

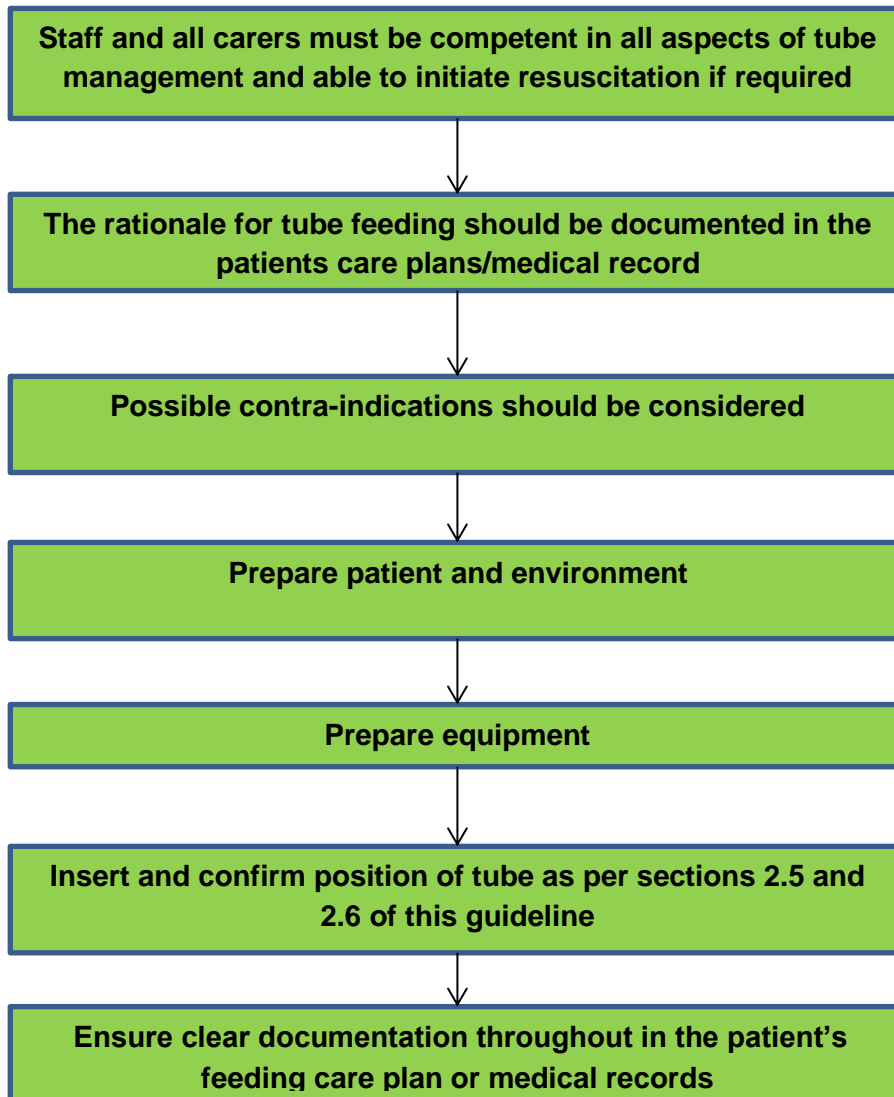
Nasogastric and Orogastric Tube Management in the Infant, Child and Young Person on the Paediatric Ward Clinical Guideline

V2.0

August 2022

Summary

Please refer to the Nasogastric and Orogastric tube management on NNU and Transitional Care- Clinical Guideline for guidance on caring for a neonate.



1. Aim/Purpose of this Guideline

- 1.1. This guideline aims to promote the safe management of an infant, child or young person requiring a naso/orogastric tube on a paediatric ward.

The guidance will incorporate the NHS improvement resource and patient safety alerts for safe placement of naso/orogastric tubes in adults, children and infants.

- 1.2. This guideline is applicable to all practitioners passing and using a nasogastric or orogastric tube in a child or young person on a paediatric ward.
- 1.3. This version supersedes any previous versions of this document.

Data Protection Act 2018 (General Data Protection Regulation – GDPR) Legislation

The Trust has a duty under the Data Protection Act 2018 and General Data Protection Regulations 2016/679 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed, and documented. We cannot rely on opt out, it must be opt in.

