Aneurin Bevan University Health Board

Nasogastric Feeding Tube Policy

Insertion and Maintenance of Nasogastric Feeding Tubes in Infants, Children and Young People

N.B. Staff should be discouraged from printing this document. This is to avoid the risk of out of date printed versions of the document. The Intranet should be referred to for the current version of the document.

Issue: 1 Issue Date: 13 April 2023
Approved by: F&T Clinical Governance Forum Review Date: 13 April 2026
Owner: Paediatric Enteral Feeding and Gastroenterology Team Ref No: ABUHB_F&T_0600

Contents

Appendices (to be considered alongside the policy)

1. Nasogastric tube position confirmation and recording form
2. Training development portfolio competency record
3. ABUHB staff NG passing re-assessment for
4. Nasogastric tube insertion recording form
5. Nasogastric tube passing competency assessment for parents and carers
6. NEX measurement diagram (NEMU for neonates)
7. NPSA Decision Tree
8. Recommended procedure for checking the position of tube
9. Nasogastric tube pump feeding competency assessment for parents and carers
10. Nasogastric tube bolus feeding competency assessment for parents and carers

1. Executive Summary

Many infants, children and young people are unable to meet their nutritional requirements orally, whether it is due to acute illness or chronic disease and as a result they may need an alternative clinically assisted method of nutrition support in the form of enteral tube feeding.

This policy outlines the use of nasogastric (NG) feeding tubes, explaining when they are indicated and how they should be cared for.

1.1 Scope of policy

This policy applies to:

- Children within ABUHB with NG feeding tubes up until the date of their 18th birthday.
- It does **not** apply to babies on the neonatal unit or babies following the neonatal short-term NG tube feeding at home pathway as they have their own guidelines (Oro-gastric/ naso-gastric Feeding Guideline 2021, All Wales Enteral Feeding for Pre-Term Infants reference document 2020, All Wales Neonatal Passport) However, it does apply to babies under 28 days on acute paediatric wards or in the community.
- All staff involved with the insertion of NG feeding tubes and managing patients being fed via NG feeding tubes in paediatrics.
- Staff who provide training in the methods used to safely confirm correct NG tube placement and in the safe administration of feeds, water or medicines via a NG tube.
- Student nurses (*Aligned to ABUHB partner universities*) **in Part 2 and Part 3** of their nurse education programme may participate in this procedure under the direct supervision of a registered Health Care Professional who is competent in this aspect of care and in the supervisory role, with the consent of the patient /parent/carer/.

Please note

Direct supervision (Alongside the student): *the student is observed by a competent health care professional who takes accountability for the student's actions throughout the procedure.*

1.2 Essential implementation criteria

The elements of the policy that will be monitored for effectiveness and be subject to audit are as follows:

- NPSA Compliant pH strips (NPSA, 2011) are available to be used in all clinical areas **(Litmus paper should NEVER be used)** The current All Wales policy is to use Avanos asPhirate pH indicator strips.
- The correct procedure is undertaken to confirm correct placement of a NG tube – on insertion and before EVERY use (refer to section 9)
- A NG tube recording form must be completed for all patients with a NG tube in situ (Appendix 1)
- Training has been undertaken to ensure staff competencies in relation to the policy (Appendix 2)
- Staff competency is re-assessed (Appendix 3)
- Risk assessments have been carried out where needed

2 Aims

To standardise practice throughout ABUHB in order to comply with the National Patient Safety Agency (NPSA) alert /2011/PSA 002, "Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants" and PSA008/May 2017 "Nasogastric tube misplacement: continuing risk of death and severe harm".

