Worcestershire Acute Hospitals NHS Trust

Care and Use of Radiologically Inserted Gastrostomy (RIG) Feeding Tubes in Adults

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

Lead Clinician(s)

Nutrition Nurse – Natalie Tayler
Dietitian – Sarah Pritchard

Approved by Nutrition and Hydration Committee on: 9th May 2023

Review Date: 9th May 2026
This is the most current document and should be used until a revised version is in place

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AIM

This guideline covers the care of the patient prior to RIG placement, immediate post care, longer term nursing care and care of the patient going home with a RIG. Adherence to these guidelines should ensure comprehensive care for all patients with a RIG, thus ensuring optimal nutrition support with reduced risk of complications.

THIS GUIDELINE IS FOR USE BY THE FOLLOWING STAFF GROUPS:

Doctors, Nurses, ACPs, Nurse Associates, Healthcare Assistants, Dietitians, Speech & Language Therapists and other AHPs, Pharmacists

Key amendments to this guideline

Date	Amendment	Approved by:

Contents:

1 Introduction

The scope of this document is to discuss the use of radiologically inserted gastrostomy (RIG) feeding tubes. A RIG is a method of artificial enteral nutrition. Enteral nutrition is described by the British Association of Parenteral and Enteral Nutrition (BAPEN) (2018) as:

Patients who either are unable to take any nutrition orally or who are unable to take sufficient nutrition orally, but in whom the gastrointestinal tract is functioning, may be fed enterally. This implies feeding into the gastrointestinal tract using a tube.

Gastrostomy feeding involves the creation of a tract between the stomach and the surface of the abdomen. Gastrostomy tubes may be placed endoscopically (PEG), surgically or radiologically (RIG). Gastrostomy feeding can be considered when enteral feeding is required for more than 30 days (BAPEN 2019). All gastrostomy placements must be discussed at the Nutrition MDT or Head and Neck MDT and agreed to be in the patient's best interest. The Freka 15 PEG is the first line feeding tube of choice within Worcestershire Acute NHS Trust. A RIG should be considered when a PEG is contraindicated or cannot be placed.

This policy is in line with the Adult-Percutaneous endoscopic gastrostomy (PEG) guideline (WHAT NUT-004).

1.1 Scope of policy

This policy applies to all staff involved in managing adult patients being enterally fed via a RIG feeding tube, including ward based staff, hospital based and Home Enteral Feeding Dietitians as well as community nurses contracted to Worcestershire Hospitals Acute NHS Trust.

2 Aims

The aim of this guideline is to ensure RIG feeding tubes are cared for in an appropriate manner, whilst standardising practice throughout Worcestershire Acute Hospitals NHS Trust in order to decrease the risk of any unnecessary discomfort to the patient.

3 Consent and Ethical Considerations

NUTRITION MDT: Head and Neck cancer patients can be discussed at Head and Neck MDT then inform Nutrition MDT team. All other patients being considered for a gastrostomy in Worcestershire must be referred to and discussed at Nutrition MDT including Gastroenterologist Consultant, Palliative Medicine Consultant, Nutrition CNS, Dietitian and Speech and Language Therapist. The Nutrition MDT referral form (http://nww.worcsacute.nhs.uk/departments-a-to-z/nutrition-mdt/) has to be completed by the ward team prior to Nutrition MDT and emailed to peg.mdt@nhs.net before 5pm every Monday.

'Scoping our practice' (NCEPOD, 2004) and NICE (2006) recommend that the multidisciplinary team (MDT) should discuss the benefits and risks of gastrostomy placement for a patient prior to insertion. Some patients are not medically suitable for endoscopic gastrostomy placement but still require a permanent feeding tube. This will be discussed at the nutrition MDT and a decision made as to whether a RIG may be more suitable.

If the patient has capacity, the procedure should be discussed with them and informed consent gained. If the patient will not be caring for the gastrostomy themselves, carers and family will need to be involved in planning and discussions around the gastrostomy tube.

If the patient lacks mental capacity to make decisions and is unable to consent, a formal capacity assessment should be carried out and capacity documented. A 'Best Interests' meeting should be organised. It is important to know whether there is a LPOA (Lasting Power of Attorney) for Health and Welfare. The procedure should be discussed with next of kin (NOK) but where there is no LPOA a 'best interests' decision will be made, taking into account the risks and benefits of the procedure in relation to the individual patient and any previously held views/wishes of the patient (in line with Mental Capacity Act 2005). If there are no NOK an IMCA (Independent Mental Capacity Advocate) should be involved to represent the patient.

4 Indications for RIG feeding

- The first line gastrostomy tube of choice at Worcestershire Royal Hospital is a Freka PEG tube placed endoscopically. A RIG would only be considered for those patients for whom an endoscopically placed PEG has failed or could not be performed.
- A RIG feeding tube may be indicated in patients with cancer or disease conditions where there is a high risk associated with higher levels of sedation required for percutaneous endoscopic gastrostomy (PEG) insertion such as patients with respiratory conditions.
- RIG tube feeding may be considered if a patient is unable to meet fluid and nutrient requirements orally, is malnourished and has a functional, accessible gastrointestinal tract and where a percutaneous endoscopic gastrostomy (PEG) tube is not appropriate or unsuccessful.

4.1 Contraindications for RIG feeding

RIG feeding may not be appropriate if there is a gastrointestinal obstruction, acute abdomen, ascites, paralytic ileus, perforation of the gut, persistent vomiting or gastro-intestinal bleeding. In some cases, a RIG may not be possible due to altered anatomy such as overlying bowel or ribs or a previous gastrectomy.

The RIG procedure requires a nasogastric tube to be inserted into the stomach. If this cannot be performed (i.e. due to upper gastro intestinal obstruction) a RIG cannot be inserted.

The procedure needs to be carried out as an inpatient and cannot be organised as a day-case due to the post procedure care plan. A 24-hour admission is usually recommended. For patients at high risk of re-feeding syndrome a longer admission may be required to stabilise electrolytes and establish nutrition, see guidelines for details (http://whitsweb/KeyDocs/KeyDocs/Sub_Webpage/1585?persist=True).The team managing the patient are responsible for organising the admission and booking the bed. They should liaise with interventional Radiology and the Dietitian with the date planned for admission.

