition by a medical doctor, specialist nutrition nurse/ district nurse) and talcum powder on the site as they can irritate the skin and give rise to infection. Creams can also reduce the effectiveness of the external retention device (fixator) and affect the tube material itself.

1.8 For Cook-Wilson tubes: the parts (external fixator and red feeding adaptor) should be kept clean to prevent degradation of the material and the potential for microbial contamination of residual feed and secretions.

   - The external fixator can be cleaned in the bath/shower or using gauze or a cotton bud.

   - The red feeding adaptor should be cleaned after each use using hot, soapy water. Although the manufacturers do not recommend sterilising this adaptor, it may be prudent, particularly in care settings and in patient homes with less than ideal hygiene to use sterilising solution.

1.9 Lost or broken red feeding adaptors should be replaced with the spare the patient will be provided.

1.10 **RIG tubes should not be advanced nor rotated.** Although the tube has no clamp, the tube should nonetheless not be bent to prevent backflow, as this may result in damage to the tube.
1.11 **For Cook-Wilson tubes:** **Under no circumstances** should the string, which is secured by the rubber sleeve, be cut, as this **will** result in release of the internal “pigtail” and displacement of the tube.

1.12 When the tube is initially placed, there will be a (normally) blue anchoring suture in close proximity to the exit point of the tube. This suture anchors the internal T-bar in place, pulling the stomach up to the abdominal wall, allowing a stoma tract to form. This suture should be cut after 10-14 days, to release the T-bar, but **this should only be done in the hospital environment**, normally by a Nutrition Team, Specialist Nurse or the team who originally placed the RIG tube.

1.13 The external fixation device should be left in situ. The (normally) black sutures holding this in place should be cut after 10 days, or as advised by the discharging hospital, as they can become infected and painful. Contact the Nutrition Nurse or relevant specialist nurse for advice.

1.14 It may be necessary to hold the external fixator in situ with surgical tape placed in a triangular fashion across each of the three sides of the external fixator, taking care to leave the stoma open to the air, to prevent movement and friction of the tube within the tract and discomfort to the patient. Ask the nutrition nurse, discharging hospital or relevant specialist nurse for advice. Great care should be taken when replacing the tape, to prevent pulling on the tube internally.

1.15 Patients with RIG tubes should either:

Have been issued with a balloon-retained gastrostomy device (see “Balloon-retained devices”) because, if displaced, the gastrostomy tract (stoma) will start to close over in 2-3 hours. The patient and/or carer(s) should be competent with the placement of a balloon-retained gastrostomy device.

or

The patient should be instructed to attend the Accident & Emergency Department of the discharging/local hospital in the event of displacement.

1.16 It is the responsibility of the discharging hospital to ensure one of these two options are in place prior to discharge, as part of the discharge planning, and that the patient and/or carer(s) are aware of the arrangements that have been made.

1.17 **Under no circumstances should a Foley catheter be used to replace a gastrostomy tube,** as advised by the Medical and Healthcare Products Regulatory Agency (MHRA).
2. **BALLOON RETAINED DEVICES**

2.3 PEG and RIG tubes sometimes need replacing. They are often replaced with a **balloon gastrostomy device**. These are tubes inserted into the stomach and kept in place internally by a water-filled balloon; the principle is the same as a urinary catheter. These can have an integral external tube and (occasionally) a clamp and look similar to a standard gastrostomy tube.

2.4 Alternatively, balloon retained gastrostomy devices can appear as a **low profile device (or “button”)**, which require extension sets before attaching to a syringe or giving set for feeding and flushing. They do not have an external fixator, as they are retained in situ by careful measuring of stoma length and selection of a device with a snug fit. These devices contain an internal anti-flow mechanism, preventing backflow of gastric contents, and so do not have a clamp either.

2.5 There are two types of extension sets used with low-profile devices; “bolus” sets, which will take a catheter-tip syringe, and are usually used for bolus feeding, and “luer” type extension sets, which are required before attaching to a giving set. Water can be administered through either of these extension set types with selection of the correct syringe.

4 **TUBES THAT FEED INTO THE SMALL BOWEL (JEJUNUM)**

**General principles**

4.1 It is common practice to feed for up to 24 hours when feeding into the bowel, as a break is not required.

4.2 Larger volumes of feed (ml/h) are generally not tolerated, leading to increased diarrhoea, discomfort and possible complications.

4.3 It should not be necessary for the patient to be sat upright or propped on pillows, as the risk of reflux should be small when feeding directly into the bowel.

4.4 Diarrhoea is a frequent problem, and can necessitate regular medication, such as Loperamide or codeine. This should be discussed with the GP/consultant and managing dietitian. For this reason, it is usually recommended that patients use a feed without fibre, although very occasionally, patients can also suffer from constipation with a jejunostomy tube.

4.5 Bolus feeding should normally not be used with a feeding tube ending in the bowel. The patient should be fed using an enteral feeding pump.

4.6 Large water flushes (>200 ml) should probably not be used, as necrotising enteritis has been reported with 400 ml water flushes (P. R. Schloerb, et al. JPEN, 2004).
Nasojejunal tubes

4.7 Position of nasojejunal tubes should be performed following placement and before the patient is discharged home.

4.8 Position of nasojejunal tubes can only be performed by radiography.

4.9 Whilst at home, the healthcare professional/carer/patient should check the position of the nasojejunal tube against the nostril using the gradient markers on the tube or by marking the original position with an indelible marker before administration of any feed, medications or fluids.

4.10 Do not use the tube for feed, medications or fluids if it is suspected that the tube has become dislodged and/or the tube has moved according to the gradient markers or the marked position.

4.11 Patients should be discharged with a management plan and the patient/carers should be clear on how to proceed in the event of tube displacement.

Nasojejunal tube fixation-skin care

4.12 Wash hands before administering to the fixation tape (see “Hand washing”).

4.13 Use the fixation tape recommended by the discharging hospital/nutrition nurse or specialist nurse.

4.14 Replace the tape only if dirty or peeling off.

4.15 Ensure that when the tape is changed, the skin is cleansed with the patient’s normal face cleansing method and dried thoroughly.

4.16 Try and alter the position of the tape when changing it, to avoid discomfort.

4.17 If the skin becomes sore or irritated, contact the community nursing team for advice, and then the GP if necessary.

4.18 Avoid the use of creams and powders, as these can not only damage the tubes, but also affect the ease of fixation.

Percutaneous Endoscopic Gastrostomies with a jejunal extension (PEGJ)

4.19 Another method of feeding into the bowel is by inserting a tube into the bowel through a PEG tube with a jejunal extension (PEGJ). A jejunal extension is inserted through an existing or a new PEG tube. The internal fixator (bumper) of the PEG tube therefore ends in the stomach as normal, but the internal tube is longer and extends into the jejunum. These tubes are sometimes used in patients who experience frequent vomiting. The jejunal extension does frequently coil back into the stomach and these tubes are therefore not a permanent solution. The onset of vomiting, where this had previously been
resolved, may indicate that the tube has coiled back into the stomach and should be X-rayed to confirm jejunal extension position, or as agreed in the individual patient’s management plan.

**General principles of PEGJ tube care** (See also: “Tubes that feed into the small bowel (jejunum)” above)

4.20 The PEGJ tube should be advanced into the tract and pulled back at least weekly, but **not rotated**, as rotating the tube could result in increased risk of the jejunal extension coiling back into the stomach. All other care remains as per normal PEG site care.

4.21 Should a patient with previously resolved vomiting experience recurrence of frequent vomiting, the patient should have an abdominal X-ray in hospital to determine whether the jejunal extension has coiled back into the stomach, unless indicated otherwise in the patient’s care plan or medical notes. If in doubt contact the managing dietitian, nutrition nurse or senior managing medical practitioner for advice.

4.22 Replacement PEG ends are available for the PEGJ tubes (green). These should only be replaced if lost or damaged, but do not require routine replacement. These should not be disconnected for cleaning, as this connects the jejunal extension and the lumen of the PEG tube, but kept clean with cotton buds, gauze or a clean toothbrush.

**Jejunostomy tubes**

4.23 One method of feeding into the bowel is by surgically inserting a jejunostomy tube directly into the bowel. These tubes tend to be narrower than gastrostomy tubes (9FG) and thus more prone to blockages. The tube currently used in Somerset is the Fresenius jejunostomy tube, which in appearance is similar to the Fresenius Freka PEG, but can be distinguished by the white end and external fixator.

4.24 The tube should be flushed every 4 hours while the patient is awake to prevent blockages of tube. Such blockages may require further general anaesthetic and laparotomy to be resolved. However, the importance of rest and quality of life is felt to take priority over any risk of tube blockage and night-time flushing is therefore not routinely recommended.

4.25 The site should be cleaned daily with a mild solution of soapy water and rinsed or using sterile water, lint-free gauze or a clean towel, and dried daily.

4.26 The tube is not fixed internally and is held in place by the external fixator and sutures only and should therefore not be advanced nor rotated. This could lead to displacement of the tube.

4.27 The external fixation device should be secured with 2-3 sets of sutures. If the sutures should come undone, these need to be replaced to prevent tube displacement.
4.28 The patient should be provided with semi-permeable dressing or low-allergy tape to place over the external fixation device should the sutures come undone, until they can be re-sutured at the patient’s surgery or in hospital. Great care should be taken when removing any tape or dressing, so as not to pull the tube when removing the dressing/tape and accidentally displace the tube.

4.29 Tape or dressing should not be used in place of re-suturing unless in an emergency if sutures become detached. In exceptional circumstances, patients may decline further re-suturing. This falls outside the manufacturers recommendations. Contact the surgeon, dietitian, nutrition nurse, medical practitioner or other specialist nurse for advice.

4.30 The tube should be coiled and secured against the patient’s stomach with suitable low-allergy tape or a dressing to help prevent displacement.

4.31 The site itself should be left undressed unless oozing and staining clothing or a dressing is recommended to treat a particular condition. This may help prevent infection by allowing air to the site.

4.32 Should the jejunostomy tube end and/or clamp become lost or damaged and require replacement, this should be replaced with a Fresenius 9FG PEG end (yellow) and clamp, as the manufacturer does not provide spare parts for this tube. It should be noted in the patient’s care plan that this is a jejunostomy tube, not a PEG tube, and normal jejunostomy care should be employed.
Patients who are severely malnourished may be at risk of re-feeding. Please refer to the re-feeding guideline (Appendix D). The term ‘re-feeding syndrome’ describes a potentially fatal medical condition that may affect malnourished and/or ill patients in response to an inappropriately high protein-calorie intake. This can affect patients that receive nutritional support, either parenterally, enterally or orally. Complications are more likely to occur when patients are being fed via artificial nutrition support than via the oral route.

1. **PUMP FEEDING**

1.1 Nursing staff setting up feeding pump devices should be competent in the management of the particular manufacturers pump.

1.2 Check the feed to be administered (see “Checking feed prior to administration”, section 2.2).

1.3 Ensure the patient is positioned correctly for feeding (see “Positioning during feeding”).

1.4 Wash hands before and after setting up feed (see “Infection Control: Hand washing”).

1.5 If a nasogastric tube is in situ, check feeding tube position, refer to the protocol for the insertion and checking of naso-gastric tubes. (see “Nasogastric Tubes”)

1.6 Flush the feeding tube (see “Maintaining feeding tube patency”).

1.7 Set up feed and programme the pump as per staff training.

1.8 Nursing staff should refer to the troubleshooting guides outlined in the manufacturers pump information booklets.

1.9 If a problem cannot be resolved by referring to the pump information booklet, please contact the Nutrition Nurse/ Dietician/ home feed delivery company for advice, dependent on current local agreement.

2. **BOLUS FEEDING**

Bolus feeding should not be used with feeding tubes entering the small bowel (i.e. PEGJ, jejunostomy or nasojejunal tubes).

2.1 Check the feed to be administered (see “Checking feed prior to administration”).
2.2 If to be administered from a previously opened container i.e. a measuring jug stored in the fridge, the required amount should be decanted into a clean container and left, covered, for 30 minutes to reach room temperature, before feeding.

2.3 Ensure the patient is positioned correctly for feeding (see “Positioning during feeding”).

2.4 Wash hands before and after setting up feed (see “Infection Control: Hand washing”)

2.5 If a nasogastric tube is in situ, check feeding tube position refer to the protocol for the insertion and checking of nasogastric tubes (see “Nasogastric Tubes”).

2.6 When using packs of enteral feed, the feed should be accessed by attaching the appropriate bolus adaptor (not pierced using scissors or any other sharp implement, to reduce infection risk). The prescribed amount of feed should be decanted into a clean container, such as a measuring jug.

2.7 Containers/measuring jugs should be cleaned in hot, soapy water, rinsed and dried with paper towels between uses.

2.8 Flush the feeding tube (see “Maintaining feeding tube patency”).

2.9 Syringes should not be inserted directly into packs of feed, if further administrations are intended from the same pack. The syringe can be inserted directly into the pack if all the feed is to be used, or the remainder is to be discarded, such as when using cartons of sip feed for bolus administration via an enteral feeding tube.