3. Responsibilities in Managing NG tubes

Those responsible for undertaking this procedure will be:

- Registered Nurses
- Registered Medical Staff
- Healthcare Support Workers (Refer to local policy for acute and community areas)
- Suitably trained and assessed parents and carers

The professional must have undertaken a period of training and supervised practice in the management of NG tubes. The extent of supervised practice

will vary from person to person but supervision will continue until the person is assessed as competent by the assessor and the person is confident with their own practice (Appendix 2). Ongoing competence must be assessed a minimum of 3 yearly (Appendix 3)

3.1 Person with appropriately assessed competence placing the tube:

- Ensure there are no contraindications to the insertion of a NG tube (refer to section 5.2).
- Explain risks to parent/ carer and infant, child or young person if appropriate and gain verbal consent if patient able.
- Complete the NG Insertion Recording Form – see Appendix 4. Ensure that the type, size, LOT number, expiry date and brand of NG tube placed is documented in the patients' medical and nursing notes. Also make note if the tube is for long or short term use. The manufacturer's sticker provided with some tubes may be completed and fixed into the medical notes instead of NG insertion Recording Form, if xray not required.
- The external length of tube once placement is confirmed should be measured and recorded after placement to help identify any movement of tube. Consider marking the tube with indelible pen at the site of exit. Ensure that the guidelines regarding the checking of the position of the NG tube are adhered to and actions undertaken are documented.
- To complete the NG Tube position confirmation and recording form (Appendix 1).

3.2 Medical staff or nurses/ allied health professionals whose role fits within the advanced practice framework (NLIAH, 2010) completing X-ray request forms

- If x-ray is required, the child must be in a hospital setting. Ensure that the request form clearly states that the purpose of the x-ray is to establish the position of the NG tube and that all other methods have failed to confirm position. A copy of the NG Insertion Recording Form (Appendix 3) must also accompany the patient to the Radiology department.

3.3 Radiographer and Radiologist

- The radiographer acting as practitioner and operator within the Ionising Radiation (Medical Exposure) Regulations (IR(ME)R) shall ensure that the x-ray request is justified and that the form clearly states that the purpose of the x-ray is to establish the position of the NG tube and that all other methods have failed to confirm position. X-ray requests that are made without any prior checking of the position of the NG tube by other means will not be justified.

- Once the x-ray has been taken, the Radiographer will place it in the Urgent reporting folder.

- The Radiologist will provide a written report on the x-ray examination that states the position of the nasogastric tube and will contact the requester if a misplaced NG tube is identified. The requestor should then arrange for immediate removal of the tube prior to leaving the x-ray department.

3.4 Medical staff interpreting X-rays

- Must ensure they are familiar with the interpretation of chest x-rays following NG insertion. Guidance on interpretation may be found online at the Radiology Masterclass website:

- https://www.radiologymasterclass.co.uk/tutorials/chest/chest_tubes/chest_xray_ng_tube_anatomy

- Must complete section 8 of the NG Insertion Recording form (Appendix 4). If the NG tube is placed by medical staff, then all of the NG Insertion Recording form or manufacturer's sticker should be completed.

- The decision to commence feeding through the NG tube must be documented in the medical notes, dated, timed and signed.

3.5 Registered Nursing Staff

- Are the most likely professionals to insert a NG tube for feeding purposes following training and assessment of competence (Appendix 2). Some parents and occasionally foster carers (approval required from social

services) may also have been trained and assessed as competent to pass NG tubes for their own child or the children within their care (Appendix 5)

- Must ensure that the NG feeding tube is used correctly and in an appropriate manner.
- Must ensure prompt removal of any NG tube identified to be in the wrong position.
- Must ensure that the NG tube is cared for correctly in order to prevent any problems occurring with the tube.
- Must ensure that the guidelines regarding the checking of the position of the NG tube are adhered to and that any actions undertaken are documented.
- Must complete the NG Tube position confirmation and recording form (Appendix 1) and in addition the NG Insertion Recording form (Appendix 4) or manufacturer's sticker if they have inserted the NG tube.
- Must ensure parents and carers are competent to care for the NG tube and administer feeds and medications following training and assessment prior to discharge home.

3.6 Dietitian

- To recommend appropriate use of NG feeding.
- To provide a feeding regimen so that feeding can commence safely including highlighting the risk of Refeeding Syndrome (if applicable) in the medical notes.
- To monitor tolerance of NG tube feeding and adapt regimen according to patient's needs.
- Completion of overnight feeding risk assessment if applicable.

