

## **TRANSPYLORIC TUBE PLACEMENT AND MANAGEMENT**

*This LOP is developed to guide safe clinical practice in Newborn Care Centre (NCC) at The Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this Local Operations Procedure (LOP).*

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### **INTRODUCTION**

Transpyloric tube feeds are used for infants who are unable to tolerate gastric feeds either because of poor stomach emptying or severe gastro-oesophageal reflux.

#### **1. AIM**

- To ensure safe placement and management of a transpyloric tube (TPT) in a newborn.

#### **2. PATIENT**

- Newborns

#### **3. STAFF**

- Medical and nursing staff

#### **4. EQUIPMENT**

- Enteral polyurethane feeding tube with stylet Fg6 91cm long. (Do not use the PVC (short term) feeding tubes for transpyloric placement as these need to be replaced weekly).
- Sterile water for injection ampoule to flush the tube
- 5 mL syringe
- Comfeel and Tegaderm
- Clean gloves
- Water soluble lubricant
- Stethoscope
- Sucrose
- Pacifier
- External feeding adapter

#### **5. CLINICAL PRACTICE**

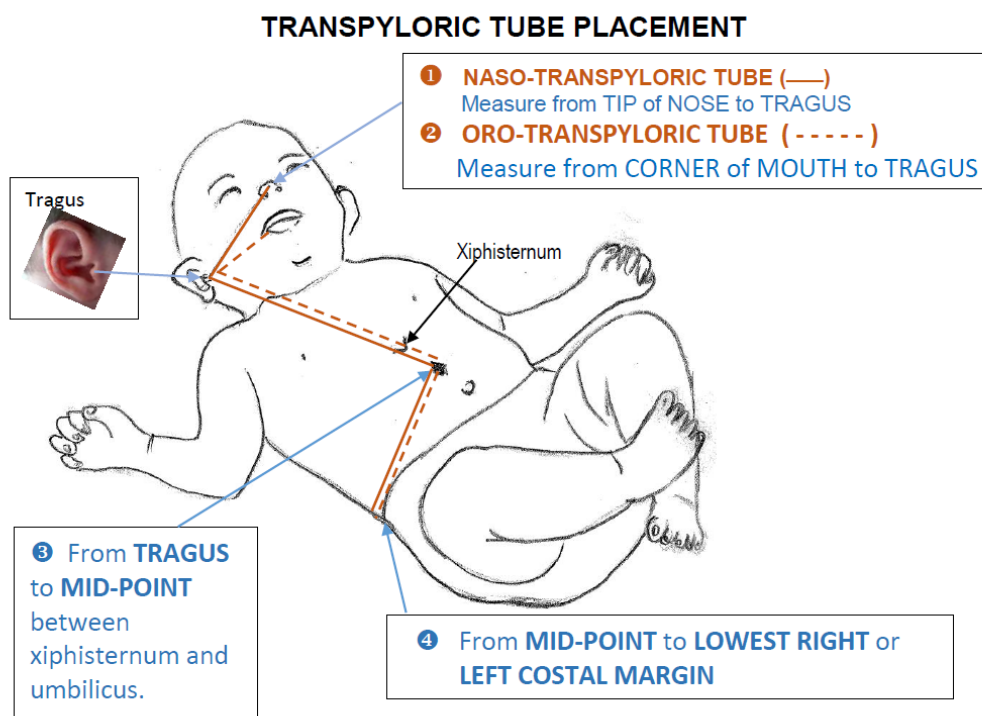
##### **Procedure:**

1. Verify clinicians order for transpyloric feedings.
2. Gather all necessary equipment.
3. Confirm the infant's identity using 2 patient identifiers.
4. Explain the procedure to the parents
5. If the infant has a nasogastric or orogastric tube in place, remove the tube for TPT placement.

##### **Measure Insertion Distance of TPT**

1. Determine if the TPT is to be inserted via nasal (recommended and preferred) or oral (e.g. choanal atresia, nasal CPAP) route.
  - a. Nasogastric TPT: Measure the distance from the bridge of the nose to the earlobe, from the earlobe to the point half way between the xiphoid process and umbilicus. This is the gastric mark (for naso-gastric tube). From the gastric mark, measure the distance from gastric mark to the lowest left or right costal margin. This is the length of tube needed for TP feedings.
  - b. Orogastric TPT: Measure the distance from the lower lip to the point half way between the xiphoid process and umbilicus. This is the gastric mark (for naso-gastric tube). From the gastric mark, measure the distance from gastric mark to the lowest left or right costal margin. This is the length of tube needed for TP feedings.

