# Nasogastric Tube Insertion and Maintenance Policy

**Version:** 2

<table>
<thead>
<tr>
<th>Summary:</th>
<th>This policy is designed to guide all Southern Health Healthcare Professionals in the safe insertion and maintenance of fine bore nasogastric feeding tubes in adults, children and infants.</th>
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</thead>
<tbody>
<tr>
<td><strong>Keywords (minimum of 5):</strong> <em>(To assist policy search engine)</em></td>
<td>Nasogastric feeding tubes, insertion of</td>
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<tr>
<td><strong>Target Audience:</strong></td>
<td>Health Care Professionals within Southern Health NHS Foundation Trust</td>
</tr>
<tr>
<td><strong>Next Review Date:</strong></td>
<td>January 2019</td>
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<td><strong>Approved and ratified by:</strong></td>
<td>Quality Improvement and Development Forum [Date of meeting: 15 December 2014]</td>
</tr>
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<td>January 2015</td>
</tr>
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## Version Control

### Change Record

<table>
<thead>
<tr>
<th>Date</th>
<th>Author</th>
<th>Version</th>
<th>Page</th>
<th>Reason for Change</th>
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<tr>
<td>January 2015</td>
<td>Angela Sergeant</td>
<td>2</td>
<td>All</td>
<td>Policy review</td>
</tr>
<tr>
<td>January 2015</td>
<td>Dr Mary Mitchell</td>
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<td>All</td>
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<td>January 2017</td>
<td>Lyn Street Lead Nurse for Eating Disorders and Nutrition</td>
<td>2</td>
<td></td>
<td>Policy review, Tim Coupland’s name replaced on front cover and TNA, no further amendments required. Review date extended to January 2019</td>
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### Reviewers/contributors

<table>
<thead>
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<th>Name</th>
<th>Position</th>
<th>Version Reviewed &amp; Date</th>
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</thead>
<tbody>
<tr>
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<td>Consultant Psychiatrist</td>
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<td>Angela Sergeant</td>
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Nasogastric Tube Insertion and Maintenance Policy

1. Introduction

1.1. This policy was developed in direct response to Patient Safety Alert NPSA/2012/RRR001: ‘Harm from flushing nasogastric tubes before confirmation of placement’ March 2012. [Link](http://www.nrls.npsa.nhs.uk/resources/?EntryId45=133441) and should be read in conjunction with the previous alert NPSA/2011/PSA002: ‘Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants’ March 2011. [Link](http://www.nrls.npsa.nhs.uk/resources/type/alerts/?entryid45=129640) This remains in force and should be referred to for all other issues, including repeat placement checks after initial gastric placement has been confirmed.

This policy is designed to guide all Southern Health Healthcare Professionals in the safe insertion and maintenance of fine bore nasogastric feeding tubes in adults, children and infants.

The NPSA/2012/RRR001 Alert requires all organisations to ensure that “Nasogastric tubes are not flushed, nor any liquid/feed introduced through the tube following initial placement, until the tube tip is confirmed by pH testing or x-ray to be in the stomach”. This advice is repeated in the National Nurses Nutrition Group Good Practice Guideline: Safe Insertion of Nasogastric Feeding Tubes in Adults.

The advice not to flush until after gastric placement is important because:

- any flush could cause an aspiration pneumonia if the tube is misplaced in the lungs.
- pH testing for gastric placement relies on collecting aspirate via the tube; anything introduced down the tube will contaminate this aspirate, potentially leading to false positive pH readings.

1.2. Enteral feeding should be considered for malnourished patients, or in those at risk of malnutrition who have a functional gastrointestinal tract but are unable to maintain an adequate or safe oral intake. Short-term access is usually achieved using nasogastric (NG) or nasojejunal (NJ) tubes.

1.3. Nasogastric tube feeding is common practice and many tubes are inserted daily without incident. However, there is a small risk that the tube can become misplaced into the lungs during insertion, or move out of the stomach at a later stage. Misplaced nasogastric tubes leading to death or severe harm are ‘Never Events’.

1.4. Auscultation must not be used as a method for checking correct nasogastric tube (NGT) placement as studies have shown this method to be inaccurate.

1.5. NG tubes should be aspirated and the tube position confirmed using pH indicator strips. X–ray should not routinely be used.

1.6. Due to the evidence of harm all staff responsible for checking initial placement of nasogastric tubes (including staff who support carers/patients who check initial placement of tubes) must be aware that:

   a. NOTHING should be introduced down the tube before gastric placement has been confirmed.
b. DO NOT FLUSH the tube before gastric placement has been confirmed  
c. Internal guidewires/stylets should NOT be lubricated before gastric placement has been confirmed.

2. **Scope**

2.1 These guidelines apply to all competent Healthcare Professionals inserting and/or maintaining fine bore nasogastric feeding tubes in Southern Health NHS Foundation Trust.

2.2 They are applicable to adult, children and infant patients who require feeding via a fine bore nasogastric feeding tube for short term (4 – 6 weeks) enteral feeding.

2.3 This policy does not cover the administration of medication via a fine bore nasogastric feeding.

2.4 This policy does not cover the administration of long term enteral feed via a fine bore nasogastric feeding tube.

2.5 For fine/wide bore nasogastric feeding tubes or oro-gastric feeding tubes inserted other than at the bedside (i.e. endoscopy, imaging, and theatres) this policy should be adhered to for the verification of tube position.

3. **Definitions**

3.1 Appropriate Healthcare Professionals to undertake procedure: A registered or trained competent member of staff including (doctors, nurses and midwives.) Competency level 3 and above (Appendix 3).

3.2 Enteral tube feeding: the delivery of a nutritionally complete feed, containing protein, carbohydrate, fat, water, minerals and vitamins, directly into the stomach, duodenum or jejunum.

3.3 Bolus feed: administering a volume of feed via a syringe and tube at regular intervals.

3.4 Intermittent feeding: this involves gravity feeding or feeding with a pump - with breaks in between feeds to suit patient needs.

3.5 Continuous feeding: may be appropriate for patients who cannot tolerate large volumes of feed.

3.6 Nasogastric feeding: The administration of artificial nutrition via a fine bore nasogastric tube. Feeding via a nasogastric tube is usually a short-term intervention (4-6 weeks). A route for permanent enteral access should be considered if enteral support is required for longer than this.

3.7 Fine bore naso-gastric feeding tube: Defined as between a 6 – 8 fg (french gauge) NNNG guidelines state 6-12fg. The length of the tube is measured in cms starting at the distal tip (stomach end = “0” cms). Measurements are seen along the length of the tube, the tube length will vary depending on manufacturer. The tube should be radio opaque along its length made of silicone or polyurethane which is passed through the nostril via the naso-pharynx into the oesophagus, then stomach.
3.8 Maintenance of a Naso-gastric tube: Including correctly checking tube position, and maintaining the patency of that tube. On-going management including skin care, checking tube position.

3.9 Gastric Aspirate: Fluid obtained from the stomach via the NGT using an enteral syringe. Aspirate is then checked for pH using the recommended pH indicator testing strips.

4. **Duties / Responsibilities**

4.1 Medical Staff: The decision to commence artificial nutrition via a naso-gastric tube is a medical decision to be made in conjunction with the patient, the patients’ family and members of the multi disciplinary team (MDT). For young people please see consent guidelines for Leigh House are to be found within Leigh House Guideline for Naso-Gastric Feeding (Updated October, 2014).