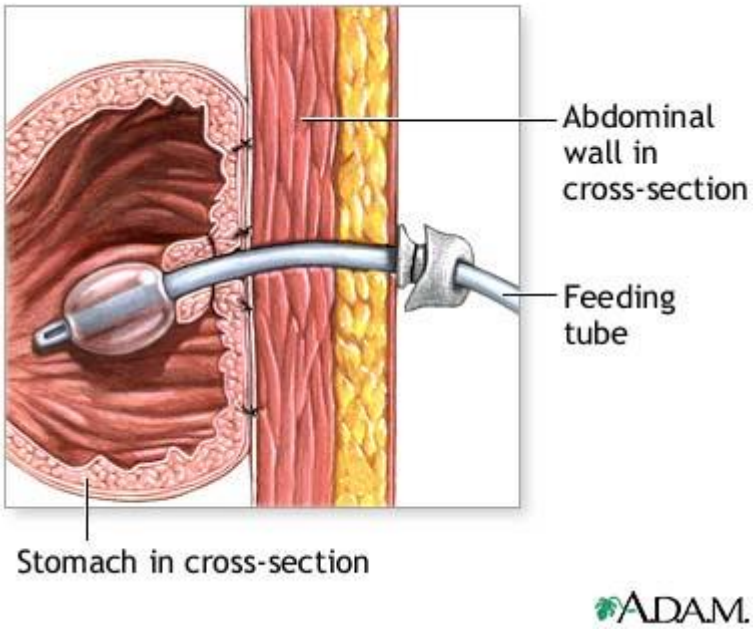
5 How to Request a RIG

All requests for a RIG must be agreed by the Nutrition MDT or Head and neck MDT (Appendix 1).

Once agreed by the MDT the RIG can be requested on ICE – this comes up as IRIG on requests.

6 RIG Feeding Tubes

RIG tubes are placed under radiological guidance. The diagram below shows the position of the feeding tube in situ



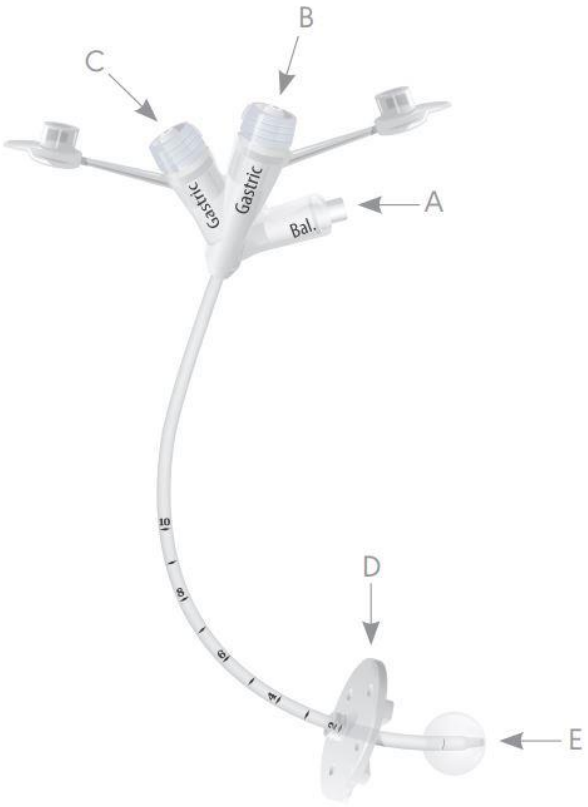
Medline Plus (2022)

The tube should be replaced every 3 months as per manufacturers' guidelines. The first change should be 12 weeks post insertion but if the tube falls out before then it can be replaced in the community from 8 weeks. Prior to 8 weeks if the tube falls out the patient must attend A&E for an emergency tube replacement. If the tube falls out before 2 weeks post procedure the tract may not be formed therefore a new RIG should be sited in radiology. No matter how old the tract is, if the tube falls out this should be acted upon urgently as the tract can close within 2 hours. Once the tract has closed the tube will need to be re-sited in radiology.

Referral by the ward Dietitian will need to be made to the Nutricia Homeward service to help support patient training and to manage replacement tubes.

6.1 Type of tube: Balloon Gastrostomy Tube 16 Fr Gauge

A size 16 balloon gastrostomy NPSA compliant tube will be placed. The full details will be detailed by the Radiologist on ICE, including make, size and volume of water used to inflate the balloon. The manufacturer's booklet, including after care details will be provided to the patient on discharge. The tube is recommended for long term feeding and should be replaced every 3-6 months depending on the manufacturer's specifications. Full details on what to do if the tube becomes dislodged must also be provided.



Gastrostomy Feeding Tube

- A: Balloon inflation port
- B: ENFit feeding port
- C: ENFit medication port
- D: External retention disc
- E: Internal silicone retention balloon

Central Infusion Alliance Medical (2022)

7. Responsibilities

7.1 Clinicians who place the tube (Radiologist)

- To check the patency of the new tube by filling the water balloon prior to placement.
- To ensure that the type and size of RIG feeding tube placed is documented in the medical notes and a radiology report of the procedure is documented on CRIS which will then be seen 'ICE order comms' computer system.
- To ensure the volume of water used to fill the balloon is documented.
- To ensure the RIG tube is placed in the correct position and that this is documented in medical notes and an image is saved.
- To ensure that any tube related care that falls outside of the agreed standard enteral tube care policies are communicated to ward staff and documented in the medical notes.

7.2 Ward Nursing Staff and Nutrition Nurse

- To follow post RIG placement after care guidelines correctly to prevent any problems occurring with the tube and the stoma site.
- Ensure infection control procedures are followed and safe handling technique employed when using tube and equipment.
- To facilitate discharge 24 hours after placement if training and feeding plan completed.
- To agree plan of what to do if tube becomes dislodged in the first 3 months of placement.
- Nutrition Nurse to arrange tube changes in clinic if not suitable for home replacements.

