East London NHS
NHS Foundation Trust

Enteral Feeding Policy

Naso- gastric tube feeding

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Name of originator/author:	Practice Development Facilitator
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Target Audience:	All professionals involved with the daily care and management of service users receiving enteral feeding via a naso gastric tube.

Version Control Summary

Version	Date	Author	Status	Comment
1.0	September 2011	Practice Development Facilitator (RD)	Draft	An updated policy was required following NPSA/2011/PSA002, previous policy was not ratified
1.1	September 2011	NDSG	Ratified	
1.2	October 2011	Trust Policy Group	Ratified	
1.3	March 2012	Practice Development facilitator (RD)		Amendments: Section 5.3.6 and 5.3.7 included. 5.2 – 30days added for inpatient setting Page numbers changed to reflect changes
1.4	April 2012	Practice Development facilitator (RD)		Section 9, and Procedure for passing a nasogastric tube amended to reflect NPSA 2012 RRR001
1.5	July 2013	Practice Development Facilitator (RD)		Section 5.2 page 10. Medicina NGT only for 30 day use not 60 as previously advised by the company. Section 6.1, page 19. Additional information regards Coburn unit training documents to be adapted by Coburn to reflect needs of adolescent with mental health needs.
1.6	August 2013	Childrens Community Matron (KR)	Draft	To reflect findings of risk assessments of continuous overnight feeds via naso-gastric feeds. Appendix 7, Page 9 Section 4.5.3. To reflect findings of risk assessment of overinfusion following power failure of feeding pump. Appendix 8, Page 16 5.5.3

				Procedural guidelines amended to reflect the findings of risk assessments. Pages 32,34,35,38.
1.7	September 2014	Children's Community Matron (KR)	Review	No changes. To review September 2015 or sooner, as required.
1.8	June 2016	Acting Community Children's matron/practice Development facilitator (RD)	Review due	Amendments made to reflect changes to practice, teaching, assessing and products as follows: Section 3.2 change duties; 4.5.3 to reflect Appendix 7; 5.2 change manufacturer; 5.5.2 to include simulated assessment; 5.6.3 gravity feeding with duolines removed; 6.3 senior (nurse) removed; 11.3 expectations parents; appendix 5 section 9 and appendix 6 section 3 risk overnight feeding added to competency document and appendix 6 risk assessment updated to reflect addition in 4.5.3 New sections added: 3.11 duty of continuing care nurse and policy; 5.1.1 ENFit changes due to come in for July 2016; 7.2 paragraph on continuing care documentation. NMC(2008) changed to NMC (2015)

Contents

1. Introduction

1.1 Enteral nutrition is defined as nutritional support given via the alimentary canal or any route connected to the gastrointestinal system. This includes oral feeding and tube feeding using naso-gastric, oro-gastric, gastrostomy and Jejunostomy tubes.

1.2 For the purpose of this policy the term enteral feeding/nutrition will be used to refer to enteral feeding/nutrition via a tube.

1.3 This policy is specifically aimed at enteral feeding via a naso-gastric tube and will become part of the larger Enteral Feeding Policy to include oro-gastric, gastrostomy and Jejunostomy feeding within the future.

1.4 This policy has been written through a multi professional working group, including paediatric nurses (inpatient and community), home enteral paediatric dietitian, school nursing, adult nurses (inpatient and district) and mental health nurses.

1.5 This policy is aimed at all service users requiring enteral feeding via a naso-gastric tube, within East London NHS Foundation Trust. Adult services have identified they currently have no patients with a naso-gastric tube in situ, so throughout the policy the service user will be referred to as a child or young person.

2. Purpose

2.1 This policy is aimed to provide guidance and procedures for children and young people who require enteral feeding via a naso-gastric tube within East London NHS Foundation Trust to ensure appropriate and high quality patient care is delivered.

2.2 This policy aims to reduce the risk of misplaced naso-gastric tubes as highlighted by the National Patient Safety Agency (NPSA, 2011) by providing guidance in safe management of children and young people with naso-gastric tubes in situ.

2.3 The purpose of this policy is to ensure that:

- All children and young children with a naso-gastric tube in situ receive safe management of their naso-gastric tube from the initial decision to insert the tube, through regular feeding to the final decision to remove the tube or change over to a gastrostomy tube for long term needs.
- Long term needs is defined as a child requiring enteral feeding via a tube for longer than 6 months. See 4.4.4 for further details of longer term enteral feeding needs.
- All staffs, parents and carers who care for a child or young person with a naso-gastric tube receive adequate training and assessment of their skills and knowledge to enable them to deliver competent care.
- Provide guidance on
    - Procedure of passing a naso-gastric tube
    - Trouble shooting aspects of naso-gastric tube feeding
    - Skin care of naso-gastric tube
    - Gravity bolus feeding
    - Bolus feeding via a feeding pump
    - Continuous feeding via a feeding pump

2.4 This policy is aimed for usage by the following professionals within East London NHS Foundation Trust who are caring for a child or young person with a naso-gastric tube in situ (this list is not exhaustive):

- Community Children's nurses
- Health Care Support workers
- School Nurses
- Health visitors
- Teaching assistants, Nursery nurses and school staff within local authority school within London Borough of Newham (LBN)
- Community Dietitian
- Coburn Unit
- Social services carers

2.5 This policy can be reviewed and adapted for use within adult care should an adult present within East London NHS Foundation Trust (ELFT) with requirements of naso-gastric enteral feeding, although gastrostomy feeding should be considered as first line treatment.

3. Duties

3.1 Qualified nurses have a duty of care according to NMC (2015) professional code of conduct to ensure they are adequately trained and competent before undertaking any care of a child or young person with a naso-gastric tube in situ.

3.2 Competent experienced nursing staffs (with a completed competency) within the Community Children's Nursing Service (CCNS) are responsible for ensuring the training and competency of staff within CCNS when they join the service, linking in with the practice development facilitator (PDF).

3.3 Nursing staff within CCNS are responsible for delivering regular training on theory and practical skills within enteral feeding for school staff throughout the academic year. Training and assessment will take place over a minimum of 6 hours. See section 6 for further information of training and assessments.

3.4 School staff, health care support workers and social services carers must be adequately trained and competency assessed before undertaking any care of a child or young person with a naso-gastric tube in situ. This training and assessments must be carried out by a competent member of CCNS and should be reassessed within 18months.

3.5 School managers are responsible for ensuring school staff attend initial training on enteral feeding and subsequent yearly revision sessions.

3.6 Home enteral feeding dietitian is responsible for working alongside health professionals in reviewing the child and young person receiving enteral feeding via a naso-gastric tube.

3.7 All staffs working with children and young people receiving enteral feeding via a naso-gastric tube are responsible for working within their level of competence and identifying their learning needs to their line manager for any further training or assessments required.

3.8 Staff working within the Coburn Unit caring for young people with a naso-gastric tube in situ should all be appropriately trained and assessed by a competent practitioner.

3.9 Parents caring for a child or young person receiving enteral feeding via a naso-gastric tube must be adequately trained and competency assessed before undertaking any care for the child within this area. The training and assessment for feeding via a naso-gastric tube should be commenced within the setting where the tube has been placed (for example the hospital setting).

3.10 Agency nursing staff are responsible for their own practice and for ensuring they work within their level of competence (NMC, 2015). The nurse coordinator for the shift must ensure the level of competence for the agency nursing staff has been assessed before they are allowed to pass a naso-gastric tube or work with a child with enteral feeding via a naso-gastric tube. If competence is unsure, competence can be assessed using training mannequin and pump by a competent member of the CCNS/Coburn Unit using "Passing a naso-gastric tube competency" and "Naso-gastric feeding competency".

3.11 The continuing care nurse specialist is responsible for ensuring a copy of the naso-gastric tube feeding policy is given to families of a child who is fed via the naso-gastric tube and receives a continuing care package in the community. This will be in place to support both ELFT health care support workers but also care workers provided by agency to deliver the continuing care package in the home setting. Naso-gastric confirmation checklists will also be provided for use within the home setting.

4. Enteral Feeding

Enteral feeding via a feeding tube is required when a child or young person is unable to meet their nutritional requirements orally, and they have a functional, though not necessarily normal, gastrointestinal tract. Enteral feeding is indicated when oral intake is insufficient or unsafe and it ensures the child and young person is able to receive adequate nutrition and hydration to enable them to maintain their growth and development (Spalding and McKeever, 1998).

4.1 Indications:

Enteral feeding via a feeding tube may be indicated when the child or young person has:

- **An unsafe swallow**: uncoordinated swallow due to neurological condition, neuromuscular weakness.
- **Absence of effective swallow**: due to prematurity
- **Congenital abnormalities**: Cleft Lip and Palate (CLaP), Oesophageal Artesia (OA), Oesophageal Stenosis (OS), tracheo-osophageal fistula (TOF).
- **Not meeting their requirements**: unable to take adequate amounts via mouth due to health condition, treatment or unknown cause (poor oral intake, faltering growth, oncology, congenital heart disease, short gut Syndrome)
- **Increased nutritional requirements:** Cystic Fibrosis
- **Specific treatment or medications which are not tolerated orally**: Chrohn's disease/ulcerative colitis/metabolic disorders
- **Psychological problems**

Huband and Trigg (2000); NICE (2006)

4.2 Routes:

Enteral feeding can take place via numerous routes along the gastrointestinal tract. These include oro-gastric, naso-gastric, naso-jejunal, gastrostomy, Jejunostomy and Jejunostomy via a Gastrostomy. See Figure 1, page 8

The route which is chosen is dependant on the following factors:

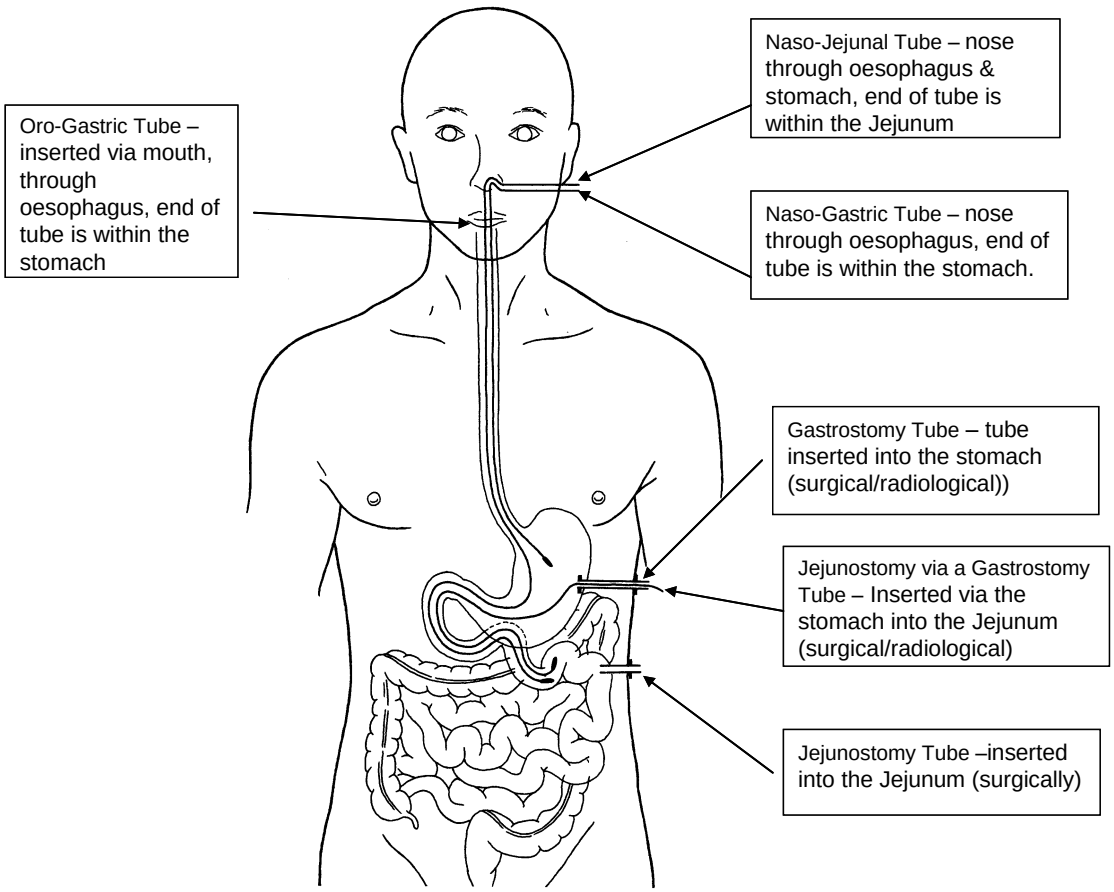
- Assessment of the child and young person
- Assessment of their gastrointestinal tract function
- Planned duration of the enteral feeding tube
- Ease of tube placement
- Families' ability to manage the feeding tube, feeding and care and maintenance.

4.3 **Food Fortification and oral supplements:**

If a child can tolerate oral feeding, advice should be provided by a paediatric dietitian to maximise oral intake. Examples would include food fortification and oral supplements.

Routes of enteral feeding

(Figure 1)



4.4 **Referral:**

A referral can be made by any health professional that has concerns that the child or young person has been losing weight or having concerns that the child or young person is not tolerating enough oral nutrition/hydration.

4.4.1 Dietitian:

A drop of 2 centile lines within a growth chart is indication of significant weight loss and a referral must be completed in writing to the home enteral dietitian for further assessment of the child or young person. Verbal referral can be made first if urgent and followed up with the written within 24hrs.

4.4.2 Speech and Language Therapy:
Indications a child or young person is not tolerating oral intake due to aspiration may be the following:

- Coughing or gagging when eating or drinking.
- Recurrent chest infections
- Watering eyes upon feeding or drinking
- Taking a long time to feed or swallow
- Increased breathing before, during or after swallowing
- Gurgle or wet sounding voice during of after feeding

Children displaying these symptoms should be referred to the Speech and Language Therapist (SALT) in writing for further assessment of their swallow.

If the child or young person is acutely unwell they should be referred to the local hospital trust for immediate review.

4.4.3 Risk Assessment:
The decision to commence enteral feeding is made by the medical team if the child or young person is already within the hospital setting or Coburn Unit. However a referral to both the home enteral dietitian and Community children's nursing team (if under 16yrs) should be completed prior to discharge to ensure the care of the child and young person continues to be managed safely within the community post discharge.

A full multidisciplinary supported risk assessment must be made and documented before the child or young person is discharged into the community from acute care with a naso-gastric tube in situ (NPSA, 2011).