## TRANSPYLORIC TUBE PLACEMENT AND MANAGEMENT cont'd



### Insertion Procedure

1. Feeds should be stopped at least 2 hours prior to insertion to aid stomach motility and prevent vomiting
2. Perform hand hygiene
3. Lubricate the end of the TPT.
4. Flush the tube with 2 mL sterile water for injection.
5. Swaddle infant to provide comfort and give oral sucrose. (R2)
6. Elevate the head of bed to a 30-45 degree angle.
7. Mark on TPT the estimated insertion length with a small strip of leucoplast. (Picture) (R1)
8. With the infant lying supine, gently place the TPT through the nares/mouth and insert the tube to the gastric mark
9. Remove the stylet gently.
10. Advance the tube further of the remaining estimated length. Once the TPT has been advanced to the pyloric mark, secure it with Tegaderm.
11. Place the infant into a right side for 30 minutes – this aids the peristaltic passage of the tube tip allowing it to pass into the intestine. Do NOT reinsert the guidewire under any circumstances as there is a risk of perforation.
12. Perform hand hygiene.

### Conformation of TPT

1. After 30 -60 minutes - Confirm the position clinically by: A. Inability to aspirate air B. Aspiration of bilious contents (gold/yellow in colour). C. The aspirate is alkaline (pH > 6). Once confirmed,
2. Notify Fluoroscopy of tube placement and perform X-Ray after 30-60 minutes. Transfer to Radiology Department for further management and confirmation if the procedure fails in the NICU. Further advancement of the tube will occur in Radiology Department as required.

**TRANSPYLORIC TUBE PLACEMENT AND MANAGEMENT cont'd****Document**

1. Document procedure in the clinical record, marking exit position of the tube and length at which the tube has been inserted using the markings on the tube e.g. 50 cm

**Oral Medications:**

1. Verify with medical staff and/or pharmacy staff that oral medications can be administered by TPT.
2. If the TPT cannot be used for oral medication administration, an NGT/OGT gastric tube should be inserted and used.
3. The side port of the TPT is for medication administration and flushing if needed. Check all medications for compatibility with TPT feedings. If the TPT is used for medication administration, hold continuous feed, push medication thru port and flush dead space with a small amount of air using the medication syringe.

**Feeding**

1. **Transpyloric feeds must always be a continuous infusions** using syringe pump or feeding pump [R x]. This will help to prevent diarrhea or “dumping syndrome.”
2. Verify feeding order.
3. Gather and prepare equipment.
4. The physical area where the feed is decanted must be clean and free of contamination.
5. Prime the extension tubing with the feeding.
6. Connect the enteral feeding adapter to the feeding administration port (pink color) of the TPT.
  - a. Adjust the prescribed flow rate for the feeding.
  - b. Document in Crib Notes the amount infused hourly.
7. Gently shake the syringe every 1-2 hours [R x – to prevent suspension]
8. The volume decanted into a feeding bag or container should not exceed a four hour supply of feed. Change feedings every 4 hours.
9. Before changing a feeding, confirm that the TPT is positioned correctly. Visually verify the centimeter mark of the TPT at nare or mouth. Then confirm TPT yellow length from nares to connector matches previous documented length on the measuring tape.
10. Enteral feeding adaptor should be changed every 24 hours.
11. Do not check residuals with continuous TP feeds.
12. NGT/OGT can be placed for gastric decompression.
13. TPT can remain in place for 30 days.

**Maintenance**

1. Supervision by a trained carer is required at all times.
2. Ensure feeding tube is tested for placement prior to any feed or use and every 6 hours if on continuous feeds or after episodes of vomiting or coughing.
3. Regular flushing has been reported to reduce the intraluminal build-up of product and increase the life and patency of feeding tubes. All tubes must be flushed with sterile water every 6 hours as follows: ≤1000 g current weight: 1 mL and >1000 g current weight: 2 ML.
4. In the hospital setting, use a single use syringe for each intervention (flush etc.).
5. A designated “oral” or “enteral” syringe should be used to reduce the risks of inadvertent administration of oral medication into an intravenous line.
6. Enteral feeding pumps must be secured to appropriate poles when in transit.
7. Document the ongoing management of the tube in the clinical notes contemporaneously every shift (with each use).
8. Secure feeding tubes appropriately. Change tapes to skin regularly, assessing skin integrity each time. Document in the patient notes.
9. Check the nares regularly to ensure skin integrity – try to alternate nares with any re-insertion of the tube.
10. Check the marking on the TPT daily to confirm position. Re-adjust TPT to measured marking if required.
11. TPT can in situ for up to 3 months.
12. Aspiration of TPT is not recommended (R5 )

## TRANSPYLORIC TUBE PLACEMENT AND MANAGEMENT cont'd

### Removal of TPT

1. Verify medical order.
2. Inform parents.
3. Follow hand hygiene precautions.
4. Gently withdraw the tube.
5. STOP withdrawing if any resistance and inform the medical staff for further advice. Resistance indicates kinking, obstruction or knot formation of the TPT and forceful withdrawal may damage and tear the gastric or oesophageal mucosa.