Data Protection Act 2018 and General Data Protection Regulations 2016/679 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the Data Protection Act 2018 and General Data Protection Regulations 2016/679 please see the Information Use Framework Policy or contact the Information Governance Team

Royal Cornwall Hospital Trust rch-tr.infogov@nhs.net

2. The Guidance

- 2.1. The placement of a nasogastric or orogastric tube is common practice across neonatal, maternity and child health. It is a useful tool for stomach decompression and medication administration, but is primarily used for the maintenance of growth and development in patients who are unable to achieve adequate intake of fluid and nutrients orally.

However, there is a small risk that the tube can be misplaced into the lungs during insertion or move out of the stomach at a later stage. Staff and carers caring for children with a naso/orogastric tube in place should have adequate, competency-based training for the insertion and assessment of the position of feeding tubes prior to their use.

Staff including students must have completed the NG Tube insertion and NG Tube feeding competency documents (available on shared drive Nursing Education Folder) and deemed as competent.

Please see the Nasogastric and Orogastric tube management on NNU and Transitional Care- Clinical Guideline for guidance on caring for a neonate.

- 2.2. Staff and all carers must be competent in all aspects of tube management and able to initiate resuscitation if required.
- 2.3. The rationale for tube feeding should be documented in the patients care plans/medical record.

However, possible contra-indications should be considered:

- Anatomical deformity
- Trauma
- Recent oral, nasal or oesophageal surgery
- Severe gastro-oesophageal reflux disease (GORD)
- Take into consideration that children on anti- reflux medication can present with a high PH- of 6-7

Possible complications following insertion include:

- Misplacement into the trachea or oesophagus leading to aspiration or pneumonia;
- Gastro-oesophageal reflux;
- Vasovagal response on passage of tube resulting in apnoea, bradycardia and cyanosis;
- Nasal, pharyngeal and oesophageal trauma;
- Trauma to skin underlying tube fixation device;
- Malposition following coughing or retching during a feed;
- Tube embedded in the gastric wall;

2.4. Preparation of patient and environment

- 2.4.1. Explain the procedure to the child/family/carer with adequate information, seeking consent from child/carer as appropriate.
- 2.4.2. Document in the medical/nursing notes
- 2.4.3. The play specialist may be useful in assisting the preparation of the child and family with the use of appropriate aids.
- 2.4.4. Ensure adequate light.
- 2.4.5. Ensure clean surface for equipment.
- 2.4.6. If appropriate the procedure can take place at the patient's bedside, however the treatment room can be used if required.

2.5. Preparation of equipment

- 2.5.1. Select the most appropriate sized tube, that is sterile, radio-opaque, phthalate free, have graduated markings and oral syringe compatible **ONLY**.
- 2.5.2. Sterile water for lubrication of the tube (not neonates).
- 2.5.3. pH indicator paper.
- 2.5.4. Skin protection suitable for patient e.g. Comfeel, Duoderm, Cavalon.
- 2.5.5. Tape to secure in place.
- 2.5.6. Oral/enteral syringe to aspirate – minimum of 10ml syringe (generates 20 PSI). [N.B. 1ml generates 150 PSI, 3ml generates 120 PSI, 5ml generates 90 PSI].
- 2.5.7. Appropriate personal protective equipment (PPE) relevant to patient's condition e.g. gloves/apron.
- 2.5.8. Disposal bag.