Parents should be adequately informed of the risks involved with naso-gastric feeding and that continuous overnight feeding via a naso-gastric tube is not recommended within the community setting. The administration of continuous overnight feed will only be considered in exceptional circumstances. A letter from the hospital consultant must be provided in these circumstances confirming their acceptance of responsibility for child receiving continuous overnight feeds via naso-gastric tube against the risks raised (see appendix 7 for risk assessment for overnight feeding)

Parents/guardians should be given resuscitation training if the child or young person is commenced on continuous overnight feeding via a naso-gastric tube (at home) prior to discharge into the community setting.

The decision to commence enteral feeding within the community setting, East London NHS Foundation Trust, is made by either the home enteral feeding dietitian or community Paediatrician with the advice from other professionals for example speech and language therapists involved with the child or young person's care.

A detailed assessment of the child and young person must be undertaken to identify whether naso-gastric tube feeding is appropriate for them and the rationale clearly documented within their notes. Documentation should also include the risk assessment that evaluates the benefits against the risks of introducing a naso-gastric tube and be signed, dated and timed for the entry (NPSA, 2011).

A child or young person who is identified as requiring enteral feeding via a tube within East London NHS Foundation Trust must be referred to the paediatric dietitian for management of feeds and regimes.

4.4.4 Community Children's Nursing Service:
A referral must also be completed to the Community Children's Nursing Service (CCNS) for further teaching for the family, management of the supplies and support with the child's feeding. If the child has a life limiting condition or palliative care needs they should be referred to the Diana team, all other cases should be referred to the Community Children's Nursing Team (CCNT).

4.4.5 Long term enteral feeding needs:
If a child or young person is identified as requiring an enteral feeding tube for greater than 6 months, a referral should be made for the child or young person to have a gastrostomy inserted. The referral should be made via community paediatricians or home enteral dietitian to the appropriate hospital for the child or young person if the child is within the community. The referral should be made through the medical team if the young person is on the Coburn Unit. The referral should be made 3 -6 months post insertion of the naso-gastric tube or before, due to the waiting list for gastrostomy tube insertion.

5. Feeding devices and equipment.

Enteral tubes are classified as medical devices and healthcare professionals have a responsibility to know how to care for them and to ensure they are only used as intended by the manufacturer. This information should be passed onto families and carers who also care for a child or young person's feeding tube within East London NHS Foundation Trust.

No modifications should be made to any enteral feeding device without first checking with the manufacturer. Any person modifying a tube without authorisation assumes full responsibility for their actions.

Symbols appearing on medical devices and/or their packaging should be adhered to, for example devices designated for "singe use" as shown by this symbol must not be reused and should be discarded immediately after use (MHRA, 2006).

5.1. ENFit.

Global changes are being introduced to reduce the risk of clinical incidences with enteral feeding devices and other devices (for example Intravenous devices). This is partially as a result of the implementation of the NPSA guidance (2007) across the UK which demonstrated a significant reduction in accidental administration via Intravenous or enteral lines, due to the introduction of the reverse luer system. In 2011, an international standard (ISO 80369-1) was established to set general requirements and a new global design standard for small bore connectors for liquids and gases has been developed to make it "difficult if not impossible for unrelated delivery systems to be connected" (Holland, 2015; Wilkinson, 2015).This means that all devices designed for enteral feeding will have a new connector on the end which will only connect to another enteral feeding device. The name for the new global connector for enteral feeding is ENFit. New products are currently being developed, manufactured and are expected to be available to purchase by July 2016. There

is expected to be a 6 month change over period once new products are available to purchase. Although the initial date for commencement was March 2016, this date has been delayed until July 2016. The policy will be updated once products are readily available within the community and acute settings.

5.2 Naso-gastric tubes:

Naso-gastric tubes come in many different lengths, widths and material, made by different companies. All Naso-gastric tubes must be radio-opaque in length with external markings to comply with the NPSA alert (2011) and designed for enteral usage.

Within East London NHS Foundation Trust we currently use:

- Entral™ (previously Medicina)
- CORFLO© (Corpak medsystems)

Entral™

- Short term infant/paediatric naso-gastric tube. 7days polyurethane. Radio-opaque strip and external markings
- Long term fine bore naso-gastric tubes. 30days polyurethane. Fully radio-opaque. Guidewire and external markings.

CORFLO© (Corpak medsystems)

- Long term fine bore naso-gastric tube. Polyurethane. Fully radio-opaque. Stylet and external markings. Can remain in place as long as functioning properly

Within East London NHS Foundation Trust, Community Health Newham Directorate, the ordering of all naso-gastric tubes takes place via the Newham Integrated Community Equipment Store (NICES). All health professionals working within the trust need to ensure they order the appropriate tube from the above list. All other naso-gastric tubes should be removed from NICES to ensure compliance with NPSA guidance. A guide of tube types, sizes and codes can be found in Appendix 1

Coburn Unit are responsible for ordering their supplies direct via NHS Supply chain Logistics.

5.3 Syringes

Within East London NHS Foundation trust, only purple syringes labelled for oral/enteral usage can be used to administer medication, enteral feed or water via an enteral feeding device. This follows an alert by NPSA which highlights patient incidents including 3 deaths resulting from oral liquids being administered intravenously between 2001 and 2006 (NPSA, 2007).

Oral/enteral syringes can not be connected to intravenous catheters or ports. Examples of syringes both NPSA compliant and non complaint can be found in Figure 2, page 13

Guidance from the National Patient Safety Alert (2007) applies as follows:

5.3.1 Risks of wrong route being used for drug administration

- Only use oral/enteral syringes that have been manufactured such that they cannot be connected to intravenous catheters or ports to administer oral liquid medicines.

- Intravenous syringes must not be used to measure or administer oral liquid medicines.
- Stocks of oral/enteral syringes are available through Newham Integrated Community Equipment supplies for all children and young people with an enteral feeding device within Community Health Newham Directorate, East London NHS Foundation trust.
- Stocks of oral/enteral syringes are available through NHS supply Chain Logistics

5.3.2 Safe devices – labelling

- All enteral feeding systems (giving sets) are labelled to indicate the route of administration.
- All oral/enteral syringes are clearly labelled 'Oral' and/or 'Enteral' in a large font size and purple colour coded to aid selection and use.

5.3.3 Connector combinations

- Ports on naso-gastric and enteral feeding catheters through which liquid medicines are to be administered, or which may be used for aspiration, must be male luer or catheter tip in design. They must not be able to connect with intravenous syringes.
- From 1 April 2008 the new Fresenius-Kabi range of enteral feeding systems have male luer ports on the enteral feeding tubes which require a reverse female luer connection syringe.
- Three way taps should not be used as they introduce additional risks.
- Adaptors to convert oral/enteral syringe connectors so that they may connect to intravenous lines increases the risk of wrong route errors and should not be used.

5.3.4 Administration of medicine and labelling of oral/enteral syringes

- Syringes must be labelled with the name and the strength of the medicine, the patient's name, the date and time it was prepared by the person who has prepared the syringe if there is any interruption in the process between preparation and administration of the medicine.
- If preparation and administration is one uninterrupted process and the unlabelled syringe does not leave the hands of the person who has prepared it labelling is not required.
- Only one unlabelled syringe should be handled at any one time.

Extra caution must be taken when a child or young person has both an intravenous device and enteral feeding device in situ as both oral/enteral syringes and Intravenous syringes will be provided. Clear teaching needs to be undertaken with the family to ensure risks are identified.

Any families identified as using the incorrect syringes must be highlighted immediately to the community nursing service providing the supplies to the family.

5.3.5 Ordering syringes

Within East London NHS Foundation Trust, Community Health Newham Directorate, the ordering of all oral/enteral syringes takes place via the Newham Integrated Community Equipment Store (NICES). All health professionals working within the trust need to ensure they order the appropriate size syringes for the child's feeding and medication regime. A table of syringes available and ordering codes can be found on page 13. A new syringe per medication or feed

should be calculated over a daily requirement. The same syringe can be used to flush before and after a feed.

5.3.6 Reusable syringes (single patient use) are currently being used within the community setting of Community Health Newham since November 2011. The syringes can be used up to 30 times each. Syringe assessment should still continue as 1 syringe per medication or feed and carers are advised to use a different syringe for each time during the day and to wash all the syringes at the end of the day. These can safely be reused for the month and new syringes commenced after 30days. Extra syringes may be ordered if the child attends school.

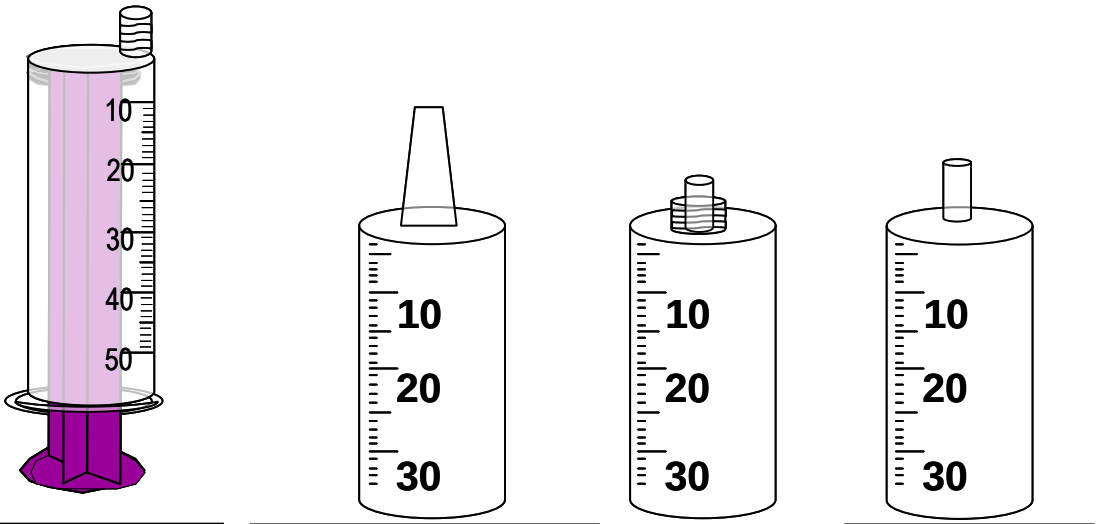
Reusable syringes can be cleaned using warm soapy water (washing up liquid) and rinsed thoroughly, leaving to dry as separate chambers.

5.3.7 Single use syringes should be ordered and used for the following clients:

- Child or young person who is fed directly into the bowel or has malabsorption problems
- Child or young person who is immune suppressed (although syringes can be sterilised)
- Child or young person who is using the syringe for cytotoxic medication
- Anyone who is within an inpatient clinical setting.

Coburn Unit are responsible for ordering their supplies direct via NHS Supply chain Logistics.

Figure 2



Newham Integrated Community Equipment Supplies (NICES) currently provide oral/enteral with reverse female luer lock in the following sizes. The table below details the Baxa syringes which are reusable (single patient use – 5.3.6):

Make	Type	Size	NHS supply code	Elms code
Baxa Exacta Med	Oral/enteral	1ml	FTA176	F01
Baxa Exacta Med	Oral/enteral	3mls	FTA177	F03
Baxa Exacta Med	Oral/enteral	5mls	FTA178	F05
Baxa Exacta Med	Oral/enteral	10mls	FTA179	F10
Baxa Exacta Med	Oral/enteral	20mls	FTA180	F20
Baxa Exacta Med	Oral/enteral	60mls	FTA023	F60

For children and young people mentioned in 5.3.7 the following table details single use syringes – Medicina

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Make	Type	Size	NHS supply code	Elms code
Medicina (Penta)	Oral/enteral	1ml	FTA039	F1101
Medicina (Penta)	Oral/enteral	2.5mls	FTA040	F1102
Medicina (Penta)	Oral/enteral	5mls	FTA041	F1105
Medicina (Penta)	Oral/enteral	10mls	FTA044	F1110
Medicina (Penta)	Oral/enteral	20mls	FTA046	F1120
Medicina (Penta)	Oral/enteral	60mls	FTA047	F1151

NICES also stock oral/enteral catheter tip syringe as follows:

Medicina (Penta)	Oral/enteral	60mls	FTA048	F1150

Oral tip syringes are also available from NICES made by BAXA (figure 3). However these syringes can not be used directly onto enteral feeding devices without an adapter. They are single patient use so care must be taken when ordering that correct guidance is given to the family about washing as these can be used for 7 days/28 uses instead of single usage. These should only be used in exceptions and should not be first choice of syringe.

Figure 3

5.4 pH indicator strips

To safely check a naso-gastric tube is in the correct placement within the child or young person's stomach, stomach contents must be aspirated and tested on pH paper. The level of aspirate should record pH below 5.5 to identify the tube is within the stomach and not within the bronchus or small bowel which would test pH7-9 (NPSA, 2005).

Litmus paper should not be used under any circumstances as it is not sensitive enough to distinguish between bronchial and gastric secretions (MHRA Notice MHRS/MS/2004/026 cited in NPSA, 2005).

pH indicator paper must be CE marked and intended by the manufacturer to test Human gastric aspirate (MHRA, 2010 and DOH, 2000).

5.4.1 Community Health Newham Directorate, East London NHS Foundation Trust currently use pH indicator strips pH 0-6 made by Merck Serono (Figure 4). They are supplied in tubes of 100 pH strips and are available from NICES.

All health professionals working within the trust need to ensure they order the correct amount of strips to allow the family to test the tube before every feed, medication and water given via the naso-gastric tube. They should also include extra to cover if the child or young person requires the tube to be re tested due to misplacement of the tube due to coughing, vomiting, respiratory symptoms or if the tube requires resiting.

If the child or young person is school age family must be made aware a tube must be sent in to school so supplies must reflect this.

Coburn Unit are responsible for ordering their supplies direct via NHS Supply chain Logistics. NHS supply code: FWM1216.

Figure 4

www.merckserono.co.uk

5.5 Feeding pump

Fresenius Kabi Applix® Smart enteral feeding pumps (Figure 5) are the only enteral feeding pump currently in use within Community Health Newham Directorate, East London NHS Foundation Trust.

Figure 5

www.fresenius-kabi.co.uk

The pump can be used either on the stationary stand provided on a flat surface level to the patient or for use with the portable rucksack to allow mobility.

5.5.1 Ambulatory Rucksacks:

Fresenius Kabi currently provides 2 x rucksacks for ambulatory use:

- Mobility Kit Mini (blue) for younger children;
- Mobility Kit Standard (grey) for older children and adults.

5.5.2 Training:

All parents/guardians, carers and staff who are operating the pump and delivering feed to a child or young person via an enteral feeding device must be appropriately trained by a Fresenius Kabi representative and hold a competency certificate. For all carers and staff working within schools their competence will be assessed during an in depth assessment when they are feeding the child or young person or via simulated practice using mannequins and training equipment, by a competent member of the CCNS. A copy of the competency will remain in the child's nursing notes, a copy within the school and a copy within the school competency record held at CCNS. See section 6 for further details on training.