2.10 Follow one of the three bolus feeding methods outlined below to administer the prescribed amount of feed, depending on patient preference.

2.11 Once the bolus feed has been administered, flush the tube again (see “Maintaining feeding tube patency”) and replace the end cap.

2.12 Unused feed should be stored, with the bolus adaptor attached, in the fridge between administrations. The feed should be removed from the fridge 30 minutes before administration to allow it to reach room temperature. Unused feed should be discarded after 24 hours.

2.13 Correct positioning should be maintained for at least 30 minutes after the administration of a bolus feed.

Method 1:

- Attach the syringe, without the plunger, to the feeding tube.
- Slowly pour the prescribed amount of feed into the syringe.
• If the feed is running too quickly or slowly, alter the height of the syringe slightly.
• The feed rate should not exceed 30ml a minute.
• When the feed has been delivered, detach the syringe and flush the tube with water.

Method 2:

• Attach the syringe, without the plunger, to the feeding tube.
• Ensure the clamp of the feeding tube is closed.
• Pour in an amount of feed to fill the syringe.
• Release the clamp of the feeding tube.
• Once delivered, close the feeding tube clamp and repeat, until the prescribed amount of feed has been delivered.
• When the feed has been delivered, detach the syringe and flush the tube with water.

Method 3:

• Draw up feed from the container using the syringe, with the plunger attached.
• Attach the syringe to the feeding tube and undo the clamp.
• Slowly administer the feed through the tube.
• Close the clamp, disconnect the syringe from the feeding tube and repeat the stages above, until the prescribed amount has been administered.
• Once the prescribed amount of feed has been administered, detach the syringe and flush the tube with water.
APPENDIX C

COMMON PROBLEMS

1 FEEDING TUBE BLOCKAGES

1.1 If a blockage is suspected, i.e. if resistance is felt, then do not force water into the tube, as this could damage the feeding tube.

1.2 Use a 50ml syringe to attempt to gently flush the tube using warm water or soda/ sparkling water. A mild solution of bicarbonate of soda in warm water can be used if there is no soda or sparkling water available.

1.3 If the above fails to dislodge the blockage, gently squeeze (massage) the tube between the fingers along its length.

1.4 If this fails, very gently draw back on the plunger of the syringe and then attempt to flush as before using warm water or soda water, using a gentle push/ pull motion.

1.5 If the blockage persists within normal weekday working hours, then call the nutrition/ company nurse, Dietitian or medical practitioner for advice.

1.6 If the blockage occurs outside normal working hours or at the weekend and the patient relies on the feeding tube for hydration and/ or medication administration (i.e. is Nil By Mouth), then call the out of hours medical service for advice.

1.7 If the blockage occurs outside normal working hours or at the weekend and the patient takes medications orally and can take oral fluids (i.e. the tube is supplementary to oral diet), it may be advisable to wait until normal working hours and call the nutrition/ company nurse, Dietitian or medical practitioner for advice.

1.8 Do not flush the tube using acidic solutions, such as fruit juices, cola or lemonade, as these can further curdle any residual feed and possibly damage the tube.

1.9 If a feeding tube blocks or resists flushing recurrently, the Nutrition/ company nurse or Dietitian MUST be notified, as this could indicate a deteriorating tube or problems with the stoma.

2 TUBE DISPLACEMENTS

2.1 In the unlikely event of a PEG tube or surgically inserted gastrostomy becoming displaced, the patient should be taken urgently into the A&E department. Do not attempt to re-intubate the gastrostomy tube, as this could result in peritoneal placement and/ or stoma tract separation.
2.2 In the event of a displaced jejunostomy tube, the patient should be taken urgently into the A&E department. **Do not attempt to re-intubate the jejunostomy tube**, as this could result in peritoneal placement and/or stoma tract separation.

2.3 In the event of a displaced radiological gastrostomy (RIG) tube, the patient should either:

i. Have been issued with a balloon-retained gastrostomy device (see “Balloon-retained devices”) as, if displaced, the gastrostomy tract (stoma) will start to close over in 2-3 hours. The patient and/or carer(s) should be competent with the placement of a balloon-retained gastrostomy device or a named member (or members) of the primary care team (i.e. District Nursing, Nurse Practitioner) should be identified who is skilled in the placement of these devices.

   or

ii. The patient should be instructed to attend the Accident & Emergency Department of the discharging/local hospital in the event of displacement. Do not attempt to re-intubate the gastrostomy tube, as this could result in peritoneal placement and/or stoma tract separation.

2.4 In the event of a displaced balloon gastrostomy device, the procedure agreed in the patient’s care plan should be followed. This may involve replacement with a new device by the patient or carer (if trained and competent to do so, i.e. for patients/carers who already perform balloon gastrostomy replacements), replacement by a member of the community nursing team or nurse practitioner.

2.5 In the event of a displaced balloon gastrostomy device and no documented management plan, the patient should be taken urgently into the A&E department. If the patient has a spare tube, then this should be taken with them.

3 **NAUSEA, VOMITING, REFLUX AND REGURGITATION**

<table>
<thead>
<tr>
<th>Possible Causes</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection.</td>
<td>Ensure meticulous hygiene procedures are in place, as outlined in this document.</td>
</tr>
<tr>
<td>• Contamination of feed/equipment</td>
<td></td>
</tr>
<tr>
<td>• Gastrointestinal infection.</td>
<td>If patient is suffering systemic infection with vomiting, it may be necessary to reduce, or even omit, feed temporarily, whilst replacing fluid and possibly electrolytes. See “Diarrhoea” below. Refer to Dietitian for advice.</td>
</tr>
<tr>
<td>• Systemic infection (cold/’flu, urinary tract infection, chest infection)</td>
<td></td>
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</tbody>
</table>
Severe constipation/impaction.  
Bowel movements should be documented daily for all patients receiving HETF. See section “Constipation” below.

Recent change in feeding regimen.  
If feed has recently been increased it may be necessary to reduce rate/volume to start with. If a bolus regimen has recently been introduced, it may be necessary to introduce smaller boluses initially. Refer to Dietitian for advice.

Coughing fits.  
Coughing fits may result in vomiting. Ensure correct positioning. If patient is taking oral diet and coughs and vomits with meals, it may be necessary to review amounts of oral diet. Refer to Dietitian and/or Speech & Language Therapist for advice.

Medication (especially painkillers)  
Ask pharmacist/GP for advice. It may be necessary to use regular anti-emetics.

Incorrect positioning/reflux  
Ensure patient is positioned at 30 degrees for feeding and for ½ hour afterwards, if possible. It may be necessary to consider daytime or bolus feeding.

Disease progression/reflux  
Gastritis/oesophagitis and reflux, with subsequent regurgitation/coffee-ground vomit can be common in patients receiving long-term HETF. Consider regular antacids/PPI’s.

Vomiting can be common with the progression of some neurological diseases. Consider the use of regular anti-emetics/prokinetics.

4 DIARRHOEA

<table>
<thead>
<tr>
<th>Possible Causes</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection.  Gastrointestinal infection.</td>
<td>Continuing feed is not generally contraindicated. However, if diarrhoea is persistent and uncomfortable it may be necessary to temporarily reduce or omit feed. Refer to Dietitian for advice.</td>
</tr>
<tr>
<td> General viral infection/cold or ‘flu.</td>
<td>For acute episodes of diarrhoea, as</td>
</tr>
<tr>
<td> Lasting effects from previous, resolved gastrointestinal infection, such as Clostridium difficile colitis.</td>
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<tr>
<td>Contaminated feed/equipment</td>
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<td>----------------------------</td>
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</tr>
<tr>
<td>Contamination of enteral feeds, and particularly non-sterile feed equipment, such as syringes, containers, water jugs and bungs/adaptors, may lead to gastrointestinal infection. Observe meticulous hygiene at all times and ensure procedures are in place as outlined in this document.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feed too cold</th>
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</thead>
<tbody>
<tr>
<td>Ensure feed is administered at room temperature. If using bolus feeding method and feed pack is stored in fridge between feeds, decant recommended feed volume into a clean, covered container 20 minutes before bolus, to allow feed to reach room temperature.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overflow diarrhoea</th>
</tr>
</thead>
<tbody>
<tr>
<td>If patient is constipated, treat appropriately.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Some medications, such as antibiotics</td>
</tr>
<tr>
<td>- Medications in syrup format, which may contain sorbitol</td>
</tr>
<tr>
<td>If medication has changed recently, gastrointestinal symptoms may be transient. If diarrhoea is ongoing, discuss with pharmacist as to whether any changes can be made. If diarrhoea is troublesome, it may be necessary to reduce feed volume until resolved. Refer to Dietitian.</td>
</tr>
</tbody>
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<thead>
<tr>
<th>Feed Intolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>- New gastrostomy tubes</td>
</tr>
<tr>
<td>- Recently changed regimen</td>
</tr>
<tr>
<td>- Recent increase in pump rate/bolus volume</td>
</tr>
<tr>
<td>Refer to Dietitian for advice. If rate recently increased and diarrhoea troublesome, reduce rate/volume to midway between “new” and “old” regimen. Ensure recommended daily fluid intake is met.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disease progression</th>
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</thead>
<tbody>
<tr>
<td>Progression of neurological diseases may affect bowel control, leading to loose stools and incontinence. Is incontinence being confused with</td>
</tr>
</tbody>
</table>
diarrhoea? Consider medication to reduce gut motility and improve sphincter control, once infective causes have been ruled out. Refer to GP / pharmacist for advice.

Using Oral Rehydration Solution

Oral Rehydration Solution (such as Dioralyte) can be used to replace electrolytes in acute diarrhoea and vomiting. It does not reduce gut motility, as for example codeine and Loperamide do, but can improve diarrhoea by facilitating the reabsorption of fluid from the gut. **Always consult with the GP/ consultant before use.**

Rehydration solution should be diluted in 200ml water (tap water normally, boiled, cooled water for patients with jejunostomies) and administered as a bolus (see “Bolus Feeding”). For patients who cannot tolerate 200ml water, or patients with jejunostomy tubes in situ, make up half this amount and administer more frequently. Made up solution must be used within 1 hour. Always flush the tube with at least 30ml water after administration.

## 5 CONSTIPATION

<table>
<thead>
<tr>
<th>Possible Causes</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of / too much fibre in the feed</td>
<td>If the patient is receiving a feed without added fibre, this may need to be changed. If the patient is receiving a feed with fibre, it is important to ensure that adequate additional water is provided. Refer to Dietitian for review</td>
</tr>
<tr>
<td>Insufficient fluid intake</td>
<td>Monitor fluid intake and output. As a rule of thumb, adults younger than 65 years old require 35 ml fluid (oral fluid, feed and water flushes via PEG) per kg body weight per day. Adults older than 65 years old require 30 ml per kg per day. For paediatric fluid requirements please refer to dietitian. Fluid losses (diarrhoea, vomiting, sweating, and in hot weather) will need to be provided in addition to the basic fluid requirement.</td>
</tr>
<tr>
<td>Reduced mobility</td>
<td>Reduced physical mobility may result in constipation. Regular laxatives and medications that increase gut motility may help. Refer to your GP and / or pharmacist for advice. Consider a bolus feeding regimen.</td>
</tr>
<tr>
<td>Medication</td>
<td>Some medications may lead to constipation. Refer to your pharmacist and / or GP for advice.</td>
</tr>
</tbody>
</table>
## 6 STOMA COMPLICATIONS