2.6. Insertion of the nasogastric or orogastric tube

- 2.6.1. Identify the patient as per the RCHT policy for patient identification.
- 2.6.2. Identify appropriate route, e.g. consider orogastric if there is respiratory distress or nasal anomalies; nasogastric if no respiratory compromise.
- 2.6.3. Ensure appropriate timing to pass the tube; i.e. be aware of the risk of vomiting if passing a tube midway or immediately following a feed.
- 2.6.4. Find the most appropriate position for the infant or child, depending on their age and their ability to co-operate. Consider methods of therapeutic holding with child/carer consent; e.g. child sitting on parent/carers lap, infant may be wrapped in a sheet or blanket (RCN, 2010): or comfort measures such as colostrum/maternal expressed breast milk, sweetease, or a dummy for infant/child to suck on.
- 2.6.5. Wash and dry hands in accordance with RCHT policy and put on PPE.
- 2.6.6. If appropriate ask the child which nostril they prefer, ensuring the nostril is clear of debris.
- 2.6.7. Check the tube is intact and measure the required length of the tube; for infants and children – measure from the nose to the earlobe and then to the xiphisternum (NEX), Please see the Nasogastric and Orogastric tube management on NNU and Transitional Care- Clinical Guideline for guidance on caring for a neonate.
- 2.6.8. Apply skin protection to the nose, cheek or chin if used and prepare securing tape
- 2.6.9. Gently pass the tube into the nostril and aiming down and back, advancing along the nasopharynx to the oropharynx (or along the oropharynx if inserting in the mouth) to the measured length and hold into position. Use comfort measure to assist in the passage of the tube if necessary. If the patient exhibits signs of distress, or malposition then remove the tube and restart the procedure.
- 2.6.10. Test the position of the tube as per the NPSA algorithm (2011) with enteral syringe
- 2.6.11. Once correct position has been confirmed, secure the tube.
- 2.6.12. Comfort and settle the infant/child as required.
- 2.6.13. Dispose of waste as per RCHT policy.
- 2.6.14. Wash and dry hands as per RCHT policy.

2.7. Confirming the position of a naso/orogastric tube

2.7.1. The position of all tubes should be checked:

- Following initial insertion;
- Before administering each feed;
- Before giving medication;
- At least once daily during continuous feeds;
- Following episodes of vomiting, retching or coughing;
- Following evidence of tube displacement e.g. loose tape or visible tube appears longer

2.7.2. If the patient is receiving continuous feeds, tube checking should be synchronised with feed changes. When continuous feeds have stopped, wait 15-30 minutes to allow the stomach to empty and the pH level to fall.

- The tube should be checked after vomiting, retching, or coughing during continuous feeding.
- Tube displacement should be considered if there is evidence of loose tape, or the external tube length is longer than when inserted.
- If replacing the tube Staff must be mindful the using a longer tube in a neonate or baby is a strangulation risk.
- Document and record the size and length of the tube.

2.7.3. pH testing using a CE marked pH indicator paper fit for use on human gastric aspirate is the first line method for checking tube position.