5.5.3 Volume delivery:

Volume to be delivered should be set prior to each feed and the previous feed delivered cleared before a new feed is started. This will enable the volume infused to be monitored and ensure the child or young person receives the correct amount of feed. Any problems identified with under delivery of feed must be reported back to Fresenius Kabi immediately (Medical Device Alert MDA/2011/058)

The Applix® pump will reset volume delivery if the feed is interrupted where the pump is switched off and on again. If a feed is interrupted before volume is delivered, ensure pump is placed on hold only to prevent over delivery of feed to the child or young person. (See appendix 8). The risk of overfeeding following power failure to the feeding pump must form part of acquisition of competency.

5.5.4 Schools:
School age children can have a second pump and rucksack provided by Fresenius Kabi for use within the school setting. This can be ordered via a Fresenius Kabi amendment form. A copy of the amendment form should be uploaded to RIO for community or filed within medical notes for the Coburn Unit.

All children with school should preferably be commenced on a regime which can be given using the rucksack to aid their learning and provide them with adequate mobility to reach their full potential within the educational setting.

A spare pump should also be made available within the school setting as a back up, to ensure the child or young person can continue to receive their nutrition if their pump experiences a malfunction.

5.5.5 Servicing:
Fresenius Kabi is responsible for servicing the pumps on a yearly basis. Any problems with malfunctioning pumps should be reported directly back to Fresenius Kabi.

5.6 Feeding sets

Feeding sets are provided for both the stationary stand and mobile rucksacks. Only the Duo lines are interchangeable between stationary and mobile set up. Feeding sets with a chamber will not fit within the mobile rucksacks and should not be used as this will lead to problems with kinking and air within the line, causing the pump to alarm.

See figure 6, pages 16/17 for correct feeding sets currently used for the stationary stand and ambulatory rucksack.

The feeding set needs to be correctly fitted within the pump to prevent any free flow of feed to the child or young person as this poses a potential risk of fatal overfeeding (Medical advice alert MDA/2007/098).

All feeding sets must be primed using the pump and not primed using gravity.

5.6.1 Initial registration:
All feeding sets can be ordered from Fresenius Kabi. Initial registration can be completed by a registered nurse or dietitian. A copy of the registration form should be uploaded to RIO for community patients or filed within medical notes for Coburn Unit.

5.6.2 Amendments:
Any amendments to orders can be made by a registered nurse or dietitian by completion of Fresenius Kabi amendment form. A copy of the amendment form should be uploaded to RIO for community patients or filed within medical notes for the Coburn Unit.

5.6.3 Kangaroo gravity feeding sets:
Kangaroo gravity feeding sets are not used within Community Health Newham Directorate, East London NHS Foundation Trust. Any child or young person being discharged into the community should be either changed onto bolus feeds (over 20mins) using the Applix® smart pump.

5.6.4 Feeds – Hang time and storage:

Pre-packaged, ready to use feeds should be used where possible as preference to feeds requiring decanting, reconstition or dilution to reduce the risk of infection associated with enteral feeding (NICE, 2003; DoH, 2010)

When decanting, reconstituting or diluting feeds, a clean working area should be prepared and equipment dedicated for Enteral feed use only should be used (NICE, 2003).

If sterile feeds are not within a closed enteral system they should be refrigerated and used within 24hrs. Any feed left open at room temperature should be discarded after four hours (NICE, 2003).

Pre-packaged, ready to use feeds can be used with the EasyBag or EasyBag mobile and maintain a sterile circuit which can be reused for 24hrs, providing the cap is replaced at the end of the line in between feeds (NICE, 2003). This does not require refrigeration but storage within a cool dark area.

Non-sterile feeding systems (decanted or reconstituted feeds) should not be hung for more than 4 hours (NICE, 2003).

Reconstituted feeds can be stored within the refrigerator for no longer than 24hrs. Once feeds are at room temperature they must be used and discarded within 4 hours (NICE, 2003).

All refrigerated feeds must be removed from the fridge at least 30 minutes prior to usage to prevent abdominal discomfort to the child or young person (NHS QIS, 2007).

Figure 6
www.fresenius-kabi.co.uk, NICE (2003), DoH (2010)

Pump set bag reservoir - used for decanting feeds.
Decanted feeds can be hung for 4 hours before the bag and feed must be replaced.
These are for use with the stationary stand.
Single use.

Duolines – used for decanting feeds.
Decanted feeds can be hung for 4 hours before the bag and feed must be replaced
Can be used with either the stationary stand, the ambulatory rucksack or for gravity feeding (without the pump).
Single use

Easy Bag – For use with stationary stand only.
Used for sterile feeds.
When used with sterile feed can be reused within 24hrs as long as end of set is capped at the end of each feed to maintain a sterile circuit.

Easy Bag mobile - for use with ambulatory rucksack.
Used for sterile feeds.
When used with sterile feed can be reused within 24hrs as long as end of set is capped at the end of each feed to maintain a sterile circuit.

Easy Bag bolus adapter – For decanting feeds.
Once feed is opened it must be kept within the fridge and used with 24hrs.
if feed is left at room temperature discard after 4hrs.

Hydro Bag - For use with stationary stand or ambulatory rucksack
Used for decanting feeds with the Easy Bag gravity set.
Decanted feeds can only hang for 4 hours
Single use

Easy Bag Gravity Set – For use with Stationary stand or gravity feeds.
If used with sterile feeds it can be reused within 24hrs as long as the end of set is capped between each feed to maintain a sterile circuit.

www.fresenius-kabi.co.uk, NICE (2003), DoH (2010)

6. Training and Competency

All registered nurses working with children and young people with a naso-gastric tube in situ must be assessed as competent before they carry out any direct care for the child/young person.

Competency is two parts and includes a work book (Appendix 4) along side a competency document. Both copies must be completed and assessed by a competent senior nurse within East London NHS Foundation Trust. There are separate competency documents for "Passing a naso-gastric tube competency" and "Naso-gastric feeding competency" (Appendix 5 and 6 retrospectively). Coburn unit will adapt competency documents to reflect the adolescent needs within mental health.

Carers will not be taught and assessed on passing a naso-gastric tube, only parents and nursing staff will be expected to learn this skill.

Untrained or un-assessed carers, parents/guardians or nurses must not carry out any care for a child or young person requiring enteral feeding via a naso-gastric tube.

Training should include

- Anatomy and physiology of the gastrointestinal tract
- Theory of naso-gastric tubes to include benefits and risks
- Recent research and current practice in naso-gastric feeding
- Practical skills in naso-gastric tube insertion (parents/guardians and nurses only)
- Practical skills in naso-gastric tube feeding.

6.1 Simulated assessments:

Assessments with the use of mannequins and training equipment can be used for demonstrating the following:

- Measurement of Nose, Earlobe and Xiphisternum (NEX)
- Insertion of naso-gastric tube and removal of guide wire/stylet
- Securing naso-gastric tube in place

- Observation of external tube placement and documentation of external tube length
- Practising connecting syringe and aspirating the naso-gastric tube.
- Practising aspirating the tube from a cup of water
- Practising flushing the tube with water (whilst not in the mannequin)
- Priming Fresenius Kabi feeding sets using the Applix® Smart pump
- Setting up the Applix® Smart pump within the ambulatory rucksack
- Checking alarms on the Applix® Smart pump
- Changing rates, volume to be infused, clearing the volume delivered and locking the Applix® Smart pump

6.2 **Patient assessments**:

Assessments on the following must be carried out on the child or young person and must be supervised by a competent nurse:

- Correct preparation and positioning of the child/young person
- Insertion of naso-gastric tube on child or young person
- Aspiration of stomach contents via the naso-gastric tube
- Testing of stomach contents on pH indicator strips
- Flushing of naso-gastric tube prior to removal of guide-wire (only after correct pH testing has occurred)
- Reassurance of the child/young person and family.
- Flushing of the tube prior to feeding (only after correct pH testing has occurred)
- Commencing feed after correct connection of feeding set using Applix® smart pump or duolines for gravity feeding.
- Trouble shooting when no aspirate, aspirate above pH 5.5, blocked or displaced tube.
- Trouble shooting when child coughs of vomits before, during of after feeding.

6.3 **X-ray interpretation**:

A useful training resource for x-ray interpretation of naso-gastric tube position is available at www.trainingngt.co.uk (NPSA, 2011). It is not expected for any nursing staff within Community Health Newham Directorate, East London Foundation NHS Trust to be trained in x-ray interpretation. The child or young person should always be referred immediately to the local hospital for X-ray when it is required.

7. Documentation

Following insertion of a naso-gastric tube the following must be recorded within the child or young person's notes by the person who inserted the tube:

- Naso-gastric tube type
- Naso-gastric tube size
- NEX measurement and external tube length once secured in place
- Which nostril the tube has been sited within
- pH test and test result
- Whether feeding was commenced following correct pH aspirate
- Whom the tube has been inserted by
- X-ray interpretation if pH aspirate was not obtained or pH indicator strips have failed to confirm the correct placement of the naso-gastric tube.

Metheny et al (1990), (1997), (1998), (1999); Metheny, Smith and Stewart (2000); Burns, Carpenter and Truwit (2001); Metheny and Titler (2001) and Hana (2010)

7.1 **Naso-gastric tube placement checklist**:
The information above should be documented on the "Naso-gastric tube placement checklist" (Appendix 2) and filed within the patient's notes if a community patient and within the bedside folder on the Coburn Unit. Within the community setting for continuing care patients (cared for by agency nurses) the information must be written on the checklist and once the placement chart is full this should be uploaded to RIO documents by CCNS staff. For nursing staff within CCNS, the information in part 7 should be documented within the RiO progress notes for patients seen and tube inserted within the community setting.

7.2 **Naso-gastric tube confirmation checklist**:
The position of the naso-gastric tube should be checked:

- Following initial insertion - nursing staff and parents/guardians only (please use placement checklist to record this).
- Before administering each feed.
- Before administering water
- Before giving medications.
- Any new or unexplained respiratory symptoms or if oxygen saturations decrease.
- At least once daily during continuous feeds.
- Following episodes of vomiting, retching or coughing spasms.
- When there is suggestion of tube displacement.

All pH testing and pH test results must be recorded on a chart specific for the child or young person with a naso-gastric tube in situ (NPSA, 2011). This must be documented every time the tube position is checked on the "Naso-gastric tube confirmation checklist" (Appendix 3).

Children receiving nasogastric tube feeding, who receive a continuing care package in the community will require nasogastric tube confirmation checklists to be completed. The continuing care package could be delivered by ELFT health care support workers or agency care workers. All care workers who are carrying out the nasogastric tube feeding must complete this checklist which will remain in the home until the nursing staffs from CCNS collect to review and upload to RiO. Nursing staff from CCNS must collect these checklists to review and upload, minimum of monthly and must document on RiO progress notes as follows "Naso-gastric tube confirmation checklists collected from the home and reviewed, checklists given to admin team to upload". Any concerns or outcome from the review must also be documented within the RiO progress note.

Within the Coburn unit this documentation should be kept at the young person's bedside and filed within the medical notes once completed.

Within schools of London Borough of Newham, the Naso-gastric tube confirmation checklist should be kept within the child's folder within the school base. The responsible school nurse will collect the completed checklists at least once a term and upload them to the child's RIO notes.

7.3 **X-ray**

Should an x-ray be used as second line test method (see section 9), the child or young person must be referred immediately to the local hospital for this to take place. The following should be documented by hospital staff:

- Who authorised the x-ray.
- Who confirmed the position of the naso-gastric tube. This person must be evidenced as competent to do so.
- Confirmation that any x-ray views was the most current x-ray for the correct patient.
- The rationale for the confirmation of position of the naso-gastric tube, for example placement was interpreted and clear instructions as to required actions.

8. Transition to adult services

Once a young person (who is currently under the Community Children's nursing Service) reaches 14yrs old, transition to adult community services should begin to take place until they reach 16yrs (unless the young person is managed by the Diana Community nursing team who will manage their care until 19yrs).

Transition to adult services should be seen a process rather than a single event to allow both the young person and adult services to adjust to the changing needs of the adolescent as they move into adulthood, whilst continuing to be supported by the children's service (DoH, 2006).

However a young person with a naso-gastric tube in place who is reaching transition age should be adequately informed that adult community services will not provide the same level of support as the children's community nursing services whilst the naso-gastric tube remains in situ.

Adult services would recommend the young person has a gastrostomy inserted for safer management of their enteral feeding within the community under adult services. Information, training and support should be offered to the family to help them in the transition from naso-gastric tube feeding to gastrostomy.

Families who wish to continue with naso-gastric tube feeding must be advised appropriately that they will hold responsibility for all aspects of the enteral feeding, although the adult services will still be responsible for providing supplies to the family.

9. Placement of naso-gastric tubes

Naso-gastric tubes should only be inserted by a trained professional or parent/guardian who has undergone training and competency assessment in placing the tube (NPSA, 2011) as discussed in section 6.

The naso-gastric tube should not be flushed nor any medication or feed be administered through the tube after initial placement until the tip is confirmed to be placed within the stomach, by pH testing or x-ray confirmation.

When inserting a long term tube using a guide wire or stylet, confirmation the tube is within the stomach must always be confirmed before the tube is flushed with water (which lubricates the tube to enable safe removal of the guide wire or

stylet). The naso-gastric tube should **not** be lubricated before confirmation within the stomach is confirmed by either pH testing or x-ray confirmation. This includes not flushing the tube before insertion as this activates the lubricant which can affect the pH reading, giving a pH of less than 5.5 when the tube may not be placed within the stomach (NPSA, 2012).

Whoosh tests, acid/alkaline tests using litmus paper or interpretation of the appearance of the aspirate are never used to confirm naso-gastric tube position (NPSA, 2005)

9.1 **First line test method**:
pH testing is used as the first line test method for naso-gastric tubes. Only pH indicator paper/strips that have been CE marked and manufactured to test human gastric aspirate should be used. The safe range stated by NPSA 2011 is pH between 1 and 5.5 where each test result must be documented as discussed within section 7.1 and 7.2

9.2 **Second line test method**
X-ray confirmation is the second line test method and should only be used when no aspirate can be obtained or pH indicator strips has failed to confirm the location of the naso-gastric tube. The child or young person will need to be referred to the local hospital for second line testing.

NPSA (2011) guidance states the following re x-ray confirmation:

- The request form must clearly state that the purpose of the x-ray is to establish the position of the naso-gastric tube for the purpose of feeding.
- It is the radiographer's responsibility to ensure that the naso-gastric tube can be clearly seen on the x ray to be used to confirm tube position.
- X-rays must only be interpreted and naso-gastric tube position confirmed by someone assessed as competent to do so.