<table>
<thead>
<tr>
<th>Complication</th>
<th>Signs &amp; Symptoms</th>
<th>Presumed or Known causes</th>
<th>Treatment</th>
<th>Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Buried Bumper</td>
<td>Tube cannot be advanced and/ or rotated, or resistance is felt. Sometimes tube can be rotated but not advanced. Oozing/ leakage of clear, serous fluid or milky fluid. Inability to flush or feed via tube. Pain/distension, erythema or hardening of peristomal skin. Note: length of time post placement is not a reliable indication. Cases have been reported as little as two months post placement.</td>
<td>Overgrowth of the internal fixator by gastric mucosa. This results when the tube is not advanced and rotated regularly. It is thought factors such as infection and individual immune responses may make some patients more prone to this complication than others, as well as positioning the retention device too tightly, placing of thick dressings under the retention device, rapid weight gain immediately post placement and possibly a response to chronic infection of the stoma tract.</td>
<td>Has the tube previously advanced and rotated well when performed regularly? Is this a one-off? Patient positioning and a recent meal and/ or feed can make it difficult to advance the tube. If this is the case, try again later. If, however, there is any suspicion of a buried bumper or there is resistance on flushing and/ or feeding, advancing and rotating should not be performed, as this could lead to displacement of the internal bumper or rupturing of the overgrown tissue and peritonitis. Do not feed/ flush and alert the nutrition nurse or specialist nurse. If outside normal working hours and the patient is Nil By Mouth, alert the emergency medical service. Buried bumpers usually require surgical removal, often with the formation of a new stoma.</td>
<td>Prevention is the key. Advancing and rotating of the tube within the tract, to prevent the formation of overgrowth tissue, as recommended in this document, should prevent most cases of this serious complication.</td>
</tr>
<tr>
<td>Complication</td>
<td>Signs &amp; Symptoms</td>
<td>Presumed or Known causes</td>
<td>Treatment</td>
<td>Prevention</td>
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<tr>
<td>6.2 Hyper granulation</td>
<td>Overgrowth of pink, fleshy friable tissue or red, raised tissue around the stoma tract. This tissue is often moist and prone to infection and bleeding, particularly when touched (i.e. with cleaning or friction).</td>
<td>It is thought to occur as the result of an extended inflammatory response and has been associated with bacterial infection, gastro-oesophageal reflux, the presence of foreign bodies such as suture material or cellulose fibres and pressure from the gastrostomy tube itself. Other factors, such as the external fixation device being too loose or too tight, incorrect tube size in relation to stoma leading to rubbing, chronic disease, malignancy, diabetes and malnutrition may also contribute.</td>
<td>Maintain good hygiene around the stoma. Refer to the Nutrition Nurse or Specialist Nurse for advice. It may be recommended that the site is swabbed and underlying infection treated, if appropriate. Certain dressings may help, such as Polyurethane foam dressings. These add additional pressure. Ensure all hyper granulation tissue is evenly covered. It may be necessary to apply these as double thickness dressings. If these are not successful, silver impregnated/coated dressings may be used, applied according to manufacturer’s instructions, ensuring even coverage and holding them in situ with surgical tape. Corticoid steroid cream, although often used as a short term anti-inflammatory treatment, as well as silver nitrate are not routinely recommended. This should only be used under medical supervision. Topical usage of corticosteroid cream is not licensed in the UK for granuloma treatment, therefore the prescriber retains accountability. Treat for a maximum of 7-10 days. The use of caustic agents, such as silver nitrate and corticosteroid creams should not be used without specific advice to do so. It would be advisable to secure the tube to the stomach using surgical tape (low-allergy, if indicated), and to tuck the tube into clothing, to prevent pulling at the tube.</td>
<td>Good stoma care is important, i.e. daily cleaning, advancing and rotating the tube as recommended and keeping the stoma as clean and dry as possible. Ensure tube is fastened to prevent friction – the external fixator should be 0.2-0.5 cm away from the surface of the skin to prevent friction within the tract. Consider pain relief.</td>
</tr>
<tr>
<td>Complication</td>
<td>Signs &amp; Symptoms</td>
<td>Presumed or Known causes</td>
<td>Treatment</td>
<td>Prevention</td>
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<tr>
<td>6.3 Peristomal Infection</td>
<td>Bacterial Infection - pain, inflammation, pyrexia, cellulitis, wound breakdown, redness, exudate, malodour. Fungal / yeast infection - moisture, rash, itchiness, pain, redness with erythema, burning.</td>
<td>Bacterial infection - poor hygiene or hand washing, patient is immunocompromised, malnourished, elderly, obese or has diabetes, moist environment, poor vascular supply, cross infection. Fungal / yeast infection - antibiotic or corticosteroid treatment, patient is immunocompromised, moist skin and hot humid conditions, poor hygiene, tight fitting clothes, perfumed toiletries, diabetes, inappropriate dressings, gastric leakage.</td>
<td>Bacterial infection - maintain good daily cleaning and hygiene, including hand washing and use of alcohol gel and gloves. Swab site and, if a positive result is obtained for bacterial infection, refer to the Community Infection Control Team. Povidone iodine or silver dressings may be helpful - refer to Nutrition, Specialist or Infection Control Nurse for advice. Bactroban cream should not be routinely used. Consider treatment for pain and pyrexia. Fungal/yeast infection - swab stoma site, clean daily, dry area thoroughly, treat all areas of infection, educate patient/carer on hand washing, personal hygiene, loose fitting clothes, PEG care. If inflamed an antifungal preparation with corticosteroid may be of value. Topical preparation should be continued for stated time even if visible signs of infection have disappeared. Systemic treatment may be required if topical is ineffective. Refer to Community Infection Control Team for advice.</td>
<td>Daily cleaning and personal hygiene, including hand washing, should always be adhered to. Good education of patients and/or carers on hand washing, personal hygiene, loose fitting clothes and PEG care.</td>
</tr>
<tr>
<td>Complication</td>
<td>Signs &amp; Symptoms</td>
<td>Presumed or Known causes</td>
<td>Treatment</td>
<td>Prevention</td>
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<tr>
<td>6.4 Peristomal Leakage</td>
<td>Oozing from the stoma. This can be more pronounced on administering feed and/or flushes, when feed or water can ooze back up the stoma tract. It can also present as a continuous oozing of clear fluid with excoriation of the surrounding skin, which can have the appearance of being burnt. There may be pain, redness of the skin, skin breakdown and/or itchiness.</td>
<td>This can be caused when the tube used is an inappropriate size or the stoma tract has enlarged, sometimes as the result of infection of the stoma or immune reactions to the tube itself. Leakage of gastric contents through the stoma tract can also appear as the result of high abdominal pressure, i.e. severe coughing, constipation, delayed gastric emptying. It can also occur as a result of infection or buried bumper syndrome.</td>
<td>Test leakage using pH indicator paper to confirm whether leakage is gastric acid. Clean the area with a mild pH neutral solution, keep area as clean and dry as possible. Ensure the external retention device is correctly positioned. If the gastrostomy tube is a balloon device, check that balloon inflation is correct. Swab the area if infection is suspected. Check for constipation/raised abdominal pressure, check patients feeding position. Consider analgesia. Refer to the Nutrition or Specialist Nurse for advice, who may advise that a barrier cream is used to protect the surrounding skin. The stoma should be swabbed and any infection treated, if indicated. It may be necessary to consider replacement of the tube with one with a larger diameter (French Gauge). If increased gastric pressure is suspected, extra care should be taken to ensure regular bowel habits. Refer to the Dietitian, GP or Consultant for advice. Prokinetic agents may help. It may be necessary to aspirate the stomach regularly; however, this should not be performed without advice from the GP, Consultant, Dietitian, Nutrition or Specialist Nurse. Treatment: barrier film/cream should offer some protection, if exudate is heavy, use an absorbent keyhole dressing, review type and size of tube, consider medication to reduce gastric acid, refer to GP if stoma size is incorrect.</td>
<td>Meticulous stoma care and hygiene will help ensure stoma health. Care should always be taken to monitor bowel habits with patients receiving HETF, with daily documentation, adequate fluids and referral to the Dietitian, GP or Consultant when required.</td>
</tr>
<tr>
<td>Complication</td>
<td>Signs &amp; Symptoms</td>
<td>Presumed or Known causes</td>
<td>Treatment</td>
<td>Prevention</td>
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<tr>
<td>6.5 Discoloured, Misshapen and/or Internally Coated Tube with or without more frequent blockages.</td>
<td>The tube appears discoloured since original placement, is no longer opaque, can appear to be coated internally with feed or yoghurt-like matter. The tube may appear flattened, no longer smooth, or like “snakeskin”. The tube may present with more frequent blockages.</td>
<td>Tubes naturally deteriorate after 2-4 years due to interaction of the material with gastric contents and medication and occasionally infiltration with fungi. These will be reviewed by the Nutrition Nurse and/or Dietitian on routine reviews. This deterioration may be accelerated in some patients, as the result of medications, frequency of use and flushing.</td>
<td>If the tube is experiencing more frequent blockages, has split, or there is concern over the condition of the tube, please contact the Nutrition Nurse or Dietitian for advice.</td>
<td>Adequate flushing may help preserve the life of the tube. It is recommended that the position of the clamp is changed intermittently, to prevent fracturing the tube through continuous clamping, and that the tube is clamped off at the section 5-7 cm distal to the stoma (i.e. furthest away from the stomach). If it is possible i.e. the patient does not fiddle with the tube the clamp should remain open when the tube is not in use. When the tube naturally deteriorates, any splits can then be cut off and the end replaced. This will help lengthen the life of the tube. Always refer to the Nutrition Nurse, Dietitian or Specialist Nurse before cutting feeding tubes.</td>
</tr>
</tbody>
</table>
APPENDIX D

CORRECT USE OF ANCILLARIES

ENFIT CHANGES:
From September 2015 there is a new enteral connector standard and this is called ENfit. The new ENfit connector has been designed to reduce misconnections between unrelated delivery systems (e.g. vascular, respiratory, enteral). ENfit (ISO 80369-3) will replace the current luer connector system. This is an international standard across the world and affects all companies who manufacturer equipment associated with enteral feeding.

Transition sets will become available from September 2015. Transition sets are giving sets with a new ENfit connector plus an adaptor. The adaptor will allow connection between ENfit and the current NPSA systems. In March 2016 ENfit syringes and feeding tubes become available. Adaptors will continue to be available until December 2016.

Giving sets and/or bolus adaptors should be changed after 24 hours and/or with every pack of feed or water.

Giving sets and bolus adaptors should not be reprocessed, such as through washing.
All giving sets and bolus adaptors should be handled using a clean, no-touch technique.

1 SYRINGE USE

1.1 Syringes are used with enteral feeding tubes to administer medications, flush water and occasionally to administer bolus feeds. Water flushes are given both to clear the tube and provide additional hydration.

1.2 A 50 ml syringe should be used to flush an enteral feeding tube and administer bolus feeds. Although disputed, it is thought that smaller syringes may exert undue pressure on the inside of the tube and cause damage to the tube.

1.3 An Entralok (re-usable) syringe should be used. These are strictly single-patient use and are tested for up to 30 uses (i.e. 5 flushes per day = 6 days). They should therefore be replaced after 30 uses or at least weekly if using less than four times per day. A 50ml water flush, followed by 4 x 50ml boluses of feed, followed by another 50ml water flush, in the same “sitting”, counts as 1 use.

1.4 In nursing and residential care facilities it is the responsibility of the facility to ensure there are procedures in place to ensure that these syringes are maintained as single-patient use (i.e. by storing them in individual marked boxes, or using indelible markers). Individual containers and sterilising solution should be used for each patient for the purposes of sterilisation.
1.5 Other syringe types are not licensed for re-use and are therefore single-use only.

1.6 Two types of Entralok syringes should be used (order codes are given below), either:

1.7 Reverse (female) luer syringes should be used with Fresenius PEG and jejunostomy tubes. Entralok catheter-tip syringes will cause leakage.

1.8 Catheter-tip syringes should be used with the red feeding adaptor of a Wilson-Cooke RIG tube.

1.9 The top part of the Y-adaptor of the Merck PEG tube will take either the reverse (female) luer syringe or the catheter-tip syringe. The side-port will take a catheter-tip syringe. It is therefore advisable to use catheter-tip syringes with these tubes.

1.10 Standard balloon gastrostomy tubes will take a catheter-tip syringe, whilst low-profile devices (buttons) require an extension set to be attached before connecting a syringe. Some extension sets will take the reverse (female) luer lock Entralok syringe (normally extension sets used for attaching a giving set to); others require the catheter-tip syringe (normally “bolus” type sets, often used for bolus feeding). Most extension sets for attaching to a giving set (luer connections) will also take the catheter-tip syringe. If in doubt, contact the nutrition nurse, paediatric nurse, dietitian or other specialist nurse.

1.11 Entralok syringes should be cleaned in accordance with the manufacturer’s instruction leaflet (see chart below “Cleaning syringes and other ancillary items”). Careful washing of the syringes should be sufficient for patients living in their own homes, with feeding tubes that end in the stomach, where home hygiene is good.

1.12 For patients in nursing/ residential care facilities, for those patients living independently where this is concern over hygiene, when the patient is immunocompromised, or when the feeding tube ends in the bowel, syringes should be immersed in sterilising solution between each session, as per the manufacturer’s recommendations.

1.13 For paediatric patients <12 months of age, syringes should be sterilised as above between each session.

<table>
<thead>
<tr>
<th>Type of Tube</th>
<th>Appropriate Entralok syringe</th>
<th>Manufacturers code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresenius PEG or jejunostomy tube</td>
<td>Reverse (female) luer Entralok syringe</td>
<td>PES60</td>
</tr>
<tr>
<td>Wilson-Cooke RIG tube with red feeding adaptor</td>
<td>Entralok catheter-tip syringe</td>
<td>PES60CT</td>
</tr>
<tr>
<td>Merck Corflo PEG tube</td>
<td>Entralok catheter-tip syringe</td>
<td>PES60CT</td>
</tr>
<tr>
<td>Standard balloon gastrostomy tubes</td>
<td>Enteralok catheter-tip syringe</td>
<td>PES60CT</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Low-profile balloon gastrostomies (buttons) – extension set to take catheter-tip syringe (“bolus” set)</td>
<td>Enteralok catheter-tip syringe</td>
<td>PES60CT</td>
</tr>
<tr>
<td>Low-profile balloon gastrostomies (buttons) – extension set to take luer syringe</td>
<td>Reverse (female) luer Entralok syringe or Entralok catheter-tip syringe</td>
<td>PES60 or PES60CT</td>
</tr>
</tbody>
</table>

**Cleaning Instructions**

- Fill a clean bowl with hot, soapy water (domestic washing up liquid). Place the dispenser tip in the water and draw the plunger in and out several times until all traces of feed or medicine are removed.
- Separate the two parts of the dispenser and wash in soapy water.
- Rinse both parts under cold running water. Shake off any excess water and gently tap the end of the dispenser on a clean paper towel to dislodge any water in the tip of the dispenser. Dry with a clean paper towel.
- Once dry, store the dispenser still separated, in a clean, dry container.