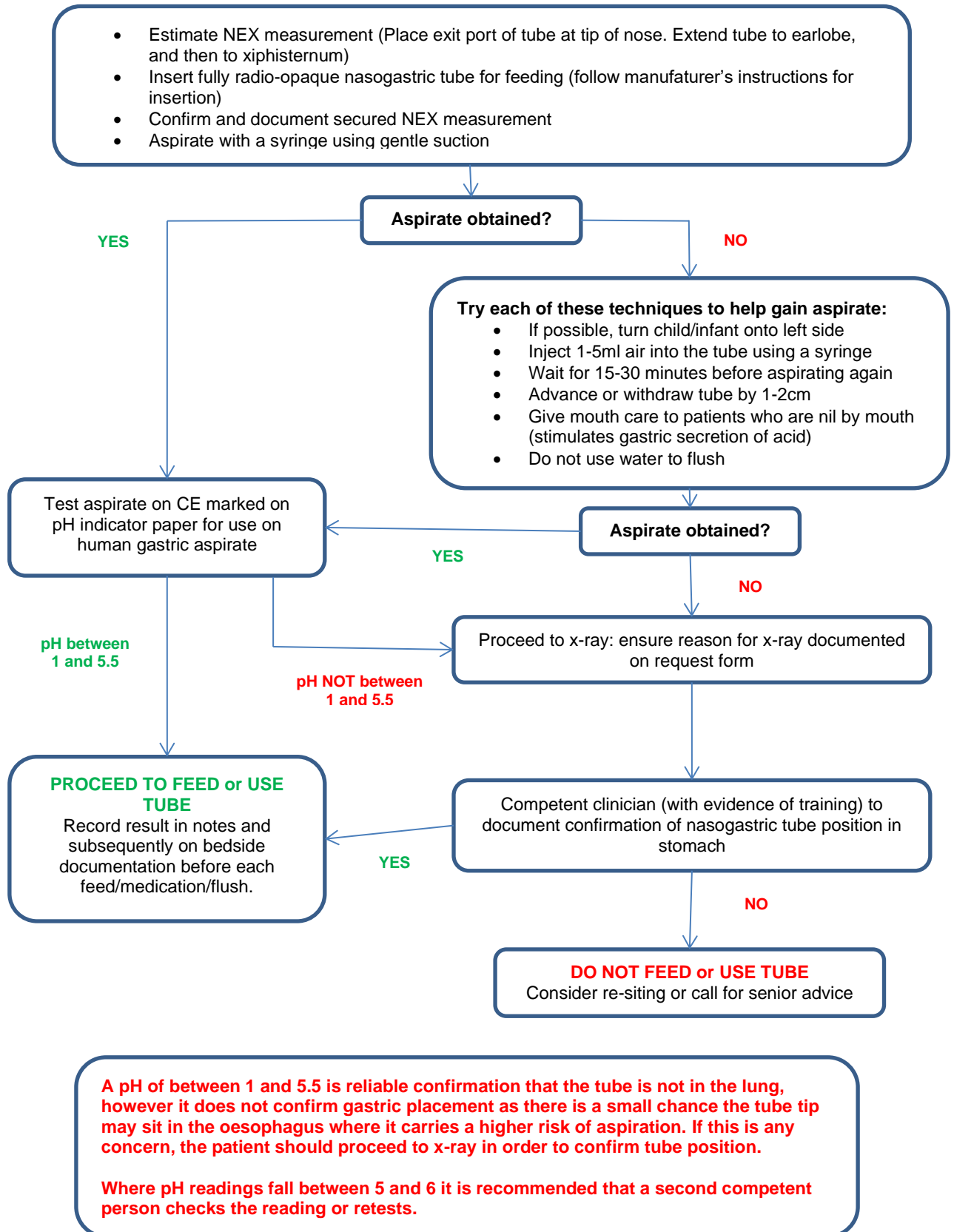
- Aspirate a small amount of stomach contents using a 10ml/20ml/50ml syringe.
- Note; For neonates a 10 ml syringe should be used.
- Test the aspirate on the pH indicator paper.
- For all gastric tubes the **safe pH range is between 1 – 5.5**.

* Take into consideration that children on anti- reflux medication can present with a high PH- of 6-7

- If no aspirate can be obtained **OR** if the aspirate is **NOT** between 1 – 5.5 follow NPSA decision tree for nasogastric tube placement checks in CHILDREN and INFANTS. See page 8.

- Complete the relevant care plan

2.7.4. Decision tree for nasogastric tube placement checks in children and infants – (not neonates - Please see the NNU Clinical Guideline for guidance on caring for a neonate.)



- 2.7.5. If confirmation by gastric aspirate is not successful, the use of x-ray is considered a second line intervention. This is the most accurate of testing method, however misinterpretation is common, while minimising radiation exposure is also important to consider. It is therefore not to be used 'routinely' and assessment of the patient should be made. If x-ray is required, fully radio-opaque tubes should be used to enable accurate interpretation and position should be documented in the patient's medical records.

2.8. Techniques that must NEVER be used when testing naso/orogastric tube position

- Introducing fluids or medication into the respiratory tract or pleura via a misplaced nasogastric or orogastric tube is a NEVER EVENT. The following methods MUST NOT be used to check position of a gastric tube:
 - Auscultation of air insufflated through the feeding tube – 'Whoosh' test;
 - Testing the acidity/alkalinity of aspirate using blue litmus paper;
 - Interpreting absence of respiratory distress as an indicator of correct positioning;
 - Monitoring bubbling at the end of the tube;
 - Observing the appearance of the feeding tube aspirate;
 - Injecting fluid into the tube – if you suspect a tube is blocked, remove immediately and insert a new tube.

2.9. Gastric decompression (emptying of stomach and gastric contents)

- 2.9.1. Gastric decompression may be required for the infant/child who is:
- Nil by mouth and receiving Humidified High Flow Nasal Cannula Oxygen, CPAP or mechanical ventilation;
 - Receiving resuscitation;
 - Nil by mouth pending investigation of gastro-intestinal problems;
 - Nil by mouth prior to, during and after surgery;
 - To determine absorption of feed.

