Nasogastric Feeding Tube Insertion and Care Guidelines- Adult

This guidance does not override the individual responsibility of health professionals to make appropriate decisions according to the circumstances of the individual patient in consultation with the patient and/or carer. Health care professionals must be prepared to justify any deviation from this guidance.

INTRODUCTION
This guideline provides evidence-based guidance for nurses on how to insert and care for a fine bore nasogastric feeding tube in adults. Patients covered are those adults who require feeding/hydration via the nasogastric route on whom it is safe to pass a nasogastric tube.

THIS GUIDELINE IS FOR USE BY THE FOLLOWING STAFF GROUPS:
Registered nurses, doctors and dieticians.

Lead Clinician
Susan Dickinson
Sonya Murray

Approved by the Key Document Approval Group on: 27th January 2016

This guideline should not be used after end of: 27th January 2018

Key amendments to this guideline

<table>
<thead>
<tr>
<th>Date</th>
<th>Amendment</th>
<th>By</th>
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<tr>
<td>August 2010</td>
<td>• Competencies Infinity pump • Details of syringe • Reference for confirming NG tube position • Document pH obtained • Attempt to obtain aspirate • Infinity pump replaces Flocare pump • Out of hours enteral regimen in Nutrition resource Folder on wards • Clarification water used needs to be sterile • Infection control measure for sterile water • Updated discharge plan • References and bibliography updated</td>
<td>Sue Dickinson</td>
</tr>
<tr>
<td>7th September</td>
<td>• Remind all staff responsible for checking initial placement of nasogastric tubes</td>
<td>Rani Virk</td>
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Nasogastric Feeding Tube Insertion and Care-Adult

WAHT-NUR-065   Page 1 of 25   Version 7
It is the responsibility of every individual to check that this is the latest version/copy of this document.

<table>
<thead>
<tr>
<th>Date</th>
<th>Notes</th>
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<tbody>
<tr>
<td>2012</td>
<td>(including staff who support parents/carers who check initial placement of nasogastric tubes).</td>
</tr>
<tr>
<td></td>
<td>- <strong>NOTHING</strong> should be introduced down the tube before gastric placement has been confirmed.</td>
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<tr>
<td></td>
<td>- <strong>DO NOT FLUSH</strong> the tube before gastric placement has been confirmed.</td>
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<tr>
<td></td>
<td>- Internal guidewires/ stylets <strong>should NOT</strong> be lubricated before gastric placement has been confirmed. The lubricant is not needed for placement, only to aid removal of the guidewire/ stylet from the tube after gastric placement has been confirmed.</td>
</tr>
<tr>
<td>9th October 2012</td>
<td>• NG Position record appendix 2 and references to it</td>
</tr>
<tr>
<td></td>
<td>• Discharging a patient on an NG tube feed Appendix 3 and references to it</td>
</tr>
<tr>
<td>19th July 2013</td>
<td>Remove Senior Healthcare Assistants from page 1</td>
</tr>
<tr>
<td>April 2015</td>
<td>• Policy Review</td>
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<tr>
<td></td>
<td>• Inclusion of updates form Marsden Manual</td>
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<td></td>
<td>• Inclusion of Appendix 2 Insertion record WR4548</td>
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<tr>
<td></td>
<td>• Inclusion of Appendix 3 Maintenance Record</td>
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<tr>
<td></td>
<td>• Inclusion of Flow chart from radiology following request for x-ray to determine placement of nasogastric feeding tube.</td>
</tr>
<tr>
<td>January 2016</td>
<td>• Updated monitoring tool</td>
</tr>
<tr>
<td></td>
<td>• Addition of link to consent policy</td>
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<tr>
<td></td>
<td>• Addition of link to Training</td>
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</table>

Sue Dickinson

Helen Blanchard

Joanna Logan
Nasogastric Feeding Tube Insertion and Care-Adult

INTRODUCTION

Naso-gastric feeding is usually considered as the first line in artificial nutrition support for patients with a functioning gastrointestinal tract whose nutritional needs cannot be met by diet alone or by diet and nutritional supplements. Each patient should be considered individually taking into account the clinical condition, treatment plan and nutritional status.

Consideration should be given to early naso-gastric feeding for dysphagic patients following stroke (Clarke et al 2005).

If the nasogastric route is used for enteral feeding a fine bore tube should be used in preference to a wide bore or Ryle’s tube. The nasogastric route is suitable for the provision of enteral feeding for up to 4–6 weeks (Bowling 2004). Wide bore tubes may be used short term in critical care areas if there are concerns re gastric emptying and increased risk of aspiration.

Naso-gastric feeding may be the patient’s sole source of nutrition or may be used to supplement the patient’s oral diet or as a weaning off parenteral nutrition.

PATIENTS COVERED

Any patient requiring feeding via the naso-gastric route on whom it is safe to pass a nasogastric tube.

COMPETENCIES REQUIRED

Insertion of naso-gastric feeding tubes may be carried out by a Registered nurse/doctor or dietician who has undergone a period of training under the supervision of a nurse / doctor competent at undertaking this clinical procedure.

Students nurses, doctors and dieticians may insert naso-gastric feeding tubes but only under the direct supervision of a registered nurse, doctor or dietician who is already competent in the skill.

Care of the naso-gastric feeding tube, may be carried out by a registered nurse, senior health care assistant or team assistant provided they have completed appropriate training and been deemed competent to provide the care. However care given by team assistants or student nurses should be under the supervision of the registered nurse who remains accountable for any care given.