3.7 Paediatric Clinical Nurse Specialist for Enteral Feeding

- Supports discharge planning by providing training and competency assessment to parents/carers for new patients on the care and management of a NG tube immediately prior to and after discharge from hospital.
- Is the point of contact for parents and carers regarding concerns about NG tube when at home.
- Will arrange for the passing of a new NG tube if the tube is removed during working hours.

- Can provide training and competency assessment on the maintenance and use of NG tubes for non-health professionals with prior notice and agreement.
- Organise training and cascade training and assessment for Health Board staff.
- The team are now supported by a nurse employed by Nutricia who will also support with all of the above.
- Reviews and assesses the ongoing effectiveness of this policy.

4 Consent and Ethical Considerations

Informed oral consent must be obtained for the passing of NG tube from the infant, child or young person and/or their parent/guardian. There may be exceptional emergency situations where prior consent may not be gained, such as during resuscitation.

5 Indications, contraindications, and risk assessment

5.1 Indications for NG feeding

NG tube feeding should be considered if an infant, child or young person is unable to meet fluid and nutrient requirements orally and has a functional, accessible GI tract. It may also be considered to facilitate provision of medication.

Indication	Examples
Inability to suck / swallow Unsafe swallow	Ventilated patients, trauma, neurological handicap, degenerative disorders, severe developmental delay
Poor suck/ tire easily	Premature infants, cardiac babies, bronchiolitis
Increased requirements	Cystic fibrosis, congenital heart disease, burns
Anorexia secondary to illness	Malignancy, liver disease, renal failure, eating disorder

Congenital abnormalities	Tracheo-oesophageal fistula, oesophageal atresia, orofacial malformations
Malabsorption	Short bowel syndrome
Unpalatability of specialised feeds	Inflammatory bowel disease
Continuous supply of nutrients to prevent hypoglycaemia	Glycogen storage disease Type 1

Adapted from Parental and Enteral Nutrition Group (PENG) 'Pocket Guide to Clinical Nutrition' 2018.

5.2 Contraindications for NG feeding

Practitioners will have different levels of experience in placing NG feeding tubes. There are very few infants, children and young people with absolute contraindications however there are some relative contraindications which will dictate the required level of experience and/or speciality of the person placing the NG tube. In some circumstances the NG tube may need to be placed in a hospital setting or even at the tertiary centre. Contraindications may include:

- Basal skull fractures
- Maxillo facial disorders
- Unstable cervical spinal injuries
- Nasal/ pharyngeal /oesophageal obstruction
- Choanal atresia
- Tracheoesophageal fistula
- Oesophageal abnormalities or have undergone oesophageal surgery.
- Actively bleeding oesophageal or gastric varices
- Gastric outflow obstruction
- Intestinal obstruction (NNNG, 2016)

A multidisciplinary team decision should be made on such individual cases, as some patients may require radiological or endoscopic guidance on tube placement, or placement in the tertiary centre.

5.3 Risk Assessment prior to NG tube feeding

Before a decision is made to insert a NG tube, an assessment should be made to identify if NG feeding is appropriate for the infant, child or young person. A

decision needs to be made that balances the risks with the need to feed. Actions to reduce risks and the rationale behind these actions should be documented prior to the commencement of feeding. This information will support staff in making the correct clinical decisions

- The decision to insert a NG tube for the purpose of long-term feeding at home must be made following careful assessment of the risks and benefits by the senior medical professional and dietitian and if possible, the consultant responsible for the patient's care.
- However, it recognised that the decision for the short-term use of NG tubes in the acute or emergency setting may not involve such a detailed assessment. Eg. Intubated child, bronchiolitis.
- The details of this assessment and actions to reduce all identified risks must be recorded in the infant, child or young person's medical notes prior to commencement of feed.
- As a minimum, documentation should include signed, dated and timed entry of the process of the initial risk assessment.

Infants, children and young people who are unconscious or semi-conscious, have swallowing dysfunction or recurrent retching or vomiting, have a higher risk of placement error or migration of the tube.