- 2.9.2. To facilitate gastric decompression, insert the largest possible gastric tube (particularly if there is a bilious aspirate/surgical concerns), place on free drainage using a closed bag with drainage facility. Intermittently aspirate the tube with a minimum 10ml syringe. Frequency of aspiration is dependent upon the condition of the baby and the volume of gastric aspirate.

2.10.Exclusion of congenital anomalies

- 2.10.1. The inability to pass a nasogastric tube beyond the nares is indicative of choanal atresia and is a medical emergency;
- 2.10.2. Resistance to passage of a naso/orogastric tube beyond the oropharynx is indicative of oesophageal atresia;
- 2.10.3. A gastric tube should be inserted prior to chest or abdominal x-ray to facilitate differential diagnosis.

2.11.Administering Medications via a feeding tube

- 2.11.1. Wash and dry hands as per the RCHT policy and wear appropriate PPE.
- 2.11.2. The position of the feeding tube should be confirmed immediately prior to administering medication.
- 2.11.3. Use oral syringes that are designed for use with a gastric tube, use a drawing up device to ensure accuracy e.g. medicine straw.
- 2.11.4. Use liquid or soluble preparations where possible, if unavailable please consult with the pharmacist if required to give via a gastric tube.
- 2.11.5. Ensure compatibility if administering more than one medication.

2.12.Administering feed via a nasogastric tube

- 2.12.1. Gain consent
- 2.12.2. Gather equipment.
- 2.12.3. Always check the infant/child/young person's feeding plan/dietician plan to ensure correct feed and volume is selected
- 2.12.4. Wash and dry hands as per the RCHT policy and wear appropriate PPE.

2.13.Gravity feeding

- 2.13.1. A new enteral syringe should be used for each feed. (Note that in the community some families may be using syringes which can be washed and reused)
- 2.13.2. Select an appropriately sized syringe for the volume of feed to be administered
- 2.13.3. Remove the plunger of the syringe and attach to the end of the nasogastric tube
- 2.13.4. Pour required amount of feed/fluid into the syringe and allow it to administer via gravity
- 2.13.5. The speed of the feed can be altered by holding the syringe in a higher or lower position
- 2.13.6. Flush the tube with at least 5mls of sterile water post feed to prevent blockage. (Some patients require water flushes pre feed as well as per their individual feeding plan).
- 2.13.7. Document on relevant feeding chart – include pH obtained on aspirate.

2.14.Pump feeding

- 2.14.1. Staff must have received appropriate training to administer feeds via the feed pump
- 2.14.2. Pump feeds via nasogastric tube must only be commenced after a risk assessment and close observation of the child should be undertaken to ensure that the nasogastric tube is not displaced during the feed. Tube position must be checked at least hourly, after initial position check using pH level position of the tube can be checked using the length of tube at the child's nose.
- 2.14.3. Prepare equipment and feed as per gravity feeding
- 2.14.4. ·Select correct administration set. A new administration set must be used for each feed.
- 2.14.5. Prime the administration set with feed and programme the pump referring to the patient's personal feeding plan.
- 2.14.6. Once tube position confirmed, connect administration set to the nasogastric tube and commence the feed. Some patients require a water flush prior to commencing feeds and this can be given via a bolus using a syringe.
- 2.14.7. Pre prepared feeds must be used and taken down within 24 hours, staff must write the date and time of commencing the feed and sign the bottle when starting the feed. Feeds that are mixed and stored in the fridge must be used within 4 hours unless manufacturers guidelines say different– check child's care plan and packing instructions for other instructions. Discard any unused feed.
- 2.14.8. If the child shows signs of respiratory distress, is coughing, or vomits then the feed should be stopped immediately, and the tube position checked using pH level before recommencing feed.

2.15.Skin Integrity.

- 2.15.1. Check the child's nostril for signs of excoriation, redness,
- 2.15.2. Check the child's cheek for signs of soreness.
- 2.15.3. Apply comfeel to the cheek area.
- 2.15.4. If a new tube is inserted alternate nostrils to help prevent skin damage unless contraindicated.