7.3 Hospital Dietitian

- To liaise with the Medical team, Nutrition Nurse and interventional Radiology to help clarify date of placement to help facilitate training needs and prevent any unnecessary delay in discharge.
- To recommend appropriate use of RIG feeding tube and to provide a feeding regimen so that feeding can commence safely.
- To monitor the tolerance of RIG tube feeding and adapt this according to patient's needs.
- To provide RIG information and contact details on discharge.
- To liaise with the Nutricia Nursing team to organise training and equipment to facilitate timely discharge.
- To register on the Nutricia Homeward delivery system.
- To confirm plan has been agreed on what to do if tube becomes dislodged in the first 3 months of placement.
- To confirm follow up plans have been agreed

7.4 Nutricia Homeward Nurse

- To provide training for the patient/carer on how to care for their feeding tube upon their discharge.
- To provide education and training on care and replacement of the feeding tubes to staff and community colleagues as required.
- To provide information relating to care of the tube, skin care and checking position of tube for feeding.
- To change balloon gastrostomy tubes in the community for all non-complex changes after 3 months from placement date.
- To feed back to WAHT Nutrition Nurse if there are any difficulties with tube change.

7.5 Ward Pharmacist

- Review all of the patient's medication to ensure that these can be given safely via the RIG tube if the oral route is not available. Ideally convert medications to liquid form to prevent risk of tube blockages

8 RIG Tube Checks

8.1 During RIG Insertion Procedure

- The packaging should be checked for any flaws to ensure it is sterile and safe to use. The correct working of the balloon should be checked prior to placement by filling the balloon with the appropriate amount of water and then removing the water.
- The consultant radiologist will place the RIG as per their competence. The radiologist will complete the documentation on ICE and the handover to the ward on EPR explaining the red flag symptoms and post insertion guidance.
- Initial confirmation of tube position needs to be established in the radiology department when the tube has been inserted. If there is any doubt about position of the RIG it can be checked by aspirate of gastric contents and reading of stomach pH.

8.1.1 Aftercare Following RIG Insertion

Red flag symptoms should be monitored alongside pH checking to help determine correct positioning of the tube. If there is any doubt tube should not be used and should be checked in radiology.

8.1.2 Immediate aftercare (0 – 6 hours)

- Recording of the tube position by noting the centimetre marking on the tube at skin level should be documented in the medical notes and monitored by nursing staff.
- Patients should be monitored for signs of bleeding and peritonitis.
- Record observations on return to ward and then:
  Every half hour for 2 hours
  Every hour for 6 hours
  Then 4 hourly
- Assess pain and provide analgesia. Medical staff should be informed if pain is severe or persistent.
- Commence fluid balance chart and maintain IV line for hydration.

The patient should be kept Nil By Mouth and Nil By RIG for 6 hours after insertion or longer if specified by radiology.

8.1.3 6 – 24 hours post insertion

- Check the tube length is still the same.
- Flush the RIG with 60ml freshly drawn tap water using a 60ml enteral purple syringe
- Monitor for any signs of leakage around stoma, notify medical staff if leaking occurs and stop using tube immediately.
- Monitor for signs of peritonitis (abdominal pain, tachycardia, pyrexia), notify medical staff if peritonitis is suspected and stop using tube immediately.
- If above completed without concerns, please start feed as per Dietitian plan. If out of hours or Dietitian not available commence out of hours emergency enteral feeding starter regimen (WAHT-NUT-008)
- (http://whitsweb/KeyDocs/KeyDocs/Sub_Webpage/1585?persist=True) and contact Dietitians.
- If patient is not using RIG for feeding recommence normal diet after 6 hours and advise patient to flush the tube once a day with 50mls water.

Feeding should be stopped immediately if any signs of shortness of breath, pallor or increased heart rate are observed at any time during feeding and medical advice sought.

IF THERE IS PAIN ON FEEDING, OR PROLONGED OR SEVERE PAIN POST-PROCEDURE, OR FRESH BLEEDING, OR EXTERNAL LEAKAGE OF GASTRIC CONTENTS, STOP FEED/MEDICATION DELIVERY IMMEDIATELY. OBTAIN SENIOR ADVICE URGENTLY AND CONSIDER CT SCAN, CONTRAST STUDY OR SURGICAL REVIEW.

9 Administration of liquids via tube

9.1 Flushing RIG Tubes

To prevent blockage of RIG feeding tubes they should be flushed regularly with water, immediately before and directly after administering feed or medication. If pump feeding is temporarily suspended or interrupted, it is also imperative to flush the tube on stopping and prior to restarting feed. Feed left to sit within the tube may coagulate resulting in tube blockage (see Procedure 11 for unblocking feeding tubes).
For patients who have had a RIG feeding tube placed but are not using it for feeding at the time (i.e. prior to chemoradiotherapy) the tube must be flushed with a minimum of 50ml freshly drawn tap water every day.
For information on flushing tubes refer to (Percutaneous endoscopic gastrostomy (PEG) guidelines – adults WHAT NUT-004).

9.2 Feeding

To reduce aspiration risk ensure the patient is elevated at a 45° / semi-recumbent position and remains in this position for at least 1 hour after the feed has finished (NOTE: this should also be followed when lying patients flat for personal care).

Monitor for “red alert” symptoms, if symptoms occur stop the feed and seek urgent senior medical review.
If nausea or abdominal distension occurs, stop the feed and seek medical review.

Use sterile packs of enteral feed as per Dietitians instructions or follow the “Out of hours emergency Enteral feed regimen” if no plan available (WAHT-NUT-008).

Feed and giving sets should be hung for no longer than 24 hours. Any handling of the feeding system should be carried out using aseptic technique.

A bolus feed must be given slowly over a 10-15 minute period to reduce the risk of reflux aspiration and aid feed toleration.

9.3 Monitoring

The progress and tolerance of the feeding regimen will be monitored by the Ward Nurse and Dietitian as an inpatient and by the Home Enteral Feeding Dietitian or Specific Oncology Dietitian in the community. Feeding regimens and plans will be adapted as required.

Give feed as prescribed by Dietitian and record on fluid balance chart.
Water flushes may vary according to a patient's requirements. Follow Dietitian advice and document flushes on fluid balance chart.
Record patient's weight weekly on MUST or as clinically indicated for community patients (NICE 2006).
If the patient is eating, ensure that food and/or fluid texture is in accordance with instructions from the Speech and Language Therapist and is reviewed regularly.
Swallow safety should be re-checked by Speech and Language Therapist as appropriate.
Keep strict food record chart and notify dietitian for re-assessment if there is a change in food intake
Monitor U&Es, bone profile, magnesium, phosphate regularly (NICE, 2006).
If the patient is at risk of re-feeding syndrome refer to re-feeding guideline WAHT-NUT-006, Fluid balance, bloods and blood glucose need to be monitored daily and corrected as required. When stable in normal range and full feed established, monitoring of refeeding bloods can discontinue.