9.3 **Radiographers responsibility**:

- The radiographer must ensure that the exposure of the x-ray is adjusted to allow the naso-gastric tube to be visible to the bottom of the film
- The radiographer must ensure the film is centred lower than would normally be appropriate for a chest x-ray so that it shows the abdomen as far as possible below the diaphragm
- The x-ray film must show the bottom of both hemi-diaphragms in the midline
- X-rays that are not as described above will not allow accurate interpretation of naso-gastric tube placement and should not be allowed out of the x-ray department.

9.4 **Repeat checks AFTER initial correct placement has been confirmed**:
When the child or young person is fed continuously, treated with acid-reducing medication and when medications are frequently given down naso-gastric tubes, it may not always be possible to obtain aspirate with a pH between 1 - 5.5 and daily x-rays are not practical or safe (NPSA, 2011).

In these circumstances where the initial placement was appropriately confirmed and there is no reason to suspect displacement since (no vomiting, retching, coughing spasms and no unexplained respiratory symptoms) the only practical method of determining if the tube remains correctly placed prior to each medications or feed may be through the external observation of the tube.

It should be agreed by the health professional involved with the specific child's care and family that as long as the external length of the tube remains the same as the initial placement length, the facial tapes are secure and have not moved and there are no indication the tube has displaced, the external length of the tube can be used as the indicator for correct tube placement. The tube length must be documented on a daily basis and prior to any medication, water or feed being administered. This is only in exceptional circumstances and should not be used for every child/young person.

However if there is any indication the external tube length has moved or the tube has displaced, either second line x-ray confirmation or removal of the tube and reinsertion of the tube (which is confirmed by pH less than 5.5) should take place before any food, medication or water is administered via the tube (NPSA, 2011).

This risk factor and decision should be documented within the child or young person's medical notes for the Coburn unit and RIO notes for community based setting.

10. Water flushes

Naso-gastric tubes should be flushed regularly with water, before and after medications and feeds are administered. Flushing before will check the patency of the tube whilst flushing afterwards will ensure the tube remains clear of any feed or medication which could potentially block the tube (NICE, 2003).

Naso-gastric tubes that are not being regularly used, should be flushed at least 3 times a day to ensure patency of the tube (Huband and Trigg, 2000; MerckSerono, 2009 and Medicina, 2011)

The amount of water the naso-gastric tube is flushed with will be dependant on the child or young person's needs and will vary depending on hydration requirements. The dietitian will advised the family on how much water to flush and this should be documented within the care plan for the child or young person.

The type of water to be given as water flushes are as follows:

- Sterile water – for all hospitalised children and young persons
- Cooled boiled water (sterile) – for children under 1year, children or young persons receiving enteral feeds into the Jejunum and any children/young persons who are immune compromised (community).
- Freshly drawn tap water – for all other children and young persons.

(NICE, 2003; DoH, 2010)

11. Infection Control

Effective hand hygiene is the single most important procedure for significantly reducing and preventing infection. The selection, wearing and correct disposal of protective clothing (Gloves and aprons) have also been shown to significantly reduce the risk of cross contamination from both child and young person to carer/parent/guardian or nursing staff (NPCT, 2009).

High Impact Interventions were implemented as a requirement of The Health and Social Care Act 2008: Codes of Practice on the prevention and control of infections and related guidance (Dec 2010) to aim to reduce the risk of infection

when specific clinical procedures were performed appropriately. The enteral feeding care bundle is linked within the procedures for enteral feeding as below and will form part of the audit cycle:

- Bolus feeding via the pump
- Continuous feeding via the pump
- Gravity feeding

11.1 **Hand washing:**

Before any care is given to a child or young person with a naso-gastric tube in situ, the use of liquid soap and water must be undertaken to ensure hands are decontaminated, using the correct hand hygiene technique. This must also be undertaken after the care has been completed (NICE, 2003; DoH, 2010;). This is classed as the first line method of hand hygiene.

The use of alcohol-based hand rubs or gels should be used where it is not possible to wash hands with liquid soap and water. Alcohol is not effective against some micro organisms (Clostridium Difficile) and will not remove dirt or organic material from hands so should only be used on visibly clean hands.

For effective hand washing to take place, all wrist and ideally hand jewellery should be removed before the hand hygiene technique is commenced. Cuts and abrasions must be covered with waterproof dressings and fingernails kept short, clean and free from nail polish (NICE, 2003).

11.2 **Personal Protective Clothing (PPE):**

Gloves and aprons must always be worn by nursing staff and carers as personal protective equipment when accessing the child or young person's naso-gastric tube. These should be applied before setting up any feeds, water or medication (NPCT, 2009; DoH, 2010) and a non touch technique used when preparing and (dis)connecting feeds/medications/water to the child or young person to reduce the risk of infection to the child and young person. Parents are not expected to wear PPE but must be observed and advised regards infection control and use of non-touch technique when preparing feeds and accessing the naso-gastric tube.

11.3 **Gloves:**

Following an alert by NPSA (2005), all latex should be eliminated or substituted where appropriate and possible to reduce the risk of contact with latex as sensitivity to latex is increasing within staff and patients. Responses to latex can range from mild skin irritations to life threatening anaphactic shock. Within East London NHS Foundation Trust all new purchases of gloves must be latex-free from 1st October 2011, with any current latex gloves in use being phased out by 1st December 2011.

12. **Audit:**

To monitor compliance of all aspects within this policy, an ongoing audit cycle will be undertaken. The audit can be divided up into the following:

- Audit of naso-gastric tube feeding using High Impact Intervention – enteral care bundle (DoH, 2010) – identify compliance with infection control.
- Staff knowledge and training – attendance rate and correctly completed workbooks.
- Competencies of nursing staff, school staff, carers and parents.

- Naso gastric initial placement checklist – notes audited for correct completion and filing
- Naso-gastric tube confirmation record – notes audited for correct completion and filing
- Removal of all non NPSA complaint stock from clinical areas/ Equipment supplies.

Audit cycle should be completed regularly and include 20% of caseload. If the number of children and young persons with naso-gastric tubes in situ falls below 10 within caseload at time of audit, all notes should be audited.

Procedure for passing a naso/oro gastric tube (NGT/OGT)

Aim: To safely and correctly pass the naso/oro gastric tube and secure in place to allow feeding via the tube to take place.

Equipment: Disposable apron (if appropriate)
Disposable gloves
Naso/oro gastric tube (specified size/length)
Syringes – 20ml for PVC, 50ml for polyurethane tube (or as per manufacturers' guidance)
Merck Serono pH indicator strips (pH range 0-6)
Duoderm & tegaderm to secure the tube in place (or similar type dressing)
Freshly drawn tap water (cold tap) for children over 1yr to flush tube
Cooled boiled water (or sterile) for children under 1yr to flush tube
Sterile water for children who are hospitalised to flush tube (NICE, 2003).

Action:	Rationale:
❑ Apply apron (if appropriate) ❑ Wash hands and apply gloves ❑ Prepare equipment in a clean area	▪ To reduce the risk of cross infection and encourage good hygiene (Anderton, 1995; Pratt, 2001; NICE 2003; DoH 2010).
❑ Check all equipment is in date and sterile. ❑ Check the NGT/OGT, if there is a guidewire, check it is not bent and that it can be inserted and removed from the tube freely. ❑ Do not flush the tube before insertion	▪ To ensure equipment is safe and ready to use. ▪ To ensure the NGT/OGT can be used once placed and reduce risk of a damaged tube being placed (Mensforth and Nightingale, 2001) ▪ This can activate the lubricant and affect the pH giving a false reading of less than 5.5 (NPSA, 2012)
❑ Position the child appropriately and explain what you are going to do – age appropriately.	▪ To prepare the child physically and psychologically.
❑ Measure **NGT** from tip nose **(N)** to ear lobe **(E),** and then to the xiphisternum **(X)** - (base of the middle of the rib cage) . ❑ Note **NEX** number on the tube measured to on the naso-gastric tube placement checklist.	▪ To ensure the tube is placed at the right length (Huband and Trigg, 2000) ▪ To provide guidance on detecting tube displacement (Dougherty and Lister, 2008; NPSA, 2011)
❑ Insert the naso gastric tube into one nostril, to the measured length (at a 45 degree angle) – lubricate end with water if needed (not inside the tube) ❑ Use alternate nostril to last tube placement (unless unable to due to physiological reason)	▪ To prevent trauma and easy passing of the tube. ▪ To prevent trauma and skin irritation.

❑ If using a long term tube ensure the introducer (metal wire) is within the tube when inserting the tube into the nostril. ❑ Encourage the child to swallow (if allowed oral fluids) or suck a dummy as you pass the tube down to the measured length.	▪ The introducer prevents the long term tube from being too floppy to pass into the nostril and oesophagus. ▪ This closes the epiglottis over the lung opening to aid the passing of the tube into the stomach and not the lungs (Huband and Trigg, 2000; NHS QIS, 2007).
❑ Measure **OGT** from corner of mouth to ear lobe and then to the xiphisternum (base of the middle of the rib cage). Note number on the tube measured to.	▪ To ensure the tube is placed at the right length.
❑ Insert the oro gastric tube via the mouth (over the tongue) to the measured length – lubricate end with water if necessary (not inside the tube)	▪ To ensure easy passing of the tube to the correct length.
❑ Do not flush the tube after insertion until placement within the stomach is confirmed. ❑ Attach empty appropriate size syringe to the tube ❑ Aspirate (draw back) 2–5mls of stomach contents into the syringe ❑ Place aspirate onto pH indicator strip ❑ If pH is less than 5.5 secure in place (see below) ❑ Record pH on naso-gastric tube placement checklist.	▪ Flushing can affect the pH level by activating the lubricant and give false readings below 5.5 even if the tube is within the lungs(NPSA,2012) ▪ To test if tube is in correct position in the stomach (NPSA, 2005) ▪ pH above 5.5 may indicate bronchial placement of NGT(NPSA, 2005). ▪ To ensure safe feeding via naso-gastric tube ▪ Accurate record keeping ensuring feeding can commence safely (NPSA, 2011).
If unable to obtain an aspirate: ❑ *DO NOT INSERT WATER into the tube* ❑ *Insert up to 5mls of air through the tube* ❑ *Wait 10-15minutes* ❑ *Re aspirate stomach contents as above* ❑ *If pH is below 5.5 secure in place* ❑ *If not: Change the child or young person's position* ❑ *Re aspirate stomach contents as above* ❑ *If pH is below 5.5 secure in place*	▪ *Water can activate the lubricant and give false readings of below 5.5 even if tube is within lungs (NPSA, 2012)* ▪ *To expel any blockages from the tube or to dislodge the tip of the tube from the stomach mucosa* ▪ *To identify pH of the fluid* ▪ *To encourage the tip of the tube to re enter the stomach fluid.* ▪ *To identify pH of the fluid* ▪ *To move the tube into the stomach fluid(from the oesophagus or small*

❑ *If not: Try retracting or inserting the tube up to 5cm and re aspirate stomach contents as above* ❑ *If pH is below 5.5 secure in place*	*bowel)* *(NPSA, 2005)*
❑ If still unable to obtain an aspirate or pH indicator strip has not confirmed location of the NGT within the stomach consider x-ray ❑ All x-rays must be read by an appropriately trained staff	▪ X-ray should not be used routinely but is the second line test method for placement of NGT (NPSA, 2011). ▪ To ensure the x-ray is read correctly and correct tube placement if confirmed (NPSA,2011).
Once tube placement is confirmed: ❑ Secure the tube in place, firstly apply duoderm to the cheek and apply tegaderm over the tube to secure onto the duoderm (or like dressings). ❑ Document the external tube length the tube is secured at the nostril (cm)	▪ To ensure the tube remains in place and to prevent the tube rubbing on the child's cheek (Huband and Trigg, 2000; NHS QIS, 2007). ▪ Accurate record keeping ensuring feeding can commence safely and assist in detecting displacement of the tube (NPSA,2011).
❑ Long term tube with guide wire/stylet: Flush the tube with 10mls water ❑ Remove the introducer once flushed	▪ To activate the internal lubricant for easy removal of stylet (MerckSerono, 2009) and to keep the tube patent and free from blockages. ▪ The introducer is removed for comfort and to allow feeding to take place.
❑ All other tubes: Flush the tube with 5mls water	▪ To keep the tube patent and free from blockages.
❑ Document in notes and on naso-gastric tube placement checklist: ▪ Naso-gastric tube type ▪ Naso-gastric tube size ▪ NEX measurement and external tube length once secured in place ▪ Which nostril the tube has been sited within ▪ pH test and test result ▪ Whether feeding was commenced following correct pH aspirate ▪ Whom the tube has been inserted by ▪ Xray interpretation if pH aspirate was not obtained or pH indicator strips have failed to confirm the correct placement of the naso-gastric tube.	▪ Accurate record keeping ensuring feeding can commence safely and to assist in detecting displacement of the tube (Dougherty and Lister, 2008; NPSA, 2011).
❑ Discard used syringes (if single use) and pH strips. ❑ Keep the introducer for the long term tube in a clean place.	▪ To prevent syringes being reused as they may not be effective or safe (MHRA, 2006) and to reduce the risk of cross infection and contamination (NICE, 2003; DoH, 2010) ▪ Introducer is kept to re-use if the tube needs reinserting within the

	weeks[MerckSerono, 2009]
❑ Tidy away equipment and wash hands	▪ To ensure the child's safety and reduce the risk of cross infection[NICE, 2003; DoH, 2010]

Procedure for skin care of a naso gastric tube or oral gastric tube or naso jejunal tube (NGT/OGT/NJT)

Aim: To maintain healthy skin and ensure secure placement of NGT/OGT/NJT.

Equipment: Disposable gloves
Disposable apron (as appropriate)
Warm water
2 x Small face cloth or gauze swabs
Small scissors
Duoderm & tegaderm to secure the tube in place (or similar type dressing)
Syringes – 20ml for PVC (NGT/OGT), 50ml for polyurethane (silk) tube (or as per manufacturers' guidance)
Freshly drawn tap water (cold tap) for children over 1yr to flush tube
Cooled boiled water (or sterile) for children under 1yr to flush tube and for all ages for the naso-jejunal tube
Sterile water for children who are hospitalised to flush tube [NICE, 2003]

Action:	Rationale:
❑ Apply apron (if appropriate) ❑ Wash hands and apply gloves ❑ Prepare equipment in a clean area	▪ To reduce the risk of cross infection and encourage good hygiene (Anderton, 1995; Pratt, 2001; NICE 2003; DoH 2010).
❑ Position the child appropriately and explain what you are going to do – age appropriately.	▪ To prepare the child physically and psychologically.
❑ Note the external length marking on the NGT/OGT/NJT by the nostril/mouth ❑ Using a finger, gently hold the tube in place whilst removing the old tape from the child's face.	▪ To ensure tube remains at correct position and allow for detection of a displaced tube[Dougherty and Lister, 2008; NPSA, 2011]. ▪ To prevent the NGT/OGT/NJT from dislodging. ▪ To allow access to the skin.
❑ Clean the skin using warm water and small face cloth/gauze	▪ To freshen skin and remove old residue from previous tapes.
❑ Observe the skin for any signs of skin breakdown: redness; spots; rash; bleeding.	▪ To assess skin for any irritation and changes.