### DOCUMENTATION

- Integrated Clinical Notes
- Daily Care Plan
- Observation Chart

### 6. EDUCATIONAL NOTES

- All registered nurses placing Nasogastric, Transpyloric (Nasojejunal) and Orogastic tubes require training and a demonstration of safety and competence.
- Transpyloric tube (TPT)/Nasojejunal tube (NJT) insertion is requested by the medical officer and placement is always confirmed via radiology. All TPT feeds must be delivered continuously via a pump.
- Transpyloric tubes must be flushed with sterile water every 4- 6 hours.
- Syringes equal to or greater than 20mLs should be used to aspirate any naso/orogastric tube.
- Trouble shooting

### Potential problem

#### Accidental tube placement or dislodgement

### Possible causes

Incorrect position of tube  
 Tube pulled out or caught  
 Excessive force  
 Severe vomiting or coughing

### Action

- Ensure the tube is secured appropriately at all times. See Appendix 2
- **If frequent tube dislodgement, consider alternative feeding route**

### Tube blockage

Infrequent flushing of tube  
 Medications not crushed properly  
 Medications and formula incompatible  
 Feeding tube kinked

- 4-6 hourly flushing with water before/after every feed and medication (sterile water for under 12 months age or TPT)
- Ensure feeds are not thickened
- Discuss medication formulations with medical team/pharmacy
- Check tube for kinks
- Use gentle push-pull action with 50mL syringe containing warm water (sterile water if under 12 months)
- Gently massage tube between your fingers

### Nausea/vomiting (aspiration risk)

Feed administered too quickly  
 Not in correct position during/after feed  
 Formula too cold  
 Gastro oesophageal reflux  
 Constipation

- Cease administration of feed
- During feed, ensure the patient is in semi-upright position of at least 30 degrees
- Patient should try to maintain position following feed for 30 mins
- Ensure formula at room temperature

**'Dumping syndrome'  
(TPT –only) 24, 25, 26**

Rapid passage of carbohydrate into the small intestine, i.e. bolus feeding 24, 25, 26

- Only give feeds continuously via TPT Feeds should be assessed for individual tolerance, however, feeds with an osmolality <300mOsm/kg are generally better tolerated as they are iso-osmolar
- Assess patient for epigastric pain, diarrhoea, sweating, and possible hypovolaemia. Hypoglycaemia is usually a late sign.

**Diarrhoea**

Medication side effect  
Formula given too quickly  
Formula too cold  
Contaminated formula

- Check with medical team/pharmacy re: medication side effects
- Discuss formula and infusion rate with Dietitian
- Allow formula to reach room temperature before use
- Ensure hygienic preparation and storage of formula/feeding equipment

**7. RELATED POLICIES/PROCEDURES/CLINICAL PRACTICE LOP**

- Continuous Feeding Procedure

**8. RISK RATING**

- Low

**9. NATIONAL STANDARD**

- Standard 11 Provision of care

**10. REFERENCES**

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**ROYAL HOSPITAL FOR WOMEN**  
 LOCAL OPERATING PROCEDURES  
**NEONATAL SERVICES DIVISION**

Approved by  
 Quality & Patient Care Committee  
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**TRANSPYLORIC TUBE PLACEMENT AND MANAGEMENT cont'd**

**11. ABBREVIATIONS AND DEFINITIONS OF TERMS**

|     |                     |     |                   |
|-----|---------------------|-----|-------------------|
| NCC | Newborn Care Centre | TPT | Transpyloric tube |
|-----|---------------------|-----|-------------------|

**12. RATIONALES**

|     |   |
|-----|---|
| R 1 | Point for checking tube migration that may require re-inserting/re-positioning.         |
| R 2 | Oral Sucrose has analgesic effect and reduces procedural pain.                          |
| R 3 | To allow peristalsis to carry the TPT through the pylorus                               |
| R 4 | Position of the tube at the nares is checked every shift to make sure it has not moved. |
| R 5 | TPT is a silicone tube. It collapses on aspiration of tube by a syringe.                |
| R 6 |   |

**14. AUTHORS**

|         |            |   |
|---------|------------|---|
| Primary | 14/01/2015 | Nilima Gaunker (RN)                         |
| Revised | 1/11/2017  | K. B. Lindrea (CNC), E. Jozsa, S. Bolisetty |