9.4 Medications

(See MedPolSOP11)

- Accountability – The prescriber must change the route on the prescription chart to make it clear that medicines are to be given via the PEG.
- Patients who need to have medicines administered via the PEG tube should have their prescriptions reviewed and their regimen simplified where possible.
- Consult the Pharmacist for advice regarding medicine-feed interactions.
- Consideration should be given to using other routes and/or once-daily regimes where possible
- The Pharmacist may suggest alternative medicines/routes if there is doubt about the suitability of a medicine to be given via the PEG tube.
- Where possible all medications should be prescribed in liquid or soluble tablet form to prevent tube blockage. Some tablets that are not marketed as soluble will disperse in water.
- Discuss any medicine which does not come in liquid form with the medical team and the pharmacist.
- Some liquid medicine preparations can be very thick and should be diluted with an equal volume of water before administration.
- Crushed or opened tablets should be avoided if possible as the particles may adhere to the sides of the tube and there is some exposure to the powder. There are some tablets/capsules that must not be crushed or opened, please consult Pharmacist/Medical team.
- When administering medications via the tube flush with water before and after. Where more than one medication is given flush with a minimum of 10ml in between each medication. **DO NOT** mix medications together give each medication separately.

- Some medications interact with enteral feed, please contact Pharmacist/Medical team for advice.

10 Routine RIG Care

10.1 Gastropexy Sutures

The RIG procedure requires the patient's stomach to be anchored to the abdominal wall which is performed by using 2-4 gastropexy sutures. These are soluble sutures that should fall out between 4 – 6 weeks post placement. If they do not dissolve they can be removed after 6 weeks by the Nutricia Homeward Nurse.

10.2 Balloon Volume Check

The balloon volume is first checked 2 weeks after the initial placement of the RIG and weekly thereafter. RIG tubes should have the volume of fluid in the balloon checked weekly, (unless manufacturers specify otherwise) as on average a loss of 1ml of fluid per week can be expected. Any water loss greater than this may be an indication that the balloon is perishing and tube replacement may need to be considered. Discoloured fluid in the balloon may also be a sign of a faulty balloon and the tube may need to be replaced.

10.2.1 Procedure for monitoring and replacing balloon gastrostomy inflation

Equipment Required

- 2 male luer slip syringes (10ml)
- Sterile water for balloon
- Freshly drawn tap water for flushing
- Gloves, apron, clean area (for HCP use)

1 Check care plan / patient notes for balloon volume. (This should also be labelled on the balloon valve).
2 Wash hands in accordance with trust hand washing guidelines
3 Fill one syringe with the volume of water required to inflate the balloon, place on a clean surface ready for use.
4 Check cm tube markings on side to confirm current position.
5 Slide the retention bolster away from the abdomen.
6 Gently move the gastrostomy tube further into the stomach.
7 Attach the empty syringe to the inflation valve of the balloon gastrostomy
8 Hold the gastrostomy firmly in place; gently draw back on the plunger of the syringe until no more fluid comes out of the balloon.
9 Continue to hold the gastrostomy firmly in place once the water has been removed from the balloon, in order to prevent the tube falling out of the stomach.
10 Connect the pre-filled syringe to the balloon valve and re-inflate the balloon with the recommended volume of water.
11 Pull back gently on the gastrostomy tube until the balloon can be felt against the stomach wall and similar cm marking on the side of the tube.
12 Slide the external retention bolster down the gastrostomy tube until it is sitting comfortably on the abdomen.
13 Check and record the volume and colour of fluid withdrawn. If weekly loss of fluid is more than 1ml, consider tube replacement.
14 Discard both syringes.

If excessive fluid loss is noted or if fluid is discoloured, this may be indicative of a tear or hole in the balloon. This may be confirmed by re-inflating the balloon as instructed above and re-checking the volume after a period of 20 minutes. If fluid has been lost or discoloured during this short time frame it may be concluded that the balloon is damaged and leaking and the tube should be replaced.

If you are unable to withdraw any water from the balloon, remove the syringe, secure the tube in position with tape and refer for tube replacement.

The life-span of a Balloon Gastrostomy is less than that of a conventional PEG, and is dependent on the condition of the balloon. Routine replacement every 3-4 months or as per manufactures instructions is therefore recommended.

10.3 Changing a balloon gastrostomy tube

Routine replacements are recommended for all adults with balloon retained gastrostomy tubes. The frequency of the tube change required is dependent on the make and model of tube placed and varies from 3-6 months. The patient will be informed of the requirement for the tube they have in situ.
Changing balloon retained gastrostomy tubes should only be undertaken by Healthcare Professionals who are clinically competent to do so.

NB. It is preferable that tube changes take place when the stomach does not contain any residue of food or enteral feed and antacids have not recently been taken as this may:
1) Affect pH of gastric aspirate obtained.
2) Result in stomach contents refluxing out of the stoma.

10.3.1 Procedure to change a balloon gastrostomy

Equipment required

- Replacement gastrostomy tube (of equivalent size to existing tube)
- 2 x 10 – 20ml male luer slip syringes. (One syringe should be pre filled with the correct volume of fluid required to inflate the balloon of the new tube, the second syringe should be left empty and used for withdrawing water)
- 50ml Syringe (For checking gastric aspirate, flushing water)
- Water based lubricant
- pH indicator paper
- Gauze
- Fresh water for flushing
- Sterile dressing pack

1 Check care plan/patient notes to confirm size (French gauge) of current tube and compare with replacement tube to ensure they are the same size.
2 Check expiry date of all equipment. Document manufacturer, balloon size, French gauge, date placed, expiry date and LOT number of new tube.
3 Wash and dry hands thoroughly before and after procedure.
4 Assemble all the equipment on a clean surface.
5 Pre fill 10m/20ml syringe with recommended volume of water.
6 Lie the patient flat.
7 Check the patency of the new balloon gastrostomy by gently inflating the balloon with the pre-filled syringe of water.