Formal training sessions on insertion and care of naso-gastric feeding tubes are available as part of in-service training. The dates for these can be found on the Trust Intranet page under Education and Training/, Nasogastric Tube Training. There is also update training available via e learning on the Trust Electronic Staff Record (ESR) system. Once training has been completed, the practitioner should carry out three successful supervised insertions under the supervision of a competent other before deemed competent.

Use of the Flocare Infinity feed pump requires competency based training for the nurse and the patient/carer if the patient is discharged on nasogastric feeding.
CONTRAINDICATIONS TO NASOGASTRIC FEEDING TUBE: These include:-

- Head injury – nasal intubation may be contraindicated in patients with a fractured base of skull because of the risk of intra-cranial insertion.

- The oesophageal tract is abnormal for example, due to stricture, neoplasm, trauma or postoperatively following a recent anastomosis.

- Gastric outflow obstruction

- Intestinal obstruction or ileus

- Intestinal perforation

- SEEK ADVICE FROM MEDICAL STAFF IF UNSURE.

Where these complications exist or a long term feeding option is needed, for example, in patients with a degenerative neurological disease, other routes of enteral feeding including gastrostomy or jejunal feeding should be considered (Best 2005).

GUIDELINE

Procedure for placement of a fine bore naso-gastric feeding tube

Precautionary measures when undertaking the procedure
Seek Medical advice in the following instances:

- Previous attempt at naso-gastric tube insertion was difficult
- Recent surgery to face, head or neck
- Poor gastric emptying
- Oesophageal reflux
- Presence of endotracheal tube
- Neurological problems causing an increased risk of aspiration

**Informed Consent**

- The nurse should aim to reduce the patients’ anxieties and allay his or her fears before carrying out the procedure
- Explain fully and clearly in terms the patient will understand the reasons for naso-gastric tube placement
- Invite and encourage questions from the patient
- Obtain patients consent before going ahead with the procedure
- Where the patient is unable to consent or where there are concerns regarding consent then the Consent to Examination or Treatment Policy - WAHT-CG-075 should be referred to.

NB. In the case of a patient who has suffered a stroke and has impaired communication skills, the multi-disciplinary team, in particular, the speech and language therapist, need to be involved in assessing the patient and determining the patient’s level of understanding and capacity to make an informed decision. Information may need to be provided in verbal and pictorial form. Also the patient’s next of kin may be approached to ascertain what the patient’s beliefs are. The decision to naso-gastric feed would be with the Doctor who must do whatever is in the patient’s best interest. Ref: Mental Capacity Act 2005

**Aims of carrying out this procedure**

- To provide adequate nutrition
- To maintain patient safety
- To ensure comfort and co-operation of the patient
- To monitor patients for complications of naso-gastric feeding
- To administer feed as prescribed by the Dietitian

**Equipment needed**

- Flocare polyurethane naso-gastric feeding tube with radio-opaque line and guidewire, CH8, 110cm
- pH indicator paper
- Non-sterile gloves
- 50ml purple female luer syringe
- Sterile water and gallipot
- Clinically clean receiver
- Tissues
- Drinking water and straw (unless contra-indicated)
- Fixative tape

N.B. Sterile gloves should be used with immuno-compromised patients.
**Position of Head**