NG tube insertion can be dangerous as well as difficult in infants, children and young people with altered anatomy e.g. oesophageal fistula/ pharyngeal pouch or in certain clinical conditions, such as basal skull fracture. In these situations, or if these are suspected, senior clinical assistance should be sought and nasogastric tube should only be attempted under fluoroscopic guidance (NPSA, 2005 & 2011).

5.4 Risk assessing the timing of tube insertion

NPSA have had a number of errors reported as a result of staff confirming tube position out of hours. Therefore, it is essential that all acute clinical paediatric areas have competent nursing, medical and radiology staff available at all times to accurately confirm correct NG tube placement.

Radiography should not be used routinely and pH testing remains the first line test. X-ray checking should only be used as a final test when no aspirate can

be obtained or pH testing has failed to confirm the position of the tube within an appropriate number of attempts to place a tube (maximum 3 attempts).

5.5 Overnight Feeding via nasogastric tube

Ideally, NG feeds should not be administered overnight due to the risk of tube migration and/or aspiration and potential for tubing to tangle around neck when the infant, child or young person is asleep and not under direct supervision. However, it is recognised that certain infants, children and young people may require overnight feeding due to poor feed tolerance etc. In these instances, it is essential that the paediatric dietitian carries out and documents the overnight feeding risk assessment prior to this and ensure that the family understand the potential risks.

6 NG Tubes

NG tubes are placed via the nostril into the stomach. They are generally intended for short-term feeding but are often used for longer in certain clinical situations. If they are used for long-term feeding the tube should be passed in alternate nostrils at each change if possible. The tube should be changed as per manufacturer's guidance or sooner depending on integrity of skin on nose or cheek or if nostril becomes sore. A new tube MUST be used every time the tube is placed, and the guidewire must NEVER be re-inserted.

Fine bore (6-8Fr) tubes are routinely used for feeding. These are fully radio-opaque tubes that have externally visible length markings. This enables accurate measurement, interpretation and documentation of their position (NPSA, 2005 & 2011). Larger bore tubes may be used for gastric drainage.

7 Nasogastric tubes placed within ABUHB

Fine bore nasogastric feeding tube

This tube will be NPSA compatible and categorised as "single use".

It is completely radio-opaque with regular centimetre markings.

Always check the packaging to see how long the tube may remain inserted. Shorter term tubes (usually 7-10 days) are made from PVC and do not usually contain a guidewire. Longer term tubes (usually up to 90 days) are made from Polyurethane and usually contain a guidewire, although some long term tubes do not have a guidewire.

8 Insertion of NG tubes

8.1 Procedure for passing a fine bore NG feeding tube

This procedure must only be undertaken independently if training is completed and competencies assessed (Appendix 2) and competence is re-assessed 3 yearly (Appendix 3)

Equipment

- Clinically clean tray
- Fine bore Enfit™ compliant NG tube of appropriate French size and length
- NPSA compliant pH indicator strips (Avanos asPhirate pH indicator strips)
- Appropriate tape and hydrocolloid dressing for skin protection unless allergic
- Scissors
- Non-sterile gloves
- Apron
- 10/20ml enteral syringes
- Glass of water / straw (if appropriate)
- Dummy or soother if used
- Tissues
- Receiver
- Disposable tape measure to measure external length
- Indelible pen to mark tube at nostril (if appropriate)