**Giving Sets**

Side ports on giving sets should not be used to administer water flushes or medicines, therefore patients will start to receive giving sets without these. Use the correct syringe and attach directly to the end of the feeding tube (or extension set for low profile balloon gastrostomies).
## ADMINISTERING MEDICATIONS VIA A FEEDING TUBE

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop the feed and disconnect the giving set from the feeding tube.</td>
<td>To allow access to the end of the feeding tube, as side ports should not be used to administer medications.</td>
</tr>
<tr>
<td>Replace the dust cap on the giving set and hang this out of the way, but lower than the pack of feed.</td>
<td>To prevent contamination of the end of the giving set and prevent backtracking of gastric acid up the giving set.</td>
</tr>
<tr>
<td>Flush the tube with at least 30mls of freshly drawn tap water (for tubes ending in the stomach), or cooled, freshly boiled water (for tubes ending in the jejunum, immunocompromised patients or infants under one year of age) with the plunger in place. For young children and fluid-restricted patients check fluid the patient’s fluid restriction with the Dietitian or Children’s Nurse.</td>
<td>To clear residual feed from the patients feeding tube and adhere to infection control guidelines.</td>
</tr>
<tr>
<td>Administer the patient's medications one by one.</td>
<td>Medications should not be mixed unless advised by a pharmacist.</td>
</tr>
<tr>
<td>Measure each medicine into a medicines measuring pot using an oral syringe if necessary.</td>
<td>To ensure that the correct dose is given.</td>
</tr>
<tr>
<td>• Soluble tablets, crushed tablets* and contents of opened capsules* should be mixed with 10-15mls of water; • Viscous liquids should be mixed with an equal quantity of water if necessary</td>
<td>To ease administration and prevent blockage of the tube.</td>
</tr>
<tr>
<td>Administer the medication down the feeding tube using the correct ENTRALOK enteral feeding syringe, by attaching the syringe to the feeding tube and tipping the medication into the barrel of the syringe. Use the plunger if necessary.</td>
<td>The correct ENTRALOK enteral syringe attached to the patient’s feeding tube prevents the need to use adaptors.</td>
</tr>
<tr>
<td>Rinse the medicine pot and/or syringe used to measure the medicine dose and administer this also down the tube.</td>
<td>To ensure the full dose is given.</td>
</tr>
<tr>
<td>If more than one medicine is to be administered, flush between drugs with at least 10mls of water</td>
<td>To clear residual medication from the tube.</td>
</tr>
<tr>
<td>Flush the tube with at least 30-50mls of</td>
<td>To thoroughly clear residual medication</td>
</tr>
</tbody>
</table>
water following administration of the last drug, using the syringe with the plunger in place. For young children and fluid-restricted patients check the patient’s fluid restriction with the Dietitian or Children’s Nurse.

Reconnect the giving set to the end of the enteral feeding tube.

* The mechanics of crushing medicines or opening capsules may alter their therapeutic properties rendering them ineffective and are not covered by their product licence. Medicinal products should not routinely be crushed or opened unless a pharmacist advises that the medication is not compromised by crushing or opening, and crushing or opening has been determined to be within the patient’s best interest.

2 REPLACEMENT TUBES AND OTHER ANCILLARY ITEMS

General principles:

2.1 Extension sets for low-profile balloon gastrostomy tubes (buttons) should be replaced according to the manufacturer’s recommendations. This is usually once every two weeks. Between uses these should be washed and rinsed thoroughly, as per box below (see “Cleaning syringes and other ancillary items”)

2.2 Fresenius funnel adaptors, if used, should be replaced weekly, as is the manufacturer’s recommendation at the current time. These should be washed and rinsed thoroughly as per box below (see “Cleaning syringes and other ancillary items”).

2.4 At April 2009, the manufacturers of the standard PEG tubes have not issued recommendations on the frequency with which clamps, external fixators and PEG ends should be changed. It is therefore recommended that these are not changed routinely, but only if they become lost or damaged. They should however be kept clean and hygienic. If the patient baths or showers, then this is the ideal opportunity for the parts to be cleaned. Otherwise, gauze, wipes, cotton buds and, in extreme cases, a clean, soft toothbrush that has not been used for oral care can be used for cleaning.

2.5 Merck PEG tubes: It is imperative that the external fixator of the Merck tube is undone weekly and cleaned inside, to prevent a build-up of exudate that is then in contact with the stoma. When undone and cleaned inside, the tube should be advanced as per (“Percutaneous Endoscopic Gastrostomy tubes (PEGs) and surgical gastrostomies: After 14 days post gastrostomy tube insertion”).
MANAGING BALLOON GASTROSTOMIES

1 CHECKING BALLOON INFLATION

1.1 As with all procedures, balloon inflation should be checked by staff and/or patients/carers competent in this procedure.

1.2 Balloon inflation should be checked weekly, unless indicated differently in the manufacturers written recommendations.

1.3 Wash hands before and after the procedure (see “Infection Control: Hand washing”).

1.4 Pre-fill a new 10ml syringe with sterile water for injection, the volume as recommended by manufacturers.

1.5 Explain to the patient that their gastrostomy tube is going to be checked. Pull back (release) the external fixator, if present (standard balloon gastrostomy tubes only).

1.6 Attach an empty 10ml syringe (in line with manufacturer’s guidelines) onto the inflation valve of the balloon gastrostomy.

1.7 Gently push the tube 1-2cm into the stomach, to prevent accidental inflation in the stoma tract.

1.8 Whilst carrying out this procedure ask the patient/carer to hold the tube, ensuring that it remains in the stomach. Alternatively, loosely tape it to the skin.

1.9 Gently draw back the plunger on the syringe until no more fluid comes out of the internal balloon and detach the syringe.

1.10 Check and document the amount of fluid taken out of the balloon against the amount recommended by the manufacturer.

1.11 Attach the pre-filled syringe and re-inflate the balloon with this fluid (amount as recommended by the manufacturer).

1.12 Remove any tape applied and gently pull the tube back until felt resting against the internal gastric mucosa.

1.13 Replace the external fixator, if applicable, to within 0.2-0.5cm from the surface of the stomach.
2 BALLOON GASTROSTOMY REPLACEMENT

General principles:

2.1 Every time the water is checked, the amount withdrawn should be documented in the patient’s notes (see “Balloon retained gastrostomy devices: Checking balloon inflation”).

2.2 If >1ml of water has been lost since the last inflation and the age of the tube falls within the manufacturers minimum recommended replacement time, the tube should be replaced with a new one (i.e. if the manufacturer states the tube should be replaced after 3-6 months, and 3 months have elapsed).

2.3 If >1ml of water has been lost since the last inflation and the age of the tube does not fall within the manufacturers minimum recommended replacement time (i.e. if the manufacturer states the tube should be replaced after 3-6 months, and only 2 months have elapsed), contact the healthcare professional managing the tube (nutrition nurse, dietitian, specialist nurse) for advice.

2.4 Balloon gastrostomy devices should be replaced routinely after the maximum period of time has elapsed according to the manufacturers recommendations (i.e. if the manufacturer states the tube should be replaced after 3-6 months, and 6 months have lapsed), even if the balloon is losing less than 1 ml of water at each check.

2.5 Balloon gastrostomy replacement should be performed by staff and/or carers who are competent in the procedure and management plan as outlined below.

2.6 Balloon gastrostomy tubes are single-use and if displaced, should be replaced with a new tube (see “Tube displacement”).

2.7 Patient should not be fed for at least one hour prior to their balloon gastrostomy tube change.

3 PROCEDURE FOR REPLACING A BALLOON GASTROSTOMY:

1.1 Wash hands before and after the procedure (see “Hand washing”).

3.2 Prepare the equipment. You will need:

- the new tube,
- 2 x 10ml (unless provided in the pack with the new tube) syringes pre-filled syringe with sterile water for injection-the volume as recommended by the manufacturers,
- 1x syringe for withdrawing fluid from the old tube,
- 1 x 50 ml syringe to aspirate the new tube after placement,
- pH strips with gradients of 0.5 or pH paper with a range of 0 to 6 or 1 to 11,
- gauze and a water-based lubricant,
- equipment to clean the stoma site (see “Percutaneous Endoscopic Gastrostomy tubes (PEGs) and surgical gastrostomies: After 14 days post gastrostomy tube insertion”),
- sterile gloves and an apron.

3.3 Check the expiry date and size of the new tube.

3.4 Explain to the patient that their gastrostomy tube is going to be changed.

3.5 The patient should lie flat, if possible.

3.6 Check the balloon on the new tube by inserting the manufacturers recommended volume of fluid into the inflation valve using the first pre-filled syringe and verify balloon symmetry, and deflate. Do not remove the new tube from the pack to perform this, but open one side, and observe a no-touch technique at all times. Discard the first syringe.

3.7 Clean around the stoma and dry thoroughly (see “Percutaneous Endoscopic Gastrostomy tubes (PEGs) and surgical gastrostomies: After 14 days post gastrostomy tube insertion”).

3.8 If the old tube is still in place, attach the empty syringe and deflate the balloon on the old tube by gently drawing back the plunger until no more fluid comes out, then discard the syringe and fluid.

3.9 Place a piece of gauze under the gastrostomy tube and pull the old tube out of the stoma. If resistance is met, check the balloon is fully deflated.

3.10 Lubricate the tip of the new tube with a water-based lubricant.

3.11 Insert the new tube through the stoma into the stomach.

3.12 Aspirate fluid from the feeding port using the 50 ml syringe and test it on pH paper (see “Nasogastric tubes”).

3.13 Inflate the balloon with the volume of fluid recommended by the manufacturer using the second pre-filled syringe.

3.14 Gently pull the gastrostomy tube back until there is a slight resistance from the internal balloon touching the stomach wall (not applicable for button tubes). Wipe excess lubricating jelly from the skin and tube.

3.15 Slide the external retention disc (fixator) so that it is at least 2-3mm from the surface of the skin (not applicable for button tubes).

3.16 Flush the feeding port with 20-30 ml water, using a syringe and water as normally recommended for the patient.

3.17 Place the sticker including LOT number from the new tube in the patient’s notes.
3.18 If at any time during the procedure the patient experiences unexpected pain, medical advice should be sought.

3.19 If there is any difficulty obtaining aspirate, follow the methods described in “Nasogastric (NG) tubes: Confirming NG tube position”.

4 MEASURING LOW-PROFILE BALLOON (BUTTON) GASTROSTOMY STOMA SIZE

4.1 Low-profile gastrostomy (button) devices do not have an external fixator, as the tube is selected for the individual patient based on both stoma width as for other tubes (FG) and length of stoma or tract, i.e. the length between the surface of the skin and the inside of the stomach, where the balloon will rest. The stoma, or tract, length may change over time, particularly in growing children and where there is any weight loss or gain. This can lead to leakage, fracture of the tube and/or pressure necrosis of abdominal and/or gastric tissue. If there is any suspicion that the stoma length may have changed, then the stoma length should be measured using a gastrostomy measuring device. These are available from the manufacturers of the button tubes.

4.2 Any new placement of a low-profile balloon gastrostomy (button) should be measured using a stoma measuring device prior to insertion to ascertain correct stoma length. This will enable ordering of correct equipment. Where this has not been done, and the patient presents with complications requiring tube replacement, the patient will be referred back to the clinician who instigated the treatment for stoma measurement.

4.3 Stoma tract measurement should be performed by staff and/or carers who are competent in this procedure.

4.4 The stoma tract should be measured following any significant weight loss or weight gain and/or with signs of leakage, redness, soreness or other pain around the stoma, frequent fractures of the tube itself with leakage. If in doubt, contact the nutrition nurse/specialist nurse, or other managing healthcare professional as agreed.

4.5 Stoma measuring devices are single-use items.

4.6 When the stoma is measured, and it is found that the stoma length is changed, it will be necessary to insert a new low-profile device or standard balloon gastrostomy to maintain the stoma tract until the new size can be ordered.
5 PROCEDURE FOR MEASURING STOMA LENGTH:

5.1 Wash hands before and after the procedure (see “Hand washing”).

5.2 Prepare the equipment. You will need:

- the stoma measuring device,
- a new low-profile tube,
- 2 x 10 ml (unless provided in the pack with the new tube) syringes pre-filled syringe with sterile water for injection-the volume as recommended by the manufacturers of the low-profile device,
- 2 x 10 ml syringes pre-filled with sterile water for injection-the volume as recommended by the manufacturer of the stoma measuring device,
- 1x 10ml syringe for withdrawing fluid from the old tube,
- 1 x 50 ml syringes to aspirate the new tube after placement,
- pH paper with gradients of 0.5,
- gauze and a water-based lubricant,
- equipment to clean the stoma site (see “Percutaneous Endoscopic Gastrostomy tubes (PEGs) and surgical gastrostomies: After 14 days post gastrostomy tube insertion”).

5.3 Check the expiry date and size of the new low-profile tube and the stoma measuring device.

5.4 Explain to the patient that their gastrostomy tube is going to be changed and the stoma measured.

5.5 The patient should lie flat, if possible. Check the balloon on the new tube by inserting the manufacturers recommended volume of fluid into the inflation valve using the first pre-filled syringe and verify balloon symmetry, and deflate. Do not remove the new tube from the pack to perform this, but open one side, and observe a no-touch technique at all times. Discard the first syringe.

5.6 Repeat the above procedure with the stoma measuring device and the first syringe pre-filled with sterile water, volume as recommended by the manufacturer of the stoma measuring device.

5.7 If the old tube is still in place, attach the empty syringe and deflate the balloon on the old tube by gently drawing back the plunger until no more fluid comes out, then discard the syringe and fluid.

5.8 Place a piece of gauze under the gastrostomy tube and pull the old tube out of the stoma. If resistance is met, check the balloon is fully deflated.

5.9 Clean around the stoma and dry thoroughly (see “Percutaneous Endoscopic Gastrostomy tubes (PEGs) and surgical gastrostomies: After 14 days post gastrostomy tube insertion”).

5.10 Lubricate the tip of the stoma measuring device with a water-based lubricant.
5.11 With the patient lying down, insert the stoma measuring device 1-2 cm further into the tract than the length of previous low-profile device through the stoma into the stomach.

5.12 Attach the second syringe, pre-filled with the volume of sterile water as recommended by the manufacturers of the stoma measuring device, to the balloon valve of the measuring device.

5.12 Inflate the balloon of the measuring device. Read off the correct stoma length (given as 0.5 cm gradients) and document this in the patient’s notes.

5.13 A second measurement should then be taken, with the patient sitting up. This measurement should also be documented in the patient’s notes and an average of the two readings used as the correct stoma length.

5.15 Deflate the stoma measuring device, remove, and discard the device and the syringe.

5.16 Lubricate the tip of the new low-profile tube with a water-based lubricant. Insert the new tube through the stoma into the stomach.

5.17 Aspirate fluid from the feeding port using the 50 ml syringe and test it on pH paper (see “Nasogastric tubes”).

5.18 Inflate the balloon with the volume of fluid recommended by the manufacturer and the second pre-filled syringe.

5.19 Gently pull the gastrostomy tube back until there is a slight resistance from the internal balloon touching the stomach wall (not applicable for button tubes).

5.20 Wipe excess lubricating jelly from the skin and tube.

5.21 Slide the external retention disc (fixator) so that it is at least 2-3mm from the surface of the skin (not relevant for low profile devices).

5.22 Flush the feeding port with 20-30 ml water, using a syringe and water as normally recommended for the patient.

5.23 Place the sticker including LOT number from the new tube in the patient’s notes.

5.24 If at any time during the procedure the patient experiences unexpected pain, medical advice should be sought.
There is no scientific evidence regarding when is the optimum time to replace balloon-retained gastrostomy tubes. The above recommendations are based on best practice working alongside Nutricia Nursing Policies.
Procedure for the Insertion of Nasogastric (NG) Tubes

1.0 Essential Equipment

- Clinically clean tray
- *Nasogastric tube (checked for correct size, within date and intact packaging) that has been stored in a deep freeze for at least half an hour before the procedure is to begin, to ensure a rigid tube that will allow for easy passage.
- Receiver
- Topical gauze
- Lubricating jelly
- Hypoallergenic tape
- CE marked-indicator strips (for use on human gastric aspirate) with pH range of 0–6 or 1–11 with gradations of 0.5 (checked that are within date and haven’t been exposed to air)
- 50 mL enteral syringe
- Spigot
- Glass of water (if patient is allowed to drink)

* A NASOGASTRIC TUBE DESIGNED FOR FEEDING PURPOSES MUST BE USED E.G. FINE-BORE FEEDING TUBE, RATHER THAN A RYLE’S TUBE WHICH IS USED FOR DRAINAGE OF GASTRIC CONTENTS

**IMPORTANT NOTE:**
Nothing should be administered via the NGT until gastric aspirate has been pH tested and a pH of 5.5 or less is confirmed. If you cannot aspirate (blocked) then you must not administer anything (fluid or air) via the NGT to try to unblock it. There is always residual fluid from flushing, medication or feeding in the NGT and this can then be pushed into the lungs. All blocked NGT’s automatically require a change.

1.1 Preprocedure

Prior to inserting an NGT the following should be checked:

- The patient’s record, to check for potential complications. For example, anatomical alterations due to surgery, such as a flap repair or the presence of a cancerous tumour, as this can prevent a clear passage for the NGT, resulting in pain and discomfort for the patient and further complications.
- The patient’s medications, for drugs such as antacids or anti-coagulants.
- The patient, to ensure they do not have a full stomach as this procedure could lead to vomiting and subsequent aspiration.

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Explain and discuss the procedure with the patient.</td>
<td>To ensure that the patient understands the procedure and gives their valid consent (NMC 2008b).</td>
</tr>
<tr>
<td>2 Arrange a signal by which the patient can communicate if they want the nurse to stop, for example by raising their</td>
<td>The patient is often less frightened if they feel that they have some control over the procedure.</td>
</tr>
</tbody>
</table>
### Hand

3. Assist the patient to sit in a semi-upright position in the bed or chair. Support the patient's head with pillows.  
*Note:* The head should not be tilted backwards or forwards (Rollins 1997).

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Assisting the patient to sit in a semi-upright position in the bed or chair. Support the patient's head with pillows. This position enables easy swallowing and ensures that the epiglottis is not obstructing the oesophagus.</td>
</tr>
</tbody>
</table>

4. Mark the distance to which the tube is to be passed by measuring the distance on the tube from the patient's earlobe to the bridge of the nose plus the distance from the earlobe to the bottom of the xiphisternum (the NEX measurement).

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
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</thead>
<tbody>
<tr>
<td>4.</td>
<td>Indicate the length of tube required for entry into the stomach (NPSA 2011).</td>
</tr>
</tbody>
</table>

5. Wash hands with bactericidal soap and water or bactericidal alcohol handrub, and assemble the equipment required.

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Hands must be cleansed before and after patient contact to minimize cross-infection (Fraise and Bradley 2009).</td>
</tr>
</tbody>
</table>

### Procedure

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
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</thead>
<tbody>
<tr>
<td>6.</td>
<td>Check the nostrils are patent by asking the patient to sniff with one nostril closed. Repeat with the other nostril. To identify any obstructions liable to prevent intubation.</td>
</tr>
</tbody>
</table>

7. Lubricate about 15–20 cm of the tube with a thin coat of lubricating jelly that has been placed on a topical swab, Being careful not to get it on or near the tip of the tube. The tip should be lubricated with water.

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
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</thead>
<tbody>
<tr>
<td>7.</td>
<td>To reduce the friction between the mucous membranes and the tube. Lubricating jelly can block the NGT</td>
</tr>
</tbody>
</table>

8. Insert the proximal end of the tube into the clearer nostril and slide it backwards and inwards along the floor of the nose to the nasopharynx. If an obstruction is felt, withdraw the tube and try again in a slightly different direction or use the other nostril.

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>To facilitate the passage of the tube by following the natural anatomy of the nose.</td>
</tr>
</tbody>
</table>

9. As the tube passes down into the nasopharynx, ask the patient to start swallowing and sipping water (if the patient is allowed), enabling the tube to pass into the oesophagus.

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>To focus the patient’s attention on something other than the tube. The swallowing action closes the glottis and the cricopharyngeal sphincter opens, enabling the tube to pass into the oesophagus (Groher 1997).</td>
</tr>
</tbody>
</table>

10. Advance the NGT slowly to the NEX measurement, observing the patient for coughing or distress. If the patient appears distressed, remove the NGT. Distress may indicate that the tube is in the bronchus. However, absence of distress is insufficient for detecting a misplaced tube (NPSA 2005; NPSA 2011).

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
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</thead>
<tbody>
<tr>
<td>10.</td>
<td>To focus the patient’s attention on something other than the tube. To facilitate the passage of the tube by following the natural anatomy of the nose.</td>
</tr>
</tbody>
</table>

11. Secure the tube to the nostril with adherent dressing tape, for example Elastoplast, or an adhesive nasogastric stabilization/securing device (Burns et al. 2009).

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td>To hold the tube in place. To ensure patient comfort.</td>
</tr>
</tbody>
</table>
1995). If this is contraindicated, a hypoallergenic tape should be used. An adhesive patch (if available) will secure the tube to the cheek.

12 The guidewire must be left in place until the NGT has been confirmed as being in the correct position.

### 1.2 Postprocedure

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>13</strong> Check the position of the tube to confirm that it is in the stomach by using the following methods.</td>
<td>To confirm placement of radio-opaque nasogastric tube.</td>
</tr>
<tr>
<td><strong>First line test method: pH paper (use only CE marked for gastric aspirate - blue litmus paper must NOT be used)</strong></td>
<td></td>
</tr>
<tr>
<td>Aspirate 0.5–1 mL of stomach contents and test pH on indicator strips (NPSA 2011; Rollins 1997). When aspirating fluid for pH testing, wait at least 1 hour after a feed or medication has been administered (either orally or via the tube). Before aspirating, flush tube with 20 mL of air to clear other substances (Metheny et al. 1993). A pH level of between 1 and 5.5 is unlikely to be pulmonary aspirates and it is considered appropriate to proceed to feed through the tube (Metheny and Meert 2004, NPSA 2011).</td>
<td>Indicator strips should have gradations of 0.5 or paper with a range of 0–6 or 1–11 to distinguish between gastric acid and bronchial secretions (NPSA 2011). To provide an accurate test result because the feed or medication may raise the pH of the stomach. Wait at least 1 hour before aspirating to enable the feed or medication to be absorbed, otherwise an inaccurate test will be obtained (NPSA 2011). PPI’s and H2 antagonists may give a higher pH – this should be included in the individual patient’s risk assessment.</td>
</tr>
<tr>
<td>If a pH of 6.0 or above is obtained <strong>DO NOT</strong> use the tube. If a pH of 5.0, 5.5 or 6.0 is obtained then a second competent person must retest gastric aspirate and pH result. The nasogastric tube may need to be repositioned or checked with an X-ray.</td>
<td>There is an increased risk of the nasogastric tube being incorrectly placed (NPSA 2011).</td>
</tr>
<tr>
<td><strong>Second line test method: X-ray confirmation</strong></td>
<td></td>
</tr>
<tr>
<td>Take an X-ray of chest and upper abdomen.</td>
<td>X-ray of radio-opaque tubes is the most accurate confirmation of position and is the method of choice in patients with altered anatomy, those who are aspirating or are unconscious with no gag reflex (NPSA 2011).</td>
</tr>
<tr>
<td>The following methods <strong>MUST NOT</strong> be used to test the position of an NGT tube:</td>
<td>These tests are not accurate or reliable as a method of checking the position of</td>
</tr>
</tbody>
</table>
- auscultation of air insufflation through the feeding tube ('whoosh' test).
- testing the acidity/alkalinity of aspirate using blue litmus paper
- interpreting absence of respiratory distress as an indicator of correct positioning
- monitoring bubbling at the end of the tube
- observing the appearance of feeding tube aspirate

| 15. The guidewire may be lubricated and removed once the position has been determined as correct. If there is any concern about the position of the tube, the guidewire should remain in situ and the tube repositioned. | The guidewire must not be lubricated to aid removal until gastric aspirate has been pH tested and found to be 5.5 or <. NPSA 2012 |
COMPETENCIES FOR INSERTING NASOGASTRIC TUBES

The competencies are to be used in conjunction with:

- Medicines Policy – Somerset Partnership NHS Foundation Trust
- Infection control Policy – Somerset Partnership NHS Foundation Trust
- Assessing Competency in Clinical Practice Policy – Somerset Partnership NHS Foundation Trust
- Protocol for the Insertion and Checking Misplacement of Nasogastric Feeding Tubes – Somerset Partnership NHS Foundation Trust

The purpose of these competencies is to clarify the knowledge and skills expected of practitioners, to ensure safe practice in the insertion of nasogastric tubes.

The self–rating scale is to be used by the individual practitioner for self-assessment of present performance during supervised practice, and to help identify learning needs. Their line manager, or other experienced practitioner, must then assess these skills and sign to confirm competency.

**Key for Self-Assessment**
1 = No knowledge / experience
2 = Some knowledge / experience
3 = Competent
4 = Competent with some experience
5 = Competent, experienced and able to teach others

Author: Steve Huish Clinical Skills Facilitator
Reviewer: Lisa Stone, Acting Senior Nurse for Clinical Practice, February 2015
Assessment of competence in inserting nasogastric tubes

I confirm that I have self-assessed as competent to practice nasogastric tube insertion as below:

Practitioner Name: ..............................................................
Practitioner Qualification: ..................................................
Practitioner Signature: ....................................................... Date: ......................

I confirm that I have assessed the named practitioner above as competent to perform the above skill.

Name & Title: ..............................................................
Signature: ....................................................... Date: ......................

Upon successful completion of your assessment of competency please send a copy of this page to the Learning and Development Dept, your line manager and retain the original in your portfolio
<table>
<thead>
<tr>
<th>KNOWLEDGE and SKILLS for Nasogastric Tube Insertion</th>
<th>Self Assessment</th>
<th>Formal Assessment</th>
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<tr>
<td></td>
<td>Score</td>
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<tr>
<td><strong>1</strong> List the two different kinds of nasogastric tubes and the differences between them both</td>
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<td><strong>2</strong> Identify the correct storage for a fine bore nasogastric feeding tube prior to insertion</td>
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<td><strong>3</strong> Briefly describe the anatomy and physiology that the nasogastric tube shall pass</td>
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<tr>
<td><strong>4</strong> Select and prepare appropriate equipment ready for nasogastric tube insertion</td>
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<tr>
<td><strong>5</strong> Assist patient into appropriate position</td>
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<tr>
<td><strong>6</strong> Describe the correct technique for measuring the tube for placement externally prior to insertion</td>
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<td><strong>7</strong> Demonstrate safe, appropriate hand cleansing technique prior to insertion</td>
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</table>
### KNOWLEDGE and SKILLS for Nasogastric Tube Insertion

<table>
<thead>
<tr>
<th></th>
<th>Knowledge and Skills</th>
<th>Self Assessment</th>
<th>Formal Assessment</th>
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<tbody>
<tr>
<td><strong>8</strong></td>
<td>Competently insert nasogastric tube and secure in the correct position</td>
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<tr>
<td><strong>9</strong></td>
<td>List the two correct means of confirming placement of nasogastric tube prior to commencing feeding</td>
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<tr>
<td><strong>10</strong></td>
<td>Identify at what pH shows that there is an increased risk that the tube has been inserted and placement is non-gastric. What may cause an altered pH and how should this be managed?</td>
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<tr>
<td><strong>11</strong></td>
<td>List three methods for confirming tube placement that must never be used</td>
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<tr>
<td><strong>12</strong></td>
<td>Safely dispose of all equipment</td>
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<tr>
<td><strong>13</strong></td>
<td>Record information in nursing documentation, including information of the tube, aspirated pH and any problems with insertion</td>
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</tbody>
</table>
Ref: The Royal Marsden Hospital Manual of Clinical Nursing Procedures.  

**THE RECOMMENDED PROCEDURE FOR CHECKING THE POSITION OF NASOGASTRIC FEEDING TUBES IN ADULTS**

The NPSA (2011) has put together information to advise staff which methods should and should not be used to check the position of nasogastric feeding tubes. The tube position should be checked:

- following initial insertion
- before administering each feed
- before giving medication
- at least once daily during continuous feeds
- following episodes of vomiting, retching or coughing (the absence of coughing does not rule out misplacement or migration)
- following evidence of tube displacement

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
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<tbody>
<tr>
<td>Check whether the patient is on medication that may increase the pH level of gastric contents</td>
<td>Medications that could elevate the pH level of gastric contents are: antacids; H2 antagonists; and proton pump inhibitors. For those patients who are frequently on antacids, the initial risk assessment needs to identify actions that staff should take in this scenario, and document them in the care plan. The initial pH of the aspirate should also be documented in the case notes.</td>
</tr>
<tr>
<td>Check for signs of tube displacement</td>
<td>Documenting the external length of the tube initially and checking external markings prior to feeding will help to determine if the tube has moved. The documentation will also assist radiographers if an x-ray is needed.</td>
</tr>
<tr>
<td>Sufficient aspirate (0.5-1ml) obtained – <strong>First line method</strong></td>
<td>0.5-1 ml of aspirate will cover an adequate area on the single, double or triple reagent panels of pH testing strips/paper. Allow ten seconds for any colour change to occur. Ensure pH testing strips are within date and have not been left open to air for a period of time.</td>
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<tr>
<td>Aspirate is pH 1-5.5</td>
<td>Commence feed. There are no known reports of pulmonary aspirates at or below this figure. The range of pH 1 to 5.5 balances the risk between increasing the potential problems for clinical staff e.g. removing tubes that are actually in the stomach, increased use of X-ray, with the as yet, unreported possibility of feeding at pH 5.5 when the tube is in the respiratory tract.</td>
</tr>
</tbody>
</table>
| **Aspirate is pH 6 or above** | **DO NOT FEED.** Possible bronchial secretion; leave up to one hour and try again. The initial risk assessment should identify actions for staff to take in this scenario for each patient. The actions should be documented in the care plan.  
If there is ANY doubt about the position and/or the clarity of the colour change on the pH indicator strip/paper, particularly between the ranges pH 5 and 6, the feeding should NOT commence, require further check by a second competent person and/or seek medical advice. |
|---|---|
| **Wait up to one hour before re-aspirating to check pH level** | The most likely reason for failure to obtain gastric aspirate below pH of 5.5 is the dilution of gastric acid by enteral feed. Waiting for up to an hour will allow time for the stomach to empty and the pH to fall.  
The time interval will depend on the clinical need of the patient and whether or not they are on continuous or bolus feeds. |

Methods that should **NOT** be used:

- auscultation of air insufflated through the feeding tube ('whoosh' test)
- testing the acidity/alkalinity of aspirate using blue litmus paper
- interpreting absence of respiratory distress as an indicator of correct positioning
- monitoring bubbling at the end of the tube
- observing the appearance of feeding tube aspirate
COMPETENCIES FOR CHECKING MISPLACEMENT OF NASOGASTRIC TUBES

The competencies are to be used in conjunction with:

- Medicines Policy – Somerset Partnership NHS Foundation Trust
- Infection control Policy – Somerset Partnership NHS Foundation Trust
- Assessing Competency in Clinical Practice Policy – Somerset Partnership NHS Foundation Trust
- Protocol for the Insertion and Checking of Nasogastric Feeding Tubes – Somerset Partnership NHS Foundation Trust

The purpose of these competencies is to clarify the knowledge and skills expected of practitioners, to ensure safe practice in Checking for misplacement of nasogastric tubes.

The self–rating scale is to be used by the individual practitioner for self-assessment of present performance during supervised practice, and to help identify learning needs. Their line manager, or other experienced practitioner, must then assess these skills and sign to confirm competency.

Key for Self-Assessment
1 = No knowledge / experience
2 = Some knowledge / experience
3 = Competent
4 = Competent with some experience
5 = Competent, experienced and able to teach others
Assessment of competence for Checking for Misplacement of Nasogastric Tubes

I confirm that I have self-assessed as competent to practice (insert skill) as below:

Practitioner Name:  
Practitioner Qualification:  
Practitioner Signature:  
Date:  

I confirm that I have assessed the named practitioner above as competent to perform the above skill

Name & Title:  
Signature:  
Date:  

Upon successful completion of your assessment of competency please send a copy of this page to the Learning and Development Dept., your line manager and retain the original in your portfolio.
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</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
<td>Tick</td>
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<tr>
<td><strong>1.</strong> List six reasons why a nasogastric tube may become misplaced</td>
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<td><strong>2.</strong> Suggest how the above could be avoided</td>
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<td><strong>3.</strong> Identify correct checks for misplaced nasogastric tubes</td>
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<tr>
<td><strong>4.</strong> Select and prepare appropriate equipment to check for misplaced nasogastric tubes</td>
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<td><strong>5.</strong> Successfully demonstrate correct aspiration technique</td>
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<td>How much aspirate is considered sufficient to achieve an accurate result?</td>
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<td><strong>6.</strong> Identify the range of an acceptable gastric aspirate pH</td>
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<td>What can cause a spurious answer? What actions are required if this occurs?</td>
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<td></td>
<td>Suggest two actions to be taken if aspiration cannot be achieved</td>
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<td>7</td>
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<td>8</td>
<td>What actions would you take if you consider the Nasogastric tube to be blocked</td>
<td>1</td>
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<td></td>
<td>What are the recommendations?</td>
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<tr>
<td>9</td>
<td>What action must you take if you find a misplaced nasogastric tube</td>
<td>1</td>
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<td></td>
<td>Ensure correct, succinct documentation of outcome, including aspirated pH prior to confirming or removing tube placement</td>
<td>1</td>
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<td>10</td>
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<tr>
<td>11</td>
<td>Correctly dispose of equipment used to check for misplaced nasogastric tubes as per trust policy</td>
<td>1</td>
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</tbody>
</table>

Enteral Feeding Policy
V6
Extended to April 2020
**APPENDIX J**

**Nasogastric Tube Position Record Form**

<table>
<thead>
<tr>
<th>Type of tube inserted</th>
<th>Date tube inserted</th>
<th>Tube inserted by</th>
<th>Level tube passed to (cms)</th>
<th>Aspirate pH reading</th>
<th>Aspirate volume and colour</th>
<th>Date tube removed &amp; reason why</th>
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<table>
<thead>
<tr>
<th>Date/Time</th>
<th>pH before feed/meds</th>
<th>External tube length (cms)</th>
<th>Print name</th>
<th>Signature</th>
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<tr>
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**Patient name:**………………………………………
**Ward/address:**………………………………
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…………………………………………………
**NHS No:** ........................................
**DOB:** ........................................
APPENDIX K

DECISION TREE FOR NASOGASTRIC TUBE PLACEMENT CHECKS IN ADULTS
NPSA 2011

- Estimate nose, ear, xiphisternum measurement (Place exit port of the tube at tip of nose. Extend tube to earlobe, and then to xiphisternum)
- Insert radio-opaque nasogastric tube for feeding (follow manufacturer’s instructions for insertion)
- Confirm and document secured nose, ear, xiphisternum measurement on NG record form
- Aspirate with a 50ml enteral syringe and gentle suction

**Aspirate obtained (0.5-1ml)?**

**YES**

- Test aspirate on CE marked pH indicator paper for use on human gastric aspirate

**pH between 1 and 5.5**

- Aspirate obtained?
  - **YES**
    - Proceed to feed or use tube
      - Record result in the position record form and evaluation record before each feed/medication/flush
  - **NO**
    - Proceed to x-ray: ensure reason for x-ray documented on request form

- Competent clinician (with evidence of training) to document confirmation of nasogastric tube position in stomach

**pH NOT between 1 and 5.5**

- Try each of these techniques to help gain aspirate
  - If possible, turn adult onto left side
  - Inject 10-20ml air into the tube using a 50ml syringe
  - Wait for 15-30 minutes before aspirating again
  - Advance or withdraw tube by 10-20cm
  - Give mouth care to patients who are nil by mouth (stimulates gastric secretion of acid)
  - Do no use water to flush

- Aspirate obtained?
  - **YES**
    - **DO NOT FEED or USE TUBE**
      - Consider re-siting tube or call for senior advice
  - **NO**
    - Aspirate obtained (0.5-1ml)?

A pH of between 1 and 5.5 is reliable confirmation that the tube is not in the lung, however it does not confirm gastric placement as there is a small chance the tube tip may sit in the oesophagus where it carries a higher risk of aspiration. If this is any concern, the patient should proceed to x-ray in order to confirm tube position. Where pH readings fall between 5 and 6 it is recommended that a second competent person checks the reading or retests.
APPENDIX L

GUIDELINES FOR THE EARLY DETECTION OF COMPLICATIONS AFTER INSERTION OF A GASTROSTOMY

1. INTRODUCTION

1.1 Gastrostomies are small stomas created between the stomach and the skin of the abdomen to insert a feeding tube. Gastrostomies are usually used as a medium-to-long term feeding method for patients unable to meet their nutritional needs via oral diet alone, or have an unsafe swallow. They may be inserted surgically, endoscopically or under radiological guidance directly into the stomach via the abdominal wall.

1.2 Gastrostomies can be inserted when a patient is in hospital receiving care for their presenting condition (e.g. stroke) and often return to their acute ward for postoperative care after the procedure. Gastrostomies can also be inserted in day surgery as a day case or as an in-patient short stay so a patient can sometimes be discharged back to community care within 72 hours of having the procedure. Patients can also be transferred from the acute setting to Somerset Community Hospitals within the 72 hour timeframe.

2. PURPOSE & SCOPE

2.1 From October 2003 to January 2010, the National Patient Safety Agency (NPSA) has received 11 reports of deaths and 11 reports of severe harm describing delay in recognising and acting on signs of complications in the first 72 hours after gastrostomy insertion. The Rapid Response Alert Report - National Patient Safety Alert, issued in March 2010, highlighted the importance of early detection of complications after gastrostomy. The alert advises that Healthcare Organisations have a responsibility to provide care in the period up to 72 hours post-gastrostomy and should be aware of the potential for complications and early action.

2.2 This policy applies to all patients who undergo a gastrostomy procedure and are discharged from acute care within 72 hours of the procedure. It will be followed by all members of staff who come into contact with this group of patients.

3. DUTIES AND RESPONSIBILITIES

3.1 This policy applies to all clinical staff working for the Somerset Partnership NHS Foundation Trust, to include bank and agency staff caring for patients with gastrostomies.

3.2 All staff within Somerset Partnership NHS Foundation Trust who have direct contact with patients following the insertion of a gastrostomy within 72 hours
of placement (for example community nurses/community hospital staff) should be aware of the need of appropriate action regarding early detection of complications after gastrostomy.

3.3 Staff should always treat patients with dignity and respect. This may include times, environment and other factors. This should be detailed in the care plan which should reflect how the patient wants to be treated regarding care of their gastrostomy and enteral feed.

3.4 Consent from the patient should be recorded in the usual way in the patient notes and should be obtained prior to any treatment.

3.5 Staff should adhere to the practices detailed in the Essential Steps to Safe Clean Care (Appendix C) to reduce the risks of infection associated with enteral feeding.

4. EXPLANATIONS OF TERMS USED

4.1 Gastrostomy: This is a stoma created between the stomach and skin of the abdomen to allow a feeding tube to be inserted.

4.2 Endoscopy: This is the procedure used in which an endoscope (long tube) is used to help surgeons insert a feeding tube.

4.3 Radiological: Under x-ray guidance.

4.4 Aspiration pneumonia: Inflammation of the lining in one or both lungs when breathing in.

4.5 Colonic perforation: This is when a tear occurs in the colon during the procedure.

4.6 Haemorrhage: Extensive bleeding.

4.7 Peritonitis: Inflammation of the peritoneum, the thin layer of tissue that lines the inside of the abdomen.

5. COMPLICATIONS FOLLOWING INSERTION OF GASTROSTOMY

5.1 Aspiration pneumonia: Levels of sedation may contribute to a risk of aspiration during the procedure. Rates of around 1% are reported on insertions resulting in peri-procedure aspiration. Post-procedure aspiration resulting from refluxed gastric contents and tube feeding is thought to be even higher. Levels attributable to the gastrostomy are difficult to assess due to the vulnerability of many patients undergoing these procedures.

5.2 Colonic perforation: This is rare (but not unknown) in adults, but occurs more frequently in paediatric populations at a rate of 2-3.5%. Colonic
perforation is likely to lead to peritonitis and major surgery may be required to identify and repair the perforation.

5.3 **Haemorrhage:** This may occur during the procedure by the puncture of gastric wall vessels, or after the procedure if the gastric mucosa is too tightly compressed underneath the internal bumper and blood vessels erode. Haemorrhage may be primary (during or immediately after insertion) or secondary (occurring 12-24 hours after gastrostomies are placed under general anaesthetic. It may occur several days after gastrostomy insertion (due to stomal necrosis). Whilst very minor external bleeding can be normal, significant external bleeding can indicate serious internal bleeding.

5.4 **Wound infection:** Localised wound infection including Methicillin-resistant Staphylococcus aureus (MRSA) can occur in 5-25% of cases despite standard administration of prophylactic antibiotics. As this group of patients are very vulnerable some localised infections may proceed to bacteraemia.

5.5 **Peritonitis:** Resulting from bacterial transmission across the stoma puncture site and complicates up to 2.3% of procedures and carries a high mortality rate. Peritonitis manifests itself as abdominal pain, fever and a raised white cell count in the initial days after insertion. Transient external leakage of the stomach contents from the puncture canal can indicate a likelihood that internal leakage is also occurring. There can also be chemical peritonitis if enteral feed leaks into the abdomen; this can manifest itself as pain on feeding.

6 **ACTIONS TO BE TAKEN WITHIN 72 HOURS POST GASTROSTOMY INSERTION**

**Patients discharged from acute setting to their own home/nursing or care home**

6.1 In line with the action plan from the Rapid Response Report NPSA/2010/RRR010 Early detection of complications after gastrostomy acute services should alert the general practitioner by affixing a warning label to the patients discharge summary which is then faxed as “urgent” to the GP practice.

6.2 Acute services should also provide a list of “danger” symptoms to the patient and/or carer and advise them that if any of these symptoms present, they should IMMEDIATELY seek urgent medical attention (day or night) at 24/7 acute service.

6.3 Any Somerset Partnership healthcare professional assessing a patient or is contacted by a patient who has had a gastrostomy inserted within 72 hours and is presenting with symptoms suspicious of complications e.g.

- pain on feeding
- prolonged or severe pain post-procedure
- fresh bleeding
• external leakage of gastric contents

should advise the patient or carer to STOP FEED/MEDICATION DELIVERY IMMEDIATELY and refer patients to 24/7 acute service for IMMEDIATE gastroenterological/surgical review.

Under no circumstances should the patient be advised to wait until next day GP surgery or to wait for repeat assessment during office hours.

Patients discharged from acute setting to community hospitals

6.4 In line with the action plan from the NPSA alert, a patient discharged into a community hospital in Somerset from the acute setting should have a warning label attached to their discharge summary.

6.5 Community hospital nursing staff must ROUTINELY ENSURE that the TYPE and DATE OF INSERTION of the gastrostomy are obtained from the acute team and recorded on the patient’s medical/nursing records.

6.6 Community hospital nursing staff should ensure that they have the necessary post-operative advice from the acute team during handover of the patient. If no information has been received and the patient is transferred to the ward, a senior nurse should contact the acute team for advice IMMEDIATELY.

Failure of the acute team to provide post-operative information should be reported in line with Somerset Partnership Health Trust clinical incidents.

6.7 The following observations must be routinely monitored after gastrostomy placement:

• Blood pressure, heart rate, pulse, respiration rate, oxygen saturations, pain score

• Wound site: bleeding, leakage of gastric contents, tube displacement

Community hospital nursing staff should monitor the above as frequently as depicted in the protocol from the acute service.

If any of the following symptoms appear:

• pain on feeding
• prolonged or severe pain post procedure
• fresh bleeding
• external leakage of gastric contents

Then the advice is to STOP FEED/MEDICATION DELIVERY IMMEDIATELY and seek * urgent medical advice* by contacting the gastroenterology/surgical department at acute service.
Patients discharged from community hospitals to their own home or nursing/care homes within 72 hours of gastrostomy placement

6.8 Most patients transferred to a community hospital stay for a period of rehabilitation. However, where patients are discharged from community hospital within 72 hours of gastrostomy insertion, the following must be carried out:

- a senior medical review
- patients and carers are advised of “danger” signs that require urgent attention and are given an appropriate local contact number for urgent aftercare advice including out of hours and weekend (GP after hours service).
- discharge information is communicated to the patient’s GP and community nurses or care home nurses on discharge, listing the danger signs and appropriate intervention.

<table>
<thead>
<tr>
<th>Department Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ward doctor</td>
</tr>
<tr>
<td>Ward nurses</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Ward dietitian</td>
</tr>
</tbody>
</table>

6.9 The warning labels for medical notes/GP discharge summaries and for patient information have been produced by the Somerset Home Enteral Tube Feeding Service (See Appendix i). Copies of these labels can be emailed out by the Somerset Home Enteral Tube Feeding Service on request.

6.10 Infection Prevention and Control

6.10.1 Always wash hands thoroughly before and after accessing the gastrostomy. (refer to Somerset Partnership NHS Foundation Trust Infection Prevention and Control Policy: Hand washing. When preparing feeds for administration the principles of asepsis should be followed.

- ‘Essential Steps to Safe, Clean Care’, is a Department of Health led delivery programme which aims to reduce healthcare associated infections, including MRSA. The ‘essential steps’ programme provides tools and guidance to support different organisations and settings,
including residential and nursing homes, as they work towards reducing and eradicating healthcare associated infections.

- As part of the ‘Essential Steps to Safe, Clean Care’ programme, the Department of Health has launched a specific step relating to enteral feeding. The aim of this document is to reduce the risk of infection associated with enteral feeding. Further details may be accessed via www.NICE.org.uk/guidance/cg139

7 REVIEW

7.1 These guidelines will be reviewed in three years, or earlier if there are any significant changes to guidance or practice.

8 REFERENCES, ACKNOWLEDGEMENTS AND ASSOCIATE DOCUMENTS

8.1 References


2 Musgrove Park Hospital (Taunton and Somerset NHS Foundation Trust) Protocol for early detection of complications after gastrostomy. (DRAFT version – awaiting ratification) Authors: Jennifer Hillier, Nutrition Nurse Specialist and Ursula Green, Dietetic Manager. Forwarded by author via email on 19 November 2010.


8.2 Cross reference to other procedural documents

1 Development & Management of Procedural Documents

2 Infection Control Policy

3 Learning Development and Mandatory Training Policy

4 Medical Devices Policy

5 Records Keeping and Records Management Policy

6 Risk Management Policy and Procedure

7 Staff Training Matrix (Training Needs Analysis)
8 Training Prospectus

9 Untoward Event Reporting Policy and procedure

All current policies and procedures are accessible to all staff on the Trust intranet (on the home page, click on ‘Policies and Procedures’). Trust Guidance is accessible to staff on the Trust Intranet (on the home page, click on Information, then Local Guidance).

9 APPENDICES

9.1 For the avoidance of any doubt the appendices within these guidelines are to constitute part of these guidelines and shall be treated as such. This should include any relevant Clinical Audits

<table>
<thead>
<tr>
<th>Appendix i</th>
<th>• Warning Labels for Medical Notes/GP Discharge Summary and Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Labels for Patients/Carers discharged from Community Hospital within 72 hours of Gastrostomy Placement</td>
</tr>
</tbody>
</table>
WARNING LABELS FOR MEDICAL NOTES/GP DISCHARGE SUMMARY

IF THERE IS PAIN ON FEEDING, OR PROLONGED OR SEVERE PAIN POST-PROCEDURE, OR FRESH BLEEDING, OR EXTERNAL LEAKAGE OF GASTRIC CONTENTS, STOP FEED/MEDICATION DELIVERY IMMEDIATELY. REFER PATIENT TO 24/7 ACUTE SERVICE URGENTLY AND CONSIDER CT SCAN, CONTRAST STUDY OR SURGICAL REVIEW.

WARNING LABELS FOR PATIENTS/CARERS DISCHARGED FROM COMMUNITY HOSPITALS WITHIN 72 HOURS OF GASTROSTOMY PLACEMENT

IF THERE ARE LEAKS OF FLUID AROUND THE TUBE OR PAIN ON FEEDING, OR NEW BLEEDING…THEN STOP FEED IMMEDIATELY AND TELEPHONE YOUR GP SERVICE FOR URGENT ADVICE (DAY OR NIGHT)
INTRODUCTION

1.1 These guidelines have been written to provide guidance for healthcare professionals managing patients in Somerset Community Healthcare settings who are diagnosed with severe malnutrition and/or at risk of re-feeding syndrome.

1.2 These guidelines are consistent with guidance from the Parental and Enteral Nutrition Group of the British Dietetic Association and with National Institute for Health and Clinical Excellence.

1.3 These guidelines should be read in conjunction with the Food and Nutrition Policy (2009) and the Enteral Feeding Policy (2009).

AIMS OF THE GUIDELINES

2.1 To assist in the identification of patients at risk of re-feeding syndrome

2.2 To provide evidence-based guidance for the management of patients at risk of re-feeding syndrome

DEFINITION OF REFEEDING

3.1 The term ‘re-feeding syndrome’ describes a potentially fatal medical condition that may affect malnourished and/or ill patients in response to an inappropriately high protein-calorie intake. This can affect patients that receive nutritional support, either parenterally, enterally or orally. Complications are more likely to occur when patients are being fed via artificial nutrition support than via the oral route.

3.2 Starved patients who are able to eat usually have a loss of appetite and are therefore less likely to eat excessively when food is reintroduced. Caution should be used when giving dietary supplements to patients who are severely malnourished. They should initially be offered in a diluted form.

3.3 The syndrome manifests as abnormalities in electrolytes, fluid, glucose and vitamin metabolism as a result of switching to carbohydrate as a main energy source in an already depleted patient.

3.4 The pathophysiology of re-feeding syndrome relates to the rapid rise in insulin production following a carbohydrate or protein ‘shock’, when protein-calories are administered at a rate above which the patient can tolerate. This insulin release, associated with possible increased insulin sensitivity, leads to
increased cellular uptake of glucose, fluid and electrolytes with associated altered plasma availability of electrolytes.

3.5 The reductions in serum electrolytes are:

- Hypophosphataemia (Phosphate levels < 0.3 is dangerously low)
- Hypokalaemia (Potassium levels < 2.5 is dangerously low)
- Hypomagnesaemia (Magnesium levels < 0.5 is dangerously low)

3.6 If uncorrected, this will lead to respiratory and cardiac distress, as well as hepatic, renal, gastro-intestinal and neuromuscular disturbances.

4 IDENTIFYING PATIENTS AT RISK OF RE-FEEDING SYNDROME

4.1 Patients are AT RISK of re-feeding syndrome if they have eaten very little or nothing for more than 5 days.

4.2 Patients are at HIGH RISK of refeeding syndrome if they have one or more of the following:

- BMI < 16kg/m^2
- Unintentional weight loss > 15% within the last 3-6 months
- Little or no nutritional intake for more than 10 days
- Low levels of potassium, phosphate and magnesium prior to feeding

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium, potassium, urea, creatinine</td>
<td>Baseline Daily until stable 1-2 a week in hospital patients</td>
<td></td>
</tr>
<tr>
<td>Glucose</td>
<td>Baseline 1-2 times a day (more if needed) until stable Weekly in hospital patients</td>
<td></td>
</tr>
<tr>
<td>Magnesium, phosphate</td>
<td>Baseline Daily 3 times a week until stable, then weekly</td>
<td></td>
</tr>
<tr>
<td>Liver function tests</td>
<td>Baseline Twice weekly until stable Then weekly</td>
<td></td>
</tr>
<tr>
<td>Calcium, albumin</td>
<td>Baseline Hypocalcaemia may be secondary to Mg deficiency Low albumin reflects disease not protein status</td>
<td></td>
</tr>
<tr>
<td>CRP</td>
<td>Baseline Then 2-3 times a week To assess the presence of an acute phase reaction</td>
<td></td>
</tr>
</tbody>
</table>
Patients are at **HIGH RISK** of re-feeding syndrome if they have **two or more** of the following:

- BMI < 18.5kg/m²
- Unintentional weight loss >10% within last 3-6 months
- Little or no nutritional intake for more than 5 days
- A history of alcohol abuse or drugs including insulin, chemotherapy, chronic antacids (these bind minerals) or chronic diuretic users

### MANAGING PATIENTS AT HIGH RISK OF REFEEING SYNDROME

5.1 Once identified as at risk of re-feeding syndrome, a baseline blood test for the following parameters is essential (see table below).

- These blood tests should be monitored daily until levels are stable and patient is established on full macro and micro nutrient requirements from their nutrition support regimen. **The patient’s doctor should be consulted regarding regularity of blood test. Pharmacist can provide advice on most appropriate form/dose of supplementation.**

- Restore circulatory volume carefully. Intravenous fluids should not be relied upon too much as this contributes to electrolyte shifts and is a source of additional calories if it contains glucose. Monitor presence of oedema, blood pressure, pulse rate, cardiovascular and respiratory systems and fluid balance (daily weights may help this).

- **Contact the patient’s community dietitian** and under their **supervision** start nutrition support regimen (such as enteral feed or oral nutritional supplements) **slowly** e.g. 10kcals/kg/day, **increasing gradually**, to meet full macro/micro nutritional requirements by days 4-7.

In extreme/severe cases (for example a patient with a BMI of less than 14 or negligible intake for more than 15 days) the dietitian may recommend a more cautious approach e.g. 5kcals/kg/day.

- All patients should receive full vitamin and mineral requirements from the first day of initiating nutrition support regimen. The dietitian can advise when the patient is meeting their full nutritional requirements for vitamins and minerals from their nutrition support regimen i.e. when they are taking 1000kcals per day from their enteral feed.
• Patients should receive immediately before and during the first 10 days of initiating nutrition support regimen:

  thiamin 200-300mg daily
  Vitamin B co-strong 1-2 tablets three times a day
  multivitamin/trace element supplement once per day

• Unless pre-feeding levels are high (e.g. in renal impairment), patients should also receive supplementation of:

  potassium (likely requirement 2-4 mmol/kg/day)
  phosphate (likely requirement 0.3-0.6 mmol/kg/day)
  magnesium (likely requirement 0.4 mmol/kg/day)

  The route may be oral (if patient safe to swallow) or IV or via enteral feeding tube depending on clinical situation. Amounts required will depend on patient size and plasma concentrations. Supplementation should be adjusted as necessary.

• By day 7 all patients should have reached their full macro and micronutrient requirements and if they are stable can continue as per their feeding regimen.

5.2 It is not necessary to correct low electrolyte levels before initiating nutrition support regimen, if this cautious approach is used.
# Enteral Feeding Policy

## Somerset Partnership NHS Foundation Trust

### Somerset Community Dietitians

## Somerset Home Enteral Tube Feeding (HETF) Service

Following referral to Somerset HETF Service for dietetic care, patients will be prioritised as urgent or routine for their first dietetic visit in the community. This decision will be based on clinical judgement and will be based on information received from the referring dietitian.

<table>
<thead>
<tr>
<th>New Patient Priority Level</th>
<th>Description</th>
<th>Examples Can Include</th>
</tr>
</thead>
</table>
| **Urgent**                | New patient discharged into the community with enteral feeding. Urgent need to review dietetic treatment. Action required to avoid compromising patient’s health and/or to prevent readmission to hospital. **Patient to be seen within 2 weeks** | ➢ Preventing hospital readmission  
➢ Patients experiencing problems tolerating feed  
➢ Patients/carers experiencing practical problems related to regimen needing attention to enable patients to continue feeding at home  
➢ Specific request from referrer e.g. complex early involvement referrals |
| **Routine (non-urgent)**  | New patient discharged into the community with enteral feeding. Review required ensuring optimum regimen for health and quality of life. **Patient to be seen within 6 weeks** | ➢ All new patients excluding the above |
Priority level for dietetic review will be based on clinical judgement guided by the information below. (Review may be face to face or by telephone as appropriate. All patients are offered a minimum of one face to face visit per year)

<table>
<thead>
<tr>
<th>FOLLOW UP PRIORITY LEVEL</th>
<th>DESCRIPTION</th>
<th>EXAMPLES CAN INCLUDE</th>
</tr>
</thead>
</table>
| 1                        | Review of patient with enteral feeding Urgent need to review dietetic treatment. Failure to implement treatment could directly compromise clinical condition or result in admission to hospital  
Patient to be reviewed within 1 week by telephone or in person | ➢ Preventing hospital admission  
➢ Failing growth  
➢ Tolerance issues – severe  
➢ Urgent change of regimen required  
➢ Intensive support required  
➢ Changing clinical situation – acute | |
| 2                        | Review of patient with enteral feeding Urgent need to review dietetic treatment. Failure to implement treatment could directly compromise clinical condition or result in admission to hospital  
Patient to be reviewed within 2 weeks by telephone or in person | ➢ Patient as priority 1 gradually needing less support/less frequent monitoring  
➢ Review of unstable patient – follow up to change in regimen | |
| 3                        | Review of patient with enteral feeding Dietetic review needed but not critical to patient’s immediate situation/wellbeing and/or close monitoring required  
Patient to be reviewed in 1 month by telephone or in person | ➢ Review of adult not fully established on regimen  
➢ Changing clinical situation or disease progression  
➢ Supporting patients through return to oral intake or establishing their maximum oral intake (transition period between feeding modalities)  
➢ Routine review of young children (under 2 years) | |
| 4  | Review of patient with enteral feeding  
Dietetic review – first follow up visit  
unless earlier review indicated  
**Patient to be reviewed in 4 months**  
by telephone or in person | ➢ Patients requiring ongoing  
support to manage enteral  
feeding  
➢ Routine review of child  
➢ Changing clinical situation or  
disease progression |
|---|---|
| 5  | Review of patient with enteral feeding  
Established tube-fed patients that  
require more support or are vulnerable  
if no dietetic review for more than 6  
months  
**Patient to be reviewed in 6 months**  
by telephone or in person | ➢ Patients requiring ongoing  
support to manage enteral  
feeding  
➢ Patients who require a joint visit  
with the Nutricia Nurse  
➢ Patients who may decline if not  
reviewed after 6 months (for example,  
with a complex social situation) |
| 6  | Review of patient with enteral feeding  
Established enteral tube-fed patients.  
Routine dietetic monitoring required  
**Patient to be reviewed in 9 months**  
by telephone or in person | ➢ Patients established on enteral  
feeding  
➢ Routine review of adult |
| 7  | Review of patient with enteral feeding  
tube  
Established tube-fed patients that do  
not receive feed via their tube  
**Patient to be reviewed in 12 months**  
by telephone or in person | ➢ Water only patients |

*All patients/carers are given contact telephone numbers for the service.*
## Enteral Feeding Policy

**V6**  
Extended to April 2020

### Patient History

<table>
<thead>
<tr>
<th>Diagnosis / Reason for tube insertion:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Other relevant medical problems:</td>
<td></td>
</tr>
<tr>
<td>Relevant drug therapy:</td>
<td></td>
</tr>
<tr>
<td>Relevant biochemistry:</td>
<td></td>
</tr>
</tbody>
</table>

### Date | Date | Date | MUST Score
---|------|------|-------------
Weight | Weight | Weight |  |
Height/Length | Height/Length | Height/Length |  |
BMI | BMI | BMI |  |

### Aim of Nutritional Treatment:

- Current level of oral intake:
- Ability to communicate:
- Emotional well-being:
- Swallow status / mouth care and planned SLT review:
- Bowels:
- Nausea / Vomiting / Reflux:
- Stoma site and condition of tube:
- Other nutritional / feed related problems on discharge:
- Other information e.g. social circumstances, prognosis, further treatment plans:

## Enteral Feeding Tube – All tube information must be completed

<table>
<thead>
<tr>
<th>Tube Type (e.g. PEG, RIG, Balloon Gastronomy, JEJ)</th>
<th>Manufacturer (Fresenius, Merck, Vygon)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size e.g. (9F, 15F, 14FR 2.5cm)</td>
<td>Tube requires replacement after [ ] months/ys</td>
</tr>
<tr>
<td>Date current tube was inserted:</td>
<td>Date original tube inserted (if current tube is a replacement)</td>
</tr>
</tbody>
</table>

**MUST BE COMPLETED**

- Who will repass the enteral feeding tube? (If Nutricia Nurse, hours of work are: Mon to Thurs: 08:45 – 17:15 Fri: 08:45 – 16:00)
- Who will repass the enteral feeding tube outside of Nutricia Nurse working hours? (Must be completed if applicable)

### Nasogastric Tubes (NG)

<table>
<thead>
<tr>
<th>NEX measurement</th>
<th>Length of tube</th>
<th>pH in last 24 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there any altered anatomy which would affect safe placement of an enteral feeding tube? Yes ☐ No ☐ (If yes, please give details)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Starter Enteral Feeding Regimen for Community Hospitals

- Ensure a referral is sent to the Community Hospital Dietitian on Day 1.
- If feeding nasogastrically, confirm the position of the tube prior to feeding. Gastric aspirate pH should be 5 or less.
- Consider whether the patient is at risk of refeeding. At risk patients may include:
  - Patients who have eaten very little, e.g. teaspoons or no food for 5 days AND any of the following:
    - A BMI of less than 18.5kg/m²
    - Weight loss of 10% or more in the past 6 months
  - If the patient is at risk of refeeding then give no more than 10kcal per kg body weight on day one. Please refer to the trust refeeding guidelines in the 'Enteral Feeding Policy' for information on vitamin and mineral supplementation and biochemical monitoring. This policy is located on the SOMPAR public internet site.
- Ensure the patient is elevated at a 30-45° angle whilst feeding.
- Always flush the tube with at least 30ml water before and after feeding.
- Always flush the tube with at least 10ml between medications.

<table>
<thead>
<tr>
<th>Feed</th>
<th>Volume</th>
<th>Rate</th>
<th>Water Flushes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day One</td>
<td>Nutrison</td>
<td>500ml</td>
<td>30ml/hr</td>
</tr>
<tr>
<td>Date: / /</td>
<td>If risk of refeeding, feed no more than 10kcal per kg body weight on day one. Example, for a 40kg patient this would be a maximum of 400ml of Nutrison 1kcal/ml on day one (400kcal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day Two</td>
<td>Nutrison</td>
<td>1000ml</td>
<td>60ml/hr</td>
</tr>
<tr>
<td>Date: / /</td>
<td>If risk of refeeding, feed no more than 15kcal per kg body weight on day two.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day Three</td>
<td>Nutrison</td>
<td>1250ml</td>
<td>80ml/hr</td>
</tr>
<tr>
<td>Date: / /</td>
<td>If risk of refeeding, feed no more than 20kcal per kg body weight on day three.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day Four</td>
<td>Please follow the Day Three feed regimen until the patient is reviewed by the Dietitian. Please ensure fluid requirements are met at all times.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>