b) Head flexed slightly forward

CORRECT POSITION FOR PASSING NASO-GASTRIC TUBE
**PROCEDURE GUIDELINES**

**Passing the Naso-gastric feeding tube**

<table>
<thead>
<tr>
<th>ACTION</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Explain the procedure to the patient</td>
<td>Reduce any anxieties and gain patient consent</td>
</tr>
<tr>
<td>2. Place the patient in an upright position with head flexed slightly forwards. If patient unable to sit upright lie on one side</td>
<td>To improve the chance of oesophageal intubation</td>
</tr>
<tr>
<td>3. Agree with the patient a signal by which he or she can indicate to stop the procedure e.g. by raising a hand</td>
<td>To enable the patient to stop the procedure if they wish</td>
</tr>
<tr>
<td>4. Wash hands and put on gloves</td>
<td>Reduce the risk of introducing infection</td>
</tr>
<tr>
<td>5. Measure the length of tube needed to be inserted. <strong>Place the tip of the tube against the xiphisternum, measure to the ear lobe and then to the tip of the nose (BAPEN, 1996).</strong> Note the closest limiting mark on the tube. This can be marked by applying a strip of micropore tape. When the tape meets the nose the correct length has been inserted.</td>
<td>To ensure the tip of the tube reaches the stomach. If too much tube is passed this risks kinking or coiling in the stomach, this may cause problems when removing the guide wire or the tube may become blocked or knotted. If too little tube is passed, then the tube could be lying in the oesophagus and aspiration of feed may ensue.</td>
</tr>
<tr>
<td>6. Lubricate the tip of the tube with sterile water</td>
<td>To assist the passage of the tube</td>
</tr>
<tr>
<td>7. Check the patients’ nostrils for deviated septum or nasal polyps</td>
<td>To ensure there is no obstruction</td>
</tr>
<tr>
<td>8. Ask the patient to blow their nose if</td>
<td>To ensure the nostrils are clear</td>
</tr>
<tr>
<td>Step</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>9.</td>
<td>Ask the patient to state the preferred nostril for insertion if they are able. Possible reasons for asking include: To ensure patient comfort.</td>
</tr>
<tr>
<td>10.</td>
<td>Wash and dry the nose using mild soap and water. To aid fixation of adhesive tape when securing the tube later.</td>
</tr>
<tr>
<td>11.</td>
<td>Ensure guide wire is firmly placed inside the tube. To make sure the guide wire does not slip out while passing the tube.</td>
</tr>
<tr>
<td>12.</td>
<td>Advance the tube into the nostril, aiming the tube horizontally and posteriorly along the floor of the nasal cavity. If obstruction is felt withdraw the tube and try again at a slightly different angle. To facilitate the passage of the tube following the natural anatomy of the nose and avoiding trauma to the nasal turbinates.</td>
</tr>
<tr>
<td>13.</td>
<td>As the tube approaches the nasopharynx ask the patient to swallow water (unless contraindicated) and advance the tube as the patient swallows. N.B. If the patient starts coughing or gagging when the tube reaches the oropharynx, stop advancing the tube until the coughing stops, then continue. To help the tip of the tube pass into the oesophagus.</td>
</tr>
<tr>
<td>14.</td>
<td>If the patient becomes distressed or agitated, withdraw the tube and postpone the procedure. Inform Medical Staff and Dietitian. Reduce patient distress.</td>
</tr>
<tr>
<td>15.</td>
<td>If the patient becomes short of breath, cyanosed or experiences chest pain, withdraw the NG tube and seek medical help. The tube may have passed into the trachea and caused trauma to the lung.</td>
</tr>
<tr>
<td>16.</td>
<td>When the limiting mark on the tube is reached stop advancing the tube. The tip of the tube should now have reached the stomach.</td>
</tr>
<tr>
<td>17.</td>
<td>Lightly tape the tube to the cheek. To hold the tube in place while position of the tube is confirmed.</td>
</tr>
<tr>
<td>18.</td>
<td>Confirm position of tube (see page 10) Ensure tube is in correct position in the stomach prior to feed to avoid intrapulmonary feeding – Do not remove guide wire until tube position has been confirmed.</td>
</tr>
<tr>
<td>19.</td>
<td>Secure tube to face using appropriate fixative tape. To ensure NGT remains firmly in position thus reducing the risk of pulmonary aspiration and maximise patient comfort.</td>
</tr>
</tbody>
</table>
Confirming Tube Position

Establishing the correct position of the tube in the stomach is essential to the safety of the patient, as intrapulmonary feeding or aspiration owing to a poorly positioned tube may have serious consequences (Cannaby et al, 2002, NPSA 2009). The tube position must be confirmed before feeding can commence. There are two methods available for confirming tube position Aspiration and where this fails then X-ray.

Please Note: The absence of respiratory distress should not be used as an indicator for correct tube placement.

Aspiration

<table>
<thead>
<tr>
<th>ACTION</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attach 60ml purple female luer syringe to syringe port (or size in accordance with manufacturer’s instructions).</td>
<td>If incorrect syringe size is used it may exert undue pressure on the tube and damage it</td>
</tr>
<tr>
<td>2. Inject 10-20ml of air into tube</td>
<td>To ensure tube is not kinked</td>
</tr>
<tr>
<td>3. Aspirate a specimen of stomach contents (approx: 2ml).</td>
<td>Repositioning the patient onto the left side may enable the tip of the tube to lie in gastric contents present</td>
</tr>
<tr>
<td>4. If aspirate cannot be obtained at first attempt;</td>
<td>If the stomach is quite empty allowing the patient to take a drink will increase the volume of gastric contents thus making aspiration easier.</td>
</tr>
<tr>
<td>- Try again</td>
<td>DO NOT USE BLUE LITMUS PAPER</td>
</tr>
<tr>
<td>- Change the patients’ position i.e. lie them down on one side, then aspirate again</td>
<td>Indicates gastric aspirate and successful positioning of the tube</td>
</tr>
<tr>
<td>- If patient is able to swallow and not nil by mouth ask them to take a drink.</td>
<td>Correct positioning of the tube cannot be guaranteed as gastric aspirate should have a pH of no higher than 5.</td>
</tr>
<tr>
<td>5. Test aspirate with pH indicator paper, a pH of equivalent to or &lt;=5 indicates gastric acid and correct positioning of the tube (NNNG 2004) Document pH obtained.</td>
<td>Cannot guarantee that the tip of the NG tube is lying in the stomach</td>
</tr>
<tr>
<td>6. If unable to obtain pH &lt; 5 on initial tube placement a chest x-ray is indicated</td>
<td></td>
</tr>
<tr>
<td>If no aspirate can be obtained a chest x-ray is indicated. Further tips on obtaining aspirate is in “Aspiration guide” in the Nutrition Resource Folder on each ward.</td>
<td></td>
</tr>
</tbody>
</table>

pH Specific Paper
This is available from: NHS Logistics

Code Number FWM 745 – Feeding Tube pH indicator IN01 by Medicina, pack of 200 @ £20.30 per pack

X-ray

Radiography has been recognised as the gold standard for determining tube position (Neuman and Meyer, 1995; Harrison and Clay, 1997; Metheny et al, 1997). However repeat exposure of the patient to radiation, the cost of the procedure and the delay before feeding is initiated limits this as a routine method (Metheny et al, 1990). In addition an x-ray will only confirm the position of the tube at the time it is taken. Therefore it is suggested that X-ray can be safely limited to cases when other methods are inconclusive (Cannaby et al, 2002). Attempts should be made to obtain aspirate. Techniques can be found in Nutrition Resource folder on the ward.