Procedure

1. Wash hands as per ABUHB guidance and assemble the equipment ready.

2. Prepare the patient for the procedure:
   * Ensure privacy and dignity is maintained
   * Explain the procedure and rationale to child/parent/carer
   * Obtain verbal consent and document
   * Assess integrity of skin when selecting nostril If no discernible difference you may wish to ask the patient/parent/carer if they have any preference for which nostril to use. Ideally alternate at each tube change.
   * Position patient (semi-recumbent, head tilted slightly forward if able)
   * Agree signal to pause / stop the procedure if appropriate.
3. Wash hands again, put on gloves and apron.
4. Examine tube and integrity - ensure guide wire moves freely if present.
5. The tube length required should be estimated before insertion using the NEX Measurement (Appendix 6) - place exit port of tube at the tip of nose and extend to earlobe and down to the xiphisternum. Consider the NEMU measurement for small infants as this is validated for use in neonates. (See Appendix 6)
6. Apply the hydrocolloid dressing to cheek.
7. If the patient is able to swallow, provide a glass of water with a straw to sip during the procedure or dummy/soother if used.
8. Insert the tip of the tube into the nostril, along the floor of the nasal passage into the oropharynx (throat) and ask the patient to swallow and tilt chin down slightly if able.
9. Advance the tube gently and encourage the patient to swallow until the tube reaches the measured length.
10. If the patient shows signs of distress e.g., gasping or cyanosis, pull back the tube a short distance. Allow the patient to settle then continue to pass the tube. If the patient continues with signs of distress, remove the tube immediately and repeat the process. Be aware, gasping or cyanosis may indicate misplacement of tube, but **misplacement does not always cause obvious symptoms**.
11. Secure tube to nose and/ or cheek with appropriate tape.
12. Remove guide wire if present. **The guide wire must never be reinserted.**
13. Withdraw approximately 0.5ml using enteral syringe and check pH reading to confirm correct position of nasogastric tube.

14. Following confirmation of position: measure external length from nostril to end of tube including cap and record the length in the medical notes. Consider marking tube with indelible pen at nostril.
15. Complete NG Insertion Recording Form (Appendix 4) or manufacturers sticker and NG Tube Recording Form (Appendix 1) accurately and document pH of aspirate.
16. Remove gloves and apron, dispose of waste according to ABUHB policy and wash hands with soap and water.

The tube should not be flushed until the position has been confirmed. The NPSA has reported incidents where NG tubes have been flushed with water, which has reacted with the tube lubricant and provided a false pH reading.

9 Confirming tube position

The tube position should be checked with pH indicator strips to ensure pH 5.5 or below:

- following initial insertion
- before administering each feed or water flush
- before giving medication (see BAPEN guidance at www.bapen.org.uk/drugs-enteral.htm)
- at least twice daily during continuous feeds, such as when changing the feed and after break period.
- following any episodes of vomiting, retching, coughing (note that the absence of coughing does **not** rule out misplacement or migration)
- following evidence of tube displacement (for example, loose tape or visible tube appears longer) (NPSA, 2005)
- The NG tube should be flushed with 2-5mls of air following the last water flush administered or prior to obtaining an aspirate.

All staff must report misplaced feeding tube incidents through their local risk management systems (NPSA, 2005).

NPSA (2005 & 2011) state the following methods are used to check the position of NG tubes:

9.1 Measuring pH of aspirate using pH indicator strips: please refer to the decision tree in Appendix 7.

NPSA (2011) state that only pH indicator strips that are CE marked (European Conformity) and intended to test human gastric aspirate are used; The strips currently approved for use in Wales are Avanos asPhirate pH indicator strips.

9.2 Difficulties obtaining aspirate (see decision tree Appendix 7)

- If able and safe to take anything orally, offer fluid to stimulate production of gastric acid. Alternatively, offer mouth care or dummy if used.

- If possible, turn the patient onto their left side to aid drawing up of aspirate. Consider other position changes. Administer 1-5ml air into tube using an enteral syringe to move the tube from stomach wall and try aspirating.

- If still no aspirate obtained, advance or withdraw tube by 1-2 cm and try aspirating again. Consider passing a new tube up to a maximum of three times until able to obtain a suitable aspirate.

9.3 Aspirates that are consistently above pH 5.5

If all attempts to obtain aspirate pH 5.5 or below fail, despite placing a new tube up to a maximum of three times, a chest x-ray is advisable. If in the community, this will require a referral to CEAU. A sticky label should be placed on the end of the tube stating that it must not be used until position confirmed.

Following confirmation on x-ray if aspirates remain pH above 5.5, consider:

- If the infant, child or young person is receiving proton pump inhibitors (PPIs) and/ or H2 receptor antagonists this may increase gastric pH. Can timings of these medications be altered?

- Aspiration should be taken at the end of the rest period to allow the feed to empty the stomach and pH to fall (NPSA, 2005).

A summary of the rationale for these procedures can be found in Appendix 8.

If the patient is alert and safe to swallow liquids:
Administer a distinctively coloured liquid such as blackcurrant squash. If this liquid can then be aspirated up the tube this will suggest the tube is in the stomach and feeding could 9.7 Radiography

There have been multiple reports of x-rays being misinterpreted, which has resulted in a number of patient deaths and cases of harm (NPSA 2011).

- Minimising the number of x-rays is also important in order to avoid increased exposure to radiation and to minimise the time that feed is not running. Outside of the acute setting, access to radiology is difficult, particularly if the patient requires transportation from the community.

- An X-ray only confirms position at that point in time; if the patient moves, coughs or vomits, there is a possibility that the tube may move and therefore may not be in the correct position when feeding is commenced.

- **X-ray checking should only be used as a last resort when no aspirate can be obtained, or pH testing has failed to confirm the position of the tube.**

- X-ray request forms should clearly state the purpose of the x-ray is to establish the position of the nasogastric tube. It must be documented on the radiological imaging request form that **all** other methods of checking the position of the tube have been attempted and have failed.

10 Methods NOT to be used to confirm tube position (NPSA 2005, 2011)

- Auscultation of air administered through the feeding tube ('whoosh' test)

- Testing the acidity/ alkalinity of aspirate using litmus paper
- Interpreting absence of respiratory distress as an indicator of correct positioning
- Monitoring bubbling at the end of the tube
- Observing the appearance of feeding tube aspirate

11 Securing the tube

A hydrocolloid dressing such as Duoderm or Comfeel is recommended to be used prior to tube insertion to provide a protective layer between the skin and tape, unless there are known allergies to this. The tube should be well secured to the patient's cheek as close to the nostril as possible, taking care to avoid eye area and lip. Tapes should be changed regularly and when soiled, damp or peeling off.

12 Documentation

The NG Tube Position and Confirmation Recording Form (Appendix 1) must be completed each time a tube is inserted and each time the tube is aspirated. On initial placement of a NG tube the pH of the aspirate must be recorded in the NG Insertion Recording Form (Appendix 4) or on manufacturer's sticker.

13 Position of Patient during Feeding

The patient's position during feeding is important to minimise the risk of reflux, heartburn and aspiration pneumonia.

- A sitting position is the ideal, or a minimum 30-45° angle during the feed and for 30 minutes following the feed

- If a patient is fed overnight particular attention needs to be paid to positioning, in order to minimise aspiration risk. Overnight feeding risk assessment **must** be completed by the dietitian.

If any signs of shortness of breath, cyanosis, persistent coughing, sudden pallor or increased heart rate are observed the feed should be stopped immediately and medical advice sought.

14 Feeding via the NG Tube

Prior to commencing feeding the risk of Refeeding Syndrome should be considered and appropriate action taken. Refeeding syndrome can occur when feeding is initiated in a malnourished patient or in one who has undergone a prolonged period of fasting.

The decision to feed via NG tube should always be made with the involvement of the paediatric dietitians to establish a suitable feed regime and a senior medic. However, this may not always be possible, such as acute admissions at evenings and weekends.

If the child is already enterally fed, their current regime should be adhered to if suitable for their presenting condition and agreed by a medic.

If a presenting child has NOT previously been on enteral feeds, a medic can make the decision to establish NG feeding. If the infant, child or young person is already using a commercial formula bottle or sip feed, this should be used if suitable for the presenting condition.

Dietitians should be made aware of the child at the earliest opportunity. The progress and tolerance of the feeding regimen will be monitored by the dietitian and regimens may be adapted if required.

Infants, children and young people who are fed into the stomach require at least a four-hour rest period from feeding within a 24 period to allow the pH of the stomach to return to 5.5 or below

15 Flushing the NG tube with Water

To prevent blockage, NG tubes should be flushed with water, a minimum of 2ml for a 50cm tube and 5ml for an 80cm tube, immediately before

and directly after administering feed or medication. If pump feeding is temporarily suspended or interrupted, it is also imperative to flush the tube on stopping and prior to restarting feed. Feed left to sit within the tube may coagulate in the presence of gastric acid and may interact with drugs administered, resulting in tube blockage.

The majority of tubes may be flushed with freshly drawn tap water, of drinking quality at home. Sterile water should be used within the hospital setting for all enteral feeding tubes. Sterile water from a freshly opened container or freshly cooled boiled water is only indicated at home if:

- A risk assessment identifies potential risk associated with use of tap water
- The patient is not receiving mains tap water and there may be concerns around contamination
- The patient is immunocompromised
- Infants aged under 12 months

Reusable enteral syringes can be used for the administration of water in the community however enteral syringes used in the hospital environment are **SINGLE USE** only. Note, if the infant, child or young person is immunocompromised, single use syringes must be used in community as well.

Reusable enteral syringes for home use should be cleaned as per manufacturer's cleaning instructions and sterilised for babies under 1 year. It will also be stated how many times they can be re-used. If the syringe is damaged in any way, the plunger is stiff or the numbers are wearing off, it should be disposed of, and a new syringe used.

16 Administration of Medication

A full review of all medications to be administered via the NG tube should be undertaken by the prescribing doctor and Pharmacist in hospital. Wherever possible medication should be prescribed in a liquid form.

Administration of medications via the NG route are often "off-license" use and as such the prescriber, pharmacist and the person administering take responsibility for the administration, assessment and reporting of any side-effects that the patient may experience.

Individual medications should be administered separately. The tube should be flushed with water before and after medication is administered. For multiple medications the tube should be flushed with water in between each medication (NNNG, 2016). There may be circumstances where infants, children or young people are fluid restricted, or neonates and these flush volumes may be reduced.

As per section 15 enteral syringes within the hospital setting are **SINGLE USE** and therefore syringes used for medication should be used only once but reusable enteral syringes may be used in the home setting if appropriate.

17 Unblocking Tubes

Flushing feeding tubes regularly is the simplest way of maintaining their patency and preventing blockages.

If a tube becomes blocked, a new tube will need to be passed. If the end cap becomes stuck, it can be soaked in warm water to see if this will release the cap. Consider using pliers, but be aware that this could damage the tube and cap. If unable to release cap, will need to pass a new NG tube.

Under no circumstances should

- A guide wire be inserted into the NG tube in an attempt to remove a blockage.
- Carbonated drinks containing sugar or saccharin be flushed through the tube as they precipitate blockages (NNNG, 2016)

18 Skin care

Caring for the skin around the tube and tape can help reduce the risk of irritation and infection. Regular checking, at least daily, and cleaning the nostril where the NG tube is sited may also help prevent irritation and ulceration.

How to care for the skin and nostril:

- Wash hands before and after caring for the tube
- Change tape securing the tube when it is soiled, damp or peeling off
- When changing the tape, cleanse the skin and dry thoroughly
- Try to alter the position of tape when changing it
- Use a hydrocolloid dressing underneath tube to protect from tube pressure and irritation from tape. Alternate the NG tube between nostrils at each change to prevent ulceration or soreness.
- If skin very sore, consider the use of a barrier wipe prior to applying hydrocolloid dressing.
- Consider the use of adhesive remover wipes.

19 Accidental NG Tube Removal

If the infant, child or young person is in hospital a new NG tube should be passed by a Registered Nurse or parent who has been assessed as competent to do this.

If the patient is in the community and the parent has not been assessed as competent to pass a NG tube, during office hours the Children's Enteral Feeding Team should be contacted. Out of hours, the Children's Community Nursing Service may be able to offer support or it may be necessary to attend Children's Emergency Assessment Unit at the Grange University Hospital for tube replacement. There should be a clear

and agreed plan in place **prior to discharge** of new patients for this eventuality to ensure patients can access replacements as needed in a timely manner and avoid the need to access acute services.

When determining the level of urgency with which the tube needs to be replaced several factors should be considered. If any of the following factors apply the tube should be replaced as a matter of urgency:

- The tube is used for medication required on a frequent/ time critical basis

- The patient is nil by mouth and solely dependent on the feeding tube for hydration and nutrition and is therefore at risk of hypoglycaemia & dehydration.

- If tube removed out of hours but not required again until working hours, families may choose to wait and contact the children's enteral feeding team in working hours.

20 Discharging patients to the Community setting with a NG tube

A minimum of 3 working days' notice is required in order to facilitate a safe discharge and to ensure competency has been assessed. Discharge should be avoided on a Friday, weekend or bank holiday as there will be no community enteral feeding nursing or dietetic support available.

- Training in care of the NG tube including pump training, if necessary, is carried out by the Paediatric Specialist Enteral Feeding Nurse or Nutricia Nurse once the discharge date has been agreed. There should be ongoing support and supervision from the ward nursing staff to ensure patients and carers are confident and assessed as competent prior to discharge.

- Before discharge the patient /parent/ carer must undertake a competency assessment with the Specialist Nurse or Nutricia Nurse to ensure they can safely care for the tube, administer feed, water and medication. (Appendix 9 &10)

- The nurse discharging the patient must inform the patient /parent/ carer of what action to take and who to contact should the tube be displaced or come out.

- Aims and goals of feeding should be clear prior to discharge and a feeding regimen will be provided

- The patient must be discharged with an adequate supply of pH indicator strips, tapes and a spare tube, in addition to a 7-day supply of feed, syringes, gravity feed sets, bottle adaptors and pump feed sets (if applicable).
  The nurse discharging the patient must ensure that the patient /parent/ carer is given a copy of the Nasogastric Tube Recording Form (Appendix 1) for continued use at home.

21 Monitoring and Effectiveness

This document will be circulated to all relevant clinical areas and will be available on the ABUHB intranet (AB Pulse). This document will be reviewed and updated every 3 years. Adherence will be audited.

22 References

ABUHB Oro-gastric/ naso-gastric Feeding Guideline 2021

All Wales Enteral Feeding for Pre-Term Infants 2020

All Wales Neonatal Passport

Lawson-Wood H, Hucker J (2022) Nasogastric tube insertion 1: children and young people. Nursing Times [online]; 118: 8.

NICE (2006). National Institute for Clinical Excellence Guidelines - Nutrition Support in adults: Oral Supplements, enteral and parenteral feeding.

NLIAH (2010) National Leadership and Innovation Agency for Healthcare Framework for Advanced Nursing, Midwifery and Allied Health Professional Practice in Wales

http://www.weds.wales.nhs.uk/sitesplus/documents/1076/NLIAH%20Advanced%20Practice%20Framework.pdf

NNNG (2016) National Nurses Nutrition Group Good Practice Guideline Safe Insertion and Ongoing Care of Nasogastric (NG) Feeding Tubes in Adults

NNNG (2016). National Nurses Nutrition Group Guidelines for confirming correct positioning of nasogastric feeding tubes

•

NPSA (2005). National Patient Safety Agency - Patient Safety Alert: Reducing the harm caused by misplaced nasogastric feeding tubes

NPSA (2011). National Patient Safety Agency - Patient Safety Alert: Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants

NPSA (2012). National Patient Safety Agency - Rapid response report: Harm from flushing of nasogastric tubes before confirmation of placement.

NPSA (2017). "Nasogastric tube misplacement: continuing risk of death and severe harm".

Parental and Enteral Nutrition Group (PENG) 'Pocket Guide to Clinical Nutrition' 2018.

Wales Neonatal Network Tube Feeding

23 Further Reading

BAPEN, Ethical and Legal aspects of clinical hydration and nutrition support, a report for the British Association for Parenteral and Enteral Nutrition.

MHRA (Medicines and Healthcare products Regulatory Agency) 2004. MDA/2004/026 – Medical Device Alert, Enteral Feeding Tubes (Nasogastric)