8 Ensure there are no leaks in the balloon and that it is symmetrical in shape when inflated. If necessary, roll the inflated balloon gently between the thumb and index finger to achieve a uniform shape. Remove all the fluid once you are sure the balloon is unproblematic. Place the syringe with water on a clean surface ready to use again.
9 Slide the external fixation device down towards the end of the new tube (away from the balloon). Lubricate the tip of the tube with a small amount of water-based lubricant or moisten the tip with water. Do not use a petroleum-based oil or jelly. The new tube is now ready for insertion. Place on a clean surface ready for use.
10 To remove the "old" tube, attach the empty male luer slip syringe to the valve and remove all water present in the balloon to deflate it. Discard the syringe.
11 Place gauze under the old tube and gently pull it out of the stoma.
12 Clean the skin around the stoma thoroughly with freshly drawn tap water.
13 Insert the new tube into the stoma as far as it will go.
14 Inflate the balloon with the correct amount of water as indicated on packaging of the tube and inflation valve.
15 Use the 50ml syringe to withdraw gastric aspirate from the stomach. Test the pH using pH indicator paper. Gastric aspirate of between pH 1 – 5.5 confirms placement in the stomach. However, administration of drugs which reduce gastric acid secretion e.g proton pump inhibitors and H2 Receptor antagonists, may result in an increase in gastric pH. A medical opinion should therefore be sought to establish an acceptable pH range for gastric aspirate obtained from patients on such medication.
16 Gently pull back the tube until slight resistance is felt from the balloon touching the stomach wall.
17 Wipe the tube and site clean of any excess lubricating jelly.
18 Slide the external fixation device towards the abdomen so that it lies about 2mm away from the surface (but not more than 1cm away).
19 Flush the tube with a least 30ml freshly drawn water.
20 Ensure the patient has access to a replacement / spare gastrostomy tube of equivalent size.
21 Complete documentation.

10.4 Caring for the skin around RIG feeding tubes

10.4.1 Day 0 – 14

The stoma site should be cleaned and dried daily.
Equipment required:

- Sterile saline solution
- Gauze
- Clean bowl
- Clean dry towel

1. Wash and dry your hands thoroughly.
2. Check the area around your tube for any signs of swelling, leaking, irritation, redness, soreness, skin breakdown or bleeding - contact your Homeward Nurse if this is a concern. If this is within 72 hours of the RIG being placed, please contact the Beech Head and Neck Ward/hospital Nutrition Nurse. Some clear fluid may be present initially, which is normal.
3. Check the position of the fixation device (this will be a circular piece of plastic, which sits next to your skin and holds the tube in place). Look at the markings on feeding tube if visible.
4. Clean the whole tube and the area around it. Dry all areas gently and thoroughly.
5. Ensure the tube is flushed with at least 50ml of water every day even if no feed, fluid or medication is administered via the feeding tube.

Additional notes:
The area around the tube should NOT be covered with a dressing routinely unless the area around the tube is infected or problematic and you have been advised that it is necessary.

The use of creams/talcum powder on the site should be avoided as they can irritate the skin and give rise to infection.

10.4.2 Post 14 days' insertion

The RIG tube can be advanced and rotated daily from day 14 post insertion.

Equipment Required
- Freshly drawn tap water
- Mild soap
- Clean bowl
- Clean dry towel

1. Wash and dry your hands thoroughly.
2. Check the balloon volume – see section 10.
3. Check the area around your tube for any signs of swelling, bleeding or discharge - contact your Homeward Nurse if this is a concern.
4. Note the position of the fixation device (this will be a circular piece of plastic, which sits next to your skin and holds the tube in place). Look at the markings on the feeding tube if visible.
5. Clean the whole tube using a soft cloth, including under the fixation device and the area around your tube, with mild soap and water. Dry all areas thoroughly.
6. Rotate the balloon gastrostomy tube through a complete circle (360°) and move the tube a couple of centimetres through the stoma site so the internal balloon does not become embedded to the stomach wall. Return the fixation device to the original position.
7. Ensure the tube is flushed with 50ml water every day even if no feed, fluid or medication is administered via the feeding tube.

Additional notes:
If rotation causes excess pain or the tube will not turn, stop and try again the next day. If it is still painful and will not turn, do not attempt to carry out the rotation, contact the Nutrition Nurse if you have any concerns.

The gastrostomy site should NOT be covered with a dressing routinely unless the area around the tube is infected or problematic and you have been advised that it is necessary.

The use of creams/talcum powder on the site should be avoided as they can irritate the skin and give rise to infection

The fixation device should lie at least 2mm and no more than 10mm away from the skin surface.

If your weight increases or decreases significantly the fixation plate position may need to be altered.

10.4.3 Regular mouth care

Ensure regular mouth care is followed according to Trust Oral Care guidelines. This is particularly important for patients that remain nil by mouth (NBM) (WAHT- NUR-061)

11 Troubleshooting

11.1 Blocked Tube

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

If a tube becomes blocked the process of unblocking needs to commence as soon as possible after the occlusion occurs. The procedure requires time and patience.

11.1.1 Advice for unblocking feeding tubes:

Equipment Required:

- 60ml Enteral Syringe*
- Cold water
- Warm water
- Carbonated water
- Clean container (suitable to hold the water)

1. Wash hands in accordance with trust handwashing guidelines.
2. Ensure all clamps are open and tube is not kinked.
3. Massage the tube around the area of blockage if obviously visible. (If the blockage is caused by medication this may help to disperse) Connect a 50ml enteral syringe to the end of the tube and attempt to withdraw any excess fluid from the tube. Flush with water, and repeat the process, using a withdrawal and flush method.
4. Flush with 60ml of warm water and leave in the tube for 30 minutes (clamp if present) then re-flush.
5. Flush with 60ml carbonated water and leave in the tube for 30 minutes (clamp if present) then re-flush.
6. If the blockage persists, very gently draw back on the syringe and then attempt to flush as before.
7. Tubes may take some time to clear therefore do not be alarmed if blockage does not resolve immediately.
8. If the blockage persists seek medical advice as the tube may need to be replaced.

* A 60ml syringe is recommended as smaller syringes cause more pressure within the tube and may cause the tube to rupture. Syringes of less than 50ml capacity should therefore be used with caution and a risk assessment should be made considering the risk of tube rupture against the risks associated with re-passing a new tube.

Acidic solutions such as fruit juices and cola etc, should not be used as they can cause the feed to coagulate/ precipitate. (Frankle *et al* 1998, Homeward 2003, Lord 1997). The acidity may also cause further damage the tube.

Objects should never be inserted into feeding tubes.