When to X-ray:

- **If aspirate cannot be obtained arrange an X-ray.**
- **For unconscious patients, those with altered anatomy or those who are aspirating, a check X-ray is indicated (Marsden Manual 2014).**
- **IF IN DOUBT, A CHECK XRAY SHOULD BE PERFORMED. Please see Guideline**
Referral received for NG tube

- Ph test completed & inconclusive
- Perform Chest X-ray to include upper abdomen – High KV technique
  - View image & check position of NG tube tip
  - Refer to reference image if necessary – tube tip clearly demonstrated
    - Below diaphragm – In stomach
      - Notify referrer / nurse in charge of ward that image has been done – record action on CRIS
    - Above diaphragm / at bottom of oesophagus / curving to right or left – contact ward / referrer & ask them to come to x-ray department & re-site or remove the tube
  - Repeat x-ray
    - Document on CRIS

Securing the tube once correct position is confirmed
- Withdraw the guide wire (for Nutricia Flocare tube inject 10ml of sterile water into the tube, this lubricates the inside of the tube thus enabling the guide-wire to slip out easily).
NEVER RE-INSERT THE GUIDE-WIRE WHILE TUBE IS POSITIONED IN THE PATIENT AS THE WIRE COULD PERFORATE THE TUBE AND DAMAGE ADJACENT ORGANS.

- Using a suitable fixation tape, secure the tube to the nose and cheek in a manner that keeps it out of the patients’ field of vision and avoids friction to the nose.
- The tape should form a bridge between the tube and the skin to reduce skin traction.
- A thin piece of granuflex may be placed under the NGT on the cheek over which the NGT can be taped, this may help to reduce skin irritation especially if the tube is to be in place for some time.
- Suitable tapes include
  - NGT Coverlet
  - Micro-pore
- Ensure the patient is not allergic to the fixation tape

Documentation

At the end of the procedure document the following:
- Date and time of procedure
- Size and make of tube inserted
- Length of tube extending from nostril
- How tube position confirmed. pH value
- How patient tolerated procedure
- Name and signature of practitioner undertaking the procedure.
- Use the Insertion record form WR4548
- Use the maintenance record chart WR4549 to document the ongoing care of the patients’ nasogastric tube.

Reducing the risk of aspiration in NG fed patients

Once the NG tube is secure and position confirmed then feeding may commence as per feeding regimen.

- Tube position must be checked at least once in every 24 hours, before commencing new feed and before administering medicines (Cannaby et al 2002). This may be done by aspirating a small amount of gastric contents and rechecking pH using pH indicator paper. Remember to document pH obtained.

- If the patient is on any antacid medication. It is important to note that the pH may be altered if the patient’s feed or antacid medication has been taken within the past hour, 30ml of AIR should be passed down the tube to clear it of any substance that might falsify the pH result

- If the patient vomits or coughs violently, the tube position must be rechecked (Colgiovanni, 1999).

Patients at greater risk of aspiration

Patients who are at higher risk of aspiration include those with a decreased level of consciousness or decreased mental state, those who exhibit uncooperative behaviour or require frequent naso-tracheal suctioning (Arrowsmith, 1993).
For patients at greater risk of feed aspiration naso-gastric tube position must be checked frequently, i.e. every 4-6 hours, to do this:

- Withdraw gastric aspirate from the NG tube using a 60ml purple female luer syringe, check the pH of the aspirate using pH sensitive strips.

In addition to regular checks, tube position should also be checked if the following occur:

- The patient has coughed violently, vomited or retched
- The limiting mark on the tube has moved
- The patient can feel the tube coiled in the throat
- The patient or nurse suspects tube malposition
- Suctioning has been carried out

If the patient is bed bound or on overnight feeding, the head and shoulders should be elevated 30-45 degrees during feeding and for at least one hour afterwards to maintain gravitational drainage of feed and prevent gastric pooling.

The patient should be observed for a sudden onset of respiratory difficulty associated with stridor and cyanosis. In this event the feed should be stopped immediately, the airway cleared and medical assistance sought.

The patient should be monitored for pyrexia and tachycardia associated with wheezing, which may also indicate that the feed has been aspirated.

Bowel sounds should be assessed daily as an indicator of gut motility, however they should not be used as a sole indicator for potential absorption (Riley, 2002).

**Using Prokinetics**

The use of prokinetic agents has been advocated in enterally fed patients, at least in start up regimens to help enhance contractility and accelerate intraluminal transit (Riley, 2002). Several potential medicines have been identified including:

- Metoclopramide
- Erythromycin
- Domperidone

**Summary**

- Check NG tube position regularly, every 6 hours
- Ensure patient is elevated at least 30-45 degrees during feeding and for an hour afterwards
- If patient becomes cyanosed stop feed immediately, clear airway and seek medical assistance
- Make sure suctioning equipment is easily accessible
- Carry out regular observations; pyrexia and tachycardia associated with wheezing may indicate feed aspiration
• Assess bowel sounds daily

N.B. Aspiration of residual volume four hourly in start up regimens and return of all volume up to 200ml has been suggested in critically ill patients (Riley, 2002).