❑ Pat skin dry with clean dry face cloth/gauze	▪ To prevent infection and prepare the skin for new tape to be secured.
❑ Check external tube length is the same ❑ Apply Duoderm (or similar type dressing) directly to cheek under the tube. ❑ Place the tube on top of the duoderm and secure tegaderm (or similar type dressing) over the tube.	▪ To ensure correct tube placement (NPSA, 2011). ▪ To prevent tube from irritating the skin (Huband and Trigg, 2000; NHS QIS, 2007). ▪ To secure the NGT/OGT/NJT in place.
❑ NGT/OGT only - using a syringe to aspirate (draw up) 2 – 5mls of stomach contents and place on pH indicator strips ❑ Check pH is below 5.5 ❑ Record pH on naso-gastric tube placement checklist. ❑ Flush tube with 5mls water (NGT/OGT only)	▪ To test if tube is in correct position in the stomach (NPSA, 2005) ▪ pH above 5.5 may indicate bronchial placement of NGT(NPSA, 2005) ▪ Accurate record keeping ensuring feeding can commence safely(NPSA, 2011). ▪ To keep the tube patent and free from blockages.
❑ Tidy away equipment and wash hands	▪ To ensure the child's safety and reduce the risk of cross infection(NICE, 2003; DoH, 2010)
❑ Document any changes identified.	▪ To keep team fully informed.
Additional Information: 1. Tape changes should take place at least weekly or when tape is peeling off or dirty. 2. If skin is identified as broken down and you are unable to find a suitable site to secure the tube, the tube needs to be re passed through the other nostril (where possible). 3. If you have not been trained to re pass the tube, please contact your community nursing team (as early as possible) or a member of ward staff as appropriate.	

Procedure for Giving a Bolus Feed using a feed pump, via a Naso-gastric Tube (NGT) or Oro Gastric tube (OGT)

Aim: To complete the feed safely and therefore maintain optimal nutritional status.

Equipment: Disposable Apron (if appropriate)
Disposable gloves
Appropriate feeding pump
Appropriate feed giving set
Freshly drawn tap water (cold tap) for children over 1yr to flush tube
Cooled boiled water (or sterile) for children under 1yr to flush tube
Sterile water for children who are hospitalised to flush tube (NICE, 2003)

Feed at room temperature (remove from fridge 30 minutes before) (NHS QIS, 2007)

Syringes x 2 – 10ml/20ml for PVC, 50ml for polyurethane (silk) tube
Merck Serono pH indicator strips (pH range 0-6)

Action:	Rationale:
❑ Apply apron (if appropriate) ❑ Wash hands and apply gloves ❑ Prepare feed and equipment in a clean area ❑ Check feed (feed type; expiry date; colour; smell. If the feed is curdled, do not use)	▪ To reduce the risk of cross infection /encourage good hygiene (Anderton, 1995; Pratt, 2001; NICE 2003; DoH 2010). ▪ To ensure correct feed is delivered to the child safely.
❑ If using powder feed, ensure it is made up correctly according to Dietitian instructions.	▪ To ensure child receives correct concentration of feed (NHS QIS, 2007).
❑ Explain what you are going to do - age appropriately. ❑ Position the child either sitting or nursed at a 30° angle.	▪ To prepare the child physically and psychologically. ▪ To prevent aspiration of feed into the lungs (Rudolph et al, 2001 cited in NHS QIS, 2007)
❑ Attach feed to giving set or decant feed into bag using a non touch technique.	▪ To prepare for feeding (NICE, 2003).
❑ Plug in and switch on feeding pump. ❑ Test the alarm on the pump. ❑ Load the giving set correctly into the pump. ❑ Clear the volume infused. ❑ Prime the set via the pump.	▪ Safety checks to ensure the pump and alarms are working (Huband and Trigg, 2000). ▪ For accurate measurement of feed to be delivered (MDA/2007/098). ▪ To prevent air entering into the stomach and causing discomfort to

	the child (NHS QIS, 2007; FreseniusKabi, 2006).
❑ Set the pump to the correct rate (mls/hr). ❑ If a specific volume of feed is to be delivered, use the appropriate function on the pump and set a total volume for delivery.	▪ To ensure feed is given at correct rate, volume and over the specified time for the child (Huband and Trigg, 2000; NHS QIS, 2007).
❑ Observe and document external length of naso-gastric tube on checklist ❑ Attach empty appropriate size syringe to tube ❑ Aspirate (draw back) 2-5mls of stomach contents into the syringe. ❑ Place aspirate onto pH indicator strips ❑ Record pH on naso-gastric tube confirmation checklist ❑ If pH is less than 5.5 commence feeding[2,3] ❑ If you are unable to obtain a pH below 5.5 please refer to troubleshooting guidelines "Unable to obtain aspirate"	▪ To ensure tube has not been displaced (NPSA,2011). ▪ To test if tube is in correct position within the stomach (NPSA,2005). ▪ Accurate record keeping ensuring feeding can commence safely and ensure tube has not displaced (NPSA, 2011). ▪ pH above 5.5 may indicate bronchial placement of NGT (NPSA, 2005). ▪ To ensure safe feeding via the naso-gastric tube (NPSA, 2005).
❑ Attach syringe filled with specified amount of water to tube. ❑ Flush tube with water. ❑ Disconnect syringe and connect the end of the feeding line to tube using a non touch technique. ❑ You may need to remove the end of the feeding set before connection to the tube.	▪ To check patency of NGT/OGT and hydrate the child or young person (NHS QIS, 2007). ▪ To reduce the risk of infection to the child or young person (NICE, 2003) ▪ To have a safe and secure connection
❑ Set the pump to run. **CHILD SHOULD NOT BE LEFT ALONE DURING FEEDING**	To minimise the risk of underfeeding, aspiration and entanglement.
❑ If appropriate encourage the child to suck a dummy during feed ❑ Older child, give feed at dinner table during meal time and allow to play with feeding utensils	▪ Encourages an association of sucking with feeding sensation ▪ Encourages play and socialisation. (Huband and Trigg, 2000)
❑ When feed is complete, turn off pump and disconnect feeding set. ❑ Flush the tube with specified amount of water.	▪ ▪ To ensure the tube is clear from milk and to prevent blockages (Huband and Trigg, 2000; NICE, 2003; NHS QIS, 2007)
❑ Discard used syringes and giving set	▪ To prevent reuse as they may not

(if single use).	be effective or safe (MHRA, 2006) ▪ To reduce the risk of cross infection and contamination(NICE, 2003; DoH, 2010)
❑ Tidy away equipment and wash hands	▪ To ensure the child's safety and reduce the risk of cross infection (NICE, 2003; DoH, 2010)
Additional information: 1. When using decanted feeds, giving sets must be changed after every feed and should only hang for 4hours (NICE, 2003; DoH, 2010) 2. When using ready to hang bags, giving sets can be used for 24hrs, if kept as a closed circuit (NICE, 2003; DoH, 2010). 3. An NGT/OGT does not have a clamp in place. When connecting and disconnecting syringe/giving set to the tube, ensure the tube end is folded over to prevent stomach contents leaking out.	

Procedure for Giving a Continuous Feed using a feed pump, via a Naso-gastric Tube (NGT) or Oro Gastric tube (OGT)

Aim: To complete the feed safely and therefore maintain optimal nutritional status.

Equipment: Disposable apron (as appropriate)
Disposable gloves
Appropriate feeding pump
Appropriate feed giving set
Freshly drawn tap water (cold tap) for children over 1yr to flush tube
Cooled boiled water (or sterile) for children under 1yr to flush tube
Sterile water for children who are hospitalised to flush tube (NICE, 2003)

Feed at room temperature (remove from fridge 30 minutes before) (NHS QIS, 2007)

Syringes x 2 – 10ml/20ml for PVC, 50ml for polyurethane (silk) tube
Merck Serono pH indicator strips (pH range 0-6)

Action:	Rationale:
❑ Apply apron (if appropriate) ❑ Wash hands and apply gloves ❑ Prepare feed and equipment in a clean area ❑ Check feed (feed type; expiry date; colour; smell. If the feed is curdled, do not use)	▪ To reduce the risk of cross infection /encourage good hygiene (Anderton, 1995; Pratt, 2001; NICE 2003; DoH 2010). ▪ To ensure correct feed is delivered to the child safely.
❑ If using powder feed, ensure it is made up correctly according to Dietitian instructions.	▪ To ensure child receives correct concentration of feed (NHS QIS, 2007).
❑ Explain what you are going to do - age appropriately. ❑ Position the child either sitting or nursed at a 30° angle.	▪ To prepare the child physically and psychologically. ▪ To prevent aspiration of feed into the lungs (Rudolph et al, 2001 cited in NHS QIS, 2007
❑ Attach feed to giving set or decant feed into bag using a non touch technique.	▪ To prepare for feeding (NICE, 2003).
❑ Plug in and switch on feeding pump. ❑ Test the alarm on the pump. ❑ Load the giving set into the pump. ❑ Clear the volume infused. ❑ Prime the set via the pump.	▪ Safety checks to ensure the pump and alarms are working (Huband and Trigg, 2000). ▪ For accurate measurement of feed to be delivered (MDA/2007/098). ▪ To prevent air entering into the stomach and causing discomfort to the child (NHS QIS, 2007; FreseniusKabi, 2006).
❑ Set the pump to the correct rate (mls/hr).	▪ To ensure feed is given at correct rate, volume and over the specified

❑ If a specific volume of feed is to be delivered, use the appropriate function on the pump and set a total volume for delivery. Pump is not to be switched off during administration of feed.	time for the child (Huband and Trigg, 2000; NHS QIS, 2007).
❑ Observe and document external length of naso-gastric tube on checklist ❑ Attach empty appropriate size syringe to tube ❑ Aspirate (draw back) 2-5mls of stomach contents into the syringe. ❑ Place aspirate onto pH indicator strips ❑ Record pH on naso-gastric tube confirmation checklist ❑ If pH is less than 5.5 commence feeding[2,3] ❑ If you are unable to obtain a pH below 5.5 please refer to troubleshooting guidelines "Unable to obtain aspirate"	▪ To ensure tube has not been displaced (NPSA,2011). ▪ To test if tube is in correct position within the stomach (NPSA,2005). ▪ Accurate record keeping ensuring feeding can commence safely and ensure tube has not displaced (NPSA, 2011). ▪ pH above 5.5 may indicate bronchial placement of NGT (NPSA, 2005). ▪ To ensure safe feeding via the naso-gastric tube (NPSA, 2005).
❑ Attach syringe filled with specified amount of water to tube. ❑ Flush tube with water. ❑ Disconnect syringe and connect the end of the feeding line to tube using a non touch technique. ❑ You may need to remove the end of the feeding set before connection to the tube.	▪ To check patency of NGT/OGT and hydrate the child or young person (NHS QIS, 2007). ▪ To reduce the risk of infection to the child or young person (NICE, 2003) ▪ To have a safe and secure connection
❑ Set the pump to run. **CHILD SHOULD NOT BE LEFT ALONE DURING FEEDING**	To minimise the risk of underfeeding, aspiration and entanglement.
❑ If appropriate encourage the child to suck a dummy during feed ❑ Older child, give feed at dinner table during meal time and allow to play with feeding utensils	▪ Encourages an association of sucking with feeding sensation ▪ Encourages play and socialisation. (Huband and Trigg, 2000)
❑ When feed is complete, turn off pump and disconnect feeding set. ❑ Flush the tube with specified amount of water.	▪ To ensure the tube is clear from milk and to prevent blockages (Huband and Trigg, 2000; NICE, 2003; NHS QIS, 2007)
❑ Discard used syringes and giving set (if single use).	▪ To prevent reuse as they may not be effective or safe (MHRA, 2006) ▪ To reduce the risk of cross infection and contamination (NICE, 2003; DoH, 2010)
❑ Tidy away equipment and wash hands	▪ To ensure the child's safety and reduce the risk of cross infection (NICE,

	2003; DoH, 2010)

Additional information:

4. This type of feeding via an NGT/OGT is not recommended for overnight within the community setting due to the risks associated with a displaced tube. It will only be used when alternative regimes have been tried but not successful. A referral for insertion of gastrostomy must be made as a matter of urgency.
5. When using decanted feeds, giving sets must be changed after every feed (NICE, 2003; DoH, 2010)
6. Hospital setting: decanted feeds and sets should be changed every four hours (NICE, 2003; DoH, 2010)
7. Community setting for overnight feeds: decanted feeds and sets should be changed every four hours due to the instability of decanted feeds and risk of infection (NICE, 2003; DoH, 2010). It is acknowledged that some families may choose to hang these feeds for the entirety of the night but they should be made aware of the risks associated with this practise.
8. Sterile feeds and giving set can be used for 24hrs, if kept as a closed circuit (NICE, 2003; DoH, 2010).
9. An NGT/OGT does not have a clamp in place. When connecting and disconnecting syringe/giving set to the tube, ensure the tube end is folded over to prevent stomach contents leaking out.

Procedure for Giving a Bolus Feed using a gravity feeding set, via a Naso-gastric Tube (NGT) or Oro Gastric tube (OGT)

Aim: To complete the feed safely and therefore maintain optimal nutritional status.

Equipment: Disposable Apron (if appropriate)
Disposable gloves
Appropriate gravity feed giving set
Freshly drawn tap water (cold tap) for children over 1yr to flush tube
Cooled boiled water (or sterile) for children under 1yr to flush tube
Sterile water for children who are hospitalised to flush tube (NICE, 2003)

Feed at room temperature (remove from fridge 30 minutes before) (NHS QIS, 2007)

Syringes x 2 – 10ml/20ml for PVC, 50ml for polyurethane (silk) tube
Merck Serono pH indicator strips (pH range 0-6)

Action:	Rationale:
❑ Apply apron (if appropriate) ❑ Wash hands and apply gloves ❑ Prepare feed and equipment in a clean area ❑ Check feed (feed type; expiry date; colour; smell. If the feed is curdled, do not use)	▪ To reduce the risk of cross infection /encourage good hygiene (Anderton, 1995; Pratt, 2001; NICE 2003; DoH 2010). ▪ To ensure correct feed is delivered to the child safely.
❑ If using powder feed, ensure it is made up correctly according to Dietitian instructions.	▪ To ensure child receives correct concentration of feed (NHS QIS, 2007).
❑ Explain what you are going to do - age appropriately. ❑ Position the child either sitting or nursed at a 30° angle.	▪ To prepare the child physically and psychologically. ▪ To prevent aspiration of feed into the lungs (Rudolph et al, 2001 cited in NHS QIS, 2007)
❑ Observe and document external length of naso-gastric tube on checklist ❑ Attach empty appropriate size syringe to tube ❑ Aspirate (draw back) 2-5mls of stomach contents into the syringe. ❑ Place aspirate onto pH indicator strips ❑ Record pH on naso-gastric tube confirmation checklist ❑ If pH is less than 5.5 commence feeding[2,3]	▪ To ensure tube has not been displaced (NPSA,2011). ▪ To test if tube is in correct position within the stomach (NPSA,2005). ▪ Accurate record keeping ensuring feeding can commence safely and ensure tube has not displaced (NPSA, 2011).

❑ If you are unable to obtain a pH below 5.5 please refer to troubleshooting guidelines "Unable to obtain aspirate"	▪ pH above 5.5 may indicate bronchial placement of NGT (NPSA, 2005). ▪ To ensure safe feeding via the naso-gastric tube (NPSA, 2005).
❑ Attach syringe filled with specified amount of water to tube. ❑ Flush tube with water and disconnect syringe.	▪ To check patency of NGT/OGT and hydrate the child or young person (NHS QIS, 2007)
❑ Prime the giving set by allowing feed to run to the end of the line and lock roller clamp.	▪ To prevent air entering into the stomach and causing discomfort to the child (Huband and Trigg, 2000).
❑ Connect the end of the giving set to the tube using a non touch technique. ❑ You may need to remove the end of the giving set before connecting to the tube. ❑ Allow the feed to enter the stomach by gravity, controlling the flow rate with roller clamp. ❑ The feed should take approx 20minutes (this will vary per child). **CHILD SHOULD NOT BE LEFT ALONE DURING FEEDING**	▪ To reduce the risk of infection to the child or young person (NICE, 2003) ▪ To have a safe and secure connection ▪ To prevent discomfort to the child or vomiting (Huband and Trigg, 2000; NHS QIS, 2007)
❑ If appropriate encourage the child to suck a dummy during feed ❑ Older child, give feed at dinner table during meal time and allow to play with feeding utensils	▪ Encourages an association of sucking with feeding sensation ▪ Encourages play and socialisation. (Huband and Trigg, 2000)
❑ When feed is complete (when the last of the milk is at the tip of the NGT/OGT), disconnect giving set. ❑ Flush the tube with specified amount of water.	▪ To ensure the tube is clear from milk and to prevent blockages (Huband and Trigg, 2000; NICE, 2003; NHS QIS, 2007)
❑ Discard used syringes (if single use) and giving set.	▪ To prevent reuse as they may not be effective or safe (MHRA, 2006) ▪ To reduce the risk of cross infection and contamination (NICE, 2003; DoH, 2010)
❑ Tidy away equipment and wash hands	▪ To ensure the child's safety and reduce the risk of cross infection (NICE, 2003; DoH, 2010)
Additional information: 10. Gravity feeding sets are single use and must be discarded after use (MHRA, 2006). 11. An NGT/OGT does not have a clamp in place. When connecting and disconnecting syringe/giving set to the tube, ensure the tube end is folded over to prevent stomach contents leaking out.	

Trouble Shooting for naso-gastric or oral gastric tube (NGT/OGT)

Remember usual pH of stomach contents should be 5.5 or below. DO NOT FEED if you can not obtain a pH below 5.5

Problem: Unable to obtain an aspirate below 5.5 (after initial placement has been confirmed)	**Causes:** ○ Aspirate removed is too small (only taken from the tube not stomach) ○ Tube is wrongly placed within the lungs, oesophagus or small bowel ○ (Antacid) Medications affecting pH ○ Tube is above fluid level in stomach ○ Tube is occluded (mucosa of stomach or other)
Action:	**Rationale:**
❑ Attach 20ml syringe and try to draw back (aspirate) a further 2-5mls stomach content. ❑ Place liquid on pH indicator strips. ❑ If pH is below 5.5 commence feeding	▪ To ensure fluid aspirated contains stomach content and not just the fluid from the tube ▪ To identify pH of the fluid ▪ To maintain the child's nutrition
❑ Insert up to 5mls of air through the tube ❑ Wait 10-15minutes ❑ Re aspirate stomach contents as above ❑ If pH is below 5.5 commence feeding	▪ To expel any blockages from the tube or to dislodge the tip of the tube from the stomach mucosa(NPSA,2005) ▪ To identify pH of the fluid ▪ To maintain the child's nutrition
❑ Change the child or young person's position ❑ Re aspirate stomach contents as above ❑ If pH is below 5.5 commence feeding	▪ To encourage the tip of the tube to re enter the stomach fluid. ▪ To identify pH of the fluid ▪ To maintain the child's nutrition ▪ (NPSA, 2005)
❑ Try retracting the tube up to 5cm and re aspirate stomach contents as above (if trained to do so). ❑ Try inserting the tube up to 5cm and re aspirate stomach contents as above (if trained to do so). ❑ If pH is below 5.5 commence feeding	▪ To move the tube back into the stomach if it was within the small bowel ▪ To move the tube into the stomach if it was within the oesophagus ▪ To move the tip of the tube back into the fluid within the stomach ▪ (Huband and Trigg, 2000; NPSA, 2005) ▪ To maintain the child's nutrition
❑ Consider the medication given and time given. ❑ If the child/young person can have oral	▪ Antacids will affect the pH as it reduces the acid within the stomach (NPSA, 2011).

fluid, give them a coloured drink and aspirate the tube ❑ If coloured liquid is observed, commence feeding.	▪ The coloured drink should be observed in the aspirate if the tube is within the stomach (NPSA, 2005)
❑ If pH is still above 5.5, remove tube and reinsert if trained to do so. ❑ Contact the parents/guardians or nurses if you are not trained to re pass the tube. ❑ Guidelines for placement of naso-gastric/oral gastric tube should be followed	▪ In case tube is placed within the lungs ▪ Only trained persons should pass a naso-gastric/oral gastric tube (NPSA, 2011). ▪ To ensure the NGT/OGT is correctly placed within the stomach.
Additional information: ○ See section 9.4 re circumstances where it may not be possible to obtain an aspirate between 1 and 5.5 and daily x-rays are not practical or safe for actions to be taken. ○ The NG tube must not be flushed, used for feeding or drug administration until the correct position of the tube has been confirmed by an authorised health professional. (NPSA, 2011)	

Problem: Accidental displacement	**Causes:** ○ Tube accidently pulled out ○ Child has coughed/vomited or sneezed the tube out
Action:	**Rationale:**
❑ Check to see how much the NGT/OGT has been displaced ❑ If feed is being administered, stop feed immediately ❑ If the tube is less than 3cm out of the nostril, gently guide the tube back into place.	▪ To identify whether the tube can be re positioned safely. ▪ To prevent aspiration of feed. ▪ The tube should still be within the oesophagus and can be replaced within the stomach.
❑ Attach 20ml syringe and try to draw back (aspirate) stomach content. ❑ Place aspirate onto pH indicator strips (5.5 or below) ❑ If pH is below 5.5 ensure NGT/OGT is secured in place. ❑ Recommence feeding if previously stopped.	▪ To check for correct tube placement within the stomach (NPSA, 2005) ▪ To prevent further displacement of the tube ▪ To maintain the child's nutrition.
❑ If more than 3cm of the tube has been displaced (through the nose or mouth), apply gloves and remove the tube completely.	▪ Tube has moved too far to be safely repositioned (Medicina, 2011).
❑ If the tube has come completely out of the mouth but remains taped to the face, apply gloves and gently remove the tube completely from the nose.	▪ Tube has been displaced but remains within the oral and nasal cavities.
❑ If the tube is long term, flush tube through with 10mls water and re pass the tube (if trained) following "Passing a NGT/OGT" procedure. ❑ If short term tube, discard and pass new tube (if trained) following "Passing a NGT/OGT" procedure. ❑ If not trained please contact parent/guardian or nurse to pass tube. ❑ Once tube placement is confirmed, recommence feeding if previously stopped.	▪ long term tubes can re used: Medicina – up to 60 days (Medicina, 2011) ▪ Corflo – as long as tube remains viable (MerckSerono,2009) ▪ Short term tubes are single use only (Medicina, 2011) ▪ Only trained staff should pass NGT (NPSA, 2011) ▪ To maintain the child's nutrition
Additional information: ○ If facial tapes securing the NGT/OGT are becoming loose, change the tapes following "procedure for skin care of NGT-OGT" to prevent accidental displacement ○ Try to secure the end of the NGT/OGT in a position that minimises the risk of accidental displacement, For example, on the back of the child's t-shirt, behind the child's ear.	

Problem: Blocked tube after feeding has commenced	**Causes:** ○ Kinked tube or tube clamped ○ Inadequate flushing ○ Viscous feed ○ Drugs/tablets not crushed adequately ○ Stomach contents within tube
Action:	**Rationale:**
❑ Check NGT/OGT for any kinks or pressure on line. ❑ Rectify if any of these problems are found and recommence feeding.	▪ To identify the cause of the blockage ▪ To unblock the tube ▪ To maintain the child's nutrition
❑ Attach 20ml syringe and try to draw back (aspirate) stomach content. ❑ Remove syringe and attach new 20ml syringe with 10mls water and try to flush the tube (use "push-pull" technique). ❑ If the tube flushes, recommence feeding	▪ To try and remove the blockage ▪ To check the tube is free from blockages ▪ To maintain the child's nutrition (NHS QIS, 2007)
❑ Massage the external NGT/OGT, starting from the child's face. ❑ Try and flush the tube with 10mls water ❑ If the tube flushes, recommence feeding.	▪ To try and break up any blockages within the tube. ▪ To check the tube is free from blockages ▪ To maintain the child's nutrition (NHS QIS, 2007)
❑ Try and flush the tube with 10mls warm water. ❑ If the tube flushes, recommence feeding.	▪ To try and disperse the blockage and check the tube is free from blockages. ▪ To maintain the child's nutrition ▪ (NHS QIS, 2007; Dougherty and Lister, 2008; Medicina, 2011)
❑ Try and flush the tube with 10mls Carbonated water (fizzy) - for example Soda water and leave for 30minutes ❑ Try and flush the tube with 10mls water ❑ If the tube flushes, recommence feeding.	▪ To try and disperse the blockage. ▪ (NHS QIS, 2007; Dougherty and Lister, 2008Medicina, 2011) ▪ To check the tube is free from blockages ▪ To maintain the child's nutrition
❑ Remove the NGT/OGT. ❑ If the tube is long term, flush tube through with 10mls water and if free of blockages re pass the tube (if trained) following "Passing a NGT/OGT" procedure.	▪ To check the tube is free from blockages ▪ Long term tubes can re used: Medicina – up to 60 days (Medicina, 2011) ▪ Corflo – as long as tube remains viable (MerckSerono,2009)

❑ If short term tube, discard and pass new tube (if trained) following "Passing a NGT/OGT" procedure. ❑ If not trained please contact parent/nurse to pass tube. ❑ Once tube placement is confirmed, recommence feeding.	▪ Short term tubes are single use only (Medicina, 2011) ▪ Only trained staff should pass NGT (NPSA, 2011) ▪ To allow feeding to recommence ▪ To maintain the child's nutrition

Preventing blockages of NGT/OGT:

- Regular flushing of the NGT/OGT before and after medications and feeds should prevent blockages of tubes (NICE, 2003).
- If the NGT/OGT is not in regular use, it should be flushed with at least 10mls water three times a day – after position is confirmed (Huband and Trigg, 2000; MerckSerono,2009; Medicina, 2011).
- Only administer prescribed feeds and medications via the NGT/OGT.

Other important information:

- If the cause of the blockage is medication, be aware that flushing the contents of the tube into the child could result in a drug overdose.
- Do not use acidic solutions – for example Cola, lemonade or fruit juice as they may make the blockage worse or damage the tube
- Do not use excessive force or syringes smaller than 20mls to flush or aspirate as the high pressure may damage the tube
- Do not insert objects into the tube in an attempt to unblock as this may further damage the tube.

(Huband and Trigg, 2000; Dougherty and Lister, 2008; MerckSerono, 2009)

Problem: Vomiting	**Causes:** ○ Wrong milk ○ Contaminated/Expired milk ○ Inappropriate temperature ○ Feed given too quickly ○ Feeding position of child ○ Delayed gastric emptying ○ Medical reason
Action:	**Rationale:**
❑ Stop the feed ❑ Clear any vomit and mucous from mouth and nose	▪ To assess the child safely and ensure airway is clear. ▪ To make the child comfortable.
❑ Check the child is receiving the correct milk. ❑ Check the expiry date of milk and no obvious signs of contamination/curdling. ❑ Check the milk is at room temperature.	▪ To ensure the milk is not the cause of the vomiting.
❑ Check the rate of the feed if using a feed pump. ❑ If using a gravity feeding set, ensure the feed is given over at least 30 minutes	▪ To ensure the feed is not running too quickly (Huband and Trigg, 2000).
❑ Check the child is seated appropriately (at least 30^{o})	▪ To prevent vomiting and aspiration (Rudolph et al, 2001 cited in NHS QIS, 2007).
❑ Check the child has received anti reflux medication (if prescribed)	▪ To encourage gastric emptying
❑ Wait 20 minutes and aspirate tube prior to recommencing feed as per regime. ❑ If pH less than 5.5 is obtained recommence feeding	▪ To allow the child to recover from the vomiting. ▪ To ensure the tube has not displaced during the vomiting episode (NPSA, 2011)
If vomiting continues when feed is recommenced: ○ Stop Feed ○ Contact dietitian for advice (to review type, rate and feeding regime) ○ Consider medical intervention/review (GP/Community Paediatrician/Hospital medical team).	

Problem: Diarrhoea (stool that is loose, runny, watery)	**Causes:** ○ Medical reason ○ Wrong milk ○ Drug therapy (for example antibiotics) ○ Contaminated/Expired milk ○ Feed given too quickly ○ Osmolarity of feed ○ Migration of tube position
Action:	**Rationale:**
❑ Stop the feed ❑ Clean the child	▪ To assess the child safely. ▪ To make the child comfortable.
❑ Observe and document external tube length ❑ Check tube position by using a syringe, aspirate (draw up) 2- 5mls of stomach contents ❑ Place fluid on pH indicator strips ❑ If pH above 5.5 withdraw the tube up to 5cm and retest	▪ To check for correct tube placement within the stomach (NPSA, 2011) ▪ To test if tube has migrated into the bowel. ▪ If pH above 5.5 then tube is within the small bowel not the stomach. ▪ To remove the tube from the bowel and back into the stomach. (Huband and Trigg, 2000; NPSA, 2005)
❑ Check the child is receiving the correct milk. ❑ Check the expiry date of milk and no obvious signs of contamination/curdling.	▪ To ensure the milk is not the cause of the diarrhoea.
❑ Check the rate of the feed if using a feed pump. ❑ If using a gravity feeding set, ensure the feed is given over at least 30 minutes	▪ To ensure the feed is not running too quickly (Huband and Trigg, 2000).
❑ Check whether the child has started antibiotics or any new medications in the past 24 - 48hours.	▪ To ensure the medication is not the cause of the diarrhoea
❑ If medications are thought to be the cause of the diarrhoea, seek health professional advice.	▪ To ensure the child is safe to continue with medication.
❑ Recommence feed as per regime.	▪ To allow the child to obtain adequate nutrition
If diarrhoea continues when feed is recommenced: ○ Obtain stool sample for Microscopy, culture and sensitivity plus virology ○ Contact dietitian for advice (to review type, rate and feeding regime) ○ Consider medical intervention/review (GP/Community Paediatrician/Hospital medical team). ○ Medical team: Consider medications to check sorbital content; use of anti-diarrhoeal	

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Appendix 1 Ordering codes for naso-gastric tubes

Short term infant tubes 7 days - Medicina

Code	Description	NHS Code
SG6/50	6FR X 50CM	FWM752
SG6/80	6FR X 80CM	FWM748
SG8/50	8FR X 50CM	FWM753
SG8/80	8FR X 80CM	FWM749

Fine Bore long term tubes 60 days - Medicina

Code	Description	NHS Code
NGP6/55	6FR X 55CM	FWM1007
NGP6/75	6FR X 75CM	FWM1006
NGP6/85	6FR X 85CM	FWM1005
NGP8/55	8FR X 55CM	FWM1004
NGP8/75	8FR X 75CM	FWM1003
NGP8/85	8FR X 85CM	FWM1002
NGP8/120	8FR X 120CM	FWM1001
NGP10/85	10FR X 85CM	FWM1000
NGP10/120	10FR X 120CM	FWM999

www.medicina.co.uk/nasogastric-tubes.php?s=8

Corflo ® Naso-gastric Feeding Tubes

Colour code	Size (French)	Length	Merck Serono Code	NHS code
Yellow	6Fr	56cm	090120001	FWM358
Pink	6Fr	92cm	090120003	FWM009
Yellow	8Fr	56cm	090120010	FWM021
Pink	8Fr	92cm	090120011	FWM394
Pink	10Fr	92cm	090120022	FWM736

www.merckserono.co.uk & www.supplychain.nhs.uk

Appendix 2

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Naso-gastric tube placement checklist

This checklist should be completed for all patients requiring naso-gastric tube placement, on insertion and on all subsequent insertions, before administration of artificial nutrition or medication via the naso-gastric tube. Within the Coburn Unit this should be kept at the patient's bedside notes.

Patient Name:
NHS Number/Hospital Number:
DOB:
Clinical environment:

Naso-gastric tube insertion/reinsertion:

Date and time of re/insertion					
Type of NGT *medicina* ***(M)*** *or Corflo* ***(C)*** *Long or short term* ***LT/ST***					
Size NGT (Fr)					
NEX measurement					
External length once secured					
Nostril used on insertion or reinsertion **L/R**					
Aspirate obtained **Y/N**					
pH of aspirate (if obtained)					
x-ray required **Y/N**					
Inserted by:					

X-ray interpretation (if applicable):

Date and time of x-ray interpretation					
Is this the most current x-ray? **Y/N**					
Is the x-ray for the correct patient					
X-ray results. *E.g. "NG has passed down the midline past level of diaphragm and deviates to the left, it is safe to feed via the NGT"*					
X-ray interpreted by:					

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Appendix 3

Naso-gastric tube position confirmation record

Patient Name: **Type NGT:**
NHS Number: **Size:**
DOB:
Ward/School:

The position of the naso-gastric tube should be checked:

- Following initial insertion - nursing staff only (please use placement checklist to record this).
- Before administering each feed
- Before administering water.
- Before giving medications.
- Any new or unexplained respiratory symptoms or if oxygen saturations decrease.
- At least once daily during continuous feeds.
- Following episodes of vomiting, retching or coughing spasms.
- When there is suggestion of tube displacement.

If you are not able to confirm that the tube is in the stomach it should be removed and reinserted by a trained practitioner. This should be documented on the naso-gastric tube placement checklist.

Date									
Time									
pH									
External tube length									
Checked by (signature)									
Date									
Time									
pH									
External tube length									
Checked by (signature)									

If the child or young person develops new or unexplained respiratory symptoms, stop feed and seek medical attention immediately.

Appendix 4

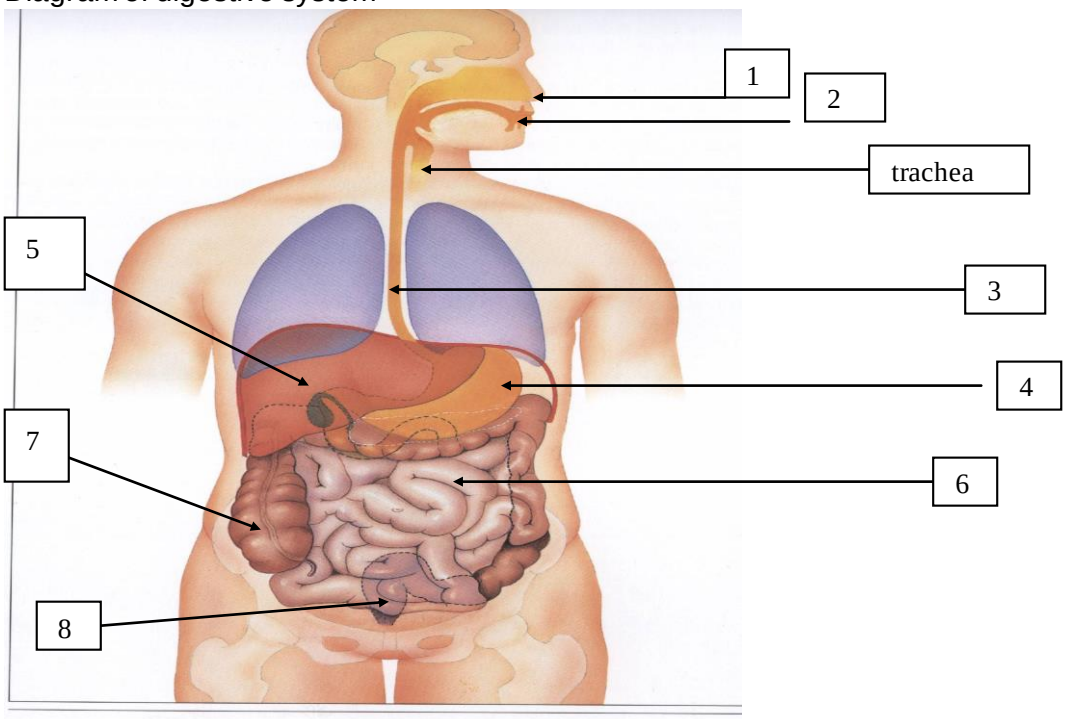
Naso-gastric Tube Feeding Workbook

Name **Date / /**

Section 1

Understanding of reasons for enteral feeding

Diagram of digestive system



Label the organs numbered above and state their functions

1)

2)

3)

4)

5)

6)

7)

8)

Give 3 reasons why a child may have an enteral feeding tube.

1)

2)

3)

List two suggestions (orally) the family may try before an enteral tube is inserted

1)

2)

Who will advise the family around these?

Describe in simple terms what a naso gastric tube is

List two types of naso gastric tubes

1)

2)

List any other enteral feeding tubes you have seen or heard about

Section 2

Carer to understand the safety aspects of enteral feeding

Hand washing is one of the most important safety aspects when feeding a child.

When do you need to wash your hands when feeding a child? (Please underline appropriate answers)

A) Prior to feeding the child
B) After feeding the child
C) Prior to contact with the child.
D) All of the above

Should you wear gloves when feeding a child?

Yes No

Give a reason for your answer

When can you use alcohol hand rub? (Please underline appropriate)

a) Every time you need to clean your hands (instead of using soap and water)
b) On visibly clean hands only
c) You should not use it at all

Should pre-packed feeds be stored in fridge? (please underline)

Yes No

Should freshly mixed feeds be stored in fridge? (please underline)

Yes No

Should you give a feed taken straight from the fridge? Please explain your reasoning.

_____

_____

_____

How long can pre-packed feeds be used (if used in a sterile circuit)?

2hours 4hours 8hours 12hours 24hours

If a feed has been opened how long before you need to discard it?
At room temperature:

2hours 4hours 8hours 12hours 24hours

In the fridge:

2hours 4hours 8hours 12hours 24hours

List four checks (in relation to the milk) that are essential prior to a feed being used

1) _____

2) _____

3) _____

4) _____

What position should children be in whilst receiving an enteral feed?

_____

_____

Why is this?

_____

_____

Section 3
Carer to demonstrate understanding of importance of checking tube position.
Prior to feeding via a naso gastric tube what check is essential to the child's safety?

How do you do this check?

List the equipment you would use.

What reading are you looking for in order to safely feed?

When must **you** carry out this check? (Please underline your answers)

a) prior to giving medications
b) prior to flushing the tube
c) prior to administration of feed
d) when the tube is inserted
e) if the child coughs or vomits

What should **you do** if you do not get the required result?

List three things that may affect the result

1)
2)
3)

What should **you not do** if you do not get the required result?

1)
2)

Why?

Identify what else you must check and document before you commence feeding?

List three ways that might indicate the enteral feeding tube is dislodged.

1)
2)
3)

Section 4
Carer to be competent using equipment required

List all equipment you will require for enteral feeding

1)
2)
3)
4)
5)
6)
7)
8)

What does 'priming' mean?

What equipment do we prime?

1)

List 3 feeding regimes (not routes) in which a feed may be administered

1)
2)
3)

Give a short description of gravity feeding and how it works?

What is a 'flush' and why is it important to use a 'flush'?

What type of water is used for a flush?

Under 1 year old:

Over 1 year old:

Section 5
Carer to be competent in daily care for a child with an enteral feeding tube

Can children with an enteral feeding tube have oral food and drink?

Yes No Depends on the child

Where would you find this information?

Is it important for children to clean their mouths? (please underline)

Yes No

If yes, how often should it be performed? (please underline)

Once daily Twice daily 3 times daily

How do you protect the skin on the child's face when a naso gastric tube is in place?

What is tube rotation (Nasogastric tube)?

How often should a tube be rotated (Nasogastric)?

Why do we rotate tubes (Nasogastric)?

Section 6
Carer to be aware of potential problems and solutions

Can you change the enteral feeding tube? (please underline)

Yes No

How would you recognise if the tube is blocked?

How can blockages in the tube be kept to a minimum?

Explain what you would do if you suspected that the tube was blocked (before calling parents or nursing team)

1)

---

2)

What would you do if you could not unblock the tube?

Explain what you would do if the tube came out:
Less than 2cms from nose:

More than 2cm out of the nose:

Out of the mouth:

Describe what you would do if a child developed vomiting, diarrhoea or abdominal pain during feeding?
1)
2)
3)

List four things that may cause vomiting, diarrhoea or abdominal pain.
1)
2)
3)
4)

Section 7
Carer to demonstrate an understanding of the psychological impact of enteral feeding.

Is it important that the child joins the family at meal times? (please underline)

Yes No

Give a reason for your answer.

List 5 ways you think enteral feeding may impact on a family
1)
2)
3)
4)
5)

Workbook Assessment Details:

Note – this workbook must be assessed by a competent member of CCNS and forms part of your competency.

Workbook assessed by _____

Signature _____

Date _____

Appendix 5

Competency for Passing a Naso Gastric Tube

Name: _____

Date Commenced: _____

I Initial Training
P Practical Training
C1 Competent to practice
C2 Competent and experienced
S Competent to supervise others

Q Assessed through questions
D Assessed through demonstration

The 'level reached' section must be dated and initialled by a Registered Nurse who has achieved this Competency. They must also sign the last page of this record to enable a record of assessors to be kept.

AREA OF CONCERN	REQUIRED SKILLS AND KNOWLEDGE	LEVEL REACHED				
		I	P	C1	C2	S
1) Able to understand reason for naso-gastric feeding tube.	○ Anatomy & physiology of the gastrointestinal tract and relative position of naso-gastric tube. **Q** ○ The indications for a naso-gastric feeding tube. **Q** ○ Any additional problems the child may have that may complicate feeding – reflux, cleft palate. **Q** ○ Identify whether the child can take oral food fluid, give a rationale for answer. **Q**					
2) To understand the psychological issues of feeding via a naso-gastric tube for the child and family.	○ Preparation of the child appropriate to their level of understanding. **D** ○ Importance of oral hygiene and mouth care – how					

	often. **Q** ○ The impact that naso-gastric feeding has on the child and family. **Q**					
3) To understand the safety aspects of inserting a naso-gastric tube	○ Safe hand washing technique. **D** ○ Appropriate preparation of equipment and accessibility **Q/D** ○ Check all equipment for integrity **Q/D** ○ Correct positioning of the child **Q/D** ○ Use of appropriate aids (dummy/drinks) **Q/D** ○ Identify the risks involved with passing a naso-gastric tube **Q**					
4) Competent in passing the naso-gastric tube	○ Appropriate NEX measurement taken **Q/D** ○ Able to demonstrate correct procedure for passing: (delete as required) **D/Q** ○ Corflo silk tube with stylet ○ Medicina long term tube with guide wire ○ Medicina short term tube ○ Able to demonstrate correct procedure for removal of guide wire/stylet **D/Q** ○ Secures tube in place appropriately **D** ○ Identifies when to stop procedure **Q/D**					
5) Demonstrate understanding of importance of checking tube position	○ Demonstrate how to test for acid reaction with pH indicator strips. **D/Q** ○ Able to identify when a tube must be tested (NPSA) **Q/D**					

	○ Able to identify range for positive pH **Q** ○ Reasons why acid reaction may not be obtained. **Q** ○ What to do if acid reaction is not obtained. **Q/D** ○ Reasons that might affect pH level **Q/D** ○ Who to contact and when **Q**					
6) Competent with daily care of tube	○ Signs of skin irritation and what they would do if this were observed. **Q** ○ Rotation of sites each tube insertion **Q/D** ○ Identify tapes used to secure and how to obtain **Q** ○ Identify when to flush tube and how much water **Q**					
7) To be aware of potential problems and solutions	○ Recognition of feed aspiration into lungs. **Q** ○ What to do if tube is blocked. **Q/D** ○ What to do if tube becomes dislodged. **Q/D** ○ What to do if a child develops vomiting and or coughing **Q/D** ○ Identifies need to re check pH before restarting tube feed **Q/D** ○ What to do if child develops diarrhoea or abdominal discomfort. **Q** ○ Who to contact for advice. **Q**					
8) Show awareness of importance of record keeping	○ Accurate, appropriate documentation **Q** ○ Use of naso-gastric tube placement checklist **Q/D** ○ Use of naso-gastric tube feeding checklist **Q/D** ○ Who to report to. **Q**					

9) Demonstrate awareness of safety aspects when feeding via a naso-gastric tube	○ Storage of feed and equipment. **Q/D** ▪ sterile / un-sterile. **Q** ▪ where to store. **Q** ▪ duration it can be opened for and stored for. **Q** ○ Need to check correct feed at correct temperature, expiry date, required rate, look and smell of feed. **Q/D** ○ Importance of checking tube position prior to feed. **Q/D (**external markings/tapes) ○ Correct positioning of child during and after feed. **Q/D** ○ Clean environment for feed. **Q** ○ Aware of risk with overnight continuous feeding **Q**					
5) Competent feeding via a naso-gastric tube using the equipment required	○ All appropriate equipment checked for integrity and placed accessibly **Q/D** ○ Able to set up Feeding pump and understand alarm systems for **Q/D** ○ Flushing tube before and after feed as specified in care plan. **Q/D** ○ Able to identify why flushing is important Q ○ Appropriate storage and usage of single use devices **Q/D**					

Individual levels assessed by**:** **Name** **initials** **Signature**

_____ _____ _____

_____ _____ _____

_____ _____ _____

Parent/guardian competency

I certify that the person named on this document is competent to carry out the procedure detailed above and that I have current N.M.C. registration and have been assessed as competent within this area.