11.2 Dislodged Tube

If the RIG tube becomes dislodged but remains within the stoma tract patients are advised to tape the tube in that position to the abdominal wall and contact the Nutrition Nurse or Homeward Nurse immediately. The stoma can start to close within 30 minutes, therefore it is imperative that action is taken immediately. The RIG tube must not be used until the correct position is confirmed. If it is out of hours the patient should be advised to attend their nearest A&E with the spare tube provided and their Balloon gastrostomy passport information.

If the patient is an inpatient and the tube has been recently been placed in Radiology or during Surgery the clinician who placed the tube should be advised as a matter of urgency. The RIG tube must not be used until the correct position is confirmed.

11.2.1 If the tube is less than 8 weeks in situ

If the RIG tube has been inserted for **less than 8 weeks** there is a possibility that the stoma tract has not matured or is damaged. The patient will need to be reviewed by the Nutrition Team to decide if the tube will need to be replaced immediately in the department where they are, in endoscopy by gastroenterologists or under radiological guidance. Please contact the nutrition nurse, gastroenterologist on call or interventional radiology department as a matter of urgency.

11.2.2 If the tube has been in for longer than 8 weeks

If the stoma is **older than 8 weeks,** the Nutricia Homeward Nurse or the Acute Trust Nutrition Nurse can review and replace with a new tube as soon as possible. If there has been trauma to the site, they may need to be referred to Gastroenterology or Radiology for confirmation that the stoma tract is safe to use.

ENPLUG

If the stoma tract is formed (older than 8 weeks) an ENPLUG can be inserted into the tract to keep it patent until someone appropriately trained is available to replace the gastrostomy tube. ENPLUG training can be delivered by the Nutricia Homeward nurse. If an ENPLUG is not available, a replacement gastrostomy tube or a Foley catheter can be used. The tract can close up within 2 hours therefore this should be done as a matter or urgency. If a Foley catheter or gastrostomy tube has been placed this should not be used for feeding until placement into the stomach has been confirmed by the Nutrition Nurse, Gastroenterologist or Interventional Radiology.

11.2.3 Inserting a replacement balloon gastrostomy or tube

Patients with a balloon gastrostomy tube should have access to a spare replacement tube in the community setting ordered by the Dietitians on the Nutricia Homeward system. The replacement tube should be the same size (i.e. French Gauge) as the tube in situ and may be placed by a Nurse or Doctor who is clinically confident to undertake the procedure, (see Section 14).

Prior to inserting a balloon gastrostomy replacement tube the patency of the balloon should be checked, by filling the balloon with the recommended volume of water (check manufacturers guidelines). Once balloon integrity is confirmed the water should be withdrawn and the tube inserted into the stoma. The balloon should then be re-inflated with the appropriate volume of water. Correct placement of the tube should be confirmed by checking

gastric aspirate on pH indicator paper. A pH of <5.5 indicates correct placement (National Nurses Nutrition Group 2004) and the tube may be used for feeding, hydration and administering medication. If unable to confirm correct placement the tube should not be used for administration of feed, fluid or medication and the patient should attend their local hospital.

11.2.4 What to do if the patient is RIG dependant for ALL fluid and nutritional needs

If the patient is RIG dependant (i.e.NBM, using the feeding tube for all nutrition and hydration needs) and the tube falls out follow the procedures above. If the stoma is more than 8 weeks old and a tube replacement fails in the community, the Homeward Nurse should contact the Nutrition Nurse for advice on how best to manage.

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

- The tube is used for medication required on a frequent/regular basis to achieve symptom control
- The patient is nil by mouth and solely dependent on the feeding tube for hydration and nutrition.
- The patient is an Insulin dependent diabetic, and therefore at risk of Hypoglycaemia if feed not administered.

12 Discharging patients with a RIG feeding tube.

DISCHARGE PROCEDURE
Complete PEG discharge checklist (Appendix 11)

Inform the Dietitian of the planned date for discharge as soon as possible and where the patient is being discharged to.
If the discharge date is within 72 hours of RIG placement, the patient and GP should be informed about monitoring for ‘red flag’ symptoms and the action required should they occur.
Dietitian to:
 Obtain consent to register patient on Homeward delivery system and organise training on RIG care by liaising with the Homeward nurse.
 Register with Homeward for ancillary deliveries.
 Contact the GP for the feed prescription.
 Provide feeding regimen on discharge to the patient/carer.
 Provide contact numbers and troubleshooting written information.
 Discuss with the patient/carer where to obtain the feed from post discharge.
 Liaise with the District nurse team (if necessary).
 Provide a pump and stand. (if not delivered prior to discharge).
 Organise out of county transfer by handing over to the relevant dietetic team if the patient does not have a Worcestershire GP.

Homeward Nutricia nurse to:
 Provide training to the patient/carer on RIG care and using the tube.
 Contact the District Nurses/Care agency/Nursing Home to offer training.
 Report back to the ward and referring Dietitian if there are any concerns with competencies.

Ward to:
 Facilitate agreement on any additional support required to discharge, in particular if a package of care is required.
 Provide a 7-day supply of feed, syringes and giving sets if using a Feed pump.
 Contact District Nurses for follow up care of tube and RIG site.
 Notify team of discharge date.

Speech and Language Therapist / Nursing Staff to:
 Ensure the patient/carer is aware of what oral intake is safe.
 Confirm if patient is to remain Nil by Mouth.
 Provide information on mouth care.

Please refer to the Percutaneous endoscopic gastrostomy (PEG) guidelines – adults WHAT NUT-004.

All patients must be discharged with a written plan on type of tube and care guide for the tube and what to do if the tube falls out. A spare feeding tube will be ordered by the Dietitian to arrive on the first Nutricia Homeward delivery to the home.

13 Monitoring and Effectiveness

This document will be circulated to all clinical areas and will be available on the Trust intranet. This document will be reviewed and updated every 3 years. Adherence will be audited.