ADMINISTERING FEED

• Enteral feed may be administered through the NGT using the **Flocare Infinity Enteral Feeding Pump** with the Infinity pack giving set following feeding regimen from the Dietitian. An emergency regimen is available in the ward Nutrition Resource folder for starting feeds out of hours.
• A pictorial guide to setting up the feed and giving set to the pump is written on the packaging of the giving set.
• Each pump has an operating instruction booklet attached. Details of error alarms can be found in this booklet or in the Nutrition resource folder on each ward.
• Duration of feeding is tailored to the patient’s needs but the standard is 20 hours with 4 hours rest. The rest period allows the gastric pH to reduce helping to protect against infection.
• Additional water may be given by flushes or using Nutrison Sterile Water pack. For flushes and medication use sterile water, using a fresh 500ml or 1000ml sterile water bottle each day/24hrs. The bottle should be labelled with patient name and time opened. Water can be given during the rest period without compromising to gastric pH. Any fluid used to flush the tube or dilute drugs must be recorded on the fluid balance chart.
• The regimen will be reviewed regularly by the dietitian in liaison with the doctors to meet target nutritional needs and minimising /managing risk of refeeding syndrome
SKIN CARE

Regular skin care will reduce irritation and possible infections

- Wash hands before and after tube care
- Replace fixation tape only when it is dirty or peeling off
- When changing the tape cleanse the skin using mild soap and water and dry thoroughly
- Alter the position of the tape when changing it to reduce the chance of irritation
- **Always avoid using creams and powders as they can damage the tube**
- Ensure that the patient is not allergic to the fixation tape

(Nutricia Clinical Care, 2002)

FLUSHING

All nasogastric tubes require regular flushing to prevent blockage (McAtear et al 1999)

- Sterile water and a sterile 60 ml purple female luer or 50ml catheter tip syringe must be used for flushing the NGT
- The NGT should be flushed with 30-50 mls of sterile water before starting a feed and when feed is stopped
- The NGT should be flushed with 30-50 mls of sterile water prior to administering medications and once medication is given
- A 10 ml flush of sterile water should be given in between medications; medications must never be mixed
- Use a 500ml or 1000ml bottle of sterile water as appropriate. Use a fresh bottle each day/24hrs. for each patient. Label bottle with patient name date and time opened.

ADMINISTRATION OF MEDICINES (also see poster Appendix 1)

- Patients who need to have medicines administered via NG tube should have their prescriptions reviewed and their regime simplified where possible. Consideration should be given to using other routes and/or once-daily regimes where possible. The pharmacist may suggest alternative medicines/routes if there is doubt about the suitability of a medicine to be given via an NG tube
- Accountability – the prescriber must change the route on the prescription chart to make it clear that the medicines are to be given in this way
- Where possible all medicines should be prescribed in liquid or soluble tablet form to avoid blockage of tube. Some tablets that are not marketed as soluble will nevertheless disperse in water
- Discuss any medicine which does not come in liquid or soluble form with the medical team and the pharmacist.
- Some liquid medicine preparations can be very thick and should be diluted with an equal volume of sterile water before administration
- Crushed tablets or opened capsules should be avoided if possible as particles may adhere to the sides of the tube and there is some exposure to the powder. There are also some tablets/capsules that must not be crushed or opened

Medicines that must not be crushed or opened
It is the responsibility of every individual to check that this is the latest version/copy of this document.

<table>
<thead>
<tr>
<th>Type of Medication</th>
<th>Example</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enteric Coated Tablets</td>
<td>Diclofenac, Sodium Valproate</td>
<td>Medicine designed not to be released in stomach.</td>
</tr>
<tr>
<td>Slow Release Preparations</td>
<td>Diltiazem, Nifedipine, Verapamil,</td>
<td>Medicine designed to be released over prolonged period,</td>
</tr>
<tr>
<td>Cytotoxics</td>
<td>Methotrexate</td>
<td>Risk to practitioner</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>Flucloxacillin</td>
<td>Risk to practitioner</td>
</tr>
<tr>
<td>Prostaglandin Analogues</td>
<td>Misoprostol</td>
<td>Risk to practitioner</td>
</tr>
<tr>
<td>Hormone Preparations</td>
<td>Cyproterone</td>
<td>Risk to practitioner</td>
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</tbody>
</table>

**National Patient Safety Agency Patient Safety Alert no. 19 (March 2007)**

Promoting safer measurement and administration of liquid medicines via oral and enteral routes

This Patient Safety Alert requires the Trust to ensure that only oral/enteral syringes (that cannot be connected to intravenous catheters or ports) to measure and administer oral liquid medicines

The Trust Medicines Policy MedPolSOP11 'Administration of Oral and Enteral Liquid Medicines' must be followed

For an adapted version of a flowchart from BAPEN on administering medicines via feeding tubes please see Appendix 1.

**Infection Control and Safety**

- Wash hands and wear gloves.
- All syringes used are single use only.
- Sterile Water - Flushes may be decanted from a 500ml or one-litre bottle of sterile water, however the bottle must be labelled with patient name, must not be shared with other patients and must be discarded after 24 hours.
- Keep exposure to drug powder to a minimum

If unsure about any aspect of medicine administration via the naso-gastric route – please contact the ward pharmacist, or Medicines Information (ext 30235 Trustwide service)
THE TUBE BECOMES BLOCKED

- If attached to the giving set check the clamp is open
- Attach an empty 60 ml purple female luer or 50ml catheter tip syringe and pull the plunger back to try and unblock the tube
- Massage the tube by rolling it gently between your fingers using small movements only. Start from the end furthest away from the body and work towards the abdomen
- Try flushing with 30 mls of warm water, wait 30 minutes then try again. If this does not work repeat procedure using carbonated soda water
- **DO NOT** use too much force and do not use any sharp objects to try and unblock tube
- **DO NOT** try to reinsert the guide wire in an attempt to dislodge the blockage
- If tube will not unblock remove and reinsert a new NGT

PROCEDURE FOR PATIENT BEING DISCHARGED WITH AN NG TUBE

The nurse must inform the Dietitian and pharmacist of discharge date 5-7 days prior to patient discharge. This is to ensure that the Dietitian has time to arrange a Homeward delivery, contact the GP re feed prescriptions and arrange pump training for patient/carers and the pharmacist to organise the appropriate medicines and medication leaflet.

Prior to discharge the nurse must ensure that the patient has:

- 7 day supply of 60ml female luer syringes (provided by the ward)
- 7 day supply of giving sets (provided by the Dietitian)
- TTO’s have been ordered and that a 7 day supply of feed is sent home
- Enteral feeding pump and stand (supplied by the Dietitian or Homeward)

**DO NOT SEND WARD PUMP**

- Enteral feed regimen (supplied by the Dietitian.
- Medications Leaflet (supplied by Pharmacy)
- Check with Dietitian that plans are in place for ongoing supplies of syringes and giving sets for the patient in the Community.
- Please ensure discharge checklist is fully completed and GP aware of patient’s needs.
- Contact District Nursing team
- User guide instructions for the Flocare infinity pump, cleaning and maintenance guidelines (found with pump provided by Dietitian or Homeward)
- Nasogastric Tube Advice Leaflet given by Homeward nurse on training.
- Contact details for assistance including out of hours nurse advice line.
Monitoring Tool

<table>
<thead>
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<th>Page/Section of Key Document</th>
<th>Key control:</th>
<th>Checks to be carried out to confirm compliance with the policy:</th>
<th>How often the check will be carried out:</th>
<th>Responsible for carrying out the check:</th>
<th>Results of check reported to: (Responsible for also ensuring actions are developed to address any areas of non-compliance)</th>
<th>Frequency of reporting:</th>
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<td>Appendix 2</td>
<td>THE COMPLETION OF THE FORM “NASOGASTRIC TUBE INSERTION RECORD” WR4548. THIS INCLUDES THE USE OF pH PAPER FOR CHECKING THAT THE TUBE IS IN THE STOMACH.</td>
<td>AUDIT OF COMPLETION OF THE NASOGASTRIC INSERTION RECORD</td>
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<td>WARD SISTER’S AND MATRONS</td>
<td>NUTRITION &amp; HYDRATION STEERING GROUP</td>
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<td>Appendix 3</td>
<td>THE COMPLETION OF THE FORM “NASOGASTRIC TUBE MAINTENANCE RECORD”</td>
<td>AUDIT OF COMPLETION OF THE NASOGASTRIC MAINTENANCE CHART</td>
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<td>Data collection &amp; audit</td>
<td>NUMBERS OF STAFF TRAINED AND REGISTERED AS COMPETENT WITH THE TRAINING DEPARTMENT</td>
<td>ANALYSIS OF ELECTRONIC REPORTING FUNCTION ON OLM</td>
<td>BI-ANNUALLY</td>
<td>PROFESSIONAL DEVELOPMENT AND TRAINING DEPARTMENT</td>
<td>NUTRITION &amp; HYDRATION STEERING GROUP</td>
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</tbody>
</table>
**APPENDIX 1**

**ADMINISTERING DRUGS VIA ENTERAL FEEDING TUBES**

**A PRACTICAL GUIDE**

**UNLICENSED ROUTE**
Crushing tablets, opening capsules, and administration via feeding tubes generally falls outside a drug’s product licence. In these circumstances the prescriber and practitioner accept liability for any adverse effects resulting from this administration.

**TUBE TIP POSITION**
- Check the drug is absorbed from the site of delivery.
- This can be a problem for jejunal tubes (some drugs have a reduced absorption).

**WHICH TYPE OF WATER?**
- Check local policy.
- The type of water recommended depends on local practice and the exit site of the tube.

**SYRINGE TYPE AND SIZE?**
- Use the appropriately sized single use disposable oral medication syringe (with purple barrel or plunger) for the volume of medication required.
- When using small size syringes do not exert more than minor pressure on the plunger to avoid rupturing the tubing or the enteral device.
- Do not use syringes intended for intravenous use due to the risk of accidental parenteral administration.

**INFECTION CONTROL AND SAFETY**
- Wash hands and wear gloves.
- It is important that exposure to drug powder is kept to a minimum.

**TUBE BLOCKAGE**
- Inadequate flushing is the most common cause of tube blockage.
- Using the wrong formulation of medication can also cause tube blockage.
- If flushing with warm water does not unblock the tube, seek specialist advice, do not apply excessive force.

**DISCHARGE PLANNING**
- Ensure the agreed feed and drug regimen are practical in a community setting.
- Ensure all necessary information is given to the community pharmacist and GP.

**STEP BY STEP GUIDE**
- Can the patient still take their medication orally?
- Do not add medication directly to the feed.
- Seek further advice for fluid restricted or paediatric patients as flushing volumes may need to be reduced.
- Review all medication. Is it all really necessary?
- Can an alternative route be used?