2.16.Documentation

Clear documentation must take place throughout in the patient's feeding care plan or medical records, including:



- Rationale for placement of tube e.g. feeding or medications;
- Date, time and route including left or right nostril;
- Size and length of gastric tube;
- pH, volume and description of aspirate including whether discarded or replaced;
- Tolerance of procedure and any corrective measures required;
- Initiate relevant NG/NO child health plan/feeding chart/fluid balance chart;
- Any attempt in which there was a failure to yield an aspirate and any interventions performed in order to achieve aspirate;
- Confirmation of position on x-ray (if performed);
- Date and time of removal and reason for this.

2.17.Parental/Caregiver Education

Parents whose children have a poor swallow and/or complex needs and are under paediatric care are trained to take on the responsibility of feeding their child until a gastro PEG/JEJ is placed later.

Parents who have children with a long term feeding tube are encouraged to learn to replace them themselves.

*Parent/Carer and Staff competency packs are available for NG tube insertion and NG tube feeding on the Nursing Education shared drive.

<div>Patient ID sticker</div> <div>Royal Cornwall Hospitals NHS Trust</div>	<div>Patient ID sticker</div> <div>Royal Cornwall Hospitals NHS Trust</div>
Nasogastric Tube FEEDING	Nasogastric Tube INSERTION
	
Supervised Competency WORKBOOK Staff and Parents/Carers	Supervised Competency WORKBOOK Staff and Parents/Carers
Completed by: (Relationship to patient)	Completed by: (Relationship to patient)
Supervised by:	Supervised by:
Department:	Department:

3. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	Compliance with policy/Key changes to practice
Lead	Paediatrics guidelines lead, ward managers.
Tool	Audit and review tool
Frequency	As dictated by audit findings
Reporting arrangements	Child health specialty audit
Acting on recommendations and Lead(s)	Paediatrics guidelines lead, ward managers
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned within 3 months, immediately if required. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant staff/stakeholders

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the ['Equality, Inclusion & Human Rights Policy'](#) or the [Equality and Diversity website](#).

4.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Information Category	Detailed Information
Document Title:	Nasogastric and Orogastric Tube Management in the Infant, Child and Young Person on the Paediatric Ward Clinical Guideline V2.0
This document replaces (exact title of previous version):	Nasogastric and Orogastric Tube Management in the Infant, Child and Young Person on the Paediatric Ward Clinical Guideline V1.0
Date Issued/Approved:	July 2022
Date Valid From:	August 2022
Date Valid To:	August 2025
Directorate / Department responsible (author/owner):	Keshia Wrigley; Children's Community Nurse Gemma Allen; Children's Community Nurse Laura Covill; Staff Nurse Yvette Williams; Staff Nurse Tabi Fergus; Practice Development Nurse
Contact details:	01872 252089
Brief summary of contents:	Guideline for use of nasogastric /orogastric tubes in child health.
Suggested Keywords:	Nasogastric Paediatric Tube feeding
Target Audience:	RCHT: Yes CFT: No KCCG: No
Executive Director responsible for Policy:	Medical Director
Approval route for consultation and ratification:	Child Health Audit and Guidelines Group
General Manager confirming approval processes:	Caroline Chappell

Information Category	Detailed Information
Name of Governance Lead confirming approval by specialty and care group management meetings:	Caroline Amukusana
Links to key external standards:	None required
Related Documents:	<p>NHS Improvement. (2016) Patient Safety Alert NHS/PSA/RE/2016/006 Nasogastric tube misplacement: continuing risk of death and severe harm. London (Online) https://improvement.nhs.uk/news-alerts/nasogastric-tube-misplacement-continuing-risk-of-death-severe-harm/ [Last accessed: 27th August 2019]</p> <p>National Patient Safety Agency. (2011) Patient Safety Alert NPSA/2011/PSA002 Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants, London (Online) https://webarchive.nationalarchives.gov.uk/20171030130404/http://www.nrls.npsa.nhs.uk/resources/patient-safety-topics/medical-device-equipment/?entryid45=129640 [Last accessed: 27th August 2019]</p> <p>National Patient Safety Agency. (2005) Patient Safety Alert 05, Reducing the harm caused by misplaced nasogastric feeding tubes. London. (Online) https://webarchive.nationalarchives.gov.uk/20171030135550/http://www.nrls.npsa.nhs.uk/resources/patient-safety-topics/medical-device-equipment/?entryid45=59794&p=4 [Last accessed: 27th August 2019]</p> <p>Royal College of Nursing. (2010) Restrictive physical intervention and therapeutic holding for children and young people. London (Online) https://www.rcn.org.uk/professional-development/publications/pub-003573 [Last accessed: 27th August 2019]</p>
Training Need Identified?	No
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet & Intranet
Document Library Folder/Sub Folder:	Clinical/ Child Health

Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
August 2019	V1.0	New document for paediatric specialty which, along with a new neonatal document, replaces the previous joint guideline	Gemma Allen, Staff Nurse Tabi Fergus, Practice Development Nurse
June 2022	V2.0	Inclusion of new competency packs for staff. Additional text in position confirming and feed administration sections.	Keshia Wrigley; Children's Community Nurse Gemma Allen; Children's Community Nurse Laura Covill; Staff Nurse Yvette Williams; Staff Nurse Tabi Fergus; Practice Development Nurse.

All or part of this document can be released under the Freedom of Information Act 2000

This document is to be retained for 10 years from the date of expiry.

This document is only valid on the day of printing

Controlled Document

This document has been created following the Royal Cornwall Hospitals NHS Trust Policy for the Development and Management of Knowledge, Procedural and Web Documents (The Policy on Policies). It should not be altered in any way without the express permission of the author or their Line Manager.

Appendix 2. Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the Trust to identify where a policy or service may have a negative impact on an individual or particular group of people.

For guidance please refer to the Equality Impact Assessment Policy (available from the document library) or contact the Equality, Diversity & Inclusion Team richt.inclusion@nhs.net

Information Category	Detailed Information
Name of the strategy / policy / proposal / service function to be assessed:	Nasogastric and Orogastric Tube Management in the Infant, Child and Young Person on the Paediatric Ward Clinical Guideline V2.0
Directorate and service area:	Child Health
Is this a new or existing Policy?	Existing
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Child Health Audit and Guidelines Group
Contact details:	01872 252089

Information Category	Detailed Information
1. Policy Aim - Who is the Policy aimed at? (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	To provide clear care guidelines for patients requiring NG/NO tube.
2. Policy Objectives	Evidence based, best practice.
3. Policy Intended Outcomes	As above
4. How will you measure each outcome?	Audit
5. Who is intended to benefit from the policy?	Patients requiring this procedure and staff involved in implementing care.

Information Category	Detailed Information
6a. Who did you consult with? (Please select Yes or No for each category)	<ul style="list-style-type: none"> Workforce: Yes Patients/ visitors: No Local groups/ system partners: No External organisations: No Other: No
6b. Please list the individuals/groups who have been consulted about this policy.	Please record specific names of individuals/ groups: Child Health Audit and Guidelines Group
6c. What was the outcome of the consultation?	Approved- 21 st July 2022
6d. Have you used any of the following to assist your assessment?	National or local statistics, audits, activity reports, process maps, complaints, staff or patient surveys: No

7. The Impact

Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	No	
Sex (male or female)	No	
Gender reassignment (Transgender, non-binary, gender fluid etc.)	No	
Race	No	Any information provided should be in an accessible format for the parent/ carer/ patient's needs- i.e. available in different languages if required/access to an interpreter if required

Protected Characteristic	(Yes or No)	Rationale
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	Those parent/ carer/ patients with any identified additional needs will be referred for additional support as appropriate- i.e. to the Liaison team or for specialised equipment. Written information will be provided in a format to meet the family's needs e.g. easy read, audio etc.
Religion or belief	No	All staff should be aware of any beliefs that may impact on the decision to treat and should respond accordingly
Marriage and civil partnership	No	All staff should be aware of any marital arrangements that may have an impact on care (for example: separated parents, domestic abuse).
Pregnancy and maternity	No	
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	No	

A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.

I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Child Health Audit and Guidelines Group

If a negative impact has been identified above OR this is a major service change, you will need to complete section 2 of the EIA form available here:
[Section 2. Full Equality Analysis](#)