4.2 If the Healthcare Professional is unable to confirm tube position at the bedside it is the doctors’ responsibility to request and review a chest X-ray to establish gastric placement. It should be noted that nasogastric tubes are radio opaque without the guide-wire in situ.

4.3 Radiologist: on reporting the radiologist must document both the position of the nasogastric tube and whether it is safe to proceed with administration of any liquids via the tube. Doctor must sign in medical notes that x-ray position is correct.

4.4 Healthcare Professionals:

4.4.1 Healthcare Professionals are responsible for establishing the correct gastric placement of NGTs prior to their use. This should be checked every time used while the tube is in situ (Appendix 5) and at other times e.g. when evidence of suspected misplacement e.g. loose Opsite, coughing, patient interference.

4.4.2 With each new nasogastric tube, the gastric placement MUST BE CONFIRMED BEFORE the tube is flushed. Lubricant is not needed for placement, only to aid removal of the guidewire/stylet from the tube after gastric placement has been confirmed.

4.4.3 It is expected that fine bore naso-gastric tubes will be inserted and maintained by a practitioner in a safe and competent manner It is the responsibility of the Healthcare Professional to develop and maintain their competency (Appendix 1).

4.5 Health Care professionals with a responsibility for nutrition (Senior Nurse Managers and Matrons) are responsible for the development and review of this policy.

4.6 Modern Matrons, Ward Managers, Practice Development Nurses and Clinical Educators are responsible for the management and implementation of this policy.

4.7 Duties and responsibilities for Leigh House are to be found within Leigh House Guideline for Naso-Gastric Feeding).
5. Main policy content

5.1 Clinical decision making

Please refer to National Patient Safety Agency (NPSA) Decision Tree for nasogastric tube placements in ADULTS (Appendix 4) and National Patient Safety Agency (NPSA) Decision Tree for nasogastric tube placements in CHILDREN AND INFANTS (Appendix 5)

5.1.1 Is nasogastric tube feeding the right decision for this patient?

Before a decision is made to insert a nasogastric tube, an assessment is undertaken to identify if nasogastric feeding is appropriate for the patient, and the rationale for any decision is recorded in the patient’s medical notes prior to the commencement of the feed.

5.1.2 The decision to insert a nasogastric tube for the purpose of feeding must be made following careful assessment of the risks and benefits by at least two competent health professionals including the senior doctor responsible for the patient’s care.

5.1.3 Placement of the nasogastric tube should not occur when there is insufficient support available to accurately confirm placement.

5.1.4 Clinical Decision advice regarding the Mental Health Services of Southern Health are found within the Leigh House Guideline for Naso-Gastric Feeding (Updated October, 2014).

5.2 Consent Issues

In exceptional circumstances young people suffering from Anorexia Nervosa may require a period of enteral feeding to prevent extreme weight loss and cardiovascular collapse. Also young people receiving treatment for other diagnosis may, on rare occasions, have difficulty eating. If circumstances dictate that a period of enteral feeding via nasogastric tube is necessary staff must:

- Provide information to the patient in an accessible form about the risks and benefits of nasogastric feeding.
- Offer time to answer questions.
- As much as possible in the circumstances ensure the patient feels free to make a decision.

Age 16 +: patient has the capacity to make decision

- If the patient has the capacity and if the patient agrees.
- Proceed to insert the NG tube.
- Parental consent is not necessary but it is good practice to involve parents/carers or at least inform them.
- If the patient is 16+, has capacity but refuses nasogastric feeding, this intervention cannot be administered with parental consent and a Mental Health Act assessment would be required or, if criteria are not met for a MHA section, then an application to the inherent jurisdiction of the High Court is needed.

_Mental Health Act Commission Guidelines:_
_The House of Lords and the court in the case of B v Croydon Health Authority, held that; ‘Medical treatment is that which taken as a whole, is calculated to alleviate the mental disorder; that a range of acts ancillary to the core treatment may still fall_
within the MHA1983, s 63 and that tube feeding will constitute ‘medical treatment’ for the purposes of the Act and may be carried out lawfully without the patient’s consent.’ Therefore under the Mental Health Act feeding is recognised as treatment for Anorexia nervosa and can be done against the will of the Patient as a life saving measure.

Age 16 +: patient lacks capacity

- Have all practical steps been taken to enable the patient to make a decision?
- If despite these efforts, the patient lacks the capacity to make the decision, consider the views of all those involved in the care of the patient in deciding what is in their best interests.
- If it is agreed that feeding by nasogastric tube is in the patient’s best interests the tube may be passed as long as it is safe to do so. In most circumstances, once the patient realises the decision has been made on his/her behalf, s/he will acquiesce and accept the decision without further resistance.
- In the case when the patient resists vigorously despite a best interest decision consider a Mental Health Act Assessment. (See MHA and Code of Practice)

Age < 16 and competent:

- Make an assessment of the competence of the patient to make the decision about treatment.
- If competent and the patient agrees to treatment the nasogastric tube can be passed and feeding commenced with the written consent of patient.
- It is good practice to also obtain and document the written consent of the parent/carer.
- If the patient is competent but refuses to have the nasogastric tube passed the Code of Practice to the Mental Health Act suggests it would be unwise to proceed against the wishes of the child and a Mental Health Act assessment would therefore be necessary.
- If the patient does not fulfil criteria for detention under the Mental Health Act an application to the Court would be required.

Young people will sometimes accept the authority of their parents if they see that parents and team are united in the decision that NG feeding is the only way forward. In these instances the patient may acquiesce rather than face a Mental Health Act assessment. If such parental determination in the patient’s best interests results in the patient accepting the treatment in the longer term, in our experience, this would be an appropriate way forward avoiding a Mental Health Act assessment.

- However if the patient persists in his / her refusal despite a strong united front from parents and team, a Mental Health Act assessment would be necessary.

Age < 16 and lacking competence

- If the patient does not have the competence to make the decision the parents / carer can make the decision, if it comes within the Zone of Parental Control. (see Code of Practice to amended MHA 1983). This will depend on the circumstances of each case.
- In practice, from our experience in this situation, there are some who will be glad of their parents' decision-making on their behalf and who will acquiesce with the intervention without resistance.
- In this situation, we believe it is better to proceed with parental authority than to subject the patient to a Mental Health Act Assessment.
- If however the patient is not influenced by parental authority and continues to
resist the intervention, a Mental Health Act Assessment will be necessary before proceeding.

- If criteria for treatment under the Mental Health Act are not fulfilled an application to the Court will be necessary.

It is imperative that health professional record in the nursing and medical notes; a full description of the process of consent and how decisions were made about the authority for the procedure. In view of the complexity of the situation obtain written consent to the intervention either from the patient if able to consent or from the parents / carer unless the intervention is carried out under the Mental Health Act.

5.3 Duties and Responsibilities

5.3.1 Is this the right time to place the nasogastric tube and is the appropriate equipment available?

5.3.1.1 If there is not sufficient experienced support available to accurately confirm nasogastric tube placement (for example at night) then, unless clinically urgent, placement should be delayed until that support is available, and that the rationale for any decisions made is recorded in the patient’s medical notes.

5.3.1.2 Nasogastric tubes used for the purpose of feeding must be radio-opaque throughout their length and have externally visible length markings.

5.3.1.3 pH indicator strips must be CE marked and intended by the manufacturer to test human gastric aspirate.

5.3.2 Is there sufficient knowledge/expertise available at this time to test for safe placement of the nasogastric tube? Any individual involved with nasogastric tube position will need to have been assessed as competent through theoretical and practical learning.