**STOP THE FEED**
Flush the tube with at least 30 ml of water using a 50/60ml oral syringe.

Do you need to allow a break before administering the medicines?

**ASSUMED SYRINGE**
- Assemble medication and equipment needed e.g. syringes, plunger and motor.
- Prepare each drug separately.
- Never mix drugs unless instructed by a pharmacist.

**STOP THE FEED**
Flush the tube with at least 30 ml of water using a 50/60ml oral syringe.

**DO YOU NEED TO ALLOW A BREAK BEFORE ADMINISTERING THE MEDICINES?**

**STOP THE FEED**
Flush the tube with at least 30 ml of water using a 50/60ml oral syringe.

**DO YOU NEED TO ALLOW A BREAK BEFORE RESTORING THE FEED?**

**PREFERRED FORMULATIONS**
- liquids or soluble tablets are the preferred formulations to be administered via a feeding tube.
- Some injections can be given enterally.
- Crushing tablets or opening capsules should be considered as a last resort.

**MEDICATIONS THAT SHOULD NOT BE CRUSHED**
- Enteric coated (EC): The coating is designed to resist gastric acid to protect the drug and/or reduce gastric side effects.
- Modified/Slow Release (MR, SR, LA, XL): These are tablets or capsules that are specifically designed to release the drug over a long period of time. Crushing these will cause all the drug to be released at once and may cause toxic side effects.
- **Cytotoxics & Hormones:** These should not be crushed due to the risks to staff from exposure to the powdered drug.

**INTERACTIONS**
Interactions between feed and drugs can be important. Always check with your pharmacist before administering any medication via a feeding tube.

Where possible give dose during a break in the feeding regimen to minimise this.

**Problem Drugs**
- Phenytin, Diclofenac and Carbamazepine: Blood levels may be affected by feeds, these should be checked regularly. It may be necessary to increase the dose.
- Antiacids: The metal ions in the antiacids bind to the protein in the feed and can block the tube. Consider using alternative drugs.
- Penicillins: Feed may reduce the absorption, a higher dose may be needed. If possible stop feed 1 hour before and 2 hours after administration.
- **Other antibiotics:** Levels of antibiotics such as ciprofloxacin, tetracyclines and rifampicin can be significantly reduced by feed.
- Consider other alternatives or increase doses.

(This list is not exhaustive.)
It is the responsibility of every individual to check that this is the latest version/copy of this document.

APPENDIX 2  INSERTION RECORD WR4548

<table>
<thead>
<tr>
<th>Date and Time</th>
<th>Indication for NG Tube Insertion (feeding, medication, drainage)</th>
<th>Type of NG brand and the size</th>
<th>Verbal consent obtained (Yes or No)</th>
<th>NEX measurement (nose, ariobus and xiphisternum obtained)</th>
<th>Nasotr (R or L)</th>
<th>'Cm' mark at exit from nostril once placed</th>
<th>Aspiration obtained (Y or N)</th>
<th>pH Value of aspirate (acceptable range is 6.5 or less. Be mindful of medication that can affect its pH value)</th>
<th>X-ray required (Yes or No)</th>
<th>NG tube safe to use and is removed (1) NG tube not safe to use (2) Insert code number and action required</th>
<th>Uncomplicated Insertion (UI)</th>
<th>Difficult Insertion (DI)</th>
<th>Failed Insertion (FI)</th>
<th>Print Name / Signature / Designation of Practitioner who inserted the NG Tube</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
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**X.RAY CONFIRMATION (IF REQUIRED)**

- NG Tube Insertion number
- Date and time
- Was the most up to date x-ray used for interpretation? (Yes or No)
- Has it been checked that the correct x-ray was interpreted? (Yes or No)
- NG tube placement confirmed? (yes or No)
- Action:
  1. NG tube feed and medication can be commenced
  2. NG tube feed and medication cannot be commenced
  (Insert code number)
- Print Name / Signature / Designation of Practitioner who interpreted the x-ray

**Caution**
- This care record must be used in conjunction with the trust Nasogastric Feeding Tube Insertion and Care guidelines (Adults) - WAHT-NUR-065. When the NG tube is being inserted for the purpose of feeding and administration of medicines.
- If the sole purpose of NG Tube insertion is to commence nutrition, placement should only occur during normal working hours 08.00 to 17.00, find by a competent practitioner and preferably sterile input.
- If the insertion of an NG Tube is part of the management of the patient's condition e.g. bowel obstruction or if the patient is unable to swallow without aspirating, the NG tube must be inserted at the earliest opportunity by a competent practitioner and Trust policy then followed to verify correct positioning.
- NG tube must not be used if position cannot be confirmed. Aspiration and CE marked pH testing is the first line test which can be attempted more than once i.e., repositioning of the patient. If the position cannot be confirmed by aspirating then an x-ray should be obtained. Please note that the x-ray only confirms the position of the NG tube at the time the x-ray was taken.
It is the responsibility of every individual to check that this is the latest version/copy of this document.

**APPENDIX 3 MAINTENACE RECORD CHART**

<table>
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<td>NHS NO:</td>
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<td>MAU:</td>
<td>E/MAU:</td>
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**NASOGASTRIC TUBE MANAGEMENT RECORD**

All NG tubes must be checked for correct position as follows (this involves aspirating and pH testing):

(A) Routine check (minimum 6 hourly for all patients or 4 hourly for patients at greater risk of aspiration.
(B) Starting a new bag of feed.
(C) Administration of medication.
(D) Patient complained of discomfort of feed reflux into the throat or mouth.
(E) Evidence of coughing or shortness of breath whilst feeding.
(F) Patient vomited / has violent retching / severe coughing bouts
(G) Following endotracheal tube or tracheostomy suctioning
(H) The length of the visible portion of the NG tube is noticeably longer.
(I) The measurement on the tube is not the same as the measurement originally recorded
(J) Other - please provide the reason.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>NG tube still indicated (Yes / No)</th>
<th>Reason for pH testing (see codes above)</th>
<th>pH result (acceptable range is 5 or less. Be mindful of medication that can alter the pH value)</th>
<th>Position of NG - cm at nostril</th>
<th>Please compare with insertion record</th>
<th>Tube fixation clean and intact (Yes / No)</th>
<th>Nasal area checked for erosion (Yes / No)</th>
<th>Patient observations stable (Yes / No)</th>
<th>30 - 40° Semi-recumbent patient position maintained to aid feed absorption (Yes / No / N/A)</th>
<th>NG tube flushed with sterile water (Yes / No / N/A)</th>
<th>NG tube can only be flushed following verification of placement</th>
<th>Name and Title of Practitioner (Print)</th>
<th>Signature of Practitioner</th>
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**Pf WR6549 Nasogastric Tube Management Record Version 1.indd Page 1 of 2**
APPENDIX 4

Discharging a Patient Home on an NG Tube Feed

Complete NG Position Record Form when tube is inserted

Monitor:
- pH aspirates
- Tolerance to feed
- Refeeding bloods (if required)
- Weight

Contact Dietitian to arrange Homeward Nurse for training

If patient / carer assessed as competent to care for NG tube at home – discharge date can be planned

If patient / carer assessed as not competent to care for NG tube at home – discharge is unsafe. Consider organising a package of care, community hospital or nursing home

- A plan must be in place for what to do if the NG tube becomes displaced - notify the patient / carer what to do if the tube is displaced.
- Dietitian will register the patient with Homeward for monthly delivery of ancillaries

Patient to take away:
- NG Position Record Form and NG care booklet
- Contact number for Dietitian and Homeward Nurse
- Details of what to do should the tube become displaced
- Equipment as required (7 day supply) – Pump, stand, giving sets (supplied by Dietitian)
- Ward to supply 7 day supply feed and syringes,
- Ward to also supply spare tube, pH paper and tape to secure tube in position if the patient has not had a Homeward delivery before the day of discharge

If NG tube feeding likely to continue for longer than 4 weeks consider PEG/RIG/JEJ placement if appropriate
REFERENCES


Colgiovanni L (1999) Taking the tube Nursing Times 95 (21) 63-7


The Royal Marsden Hospital and Blackwell Science.


A Report by a Working Party of British Association for Parenteral and Enteral Nutrition, Maidenhead Bucks

Metheney N, McSweeney M, Wehrle M, Wiersema L (1990) Effectiveness of the auscultation method in prediction feeding tube location Nurse researcher 39, 262-7


NICE clinical guideline 32 Nutrition Support in Adults Feb 2006

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

NPSA Never Event Policy : misplaced naso or orogastic tube not detected prior to use. 2009

Nutricia Clinical Care

A Report by a Working Party of British Association for Parenteral and Enteral Nutrition
WAHT- NUT -006 Guideline for re-feeding syndrome

**BIBLIOGRAPHY**


Oral Feeding difficulties and dilemma Jan 2010 RCP  A guide to practical care, particularly towards the end of life.
CONTRIBUTION LIST

Key individuals involved in developing original document

<table>
<thead>
<tr>
<th>Name</th>
<th>Designation</th>
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<tbody>
<tr>
<td>Susan Dickinson</td>
<td>Chief Dietitian</td>
</tr>
<tr>
<td>Jane Burns</td>
<td>Sister – Stroke Unit - WRH</td>
</tr>
<tr>
<td>Elaine Stratford</td>
<td>Stroke Specialist Nurse - WRH</td>
</tr>
<tr>
<td>Sharon Ellson</td>
<td>Professional Development Adviser</td>
</tr>
<tr>
<td>Alison Smith</td>
<td>Principal Pharmacist Medicines Safety</td>
</tr>
<tr>
<td>Catherine Mahoney</td>
<td>Lecturer Practitioner in Nutrition</td>
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<tr>
<td>Elaine Stratford</td>
<td>Stroke Liaison Nurse</td>
</tr>
<tr>
<td>Mary Jordan</td>
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</tr>
<tr>
<td>Tracey Fell</td>
<td>Infection Control Nurse</td>
</tr>
<tr>
<td>Martina Morris</td>
<td>Service Lead Safe Care team</td>
</tr>
<tr>
<td>Tracy Robson</td>
<td>Radiographer WRH</td>
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<table>
<thead>
<tr>
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<th>Directorate / Department</th>
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<tr>
<td>Nalinee Owen</td>
<td>Nutrition and Dietetics Manager</td>
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Circulated to the chair of the following committee’s / groups for comments

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<tr>
<td>Rani Virk</td>
<td>Food 4 Thought group and Senior Nurses</td>
</tr>
<tr>
<td>Sonya Murray</td>
<td>Professional Development Team</td>
</tr>
<tr>
<td>Jo Brown</td>
<td>Nutrition Steering Group</td>
</tr>
<tr>
<td>Caroline Lister</td>
<td>Interim Stroke Manager</td>
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