Overall competency: - **Name** _____ **Signature**_____
Date _____

I, the above named parent/guardian, certify that I am happy to carry out the above procedure within the competencies detailed above. I understand the scope of these competencies. I will not carry out procedures, which are contrary to or not covered by this training

I will seek further training if I have any concerns about my competency

Name _____ Signature _____ Date _____

East London NHS Foundation Trust staff

I certify that the person named on this document is competent to carry out the procedure detailed above and that I have current N.M.C. registration and have been assessed as competent within this area.

Overall competency: - **Name** _____ **Signature**_____
Date _____

I, the above named staff, certify that I am happy to carry out the above procedure within the competencies detailed above. I understand the scope of these competencies. I will not carry out procedures, which are contrary to or not covered by this training.

As a registered nurse I will take responsibility to seek further training if I have any concerns about my competency. In all other respects I will seek all necessary advice, guidance, and further training needed from time to time in order for me to continue to operate within these competencies.

The competency may be withdrawn with immediate effect if my practice is considered to be unsafe or incorrect. An action plan to correct this would then be devised in conjunction with my line manager and appropriate trainer.

Name _____ Signature _____ Date _____

Carers

I certify that the person named on this document is competent to carry out the procedure detailed above and that I have current N.M.C. registration and have been assessed as competent within this area.

Overall competency: - **Name** _____ **Signature**_____
Date _____

I, the above named carer, certify that I am happy to carry out the above procedure within the competencies detailed above. I understand the scope of these competencies. I will not carry out procedures, which are contrary to or not covered by this training.

I will seek further training if I have any concerns about my competency and in any event six weeks before the expiry date of the competency renew my training. Upon the date of expiry of this competency (18months from completion), if my training has not been renewed, or if I have concerns about my competency, I will discontinue undertaking the procedure detailed in this document and seek appropriate advice from a suitably qualified clinician and/or my employer. In all other respects I will seek all necessary advice, guidance, and further training needed from time to time in order for me to continue to operate within these competencies.

The competency may be withdrawn with immediate effect if my practice is considered to be unsafe or incorrect. An action plan to correct this would then be devised in conjunction my line manager and appropriate competent trainer.

Name _____ Signature _____ Date _____

Appendix 6

Competency for Naso Gastric Feeding

Carer's name: _____

Date Commenced: _____

I Initial Training
P Practical Training
C1 Competent to practice
C2 Competent and experienced
S Competent to supervise others

Q Assessed through questions
D Assessed through demonstration

The 'level reached' section must be dated and initialled by a Registered Nurse who has achieved this Competency. They must also sign the last page of this record to enable a record of assessors to be kept.

AREA OF CONCERN	REQUIRED SKILLS AND KNOWLEDGE	LEVEL REACHED				
		I	P	C1	C2	S
1) Understand reason for naso-gastric feeding tube.	○ Anatomy & physiology of the gastrointestinal tract and relative position of naso-gastric tubes. **Q** ○ The indications for a naso-gastric feeding tube. **Q** ○ Any additional problems the child may have that may complicate feeding – reflux, cleft palate. **Q** ○ Identify whether the child can take oral food/fluid, give a rationale for answer. **Q**					
2) Understand psychological	○ Preparation of the child appropriate to their level of					

Issues of feeding via a naso gastric tube for the child and family.	understanding. **D** ○ Loss of "feeding role" for family. **Q** ○ Importance of oral hygiene and mouth care – how often. **Q** ○ The impact that naso-gastric feeding has on the child and their family. **Q**					
3) Understand the safety aspects of feeding	○ Safe hand washing technique. **D** ○ Appropriate preparation of equipment – use of gloves Q/D ○ Storage of feed and equipment. **Q/D** ▪ sterile / un-sterile. **Q** ▪ where to store. **Q** ▪ duration it can be opened for and stored for. **Q** ○ Need to check correct feed at correct temperature, expiry date, required rate, look and smell of feed. **Q/D** ○ Importance of checking tube position prior to feed. **Q/D (**external markings/tapes) ○ Correct positioning of child during and after feed. **Q/D** ○ Clean environment for feed. **Q** ○ Aware of risks with overnight continuous feeding **Q**					
4) Demonstrate understanding of importance of checking tube position	○ Carer to demonstrate how to test for acid reaction with pH indicator strips. **D/Q** ○ Able to identify when a tube must be tested (NPSA) **Q** ○ Able to identify range for positive pH **Q** ○ Reasons why acid reaction may not be obtained. **Q** ○ What to do if acid reaction is not obtained. **Q/D** ○ Reasons that might affect pH level **Q/D**					

	○ Who to contact and when **Q**					
5) To be competent using equipment required to carry out nasogastric tube feeding	○ All appropriate equipment checked for integrity and placed accessibly **Q/D** ○ Able to set up Feeding pump and understand alarm systems for **Q/D** ○ Flushing tube before and after feed as specified in care plan. **Q/D** ○ Able to identify why flushing is important **Q** ○ Appropriate storage and usage of single use devices **Q/D**					
6) To be competent with daily care of tube	○ Signs of skin irritation and what they would do if this were observed. **Q**					
7) To be aware of potential problems and solutions	○ Recognition of feed aspiration into lungs. **Q** ○ What to do if tube is blocked. **Q/D** ○ What to do if tube becomes dislodged. **Q/D** ○ What to do if a child develops vomiting and or coughing Q/D ○ Identifies need to re check pH before restarting tube feed **Q/D** ○ What to do if child develops diarrhoea or abdominal discomfort. **Q** ○ Who to contact for advice. **Q**					
8) To show awareness of importance of	○ Accurate, appropriate documentation. **Q/D**					

record keeping	○ Use of naso-gastric placement checklist. **Q/D** ○ Who to report to. **Q** ○ When to contact Parents or CCNs. **Q**					

Individual levels assessed by**:** **Name** **initials** **Signature**

_____ _____ _____
_____ _____ _____
_____ _____ _____

Parent/guardian competency

I certify that the person named on this document is competent to carry out the procedure detailed above and that I have current N.M.C. registration and have been assessed as competent within this area.

Overall competency: - **Name** _____ **Signature**_____
Date _____

I, the above named parent/guardian, certify that I am happy to carry out the above procedure within the competencies detailed above. I understand the scope of these competencies. I will not carry out procedures, which are contrary to or not covered by this training

I will seek further training if I have any concerns about my competency

Name _____ Signature _____ Date _____

East London NHS Foundation Trust staff

I certify that the person named on this document is competent to carry out the procedure detailed above and that I have current N.M.C. registration and have been assessed as competent within this area.

Overall competency: - **Name** _____ **Signature**_____
Date _____

I, the above named staff, certify that I am happy to carry out the above procedure within the competencies detailed above. I understand the scope of these competencies. I will not carry out procedures, which are contrary to or not covered by this training.

As a registered nurse I will take responsibility to seek further training if I have any concerns about my competency. In all other respects I will seek all necessary advice, guidance, and further training needed from time to time in order for me to continue to operate within these competencies.

The competency may be withdrawn with immediate effect if my practice is considered to be unsafe or incorrect. An action plan to correct this would then be devised in conjunction with my line manager and appropriate trainer.

Name _____ Signature _____ Date _____

Carers

I certify that the person named on this document is competent to carry out the procedure detailed above and that I have current N.M.C. registration and have been assessed as competent within this area.

Overall competency: - **Name** _____ **Signature**_____
Date _____

I, the above named carer, certify that I am happy to carry out the above procedure within the competencies detailed above. I understand the scope of these competencies. I will not carry out procedures, which are contrary to or not covered by this training.

I will seek further training if I have any concerns about my competency and in any event six weeks before the expiry date of the competency renew my training. Upon the date of expiry of this competency (18months from completion), if my training has not been renewed, or if I have concerns about my competency, I will discontinue undertaking the procedure detailed in this document and seek appropriate advice from a suitably qualified clinician and/or my employer. In all other respects I will seek all necessary advice, guidance, and further training needed from time to time in order for me to continue to operate within these competencies.

The competency may be withdrawn with immediate effect if my practice is considered to be unsafe or incorrect. An action plan to correct this would then be devised in conjunction my line manager and appropriate competent trainer.

Name _____ Signature _____ Date _____

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Risk assessment tool

Risk type	Tick as appropriate	Description of service delivery:
Premises		**The delivery of continuous overnight feeding via naso-gastric tube in the community setting.**
Hazardous substance (chemical or biological		
Process/activity	**x**	
Fire		
Equipment		
Service delivery		
Other (please specify)		

Directorate & Service:	**Children and Young People**	**Location**	**(Warehouse K, 2014). Boleyn Medical Centre, 2016.**
Assessor:	**(Katie Render, 2014). Updated Rebecca Daniels, July 2016**	**Assessment date:**	**20/09/2014 (KR) updated 25/7/2016**

Hazards/risks	Current control measures	Additional controls (if column 3 inadequate)	Risk Rating: (remaining risk when all controls are implemented – i.e. columns 3 & 4) – Refer to Trust Management Strategy re risk rating)	Risk priority (Low, Medium or High)
Child becomes entangled in feeding tubes. Risks: Injury Strangulation	This method of feeding is discouraged/avoided where possible.	Identify risk and share with nurse development steering group and governance. Policy to restrict the use of continuous	5	High

	Where NGT is required for >6 months, referral for gastrostomy insertion is made	overnight feeding via naso-gastric tube unless there are exceptional circumstances. Consultant paediatrician to write a letter of responsibility for child who is discharged home on overnight nasogastric tube feeds. Child will not be accepted by CCNS unless this has been received. Where NGT is required for >3 months, referral for gastrostomy insertion is made		
Naso gastric tube becomes displaced Risks: Aspiration Chest infection Death	This method of feeding is discouraged/avoided where possible Where NGT is required for >6 months, referral for gastrostomy insertion is made	Identify risk and share with nurse development steering group and governance. Policy to restrict the use of continuous overnight feeding via naso-gastric tube unless there are exceptional circumstances. Consultant paediatrician to write a letter of responsibility for child who is discharged home on overnight nasogastric tube feeds. Child will not be accepted by CCNS unless this has been received. Where NGT is required for >3 months, referral for gastrostomy insertion is made	5	High
NGT removed entirely overnight Risks: Dehydration	This method of feeding is discouraged/avoided where possible	Identify risk and share with nurse development steering group and governance.	5	High

Hypoglyceamia	Where NGT is required for >6 months, referral for gastrostomy insertion is made	Policy to restrict the use of continuous overnight feeding via naso-gastric tube unless there are exceptional circumstances. Consultant paediatrician to write a letter of responsibility for child who is discharged home on overnight nasogastric tube feeds. Child will not be accepted by CCNS unless this has been received. Where NGT is required for >3 months, referral for gastrostomy insertion is made		

Action plan

Action	Implementation date	Actionee	Progress
Enteral feeding policy is amended to advise the cessation of continuous overnight feeding unless there are exceptional circumstances.	21/08/2013	Katie Render	Policy amended – to be presented at the Children and Young Peoples clinical governance meeting 22/3/2013
Teaching of the risks of continuous overnight feeding is to form part of naso gastric feeding competencies.	21/08/2013	Katie Render	Teaching of the risk of continuous overnight feeding is to be documented in the competencies which form part of enteral feeding policy.

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Risk assessment tool

Risk type	Tick as appropriate	Description of service delivery:
Premises		**Programming of Fresenius Kabi feeding pumps to deliver a specific volume of feed.**
Hazardous substance (chemical or biological		
Process/activity		
Fire		
Equipment	**x**	
Service delivery		
Other (please specify)		

Directorate & Service:	**CYPS**	**Location**	**(Warehouse K, 2014). Boleyn Medical Centre 2016**
Assessor:	**(Katie Render, 2014). Reviewed 2016 RDaniels – no changes**	**Assessment date:**	**20/09/2014. Reviewed 25/7/2016**

Hazards/risks	Current control measures	Additional controls (if column 3 inadequate)	Risk Rating: (remaining risk when all controls are implemented – i.e. columns 3 & 4) – Refer to Trust Management Strategy re risk rating)	Risk priority (Low, Medium or High)
Power failure to the feeding pump during administration of feed will not take deduct the volume of feed already infused at point of power failure and will re-infuse the original volume. Risks:	The fault is acknowledged in the enteral feeding policy.	The fault is to be taught to all those trained to administer enteral feeds with associated risks identified. Carers will only be deemed competent if there is evidence that this fault and associated risks have been taught in	5	High

Over feeding of patient Vomiting Hyperglycaemia Aspiration Fluid overloading (cardiac, respiratory and renal implications)		competency documentation.		

Action plan

Action	Implementation date	Actionee	Progress
The teaching of this risk and prevention measures to be included in competency documentation.	21/08/2013	**Katie Render**	To share with paediatric governance group 22/08/2013 and nurse led steering group in September.