5.3.2.1 Nasogastric tubes are not flushed, nor any liquid/feed introduced through the tube following initial placement, until the tube tip is confirmed by pH testing or x-ray, to be in the stomach.

5.3.2.2 pH testing is used as the first line test method, with pH between 1 and 5.5 as the safe range, and that each test and test result is documented on a chart kept at the patient’s bedside.

5.3.2.3 X-ray is used only as a second line test when no aspirate could be obtained or pH indicator strips has failed to confirm the location of the nasogastric tube.

5.4 Process: Insertion of fine bore Naso-Gastric feeding tubes in Adults.

It is recognized that obtaining aspirate for ongoing checking may at times be difficult. In the absence of aspirate pH 5.5 or below a clinical decision should be made as to whether the tube is safe to use. Consult medical staff for decision on taking X-ray to confirm position.

The following is provided to assist in your decision making. Please refer to NPSA Decision Tree for nasogastric tube placements in ADULTS (Appendix 4) and Decision Tree for nasogastric tube placements in CHILDREN AND INFANTS (Appendix 5)
**List of Equipment for Procedure:**
- Clean Tray or trolley
- 1 x Fine bore feeding tube 6 – 8 fg (NPSA compliant)
- 1 x glass of tap water and straw
- 1 x 10ml enteral syringe filled with tap water
- 1 x 50ml enteral syringe
- Bioclusive / Hypafix/Hypoallergenic Tape
- pH Indicator strips (CE) marked
- Non sterile gloves and apron
- Tissues
- Receiver
- Water for flushing once gastric position has been confirmed (freshly run tap water from a drinking source/cooled boiled water/sterile water)

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<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
<th>Reference evidence</th>
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<tbody>
<tr>
<td>1.</td>
<td>Explain procedure to patient. Agree a signal to indicate a problem or stop the procedure. Ensure universal precautions are used at all times</td>
<td>To obtain patients consent and co-operation. To adhere to local infection control.</td>
</tr>
<tr>
<td>2</td>
<td>Estimate the length of the tube by measuring using NEX (Nose, Ear, Xiphisternum), placing external port at nose, extend to earlobe and note external mark at xiphisternum.</td>
<td>To ascertain a measurement to ensure tube is sited at correct length. To increase patient comfort and facilitate easier insertion of the tube and avoid inadvertent tracheal intubation. This position allows easy swallowing and ensures that the epiglottis is not obstructing the oesophagus.</td>
</tr>
<tr>
<td>3</td>
<td>Clean hands and apply gloves. Assemble required equipment, select appropriate tube.</td>
<td>To ensure a clean procedure is maintained throughout. Consider fg required depending on diagnosis.</td>
</tr>
<tr>
<td>4</td>
<td>Check nose and mouth for any signs of obstruction and ensure both are clean.</td>
<td>To aid passage of NGT</td>
</tr>
<tr>
<td>5</td>
<td>Check nasal patency by sniff with each nostril occluded in turn.</td>
<td>Patient may have one nostril which is clearer than the other e.g. deviated nasal septum.</td>
</tr>
<tr>
<td>6</td>
<td>Gently stretch the tube and lubricate the tube as per manufacturer's instructions.</td>
<td>This will ensure that the guide wire can be easily removed once placed in</td>
</tr>
<tr>
<td>Patient</td>
<td>Naso Gastric Tube Insertion and Maintenance Policy</td>
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| 7 | Insert the tube into the clearest nostril and slide backwards and inwards along the floor of the nose to the nasopharynx approx 10-12cm and STOP. If any obstruction is felt withdraw tube slightly and try again at a slightly different angle.  
  
  a) If the patient can swallow coincide passing NGT with swallowing a sip of water  
  
  b) If the patient is dysphagic but can swallow own secretions – encourage a dry swallow  
  
  Slowly advance the tube to the pre-determined mark.  
  
  Where the patient is unable to swallow fluid, wait for the peak of expiration before slowly advancing the tube to the pre-determined mark.  
  
  NB: A chin towards chest position may aid insertion if patient is able.  
  
  There are two distinct stages when passing the tube.  
  
  a) Nose → pharynx → stop and swallow  
  
  b) Pharynx → stomach.  
  
  The passing of the NGT can be co-ordinated with observing for laryngeal movement. During this phase the epiglottis covers the airway and NGT can pass into oesophagus.  
  
  To facilitate the passing of the tube.  
  
  Risk of aspiration.  
  
  This reduces the risk of aspirating fluids.  
  
  May facilitate tube advancement. |
| 8 | If you are unsuccessful repeat above procedure in other nostril. Consider smaller bore and/or weighted tube. Do not repeat procedure more than 3 times.  
  
  One nostril may be clearer than the other. Smaller gauge or weighted tube may be easier to pass on specific patients. |
| 9 | Once at appropriate measurement secure nasogastric tube in place using hypafix/bioclusive across side.  
  
  NNNG guidelines advise that the guidewire should remain in situ until after confirmation of correct placement.  
  
  See manufacturers’ guidelines. |
of face. Do not apply to nose. Document visual external mark in the careplan for comparison. Placement as guidewires should not be reinserted whilst the tube remain in the patient. Most fine bore NGTs are radio-opaque and do not require the guide wire to be insitu for X-ray. Under no circumstances should the guide-wire be reinserted into the tube whilst the tube remains in the patient. Do not leave the guide wire in for long periods as uncomfortable for the patient. This will provide an easily identifiable mark as a baseline.

<table>
<thead>
<tr>
<th>10</th>
<th>Follow steps a-c below to obtain aspirate and verify correct NGT position.</th>
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<tbody>
<tr>
<td>a)</td>
<td>Using a 50ml enteral syringe insufflate up to 10-20ml of air via NGT.</td>
</tr>
<tr>
<td>b)</td>
<td>Attempt to gain aspirate from NGT (0.5-1mL minimum) by gently withdrawing plunger on syringe. If aspirate is obtained - check using pH indicator strips (Appendix 7)</td>
</tr>
<tr>
<td>c)</td>
<td><strong>If pH is 5.5 or below, use tube. X-ray is not required. If pH is between 5 and 6, NPSA recommends second checker.</strong></td>
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</table>

| Test the gastric aspirate, with pH indicator paper/strips that comply with NPSA guidance to obtain pH reading. This clears tube of debris and forces the end of the tube away from the stomach mucosa. |
| The pH of aspirate should be measured using CE marked pH indicator strips in the range 0-6 with ½ point gradations. Litmus strips must not be used as it does not indicate the degree of acidity. |

| A pH of 5.5 and below (acid) indicates gastric placement. pH reading MUST be 5.5 or below to administer fluid immediately without further investigation. The pH ‘cut-off’ reading may differ according to local policy but should never exceed 5.5 |

| If unable to obtain aspirate, refer to NPSA decision tree (Appendix 4/5): |

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Naso Gastric Tube Insertion and Maintenance Policy
Version 2
January 2015
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<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1</td>
<td>Turn patient onto left side, wait 15-30 minutes before aspirating again.</td>
<td>Tip of tube may not be in fluid pool in the stomach-advancing tube should enable aspirate to be obtained as tip of tube should be in gastric fluid pool.</td>
</tr>
<tr>
<td>2</td>
<td>Advance or withdraw tube by 10-20cm.</td>
<td>Withdrawing tube should allow aspirate to be obtained-by putting tip of tube in gastric fluid pool.</td>
</tr>
<tr>
<td>3</td>
<td>Give mouth care to patients who are nil by mouth to stimulate gastric secretions.</td>
<td>To change the fluid level in the stomach-as this may enable aspirate to be obtained.</td>
</tr>
<tr>
<td>4</td>
<td>Consider any medications that the patient may be taking: Prokinetics e.g. Metoclopramide PPIs e.g. Lansoprazole</td>
<td>May increase stomach emptying making it difficult to obtain aspirate. Will elevate the pH-unlikely to obtain an acid aspirate.</td>
</tr>
<tr>
<td>5</td>
<td>If still unable to obtain aspirate or pH is above 5.5 AND ONLY IF THE PATIENTS SWALLOW IS INTACT:</td>
<td>Fluid should then be in the patients’ stomach. It is not safe to ask patient to drink if swallow is NOT intact.</td>
</tr>
<tr>
<td>6</td>
<td>Ask patient to drink 200mls of freshly run tap water from a drinking source /cooled boiled water/sterile water) ORALLY.</td>
<td>Fluid aspirated may be from oesophagus-(not stomach)-may give a false positive pH result when tip of tube is not in the stomach.</td>
</tr>
<tr>
<td>7</td>
<td>Using an enteral syringe attempt to gain aspirate from NGT.</td>
<td>DO NOT USE THIS METHOD UNLESS PATIENTS SWALLOW IS INTACT. DO NOT USE ON PTS WITH OESOPHAGEAL STRUCTURE OR CA OESOPHAGUS.</td>
</tr>
<tr>
<td>8</td>
<td>In the absence of a positive aspirate test (or pH of 5.5)</td>
<td>On initial insertion only- x-ray will provide</td>
</tr>
</tbody>
</table>

---

Naso Gastric Tube Insertion and Maintenance Policy

Version 2

January 2015
and below) contact the senior
nurse or GP team for review
and X-ray

NB Confirmation of tube
position by X-ray is only
correct at the time of X-ray.
Subsequent checking of
position by aspirate test must
be carried out at the bedside.
See below.

confirmation of position
and a baseline from which
to base on-going clinical
judgments on whether the
NG is safe to use.

It is not appropriate to
request repeat X-ray to
confirm NG position
(X-ray request forms need
to document that x-ray is
to verify NG tube position,
as a specific density is
required.)

8

Following insertion and
confirmation of correct
position, document procedure
in medical and nursing notes
– including pH of aspirate
obtained +/- confirmation by
X-ray, and measurement of
tube at nose. Position of
tube on X-ray must be
confirmed by a doctor be
documented in medical notes
prior to use of NG.

Accountability for
checking the tube position
before use lies with the
competent Healthcare
Professional.
Recording the procedure
is a requirement in law
and provides a baseline
for further measurement.

This is a legal
requirement.

1

At the end of the procedure
the staff member: removes
gloves, cleans their hands,
and disposes of waste as per
Trust policy.

16 Implement NG tube checking
chart (Appendix 4) at
bedside.

To ensure documentation
of NG position is checked.

5.5 On-going Management

The nasogastric tube should be checked every time used for patency and
position before administering feed, fluid or medication

Skin Care

<table>
<thead>
<tr>
<th>ACTION</th>
<th>RATIONALE</th>
<th>EVIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAILY</td>
<td>Check that Opsite securing tube is intact and not in need of replacement. To ensure tube is safely secured in position.</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Check around nostril for any signs of pressure necrosis. Opsite may need to be changed to secure tube in a different position.</td>
<td></td>
</tr>
</tbody>
</table>

Within Appendix 2
An adverse incident form needs to be completed if any pressure necrosis is found.

Opsite should be placed across patients cheek

If patient is NBM ensure mouth care is maintained 2 hourly.

<table>
<thead>
<tr>
<th>ACTION</th>
<th>RATIONALE</th>
<th>EVIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flush tube with 30ml-50mls water before and after feed using a 50ml enteral syringe.</td>
<td>To ensure tube does not become blocked. To ensure fluid in 24hr period does not exceed restrictions.</td>
<td>4,7</td>
</tr>
<tr>
<td>If fluid restricted may need to reduce these amounts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If continuous feeding flush every 4-6 hrs.</td>
<td>To aid administration of medication via the NG.</td>
<td>4,7,16</td>
</tr>
<tr>
<td>Where possible medications should be given in liquid / dispersible form.</td>
<td>To reduce the risk of tube blockage.</td>
<td>4,7,16</td>
</tr>
<tr>
<td>If feed in progress tube MUST be flushed with water prior to giving medications via the tube.</td>
<td>To reduce the risk of tube blockage.</td>
<td>4,7,16</td>
</tr>
<tr>
<td>Medications to be given individually with a water flush in between.</td>
<td>To reduce the risk of tube blockage.</td>
<td>4,7,16</td>
</tr>
<tr>
<td>Flush tube with water at end of medications and prior to recommencing feed.</td>
<td>To reduce the risk of tube blockage.</td>
<td>4,7,16</td>
</tr>
</tbody>
</table>

**5.6 Maintaining patency**

4,7,16 Administration of Medications Policy
6. **Training Requirements**

6.1 All clinical managers or supervisors of practice are accountable for ensuring that staff are aware of the policy and training requirements.

6.2 All clinical managers are responsible for ensuring that staff involved in enteral feeding and NG tube insertion and / or maintenance have successfully completed the competence tool (Appendix 3).

6.3 All staff involved in the insertion and / or maintenance of NG tubes are responsible for ensuring they are competent to do so.

6.4 Competence for the insertion and maintenance of NG tubes including position checks must be achieved through theoretical and practical training, and assessment of competence.

6.5 Theoretical training can be obtained through e-learning (when available) or face to face training (Appendix 1).

6.6 Following theoretical training and a period of supervised practice staff must be assessed as competent by a Registered Nurse who can demonstrate competence at Level 4 or above.

6.7 On-going competence can be demonstrated by using the enteral feeding and NG tube insertion and maintenance competencies (Appendix 3) as a self-assessment tool. Staff can additionally obtain support and opportunities for updating clinical practice at either Lymington Hospital or Leigh House.

7. **Monitoring Compliance**

<table>
<thead>
<tr>
<th>Aspects to be monitored</th>
<th>Methodology</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>On insertion NG position is confirmed as per policy</td>
<td>Spot checks by Ward Managers and Modern Matrons</td>
<td>Weekly</td>
</tr>
<tr>
<td>Correct use of NG checking charts</td>
<td>Audit</td>
<td>Every 2 years</td>
</tr>
<tr>
<td>NG tubes are checked using CE marked pH indicator strips to confirm correct placement every time used.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X-ray is not used inappropriately</td>
<td>Spot checks/audit</td>
<td>Ongoing</td>
</tr>
<tr>
<td>NG tubes are not used if placed in the lungs</td>
<td>Review of Risk forms</td>
<td>Bi-annually</td>
</tr>
</tbody>
</table>
8. Policy Review

8.1 This policy will be reviewed within 2 years of the issue date.

9. Associated Documents and Supporting References

18. Patient Safety Alert NPSA/2012/RRR001
19. PHT policy for the insertion of and maintenance of fine bore naso- gastric feeding tubes in Adults Portsmouth Hospitals NHS Trust Oct 2010
APPENDIX 1 – LEAD (Leadership, Education & Development) Training Needs Analysis

If there are any training implications in your policy, please complete the form below and make an appointment with the LEAD department (Deputy Head of LEAD or LEAD Strategic Education Lead) before the policy goes through the relevant Expert Committee.

<table>
<thead>
<tr>
<th>Training Programme</th>
<th>Frequency</th>
<th>Course Length</th>
<th>Delivery Method</th>
<th>Trainer(s)</th>
<th>Recording Attendance</th>
<th>Strategic &amp; Operational Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical training study day including Nasogastric tube insertion and maintenance</td>
<td>Once or as required for updating</td>
<td>One day</td>
<td>Face to face</td>
<td>Clinical training team and clinical practitioners with specialist expertise</td>
<td>MLE</td>
<td>Steve Coopey</td>
</tr>
<tr>
<td>NG insertion and Management E-learning in development</td>
<td>Once or as required</td>
<td>TBA</td>
<td>E-learning programme</td>
<td>Under development by nutrition nurses</td>
<td>MLE</td>
<td>Steve Coopey</td>
</tr>
<tr>
<td>Competence assessment in practice</td>
<td>Supervision and final assessment</td>
<td>As required to achieve competency</td>
<td>Face to face</td>
<td>Level 4 competent practitioner</td>
<td>Verification of completion by line manager</td>
<td>Modern Matron / or Lead Manager</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Directorate</th>
<th>Division</th>
<th>Target Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>MH/LD</td>
<td></td>
<td>All staff required to insert or manage Nasogastric tubes</td>
</tr>
<tr>
<td>ICS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**APPENDIX 2 - Southern Health NHS Foundation Trust**  
**Equality Impact Assessment / Equality Analysis Screening Tool**

Equality Impact Assessment (or ‘Equality Analysis’) is a process of systematically analysing a new or existing policy/practice or service to identify what impact or likely impact it will have on different groups within the community.

For guidance and support in completing this form please contact a member of the Equality and Diversity team on 01256 376358.

<table>
<thead>
<tr>
<th>Name of policy/service/project/plan:</th>
<th>Nasogastric Tube Insertion and Maintenance Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Number:</td>
<td>SH CP 86</td>
</tr>
<tr>
<td>Lead officer for assessment:</td>
<td>Angela Sergeant, Consultant Nurse CAMHS</td>
</tr>
<tr>
<td>Date Assessment Carried Out:</td>
<td>October, 2014</td>
</tr>
</tbody>
</table>

1. **Identify the aims of the policy and how it is implemented.**

<table>
<thead>
<tr>
<th>Key questions</th>
<th>Answers / Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Briefly describe purpose of the policy including:</td>
<td>'Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants'</td>
</tr>
<tr>
<td>• How the policy is delivered and by whom</td>
<td>The aim of this policy is to reduce the risk of misplacing NG tubes.</td>
</tr>
<tr>
<td>• Intended outcomes</td>
<td>✓ To provide step by step advice on how to insert nasogastric (NG) feeding tubes.</td>
</tr>
<tr>
<td></td>
<td>✓ To provide a competency based protocol for practitioners to enable them to perform this procedure.</td>
</tr>
<tr>
<td></td>
<td>✓ To define the training required in order to be deemed competent to perform this procedure.</td>
</tr>
<tr>
<td></td>
<td>✓ To provide the best evidence based practical information available on this procedure.</td>
</tr>
<tr>
<td></td>
<td>✓ To ensure there is consistency in the insertion of naso-gastric feeding tubes which will be safe, effective and comfortable for the patient.</td>
</tr>
</tbody>
</table>

2. **Consideration of available data, research and information.**

Monitoring data and other information involves using equality information, and the results of engagement with protected groups and others, to understand the actual effect or the potential effect of your functions, policies or decisions. It can help you to identify practical steps to tackle any negative effects or discrimination, to advance equality and to foster good relations.

Please consider the availability of the following as potential sources:

- **Demographic** data and other statistics, including census findings
- Recent **research** findings (local and national)
- Results from **consultation or engagement** you have undertaken
- Service user **monitoring data**
- Information from **relevant groups** or agencies, for example trade unions and voluntary/community
<table>
<thead>
<tr>
<th>Key questions</th>
<th>Data, research and information that you can refer to</th>
</tr>
</thead>
</table>
| 2.1 What is the equalities profile of the team delivering the service/policy? | This policy applies to all Registered Nursing staff
The Equality and Diversity team will report on Workforce data on an annual basis. |
| 2.2 What equalities training have staff received? | All staff using this policy comply to the mandatory requirements for equality and diversity training:
The Trust is committed to creating a learning environment where staff are seen as an important resource. Where learning is valued, supported and shared, enabling the delivery of the highest standard of safe, effective patient care. |
| 2.3 What is the equalities profile of service users? | Service users are able to access this service as identified by clinical need
The Equality and Diversity team will report on patient data on an annual basis. |
| 2.4 What other data do you have in terms of service users or staff? (e.g. results of customer satisfaction surveys, consultation findings). Are there any gaps? | The Trust is preparing to implement the Equality Delivery System which will allow a robust examination of Trust performance on Equality, Diversity and Human Rights. This will be based on 4 key objectives that include:
1. Better health outcomes for all
2. Improved patient access and experience
3. Empowered, engaged and included staff
4. Inclusive leadership

The policy references key documents and research
This policy has been developed in direct response to Patient Safety Alert NPSA/2012/RRR001: ‘Harm from flushing nasogastric tubes before confirmation of placement’ March 2012.
[http://www.nrls.npsa.nhs.uk/resources/?EntryId45=133441](http://www.nrls.npsa.nhs.uk/resources/?EntryId45=133441)
and should be read in conjunction with the previous alert NPSA/2011/PSA002: ‘Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants’ March 2011.
[http://www.nrls.npsa.nhs.uk/resources/type/alerts/?entryid45=129640](http://www.nrls.npsa.nhs.uk/resources/type/alerts/?entryid45=129640) This remains in force and should be referred to for all other issues, including repeat placement checks after initial gastric placement has been confirmed. |
<table>
<thead>
<tr>
<th><strong>Applied to all Protected Characteristics:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Service users are able to access this service as identified solely by clinical need and therefore this policy does not discriminate against service users</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>2.5</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>What engagement or consultation has been undertaken as part of this EIA and with whom? What were the results?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>2.6</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>If you are planning to undertake any consultation in the future regarding this service or policy, how will you include equalities considerations within this?</td>
</tr>
</tbody>
</table>

In the table below, please describe how the proposals will have a positive impact on service users or staff. Please also record any potential negative impact on equality of opportunity for the target:

In the case of negative impact, please indicate any measures planned to mitigate against this.
<table>
<thead>
<tr>
<th>Positive impact (including examples of what the policy/service has done to promote equality)</th>
<th>Negative Impact</th>
<th>Action Plan to address negative impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive Impact</td>
<td>Action Plan to address negative impact</td>
</tr>
<tr>
<td>Age</td>
<td>NG will promote better nutrition for those at risk of malnutrition, i.e. elderly and people with a disability. The policy promotes good care and safety for all protected groups.</td>
<td>In the end of life phase the patient’s ability and desire to eat and drink are likely to lessen. Dysphagia is common following acute stroke, particularly in those patients who are identified as being at the end of life.</td>
</tr>
<tr>
<td>Disability</td>
<td>Involve patient, relative and significant other, informing them of plan and potential outcomes: The Trust will provide information in alternative formats via Interpreting and Translation. NG will promote better nutrition for those at risk of malnutrition, i.e.</td>
<td>Not responding to requests of information in alternative formats: This could have a negative impact on consent and understanding.</td>
</tr>
</tbody>
</table>

**Disability**

- Involve patient, relative and significant other, informing them of plan and potential outcomes: The Trust will provide information in alternative formats via Interpreting and Translation.
- NG will promote better nutrition for those at risk of malnutrition, i.e.

**Positive Impact**

- Age
  - NG will promote better nutrition for those at risk of malnutrition, i.e. elderly and people with a disability.
  - The policy promotes good care and safety for all protected groups.

**Negative Impact**

- In the end of life phase the patient’s ability and desire to eat and drink are likely to lessen.
- Dysphagia is common following acute stroke, particularly in those patients who are identified as being at the end of life.

**Action Plan to address negative impact**

- Assessment for, or presence, of dysphagia or malnutrition risk is documented in the patient notes.

**Resources required**

- Clinical Team

**Responsibility**

- Clinical Team

**Target date**

- On-going
<table>
<thead>
<tr>
<th>Gender Reassignment</th>
<th>Service users are able to access this service as identified solely by clinical need and therefore this policy does not discriminate against service users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marriage and Civil Partnership</td>
<td>Service users are able to access this service as identified solely by clinical need and therefore this policy does not discriminate against service users</td>
</tr>
<tr>
<td>Pregnancy and Maternity</td>
<td>Service users are able to access this service as identified solely by clinical need and therefore this policy does not discriminate against service users</td>
</tr>
<tr>
<td>Race</td>
<td>Involve patient, relative and significant other, informing them of plan and potential outcomes: The trust will provide interpreting and translation as required</td>
</tr>
<tr>
<td></td>
<td>Not responding to requests of information in alternative formats: This could have a negative impact on consent and understanding</td>
</tr>
<tr>
<td></td>
<td>There may be medication that patients are taking in</td>
</tr>
<tr>
<td></td>
<td>Information in an appropriate format is given to the patient and family/carer throughout the decision-making process.</td>
</tr>
<tr>
<td></td>
<td>Information given to patient and family/carer is</td>
</tr>
<tr>
<td></td>
<td>Interpreting and Translation services</td>
</tr>
<tr>
<td></td>
<td>Clinical Team</td>
</tr>
<tr>
<td></td>
<td>On-going</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Religion or Belief</td>
<td>Service users are able to access this service as identified solely by clinical need and therefore this policy does not discriminate against service users. There may be an impact in regard to patients observing Ramadan or Fasting. Engagement with patient and family/carer is necessary to provide information and document in patient notes/care plan.</td>
</tr>
<tr>
<td>Sex</td>
<td>Service users are able to access this service as identified solely by clinical need and therefore this policy does not discriminate against service users.</td>
</tr>
<tr>
<td>Sexual Orientation</td>
<td>Service users are able to access this service as identified solely by clinical need and therefore this policy does not discriminate against service users.</td>
</tr>
</tbody>
</table>
APPENDIX 3 - Enteral Feeding and Nasogastric tube insertion and maintenance clinical competencies.

<table>
<thead>
<tr>
<th>Name:</th>
<th>Role:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base:</td>
<td>Date initial training completed:</td>
</tr>
</tbody>
</table>

**Competency Statement:**

The participant demonstrates clinical knowledge and skill in nasogastric insertion and maintenance without assistance and/or direct supervision (level 3 - see level descriptors). Assessment in practice must be by a Registered Nurse who can demonstrate competence at level 4 or above.

<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Assessment Method</th>
<th>Level achieved</th>
<th>Date</th>
<th>Assessor/self assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Participant will be able to:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Demonstrate the knowledge and understanding required to insert and maintain a nasogastric tube</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Discuss the rationale for nasogastric tube insertion including appropriate timing, reason and roles and responsibilities.</td>
<td>Questioning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Discuss the legal and ethical implications for the insertion of a nasogastric tube</td>
<td>Questioning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Demonstrate knowledge of current NG policy and other relevant policies and guidelines, including Infection Prevention and Control</td>
<td>Questioning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Demonstrate knowledge of anatomy and physiology in relation to nasogastric tube insertion</td>
<td>Questioning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Demonstrate the ability to insert a NG tube in accordance with policy and guidelines</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Ensure patient informed and consent to treatment given</td>
<td>Observation/ Documentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Demonstrate correct preparation of equipment and patient environment</td>
<td>Observation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Follow guidelines to insert nasogastric tube</td>
<td>Observation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Demonstrate procedure for checking correct placement of nasogastric tube following insertion</td>
<td>Observation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Demonstrate appropriate care of skin</td>
<td>Observation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) Demonstrate correct documentation of procedure and use of positioning chart</td>
<td>Observation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
g) Demonstrate knowledge of who to contact in the event of inability to confirm tube placement or other problems beyond competency | Observation

h) Demonstrate ability to maintain patency of tube tube feeds and/or when medications are required | Observation

i) Demonstrate correct documentation and use of positioning chart | Observation

3. Demonstrate knowledge and skills in enteral feeding

<table>
<thead>
<tr>
<th>Questioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Discuss the indications for enteral feeding</td>
</tr>
<tr>
<td>b) Identify range of method for nutritional support</td>
</tr>
<tr>
<td>c) Describe how patients are screened and assessed for nutritional support</td>
</tr>
<tr>
<td>d) Discuss the ethical and legal implications of nutritional support</td>
</tr>
<tr>
<td>e) Describe three methods of delivery for feeding</td>
</tr>
<tr>
<td>f) List the recommendations for giving feeding through a feeding tube</td>
</tr>
<tr>
<td>g) Identify the main feeding routes for enteral feeding</td>
</tr>
</tbody>
</table>

Date all elements of Competency Tool completed to level 3________

I confirm that I have I am confident and competent in naso gastric tube insertion and maintenance

Registered Nurse ____________ Signature ____________ Status__________ Date _______

I confirm that I have assessed the above named Registered Nurse and can verify that he/she demonstrates competency in

Assessor_______________ Signature _______________ Status __________ Date _______
<table>
<thead>
<tr>
<th>Review Dates:</th>
<th>Competent</th>
<th>Registered Nurse</th>
<th>Verifier</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes / No</td>
<td>Signature</td>
<td>signature</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### Levels of competency Rating Scale

<table>
<thead>
<tr>
<th>Level of achievement</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novice</td>
<td>0</td>
</tr>
<tr>
<td>Can perform this activity satisfactorily to the level required in order to participate in the clinical environment</td>
<td>0</td>
</tr>
<tr>
<td>Can perform this activity but not without constant supervision and assistance</td>
<td>1</td>
</tr>
<tr>
<td>Can perform this activity with a basic understanding of theory and practice principles, but requires some supervision and assistance</td>
<td>2</td>
</tr>
<tr>
<td>Competent Practitioner</td>
<td>3</td>
</tr>
<tr>
<td>Can perform this activity with understanding of theory and practice principles without assistance and/or direct supervision</td>
<td>3</td>
</tr>
<tr>
<td>Can perform this activity with understanding of theory and practice principles without assistance and/or direct supervision, at an appropriate pace and adhering to evidence based practice</td>
<td>4</td>
</tr>
<tr>
<td>At this level competence will have been maintained for at least 6 months and/or is used frequently (2-3 times /week) The practitioner will demonstrate confidence and proficiency and show fluency and dexterity in practice</td>
<td>4</td>
</tr>
<tr>
<td>This is the minimum level required to be able to assess practitioners as competent</td>
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<td>Can perform this activity with understanding of theory and practice principles without assistance and/or direct supervision, at an appropriate pace and adhering to evidence based practice</td>
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<td>At this level the practitioner will be able to adapt knowledge and skill to special/ novel situations where there maybe increased levels of complexity and/or risk</td>
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<td>Expert</td>
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<td>Can perform this activity with understanding of theory and practice principles without assistance and/or direct supervision, at an appropriate pace and adhering to evidence based practice. Demonstrate initiative and adaptability to special problem situations, and can lead others in performing this activity</td>
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<td>At this level the practitioner is able to co-ordinate, lead and assess others who are assessing competence. Ideally they will have a teaching and /or mentor qualification</td>
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Decision tree for nasogastric tube placement checks in ADULTS

- Estimate NEX measurement (Place exit port of tube at tip of nose. Extend tube to earlobe, and then to xiphisternum).
- Insert fully radio-opaque nasogastric tube for feeding (follow manufacturer’s instructions for insertion).
- Confirm and document secured NEX measurement.
- Aspirate with a syringe using gentle suction.

Aspirate obtained?

- **YES**
  - Test aspirate on CE marked pH indicator paper for use on human gastric aspirate.
  - pH between 1 and 5.5: Proceed to FEED or USE TUBE.
    - Record result in notes and subsequently on bedside documentation before each feed/medication/flush.
    - Competent clinician (with evidence of training) to document confirmation of nasogastric tube position in stomach.
  - pH NOT between 1 and 5.5: Proceed to x-ray: ensure reason for x-ray documented on request form.

Aspirate obtained?

- **NO**
  - Do not feed or use tube.
  - Consider re-siting tube or call for senior advice.

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.

www.npsa.nhs.uk/alerts
Decision tree for nasogastric tube placement checks in **CHILDREN** and **INFANTS** (NOT NEONATES)

- Estimate NEX measurement (Place exit port of tube at tip of nose. Extend tube to earlobe, and then to xiphisternum)
- Insert fully radio-opaque nasogastric tube for feeding (follow manufacturer’s instructions for insertion)
- Confirm and document secured NEX measurement
- Aspirate with a syringe using gentle suction

**Aspirate obtained?**

- **YES**
  - Try each of these techniques to help gain aspirate:
    - If possible, turn child/infant onto left side
    - Inject 1-5ml air into the tube using a syringe
    - Wait for 15-30 minutes before aspirating again
    - Advance or withdraw tube by 1-2cm.
    - Give mouth care to patients who are nil by mouth (stimulates gastric secretion of acid)
    - Do not use water to flush

  - Test aspirate on CE marked pH indicator paper for use on human gastric aspirate
  - **pH between 1 and 5.5**

    - **YES**
      - PROCED TO FEED or USE TUBE
      - Record result in notes and subsequently on bedside documentation before each feed/medication/flush.
      - **YES**
    - **NO**
      - pH NOT between 1 and 5.5

    - **NO**

- **NO**

  - Aspirate obtained?
    - **YES**
      - Proceed to x-ray: ensure reason for x-ray documented on request form
      - **YES**
    - **NO**
      - Competent clinician (with evidence of training) to document confirmation of nasogastric tube position in stomach
      - **YES**
    - **NO**
      - DO NOT FEED or USE TUBE
      - Consider re-siting tube or call for senior advice

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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.
## NG TUBE POSITION CHART

### POSITION OF TUBE MUST BE VERIFIED ON INSERTION AND AT LEAST EACH TIME BEFORE USE

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>New Tube Insertion</th>
<th>Length of NGT in cms at tip of nose</th>
<th>On aspiration of tube. (Aspirate must be 5.5 or below)</th>
<th>Is there reason for pH&gt;5.5? **</th>
<th>Is Blackcurrant test appropriate? **</th>
<th>Is the tube safe to use?</th>
<th>Signature</th>
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*If unsure seek senior guidance and refer to policy for Naso gastric tube insertion and maintenance

** Blackcurrant test only to be used if patient has a safe swallow. Does not use if patient has oesophageal stricture/ Ca.
Leigh House Guidelines

1.0 Introduction

In exceptional circumstances during the care and treatment of young people with Anorexia Nervosa it may be necessary to instigate a period of enteral feeding by nasogastric tube to prevent extreme weight loss and cardiovascular collapse. Also, young people receiving treatment for other diagnoses may, on rare occasions, have difficulty eating. Circumstances may dictate that a period of enteral feeding by nasogastric tube is necessary for example with diagnoses of Obsessive Compulsive Disorder, Psychosis and Severe Depression. A nasogastric (NG) tube is a flexible tube passed through the nose and into the stomach through which liquid feed is given. NG feeding is relatively safe method of providing nutrition when a young person cannot or will not feed her/himself. It can be used flexibly, can provide bolus or continuous feeds, allows young people to continue to take oral feeds and does not require an anaesthetic.

2.0 Purpose of the guidelines

The purpose of this guideline is to develop clear advice for the nasogastric (NG) feeding of a patient who is unable to eat or drink. The aim of the guideline is to ensure safe practice whilst respecting the young person’s dignity and working in accordance with high ethical standards and within the law. It will include clear limits to the use of these guidelines in practice and directions to alternative services when these limits are reached. The guide will also provide referenced background information and practical tools to improve practice and expand other guidelines relevant to the feeding of young patients who are refusing or unable to maintain adequate hydration and nutrition.

3.0 Scope of the guideline

This guideline applies to the following people:-

- young patients and their families
- nursing staff
- medical staff including on-call medical staff
- pharmacy staff

4.0 Definitions

- Enteral tube feeding:
- Bolus feed:
- Intermittent feeding:

nasoenteric, gastrostomy (PEG) feeding:
administering a volume a feed via a syringe and tube at regular intervals
this involves gravity feeding or feeding with a pump with breaks between feeds to suit patient needs.
Continuous feeding: may be appropriate for patients who cannot tolerate large volumes of feed.

Nutritional supplements:
- not requiring a prescription eg. Complain, Build Up
- requiring a prescription eg. Fortisip, Ensure Plus
- multivitamin and mineral tablets

5.0 Examples

About 50% (n=10) of the inpatients in Leigh House at any one time have severe eating difficulties, usually associated with a diagnosis of Anorexia Nervosa. These young people have varying degrees of eating difficulty.

- Some young people arrive with a nasogastric tube and enteral feeding regime in place and need to continue being fed by this method either totally or partially.
- Some will be willing to have the nasogastric tube removed and to eat with the support of the eating programme.
- Of those on the eating programme, some make steady progress with intensive support.
- Some struggle and at times come close to requiring nasogastric feeds but in response to the interventions of the team manage to progress enough to avoid nasogastric feeding.
- Some require intermittent nasogastric feeds to make up for meals missed on the programme but otherwise manage to keep up with the group.
- Of the group who cannot make progress with the support of the eating programme some passively accept nasogastric feeding.
- Others refuse and resist, fighting the team by preventing the insertion or pulling out the nasogastric tubes.

Some young patients with other diagnoses such as depression or psychosis develop associated eating difficulties which may be severe.

There are occasions when, despite full nursing and medical support, a young person refuses most food and fluids for 24 – 48 hours and becomes close to physical collapse. In order to prevent such deterioration and cardiovascular complications a decision is needed about re-establishing nutritional support using prepared feeds passed through a nasogastric tube. Such support will be necessary until the young person is able to resume eating and drinking sufficiently to sustain their physical recovery.

In view of the fact that young people have shown varying degrees of acceptance or resistance to this method of nutritional support, the team needs guidance on the safe limits of such an intervention, outlining at what point it is more harmful than beneficial to intervene in this way and what degree of coercion is within safe, legal and ethical practice.

6.0 Criteria for use of Nasogastric (NG) Feeding

What are the criteria which should be met before attempts are made to pass an NG tube at Leigh House?
• Creative use of the Leigh House eating programme has been exhausted
• Every effort has been made to encourage normal eating including involvement of family if appropriate
• Restriction of activity in place
• Level of supervision has been increased
• There has been close monitoring of fluid and food over previous 24 hours using fluid charts to measure input and output
• The patient has refused food and liquid nutrition for a period of time up to 48 hours
• Nursing staff confirm that no food or fluids have been taken in 48 hours
• The patient is at risk of serious physical compromise with evidence of weight loss plus any of the following:-
  a. dehydration
  b. biochemical imbalance (rising Urea)
  c. postural hypotension or low blood pressure
  d. tachycardia
  e. bradycardia
  f. oedema
  g. dizzy on standing
  h. loss of skin turgor

The details of the assessment and the reasons for and against nasogastric feeding must be recorded in the patient's medical notes prior to the commencement of feed.

7.0 Risk Assessment

A full risk assessment must be undertaken by two competent health care professionals including the senior doctor responsible for the patient's care. This assessment must include discussion with patient, family and members of the MDT. This must include consideration of the risks and benefits of staying at Leigh House over transfer to general hospital. See below 9.0. The risk assessment of the benefits and the risks of introducing a nasogastric tube must be documented, signed, dated and timed.

Consideration of the following risks will be necessary if treatment is to continue a Leigh House:-

• Environment and capacity of the unit/
• Staffing levels.
• Availability of staff with the necessary skills in the short and longer term to support the correct insertion and accurate confirmation of placement of the tube.
• The risk to the physical health of the young person if the intervention is not carried out.

• The risk to the young person if the intervention is carried out.
• The risk to the patient’s dignity in any event.
• If the patient is already of low weight because of a diagnosis of Anorexia Nervosa s/he would have to be physically well enough to withstand the
procedure and any level of restraint that might be required.

- If the patient has unusual or altered anatomy, a senior clinician should be contacted and nasogastric tube insertion attempted only under fluoroscopic control.

**All efforts to manage the situation without recourse to NG feeding and NG feeding under restraint must have been exhausted.**

### 8.0 Criteria for Referral to Paediatric Ward

- If there is any medical or nursing doubt about the physical health of the patient.
- If a young patient looks as if s/he is on the verge of collapse.
- If the young person cannot get up from crouching without support.
- If there is evidence of very significant cardiovascular instability, such as:-
  - Hypotension BP < 80 / 50
  - Arrhythmia: irregular pulse
  - Bradycardia < 40
- Vigorous resistance by the patient seems likely to persist despite all efforts at de-escalation.
- The likelihood of a significant negative impact on the capacity of the nursing team to sustain the intervention and maintain the care of the other patients.
- Need for sedation because of vigorous resistance.
- Consideration to be given to the possibility of young person (who is vigorously resisting in Leigh House) accepting nutrition in the general hospital setting.

### 9.0 Management of Resistance

**The following bullet points suggest techniques to build up the young person’s motivation to collaborate with the nursing team allowing some negotiation.**

Assessment of likely resistance:

- Review the history of resistance
- How does the young person understand her/ his options?
- What does the young person think might help to move things forward?
- What is important to young person at present and can this be used to motivate the young person or provide an incentive to collaborate?

Encouragement to accept the process of feeding in any form:-

- Acknowledge with the young person that members of staff are in charge of the young person’s health and therefore the decision that feeding (one way or another) must go ahead is not a choice the young person needs
to make.
- Within this 'no choice situation' provide a limited range of options e.g. offer oral nutrition / fortisip etc but offered with a time limit.
- Discuss incentives eg free time when procedure finished, offer of an appropriate activity etc
- Discuss short term goals eg activities, home leave, trips out etc.
- Show empathy with difficulty faced, whilst remaining clear that feeding must go ahead.

Discuss possible physical consequences of refusal:-
- The need to cease all activities
- The need for constant rest
- Signs of Hypotension
- Weakness
- Depression
- Clouded thinking
- Heart failure
- Chest pain

10.0 Once the clinical decision has been made to proceed with nasogastric feeding, if the patient is collaborative and consenting
- The procedure must take place in the treatment room.
- The passing of an NG tube must be undertaken only by members of the nursing or medical team with experience in passing NG tubes.
- The availability of such staff in the week ahead must be assessed before the decision to use NG feeding is made to ensure that the treatment can be implemented and sustained in the event of tube being pulled out.
- Ensure the availability of NG tubes (process of stock)
- Nasogastric tubes used for the purpose of feeding must be radio-opaque throughout their length and have externally visible length markings.
- Ensure the availability of NG feed
  a. A prescription must be written by the medical team for the required feed and fluid.
  b. This prescription must be discussed with dietician as soon as possible.
  c. Laboratory request forms for blood investigations must be completed.

These tests to include:-
  i. Urea and Electrolytes,
  ii. Liver function Tests
  iii. Renal function Tests
  iv. Phosphate and Calcium
  v. Magnesium

- Oral feed available and re-offered in final attempts to avoid need for NG feeding
but with agreed time limits on such negotiation.

REFER TO PARAGRAPH 15.00: GUIDELINES FOR PLACING THE NASOGASTRIC TUBE

11.0 If the patient is not consenting and resisting and nasogastric feeding is to go ahead under parental consent, Mental Capacity Act of Mental Health Act 1983:

More often than not the young person is experiencing intermittent impulses to pull at the tube in contrast to a prolonged struggle throughout the process therefore the necessary restraint is most likely to be one of holding the arms to help the patient inhibit these impulses.

- The procedure must take place in the High Care Area.
- Alert paediatricians and discuss the possibility of transfer to Paediatric ward if unsuccessful.
- Only proceed to initiate NG feeding if a doctor on site in addition to an experienced nurse to pass the tube.

12.0 The procedure for safe holding during the insertion of and feeding via an NG tube in accordance with the guidelines for placing and feeding via an NG tube in para 15.00

- The team must use only the techniques outlined in PRISS (Proactively Reducing Incidents for Safer Services).
- The minimum number of people involved in restraint, whilst passing the NG tube is three. However, if initially more than three people are required to hold the young person safely, then try to de-escalate and sit to de-escalate for a further period until it is safe to hold with only three people.
- All nurses involved in restraint must have up to date PRISS training.
- Persuade young person to go to HCA for feed
- Sit to de-escalate.
- Once settled on settee – a nurse must sit either side of young person
- The nurse who will be passing the NG tube should be ready and prepared to pass the NG tube as outlined below. (see preparation of NG Tube):
  - In order to hold the patient safely, s/he should be held and supported by one nurse to each arm and one supporting the head, plus one free to fetch and carry.
  - Young person sitting on settee with two staff, head co-ordinator doing the talking.
  - Define the point when negotiations will stop and insertion of NG tube to proceed.
  - Head co-ordinator cups the head as in safe holding guidelines:-
    - Going with the movement
    - Not resisting any movement
    - Nurse would proceed with the NG tube
    - No attempt should be made to lock the head of the young person
    - If tube cannot be passed in these circumstances:
• Sit to de-escalate for a further period
• Try again

In the event of strong resistance and difficulty taking the young person to the High Care Area.

• Re-evaluate
• Re-offer oral feed
• Review medication and if appropriate consider light sedation such as anxiolytics, eg Oral Diazepam / Lorazepam
• Reconsider paediatric referral