14 References

- Homeward, 2006. Patient advice sheets for adults. Nutricia.
- NICE (2006), Guidelines: Nutrition Support in adults: Oral Supplements, enteral and parenteral feeding.
- Report on the impact of a service improvement programme
- in a well-established radiologically inserted gastrostomy service.
- Journal of Human Nutrition and dietetics. 2020; F. Carvalho1 & T. Wiseman
- BAPEN https://www.bapen.org.uk/nutrition-support/enteral-nutrition/access-routes-tube-types 2019
- BAPEN https://www.bapen.org.uk/nutrition-support/enteral-nutrition 2018
- Medline Plus (2022) https://medlineplus.gov/ency/presentations/100125_4.htm

- Central Infusion Alliance Medical (2022) https://www.ciamedical.com/kimberly-clark-0100-16lv-each-mic-gastrostomy-feeding-tube-16-fr

Appendix 1: Pre RIG Planning

All Patients:

- All patients should be referred via the Nutrition MDT http://nww.worcsacute.nhs.uk/departments-a-to-z/nutrition-mdt
- Nutrition Nurse to send MDT outcome form to interventional radiology team for approval for RIG
- Interventional Radiology to allocate date for procedure

***Pre Procedure*:**

- Bloods including clotting to be checked 24/48 hours pre procedure
- Anticoagulants to be reviewed and changed/withheld if required

***Day of Procedure*:**

- Patient to be nil by mouth/tube for 6 hours pre RIG
- Staff to ensure patient has NG tube and venflon cannula in situ

Inpatients

- Ward doctor to request RIG insertion on ICE – "IRIG".
- Interventional Radiology to inform ward date/time of booked procedure

Community Hospital Patients

- Ward doctor to request RIG insertion on ICE – IRIG.
- Interventional Radiology to inform ward date/time of booked procedure
- *Bed to be allocated on AEC for patient to arrive 2 hours prior to procedure and return to for 2 hours post procedure*
- *Ward to arrange transport to and from acute hospital*
- *Ward to arrange chaperone to travel with patient*

Outpatients

- Nutrition Nurse/dietitian to liaise with interventional radiology to book date
- Nutrition Nurse/dietitian to liaise with patient/AEC to arrange short term admission for procedure

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Appendix 2: RIG Care Plan – First 72 Hours

Radiologically Inserted Gastrostomy (RIG) Care Plan First 72 Hours

Name: NHS Number: Hospital number: DOB:	Patient departure from radiology: Date: …… Time: …… Transferred to …… ward

RIG Procedure	AIM
Date: …… Time: …… Type of Tube placed: Balloon gastrostomy size…… water volume in retaining balloon ……mls amount of gastropexy buttons place ……..	For all staff to be aware of potential complications following RIG placement requiring urgent management. To meet nutrition and fluid needs To prevent tube-feeding related complications.

	Action
1	**Nil by RIG/ mouth for 6 hours post insertion**. Check radiology procedure sheet for any additional / individual patient instructions
2	**OBSERVATIONS: Should be recorded as below or as more frequently if clinically indicated** • Immediately post procedure • Repeated at 30 minute intervals for 2 hours • 1 hourly for 2 hours • 30 minutes after feed/water has been given • Observe for non- verbal signs of pain, restlessness, irritability
	CHECK TUBE/STOMA SITE for signs of: bleeding, leakage of gastric contents, tube displacement Ensure external fixation device remains in place at same position as at time of placement
3	**Commencing Feed After 6 hours** • Check procedure notes before using tube • Observations satisfactory (see complication alert) • Wash hands & don clean apron & gloves • Flush RIG with 50mL freshly drawn tap water • Commence feed as per dietitian regimen • Repeat observations • **If no complications remove nasogastric tube and dressing from RIG site**

COMPLICATION ALERT

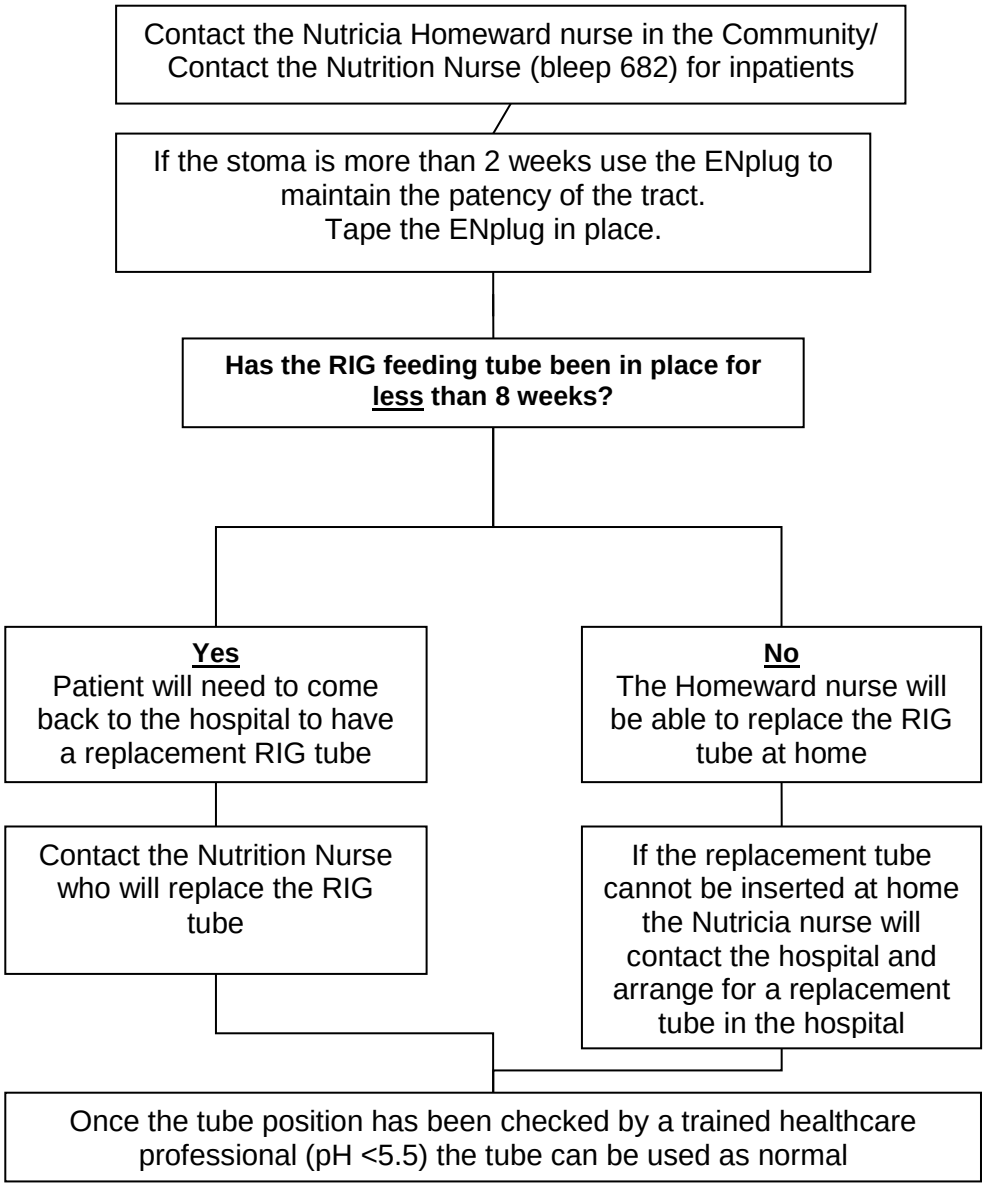
STOP feed/ medication delivery immediately if there is:

- Pain on feeding, or prolonged or severe pain post procedure
- Fresh Bleeding
- External leakage of gastric contents
- Tube displaced **DO NOT replace**, tract will not be formed **Obtain senior medical advice urgently**, consider CT scan, contrast study or surgical review

Discharge Checklist

- ☐ Tube has been flushed
- ☐ NG tube has been removed
- ☐ Feed started as per dietetic regime
- ☐ Patient has had training
- ☐ Dressing have been removed from RIG site
- ☐ Patient has all equipment required for discharge

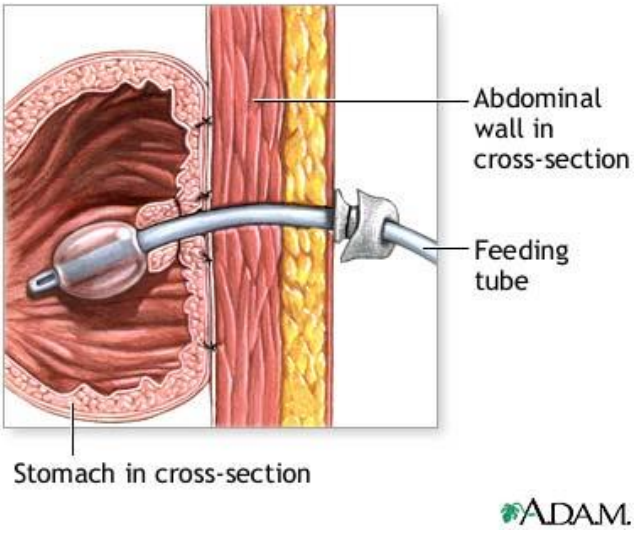
Appendix 3: What to do if the Tube becomes dislodged



Worcestershire Acute Hospitals NHS Trust

Appendix 3.1: Acute Medicine/A&E/SDEC poster for emergency tube fall out

What To Do If Gastrostomy Tube Falls Out



Act Fast! The tract will start to close quickly!

If the stoma is more than 2 weeks old insert ENPLUG/ACE STOPPER/Gastrostomy Tube (or Foley catheter if nothing else is available). Cover with a dressing – do not use tube.

Then contact Nutrition Nurse – bleep 682 – gastroenterologist on call, gastro reg, Interventional Radiology (via switch)

Appendix 4: RIG Starter Regimen

Nil by RIG for the first 6 hours to reduce risk of peritonitis

6 hours post insertion of RIG, if the abdomen is soft & there is no discomfort flush tube with 50 ml tap water.

If patient experiencing pain
DO NOT FLUSH and contact radiology to confirm position

If patient has severe pain post procedure, pain on flushing tube, fresh bleeding or external leakage of gastric contents seek urgent senior medical advice – may require CT scan.

DO NOT USE TUBE.

If patient tolerates this flush and there are no signs of leakage around RIG site.
Indication of patient tolerance:

- **No abdominal pain**
- **No distension**
- **No vomiting**
- **No leakage from RIG site**

- ☐ The Doctors should prescribe 10 days of Thiamine/Pabrinex, soluble vitamin & mineral supplement, according to Refeeding guidelines for those patients who are at high risk of refeeding syndrome.
- ☐ Commence feed as per Dietitians regimen.
- ☐ If no regimen available/dietitian unavailable but patient is to use RIG for feeding: start out of hours emergency enteral feeding starter regimen (WAHT-NUT-008)
- ☐ If patient is not using RIG straight away, nurse to teach patient to flush tube daily - with 50ml freshly drawn tap water.

References

[You should include external source documents and other Trust documents that are related to this Policy]

Contribution List

Contribution List

This key document has been circulated to the following individuals for consultation;

Designation

This key document has been circulated to the chair(s) of the following committees / groups for comments;

Committee
Nutrition and Hydration Steering Group
Gastroenterology Directorate
Surgical Directorate
Medical, Surgical, Urgent Care and SCSD Governance Teams

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and included as an appendix to key document when submitted to the appropriate committee for consideration and approval.

Please complete assessment form on next page;

Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form
Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	√	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	**Natalie Tayler**

Details of individuals completing this assessment	**Name**	**Job title**	**e-mail contact**
	Natalie Tayler	**Nutrition Clinical Nurse Specialist**	**Natalie.tayler@nhs.net**
Date assessment completed	**6.11.23**		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	**Title:** Care and Use of Radiologically Inserted Gastrostomy (RIG) Feeding Tubes in Adults			
What is the aim, purpose and/or intended outcomes of this Activity?				
Who will be affected by the development & implementation of this activity?	√	Service User	√	Staff
	√	Patient	❑	Communities
	√	Carers	❑	Other _____
	❑	Visitors	❑	
Is this:	❑ Review of an existing activity √ New activity			

	❑ Planning to withdraw or reduce a service, activity or presence?
What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	
Summary of relevant findings	

Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale**. Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age		√		
Disability		√		
Gender Reassignment		√		
Marriage & Civil Partnerships		√		
Pregnancy & Maternity		√		
Race including Traveling Communities		√		
Religion & Belief		√		
Sex		√		

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Sexual Orientation		√		
Other Vulnerable and Disadvantaged Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)		√		
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)		√		

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
		.		
How will you monitor these actions?				

When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)	

Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	Natalie Tayler
Date signed	6/11/23
Comments:	
Signature of person the Leader Person for this activity	
Date signed	
Comments:	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval.