HSE National Guidance on Adult Home Enteral Tube Feeding 2023

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Foreword

National Community Primary of the HSE, in collaboration with IrSPEN (the Irish Society of Clinical Nutrition & Metabolism) developed this national guidance on adult HETF. This guideline will build on previous work undertaken by the IrSPEN HETF guideline development group in 2017, supporting staff working in a primary care setting to standardise the approach to the management of HETF. It will support best practice and appropriate referral to the relevant staff to deliver high quality care in the primary care setting where possible, and support development of patient-centred pathways of care between acute and community settings for adults on home enteral tube feeding.

The guideline was developed in line with the national PPPG development framework by an expert multidisciplinary guideline development group. The scope of this guideline extends to adults on home enteral tube feeding living in domiciliary setting.

HETF is not just about a service user receiving nutrition through a feeding tube but involves a holistic approach of co-ordinated care delivered by a multidisciplinary team of healthcare professionals. It has been shown that quality of life of service users can increase significantly when HETF is co-ordinated by a multidisciplinary team, in addition to a decrease in complications and improved cost-effectiveness.

The current guidance is based on European policy through the European Society for Clinical Nutrition and Metabolism (ESPEN) and review of best available evidence sets out recommendations for action for healthcare professionals relevant to their duties, on the safe provision of HETF and the importance of providing adequate nutrition[1].

The document therefore aims to provide service users and carers with the support and resources that they need to ensure safe provision of HETF and is consistent with the ESPEN guideline. It is underpinned by the principle that all services users receiving HETF should receive access to a healthcare professional for evaluation of the procedure and, especially in case of complications or emergencies, adequate intervention[1].

Signed by

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Name: _____

Title: _____

Acknowledgements

This guidance has been produced with contributions from, and in consultation with, the members of the National Nutrition PPPG multidisciplinary group under the governance of Primary care Operations National Service Improvement Programme. Members of this group are listed in Part B Appendix II and include representatives from the HSE Community Operations, Acute Hospital, IRSPEN, and academia.

The document is also a credit to the work of the Irish Society for Clinical Nutrition & Metabolism (IrSPEN) who significantly contributed this guideline.

We would like to acknowledge the input in relation review of medication safety from Ms. Louisa Power MPSI Chief II Pharmacist HSE West Primary Care Unit. In relation to rapid review of literature from University College Dublin MSc students, Shane Veale, and Roisin McCaffrey, thank you. Thank you to Laura B. Kirwan PhD for compiling and formatting the final draft, and to all others who supported this work.

Finally, this national guidance would not be possible without the huge commitment, expertise, and persistence of Niamh Maher (HSE Senior Dietitian Home Enteral Tube Feeding Project Lead).

Executive Summary

Home Enteral Tube Feeding (HETF) supports the nutritional requirements of service users in primary care settings unable to meet nutritional requirements through oral intake alone. While HETF supports service users to remain in their home and may restore some quality of life for adults and children, the provision of HETF services can be variable. It is estimated that at any one time in the Republic of Ireland, there are approximately 2,500 individuals on tube feeding at home or in residential care[2]. The prevalence of HETF is increasing as health systems shift delivery of care from acute to primary care settings[3,4], and it is estimated that the number of patients receiving EN in the community is more than twice those in a hospital setting[5].

Working in conjunction with a wide range of stakeholders, the aim of the current guidance was to improve the quality and safety of HETF services by setting a national standard and published guidance. It aims to promote practice that is up to date, evidence based, effective and consistent. It also aims to enable individual providing HETF services to identify strengths and complications, while also aiming to show people what safe, high-quality care should look like, and what to expect from an optimal HETF service. This guidance is primarily aimed at doctors, nurses, dietitians, speech and language therapists, pharmacists and other healthcare professionals involved in the discharge and follow up of HETF adults and children.

The aim of these Guidelines is to:

- Improve outcomes for HETF recipients
- Promote an efficient use of healthcare resources
- Reduce variation in practice, and
- Standardise the process of discharging adults and children into the community on HETF

The current guidance contains X key recommendations, covering the transfer of an adult on home enteral tube feeding to a primary care setting; the nutrition care process; management of enteral feeding stomas; and discontinuing HETF.

SECTION 1: Introduction

1.1 What is Home Enteral Tube Feeding (HETF)?

HETF refers to nutrition provided through a feeding tube directly into the gastro-intestinal tract when an individual cannot ingest, chew or swallow food but can digest and absorb nutrients. HETF allows the patient to return to a familiar environment where support can be provided by the patient itself, family, friends, or professional carers1. HETF occurs in the community – in domiciliary or residential care settings and may be referred to as a form of artificial nutrition

support.

1.2 Who is involved in HETF management?

A coordinated HETF service is recommended for the optimal management of HETF service. The multidisciplinary team should include a team lead (to provide expert knowledge and coordination), the treating physician, a dietitian, a registered nurse trained in nutrition support (for tube fed HETF) and a speech pathologist (for dysphagic patients)(Figure 1.0)[6]. A Dietitian would be best placed to lead the coordination of HETF services[6]. The principle roles of each healthcare professional are presented in Table 1.0. The role of each healthcare professional should be clearly defined and communicated to all members of the multidisciplinary team.

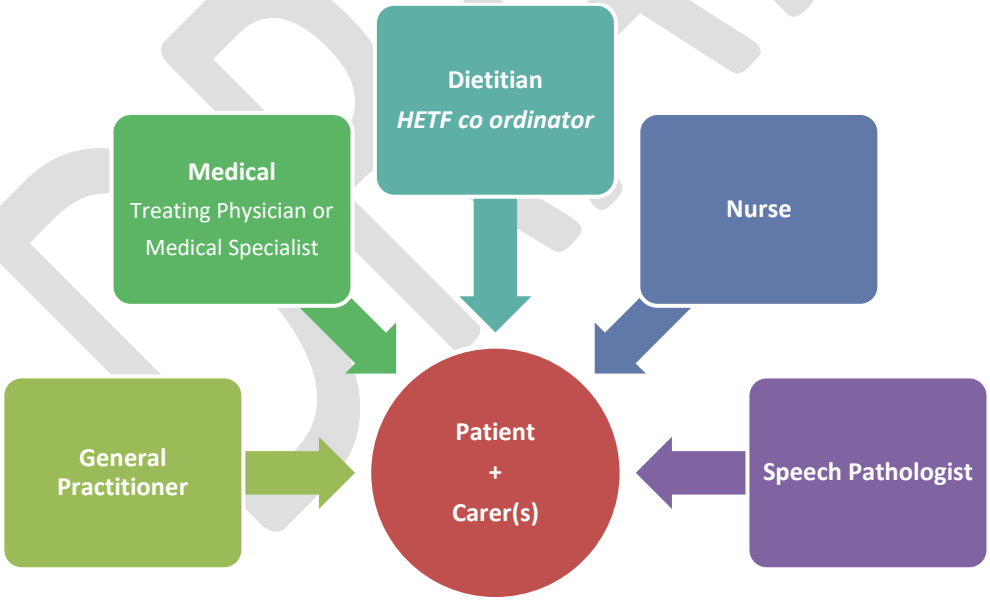


Figure 1.0: Nutrition support healthcare professionals involved in HETF care adapted from the 2012 ACI Guideline [6]

Table 1.0: Principle roles of healthcare professionals in HETF care

HETF processes and principle roles	Dietitian	Registered Nurse	Speech Pathologist	Medical Practitioner
Assessment				
Nutritional assessment	✓			
Assessment of competency		✓		
Assessment of swallow (for dysphagic HETF patients)			✓	
Medical assessment				✓
Planning				
Nutrition requirements	✓			
Nutrition regimen	✓			
Assist with selection of access route	✓	✓		
Route of administration				✓
Implementation				
Instruction on HETF regimen	✓			
Instruction on HETF administration	✓	✓		
Patient support	✓	✓	✓	✓
Establish access route		✓		✓
Instruction on texture and fluid consistency			✓	
Supply and Delivery				
Prescribe and arrange supply/delivery	✓	✓*	✓**	
Information for HETF supply/delivery	✓	✓*	✓**	
Troubleshooting supply/delivery issues	✓	✓*	✓**	
Monitoring				
Assess effectiveness of HETF therapy	✓	✓		✓
Nutritional assessment	✓			
Tolerance and compliance	✓	✓		
Access site management		✓		
Troubleshooting (tubes, pumps)	✓	✓		
Assessment of swallow (for dysphagic HETF patients)			✓	

** = Equipment only ** Thickener/thickened fluids only. Adapted from ACI, 2012[6]*

1.3 Why we need Standardised Guidance

In the ESPEN guideline on HETF[1], 96% of ESPEN members reached consensus that "HETF should be standardized and coordinated by a multidisciplinary Nutrition Support Team (NST)(physician, nurse, dietician, pharmacist) as this increases the quality of the measures, reduces the complication rates, and thus makes a significant contribution to improve patients QoL and to the cost-effectiveness of the measures"[1].

1.4 Skills of Staff

Healthcare professionals directly involved in patient care should be provided education and training relevant to their duties, on the safe provision of HETF and the importance of providing adequate nutrition[1]. Healthcare professionals should ensure individuals requiring nutrition support receive coordinated care from a multidisciplinary team[5]. All patients receiving HETF should have access to a professional for evaluation of the procedure and, especially in case of complications or emergencies, for adequate intervention[1].

1.5 Training of Patients and Carers

In line with the ESPEN recommendations, all information relating to HETF care should be provided not only verbally, but also in writing or picture format. Instruction should be provided in the hospital setting or at home. Written information should be provided and include contact information in case of complications and/or further clarifications needed (recommendation 54)[1]. The environment where HETF care is being provided should be safe in order to administer the EN without risk of complications (recommendation 58[1]). Hygiene standards are paramount and should be established to prevent contamination of the home enteral product and HETF related infections (recommendation 59[1]).

SECTION 2: Transfer of an adult on HETF feeding to a primary care setting

1.1. Discharge planning

1.1.1. The discharge planning process should consider the knowledge, skills and support network of the service user/caregiver who will be responsible for the management of tube feeding in the primary care setting.

1.1.2. The service user/caregivers must be involved in the decision-making process when HETF is being considered. The rationale of continuing tube feeding beyond the hospital setting (including expected benefits and duration), and the expectation that it will be the service user/caregiver who will be primarily responsible for the management of HETF, must be fully discussed to assist their decision-making in providing informed consent. The medical team should record this communication and the decision reached in the patient's healthcare record.

1.1.3. Once there is agreement that proceeding with home enteral tube feeding is appropriate, and the service user/caregiver has given consent, a designated clinician with the necessary expertise and skills, typically the hospital dietitian, should lead the hospital discharge planning, supported by the wider multidisciplinary team.

1.1.4. The service user's General Medical Scheme (GMS) entitlement (e.g., medical card or other eligibility) must be clarified prior to discharge, as this will determine how prescribed enteral feeds and HETF equipment and consumables are provided by the HSE in Primary Care. Designated healthcare staff can check service user's eligibility status at https://www.sspcrs.ie/portal/checker/pub/check. A hospital social worker can assist the service user/caregiver with applications for relevant reimbursement schemes.

1.2. Developing a nutritional care plan for home

1.2.1. The service user should be established on the full HETF regimen prior to discharge. It may be necessary to adjust the hospital feeding regimen to ensure it is suitable for the home setting (e.g., avoiding the need to change a feed container during the night). The hospital dietitian should liaise with the service user/caregiver in devising a feeding regimen tailored for use in their specific home setting and family routine.

1.2.2. The HD must provide the service user/caregiver with clear written instruction on administering the feeding regimen including name of feed/s, start and end time for feeding, feeding rate and total volume of feed required daily. In addition, the volume and frequency of water flushes required must be detailed on the feeding regimen. The hospital dietitian should provide the service user's GP, PHN/ RGN and Community Dietetic services with a copy of this feeding regimen.

1.2.3. **Considerations for those with diagnosed swallowing difficulties (Dysphagia)**

The medical team must clarify if the service user is permitted to take any food or fluids orally, where the indication for enteral tube feeding is an underlying diagnosed swallowing disorder. This decision may be made in collaboration with the service user's SLT following their swallow evaluations. The service user/caregiver must be fully informed of the risks of taking food or fluid orally where the medical team does not recommend this. Service users' preferences may need to be taken into consideration in relation to whether they eat and drink orally if there are identified risks of aspiration with oral intake. In which case, the service user/caregiver should be supported in

their decision making and an assessment of their capacity to decide should be considered as applicable.

If oral intake is permitted, the hospital SLT should provide the service user/caregiver on information relating to their recommended modified diets and/or fluids as per the IDDSI framework. Information regarding safe swallow/feeding guidelines may also be provided. The hospital SLT should provide the service user's GP, PHN/ RGN, Community SLT and Community Dietetic services with a copy of their recommendations.

1.2.4. A summary of the service user's nutritional status, including weight and BMI (if appropriate), and nutrition care plan should be included in the medical discharge letter to the GP, together with post-discharge arrangements for follow-up and monitoring.

The hospital dietitian should liaise with the community dietetic department in the CHO area in which the service user resides to confirm if a community dietitian can provide clinical review and monitoring locally.

The plan for **monitoring and follow-up** of the nutrition care plan following discharge must be clarified for the service user/caregiver by the hospital dietitian (and hospital speech and language therapist where appropriate) prior to discharge.

1.3. Provision of clinical nutrition products required for home enteral tube feeding

1.3.1. Clinical nutritional products include enteral formula, oral nutrition supplements and modular feeds that are recommended as part of an enteral tube feeding regimen. These products are dispensed in primary care by the community pharmacy and are reimbursable via medical card, drug payment scheme (DPS) or in some cases via long-term illness (LTI) card and other schemes. The hospital dietitian should confirm prior to discharge that all the clinical nutritional products recommended for prescription for the service user are reimbursable by liaising with a community pharmacist or alternatively checking online at https://www.sspcrs.ie/druglist/pub.

If a clinical nutritional product prescribed is not included on the reimbursable list, and there is no suitable reimbursable alternative, a GMS hardship assistance application may be submitted to PCRS – applications will be reviewed for approval on a case-by-case basis. Further information on discretionary hardship arrangements is available on the PCRS section of the HSE website https://www.hse.ie/eng/staff/pcrs/

1.3.2. The hospital medical team must provide the service user with a **prescription** for the clinical nutrition products required on discharge. The medical discharge letter should request that the service user's GP continue to repeat the prescription for the duration that home enteral tube feeding is required, unless a hospital or community dietitian recommends an alternative prescription following review of the nutrition care plan.

1.3.3. The hospital dietitian should ensure that the service user is provided on discharge with **7-day contingency supply** of the relevant clinical nutritional products required. This will assist in ensuring continuity of supply, considering likely time required for the community pharmacy to fill the prescription.

1.3.4. Prior reimbursement approval is required for non-first line standard oral nutritional supplements (List B), which may be used as part of an enteral feeding regimen (refer to Appendix I and note that

updated lists are available on https://www.hse.ie/yourmedicines). Hospital clinicians, GP's and dietitians can register with PCRS at www.pcrs.ie to apply for prior reimbursement approval of these products, where no suitable alternative is available to meet the nutritional needs of the service user. Ideally, the application for approval should be made by a hospital clinician or hospital dietitian prior to discharge to avoid delays in the dispensing of the clinical nutritional products. If approval is not in place prior to discharge, the hospital dietitian should clarify this in the discharge letter to the GP and/or community dietitian.

Where the ONS product is being used as part of an enteral feeding regimen, this should be stated on the application to PCRS, as long-term approval can be granted for tube-fed patients, avoiding the need to repeat the application process every 6 months.

1.4. Funding, ordering and supply of home enteral tube feeding equipment and consumables

1.4.1. The service user will require a variety of equipment and consumables to support the administration of enteral tube feeding in primary care, including some or all of those outlined in Table 2.1. The discharging dietitian will identify the specific equipment and consumables required for the individual service user.

Table 2.1: Examples of variety of equipment and consumables to support the administration of enteral tube feeding in primary care

Enteral Feeding Systems (EFS) - EQUIPMENT	Enteral Feeding Systems (EFS) - CONSUMABLES	Enteral Feeding Devices & accessories	Enteral Syringes	Other
Feeding pump Tabletop drip stand Backpack	Giving sets Reservoirs 2-pack connectors Bolus adapters	Feeding tubes Adapters Extension sets	ENFIT syringes (all sizes) Luer-slip 10ml (if balloon check)	pH testing strips Clog Zapper ™ Stoma plugs

1.5. Enteral Feeding Systems

An Enteral Feeding System (EFS) is required to facilitate enteral feeding where a feeding pump is necessary to administer the feed. An EFS is comprised of enteral feeding equipment (i.e., feeding pump, table-top drip stand and back pack) and enteral feeding consumables (i.e. giving sets, reservoirs, 2-pack connectors and bolus adapters)

1.5.1. There is a **national contract in place for the supply of Enteral Feeding Systems to the HSE** - the *National Drawdown Framework Agreement for the provision of Enteral Feeding Systems (HSE 8932)* - which is relevant to all HSE Statutory Hospitals, Community Healthcare Organisations and entities funded under Section 38 of the Health Act 2004 (as amended) (a "Section 38 Body"). This Framework went live in October 2019, and at the time of publication, it has been extended to October 2023. Further information on the status of this tender is available by emailing msp1@hse.ie. After October 2023, updated information on HSE contract arrangements can be attained by emailing HBS procurement at procurement.support@hse.ie, and the query will be directed to the appropriate category manager.

A standard operating procedure, which outlines the procedures for ordering under the terms for this Framework is included in Appendix IV, and the process is summarised in Table 2.2. There are four ranked EFS Vendors appointed to the Framework (Table 1.2), all of whom meet the mandatory

requirements for product quality and aftersales, training and support. To ensure compliance with National Financial Regulations, orders should only be issued to Vendors appointed to the Framework, and only for EFS products as listed on the Framework (Appendix I).

Service users on tube feeding in a primary care setting should **use the EFS provided by the highest ranked Vendor** unless there is a valid clinical indication to depart from the ranking to meet the needs of the service user.

Table 2.2: Ranking of EFS Vendors on the EFS Framework and the name of the EFS supplied

Ranking on EFS Framework	Vendor Name	EFS System Name
1st	Healthcare 21	Kangaroo Joey
2nd	Abbott	Freego
3rd	Nutricia	Flocare
4th	Vygon	EasyMoov

1.5.2. All service users who require EFS **must register with an EFS Vendor** appointed to the Framework. Registration is required for the supply of enteral feeding equipment, and to access training and support on the use of EFS, provided by the Vendor under the terms of the Framework Agreement. Registration also ensures product tracking and traceability for servicing, product recall, or field safety notices. Each EFS vendor has a registration form, which should be completed by the hospital dietitian and must be signed by the service user/caregiver to consent to registration. The hospital dietitian should file a copy of the registration form in the service user's medical record. Once registered, the EFS vendor will deliver an enteral feeding pump, table top drip-stand, a backpack (if required), and a starter 7-day supply of giving sets, reservoirs and 2-pack connectors as required to the patient's home, free of charge.

1.5.3. A **EFS equipment** (i.e., feeding pump, table-top drip stand and backpack) is **supplied free-on-loan** to service users in primary care, under the terms of the Framework, for the duration that enteral tube feeding is clinically indicated. Registration with the Vendor is required for the supply of EFS equipment.

1.5.4. **EFS consumables** (i.e., giving sets, reservoirs, 2-pack connectors, and bolus adapters) should be provided by the CHO area for service users with valid GMS eligibility. The hospital dietitian must submit a written request to the CHO area for the funding and supply of the EFS consumables required. A prescription is not required for consumables supplied by the CHO area (see Section 2.4). Where a service user is ineligible for funding under the GMS scheme, their community pharmacist may assist them in applying to have the enteral feeding equipment required supplied via their local community pharmacy, funded under DPS or other arrangements instead. Note: A prescription will be required for any enteral feeding equipment provided via the local pharmacy.

1.5.5. The **process for ordering and supply** of EFS equipment and consumables in the CHO areas is outlined fully in an SOP CFS-PC-OPS-005 (see Appendix I) and summarised in Figure 2.1. Further training is available at https://discoveryzone.hseland.ie/hse-nutrition-training-modules/nutrition-section-four/

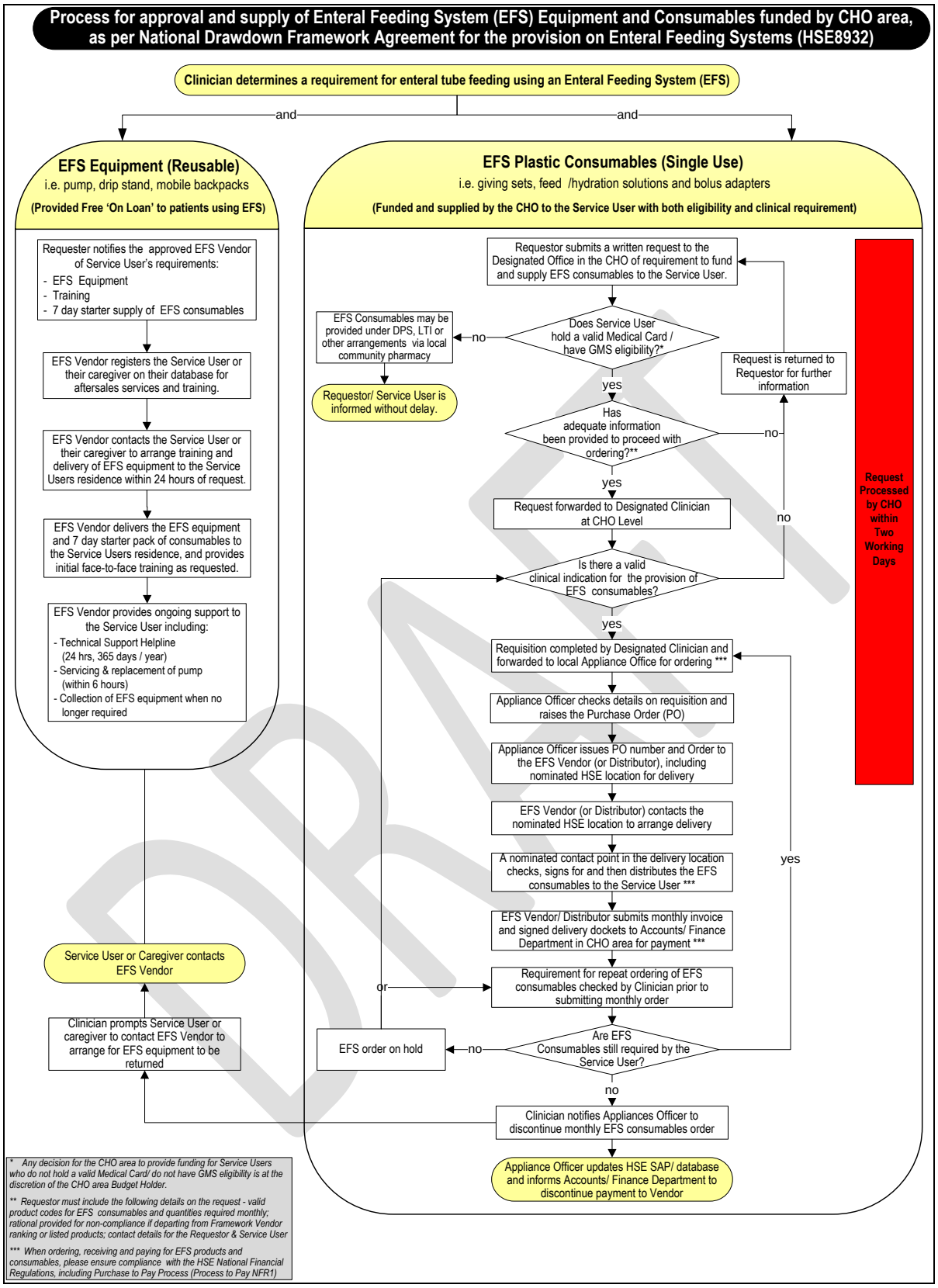


Figure 2.1: Process flow for CHO approval and supply of EFS Equipment and Consumables

1.5.6. Enteral **Devices**, Syringes and Other Equipment

At the time of publication of this guideline there was no national HSE contract in place for the supply of any **other enteral feeding equipment, devices, or accessories** that the patient may require after discharge (other than the EFS equipment and consumables previously described). This additional equipment should be supplied via the local CHO area if the service user has valid medical card eligibility, or otherwise via the community pharmacy funded under DPS or other arrangements (refer to Section 2.4). The local CHO area (or community pharmacy where appropriate) will typically place the order with the Vendor recommended by the hospital dietitian.

The hospital dietitian should provide the service user with a **7-day contingency supply** of the relevant enteral feeding devices, syringes and other equipment required at discharge (e.g., ENFIT syringes, a spare adapter or extension set, and a spare balloon gastrostomy tube). This will assist in ensuring continuity of supply, considering likely time required for the order to be processed and supplied by the CHO area or community pharmacy. A sample checklist of equipment and consumables for discharge is provided in Appendix II.

1.5.7. The **community dietitian** may update and amend the order request for enteral feeding equipment and consumables, enteral feeding devices and accessories, and other enteral feeding equipment required by the service user where appropriate for service users under the care of the community dietetic service. This may be required following initial dietetic review post discharge, or subsequently where the requirements of the service user change (e.g., may change from bolus feeding to using a feeding pump).

1.6. Applying For Funding & Supply of Enteral Feeding Equipment & Consumables

1.6.1. The hospital dietitian must provide the initial written request for the funding and supply of all enteral feeding equipment and consumables required by the service user (including those listed on the EFS Framework). This request should be submitted to the designated office for approval of these requests within the CHO area (e.g., Director or Assistant Director of Public Health Nursing or as per local area arrangements). A sample written request template is included in Appendix I. It is recommended that this written request for funding should include the following, at a minimum:

a) A list of products required (including supplier product order codes) and quantities of each required per month.
b) A contact number/ email address of the requestor should be supplied in case of any queries.

c) Details of all known funding eligibilities currently held by the Service User i.e., GMS, DPS, LTI

d) Service User address and contact details (phone and email)

e) A valid clinical indication where an EFS supplier other than the highest ranked has been recommended (as detailed in SOP CFS-PC-OPS-005)

1.6.2. Requests for funding of equipment and consumables should be reviewed on an ongoing basis by the designated staff within the CHO area in line with local and national policy.

1.6.3. Enteral feeding devices and consumables, funded and supplied by the local CHO area, are typically delivered to the local health centre or other HSE location for collection by the service user/caregiver.

1.6.4. The community pharmacist may assist service users who are not eligible for funding and supply of enteral feeding devices and consumables via the CHO area, in applying to have the required enteral feeding equipment funded under DPS or other arrangements instead and supplied via their local pharmacy.

1.6.5. A summary of the reimbursement route for service users with and without medical card eligibility at the time of publication of this guideline is provided in Table 2.3.

Table 2.3: **Summary of reimbursement route for Clinical Nutrition Products and Enteral Feeding Equipment in Primary Care**

Product Category	**Product**	**Schemes**			**Discretionary Hardship Agreement**
		GMS	**DPS**	**LTI**	
Clinical Nutritional Products e.g., Enteral Feed, Oral nutritional Supplements, Modular Products	Product with GMS code	✓	✓	Illness Code dependent, check approved medications on PCRS website	No
	Product without GMS code	No	Requires individual reimbursement form	Illness Code dependent, check approved medications on PCRS website	Reimbursement request (HD1) application required
Enteral Feeding System	Giving Sets	✓	✓	A,L,N,C**	No

	Reservoirs	✓	✓	A,L,N,C**	No
	2-pack connectors	✓	✓	A,L,N,C**	No
	Bolus adapters	✓	✓	A,L,N,C**	No
	Feeding pump	N/A*	N/A*	N/A*	N/A*
	Table-top drip stand	N/A*	N/A*	N/A*	N/A*
	Backpack	N/A*	N/A*	N/A*	N/A*
Enteral Feeding Devices	Feeding tubes	✓	✓	A,L,N,C**	No
	Adapters & extension sets for feeding tubes	✓	✓	A,L,N,C**	No
	Stoma plugs	✓	✓	A,L,N,C**	No
Enteral Syringes	ENFIT syringes – all sizes	✓	✓	A,L,N,C**	Yes
Other	pH testing strips	✓	✓	A ,L,N,C**	Yes
	Clog Zapper ™	✓	✓	A,L,N,C**	Yes

**N/A as provided free of charge to service user on registration with the nutrition company supplying the EFS **LTI Illness Codes: A= Intellectual XXXX; L=Cystic Fibrosis; N=Acute Leukaemia; C= Cerebral Palsy*

1.7. Training and education of service users/caregivers to manage enteral tube feeding at home

1.7.1. The process of training and educating service users/caregivers should be initiated without delay once the decision is made to discharge a person on home enteral tube feeding and is typically co-ordinated by the hospital dietitian. It is recommended that the service user should not be discharged from hospital to primary care until they and/or their caregiver are deemed competent and have the necessary supports in place to manage tube feeding outside the hospital setting.

1.7.2. **Training and education in relation to the use of enteral feeding systems**

The EFS Vendor must provide training on the use of the EFS to all service users/ caregiver registered with them. Under the terms of the Framework agreement, the EFS Vendor must provide sufficient training sessions, both before and after discharge, to ensure that the service user/caregiver is competent and confident in using their EFS. In addition, each nutrition company will provide written instructions, a 24-hour helpline number and an aftersales service.

1.7.3. **Training and education in relation to other aspects of enteral tube feeding**

Additional training should be provided by the hospital dietitian and/or designated acute hospital staff prior to discharge to ensure that the service user/caregiver feels competent and confident to manage tube feeding at home. This training may include but is not limited to; administration of bolus feeds, water flushes and medications; daily care of the feeding tube and stoma; troubleshooting common tube problems; together with any other training needs identified. A sample checklist of training required prior to discharge, which can be tailored to the training needs of the individual service user, is provided in Appendix X).

The hospital dietitian or designated person planning home discharge should provide the service users with written instructions to support and reinforce any education training provided. The service user should be provided with a list of contacts for provide support and advice if required after discharge. These contacts may include but are not limited to; hospital and/or community

dietetic service; public health nursing service; HSE aids and appliances office; EFS vendor and enteral feeding device vendor helplines and online training resources; community pharmacy.

1.7.4. **Other supports relating to the management of enteral feeding tubes**

Some enteral feeding device vendors offer an additional clinical nursing service in relation to the management of enteral feeding tubes in the community setting. Typically, these clinical nurse services provide additional training to service users/caregivers using their products after discharge (e.g., training on checking balloon volume or gastrostomy tube replacement). At the time of publication of this guideline, there was no national framework or service level agreement in place between with the HSE and suppliers of enteral feeding devices to provide any products or associated nursing service to the service user/caregiver. Clinicians should always familiarise themselves with local service level agreements /arrangements with suppliers and act in line with organisational standards and policies e.g., HSE general data protection regulations (GDPR), national financial regulations (NFR) etc.

1.8. Planning follow-up after discharge

1.8.1. There must be a clear plan for timely clinical review of service users after discharge to primary care on home enteral tube feeding, in line with best practice guidance (refer to section x). The plan for clinical review should be communicated to the service user/caregiver at the time of discharge and they should be provided with a contact number for the service/s that will be providing clinical review.

1.8.2. The management of home enteral tube feeding should be monitored in the setting that is most appropriate to the service user's medical needs or underlying clinical condition at that point in time e.g., specialist OPD clinics, primary care clinics or domiciliary visits. In some cases, a blended 'shared care' approach may be more appropriate, where routine follow-up is provided in primary care, with oversight from the specialist clinician. At the time of publication of this guideline, there is no national integrated care pathway for home enteral tube feeding.

1.8.3. It is recommended that the hospital dietitian should complete a standard home enteral tube feeding clinical referral form when discharging a service user to primary care on tube feeding (refer to appendix X). The referral form should be sent to the community dietetic service in the CHO area. A copy can be sent to other community services involved in the services user's nutritional care e.g., PHN/ RGN, GP or SLT.

Note: this referral form is additional to a funding request letter but can be attached to same to avoid duplication.

1.9. Accepting a referral to primary care for an adult newly discharged on home enteral tube feeding

1.9.1. The home enteral tube feeding referral should be received by the designated office/ service in the CHO, typically the community dietetic service. The procedure for processing a referral to primary care for adults on home tube feeding is outlined in Figure x.

1.9.2. Referrals to the community dietetic service for service users newly discharged on HETF should be prioritised. The service user should be reviewed by a dietitian, in line with best practice, within 10 working days of receipt and acceptance of referral, or sooner if clinically indicated (refer to Section

2.5.1). The hospital dietitian should discuss the need for sooner review with the community dietitian in advance of discharge to allow for priority appointment scheduling.

1.9.3. A service user on home enteral tube feeding who requires dysphagia management should be referred to the community SLT by the hospital SLT when appropriate and reviewed within XX timeframe or sooner if clinically indicated.

1.9.4. If the referral for clinical review in the primary care setting cannot be accepted by the relevant primary care service (e.g., community dietetic or speech and language therapy services) both the referrer and the service user/caregiver should be informed immediately, so that alternative clinical review process can be put in place.

1.10. Key Recommendations

- ✓ The plan for monitoring and follow-up of the nutrition care plan following discharge must be clarified for the service user/caregiver by the hospital dietitian (and hospital speech and language therapist where appropriate) prior to discharge
- ✓ The hospital medical team must provide the service user with a prescription for the clinical nutrition products required on discharge
- ✓ The hospital dietitian should ensure that the service user is provided on discharge with 7-day contingency supply of relevant clinical nutritional products required
- ✓ There is a national contract in place for the supply of Enteral Feeding Systems to the HSE
- ✓ The Procedure for Processing and Approval of Enteral Feeding Systems Products & Consumables in Community Healthcare Organisations should be followed

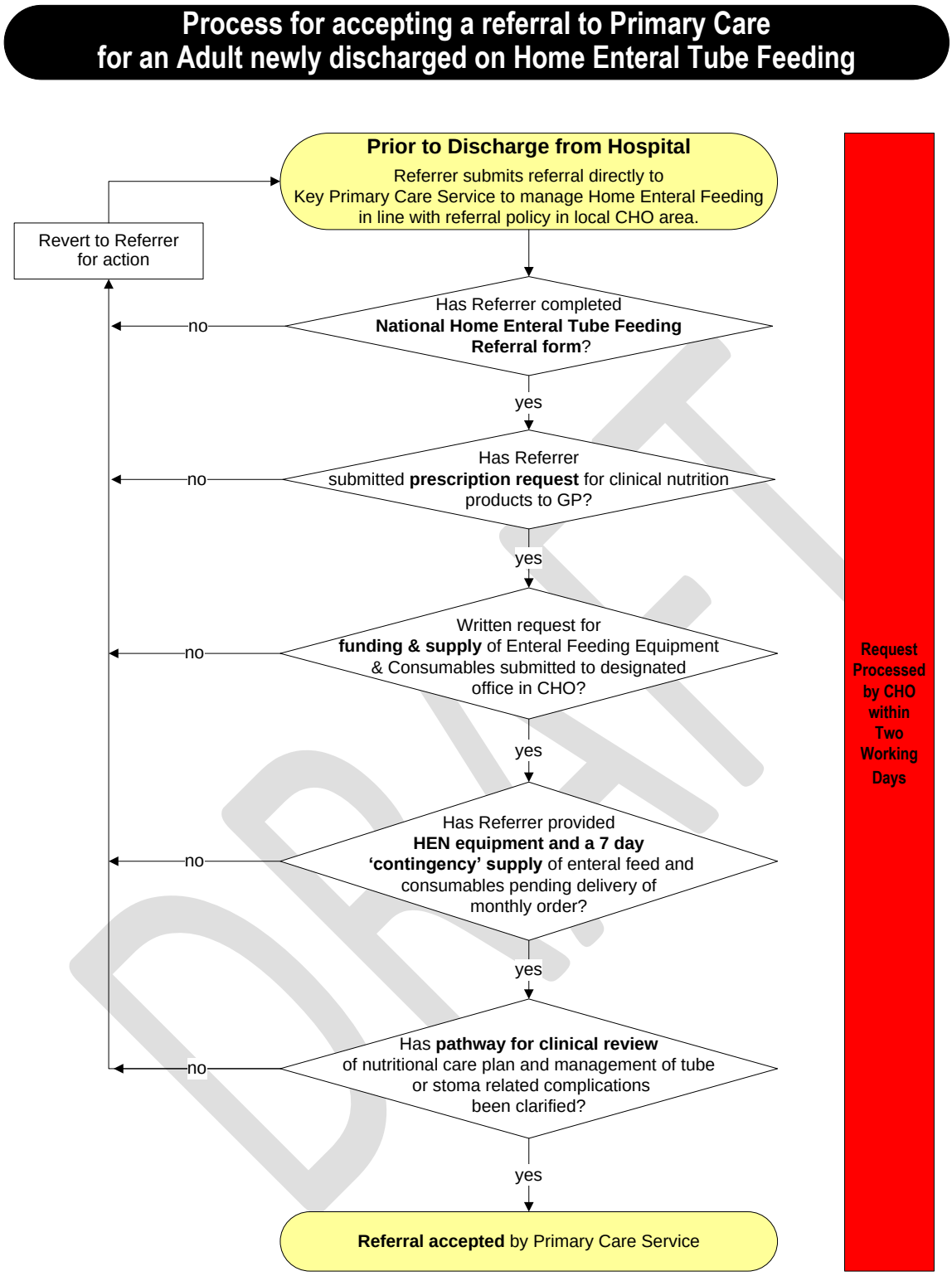


Figure 2.2 Process for accepting a referral to Primary Care for an Adult newly discharged on Home Enteral Tube Feeding

SECTION 3: Nutrition Care Process

2.1. Enteral feeding access routes

2.1.1. Enteral feeding is administered using a feeding tube directly into the stomach (i.e., gastric route) or small intestine (i.e., post-pyloric route). The appropriate route for delivery depends on the efficacy, expected duration of HETF, safety, and underlying clinical condition[6]. Adequate choice of formula, route, feeding modality, number of doses, administration time, and dose volume are important as they have been shown to reduce the risk of gastrointestinal complications [7].

2.1.2. Most service users on HETF are fed via a gastric route, with some requiring post pyloric feeding (e.g., service users with upper gastrointestinal obstruction or severe gastro-oesophageal reflux with risk of aspiration). The routes of enteral feeding are summarised in Figure 3.1.

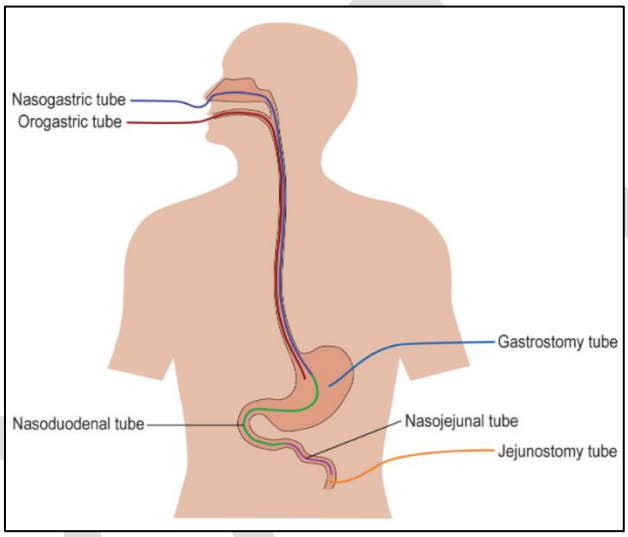


Figure 3.1: Routes of enteral feeding

2.1.3. The expected duration on HETF, together with the underlying clinical condition will inform the type of feeding tube used. Service users who are expected to only require short-term enteral feeding (<1month) may be discharged with feeding tube inserted via the nose with the tip of the tube in the stomach (nasogastric) or small intestine (nasoduodenal, nasojejunal). A longer-term feeding tube (e.g., gastrostomy or jejunostomy) will be indicated where it is expected that the service user will continue HETF for longer than 4-6 weeks (e.g., gastrostomy or jejunostomy). The different types of feeding tubes and their indication for use is outlined in Table 3.1.

2.1.4. Many feeding tubes **inserted** via the nose can be placed at bedside, with correct positioning confirmed on x-ray. Longer-term feeding tubes will be initially placed endoscopically, radiologically, or surgically. The type of feeding tube inserted will determine if future tube replacements can be performed in primary care or if the service user must return to endoscopy, radiology, or surgery to have the tube replaced. The management of the different types of feeding tubes in primary care are outlined in Section 4 [8,9].

Table 3.1: Type of enteral feeding tube for short and long term nutrition support

Duration	Feeding Route	Feeding tube	Indication
Short Term	Gastric	Nasogastric (NG)	Usually used for short term enteral feeding (4-6 weeks) but can be used for longer is alternative routes are contraindicated
		Oesophagogastric	Used temporarily post laryngectomy - feeding tube inserted into stomach via a surgical opening between trachea and oesophagus
	Nasoenteric	Nasoduodenal (ND) or Nasojejunal (NJ)	Usually used for short term feeding when the gastric route is not suitable e.g. gastroparesis or aspiration risk due to reflux. Can be used where alternative routes are contraindicated
Long Term	Gastric	Percutaneous Endoscopic Gastrostomy (PEG)	PEG is most commonly used gastrostomy tube but a radiologically or surgically inserted tube may be required if endoscopic placement of the PEG is contraindicated (e.g. pharyngeal or oesophageal stricture)
		Radiologically Inserted Gastrostomy (RIG)	
		Surgical gastrostomy	
		Balloon Gastrostomy tube (BGT)	A BGT or a LPGD may be used as a primary radiologically inserted tube, or for the replacement of an existing gastrostomy tube that has broken or dislodged
		Low-profile Gastrostomy device (LPGD)	
	Post-pyloric	PEG with jejunal extension (PEGJ)	A PEGJ is an extension to a PEG that is inserted via an existing gastrostomy stoma and passed endoscopically beyond the duodenojejunal flexure
		Percutaneous Endoscopic Jejunostomy (PEJ)	A PEJ is inserted endoscopically via a direct puncture into the small intestine Used to reduce risk of aspiration
		Surgical jejunostomy	A surgical jejunostomy is most commonly a needle catheter jejunostomy inserted subserosally to reduce the risk of leakage, but tend to be fine bore, and prone to block if poorly managed
		Radiologically inserted jejunostomy (RIJ)	Radiologically inserted jejunostomy is inserted directed into the jejunum under radiological guidance, and larger bore than surgically placed jejunostomies

2.2. Nutrition and Hydration

2.2.1. Commercially **prepared enteral formulas** are regulated as a food for special medical purposes (FSMP) in the EU under Regulation (EU) No 609/2013 of the European Parliament and of the Council (also known as the Regulation on 'Food for Specific Groups of the population' or 'FSG Regulation')[10] and Commission Delegated Regulation (EU) 2016/128[11]. Commercially prepared enteral formulas are available on prescription to be used under medical supervision. The dietitian should make a recommendation for the most appropriate enteral formula to meet the needs of the service user, based on an individual nutritional assessment and consideration of underlying clinical condition, oral intake, activity level, feeding route and administration method. The dietitian should confirm that the product recommended has GMS approval for reimbursement in primary care, before requesting that the service user's GP or hospital doctor issues a prescription (refer to Section 2.3.1). If the enteral formula recommended is not GMS approved for reimbursement, and there is no suitable reimbursable alternative to meet the clinical needs of the service user, the community pharmacist may support the service user/caregiver in applying to PCRS for funding under the HSE Discretionary Hardship Arrangements (refer to Section 2.3.1). Approval under the Hardship Scheme should be confirmed prior to discharge, as if not approved, the service user will be liable for all costs.

Commercially prepared enteral formulas are available in a wide variety of compositions, which can be broadly categorised into standard or condition-specific products.

- **Standard enteral formulas** are suitable for the majority of service users on home enteral tube feeding. These are nutritionally complete and provide macronutrients (protein, carbohydrate and fat) in non-hydrolysed forms. The energy and protein concentration varies between formulas, and some may have additional fibre to promote gastrointestinal health and gut motility, which may be beneficial to service users on long term enteral feeding where constipation can be an issue.
- **Condition-specific formulas** are available to meet the needs of service users whose clinical condition may require specific alterations in micro- or macronutrients (e.g diabetes, kidney failure, respiratory disease, liver disorders or malabsorptive conditions)[12].

2.2.2. Commercially prepared enteral formula is available in a variety of **pack sizes and presentations** such as ready-to-hang (RTH) containers or other presentations that may require decanting or reconstitution. Wherever possible, pre-packaged, RTH formula should be used[13]. Using an interoperable giving set allows all brands of RTH formula to be compatible with the various enteral feeding systems on the Irish market. This allows greater flexibility in choosing the most appropriate enteral formula, particularly if revising the feeding regimen after discharge.

2.2.3. Enteral formula for bolus feeding can be drawn or decanted from a RTH container. Once opened, RTH enteral formula should be **stored in a refrigerator**, below 5oC and any unused formula should be discarded 24 hours after opening. On occasion, oral nutrition supplement (ONS) drinks with a similar nutritional profile to RTH formula may be recommended for bolus feeding. The smaller container size may reduce the infection risk associated with incorrect storage of open RTH containers and allow for ease of administration of bolus feeds outside the home. This should only

be done under the supervision of a dietitian as there can be variation in the nutritional content, particularly the micronutrient profile, between the RTH and the ONS presentations.

2.2.4. Enteral formula should be stored according to the manufacturer's instructions in a clean, dry area and protected from extremes in temperature (e.g., not stored beside a radiator or in direct sunlight). The service user/caregiver should be advised to check the best-before date before administering the feed. Reconstituted feed should be stored in a refrigerator after preparation and discarded if not used within 24 hours of initial preparation.

2.2.5. **Blended Tube Feed**

2.2.5.1. A **blended tube feed (BTF)** is typically made by blending food or meals into a liquid form that is thin enough to be administered via a feeding tube. The service user/caregiver may express a preference to use a homemade BTF instead of a commercial enteral formula. Alternatively, the dietitian may suggest BTF as an option where they believe there to be potential physiological, social or emotional benefits to the service user/caregiver. A shared decision-making approach to using BTF is recommended, as it allows the service user/caregiver and healthcare professionals to work together in understanding the benefits and possible consequences of BTF for the individual and reach a joint decision based on discussion and information sharing. If the service user/caregiver decides to use BTF, this should be done under the guidance and supervision of a dietitian.

The type of feeding tube in place will help inform decisions about the suitability of BTF, and the dietitian should check the manufacturer's instructions for use (IFU). BTF may be well tolerated via a gastrostomy tube if the service user is clinically stable, and able to tolerate an adequate volume. The gastrostomy tube should ideally be ≥12 French size. Balloon gastrostomy tubes are preferable as they are easier to replace if blocked than a PEG tube, which has a more ridged internal fixator. Low-profile balloon gastrostomy tubes can be used for BTF, but it should be noted that extension set of these tubes have a standard size connector which is narrower than the lumen of the tube itself. It is recommended that the gastrostomy stoma is mature (i.e., >8-12 weeks post initial insertion) due to the risks of replacing a gastrostomy tube into an unformed tract if the tube should block.

Service users/caregivers must be informed of the risk that BTF may block the feeding tube and consider this when preparing the feed blend (e.g., using a suitable blender and/or strain the blend), particularly with narrower feeding tubes. Service users/caregivers must be trained to unblock their feeding tube (refer to Section 4.4.2), and where appropriate, to replace their feeding tube at home if the blockage cannot be cleared (refer to Section 4.5).

2.2.5.2. BTF is **not typically recommended** if the service user is immunocompromised (due to risk of microbial contamination if the blend) or fluid restricted (due to the potentially higher volume of fluid required to achieve the correct consistency) but this may be considered on a case-by-case basis by their medical team. The sole use of BTF is not suitable for service users who require continuous pump feeding, but a small volume of BTF as an additional bolus can be considered. It is not common practice to use blended diet with nasogastric or post pyloric tubes as these are smaller lumen feeding tubes, which if blocked, require radiological or endoscopic intervention to replace the tube. Insertion of a gastrostomy tube may be considered if a service user on nasogastric feeding wishes to use BTF. The jejunum has a limited volume capacity so bolus feeding, particularly in higher volumes, into the jejunum is not recommended. Feeding into the jejunum also bypasses

the acidic environment and digestive processes of the stomach, increasing the risk of food-borne infection and/or feed intolerance.

2.2.5.3. It is recommended to administer BTF by a **bolus method using an enteral syringe**, rather than by using a feeding pump. The recommended BTF consistency for bolus feeding should be IDDSI Level 1 (Slightly Thick) which is defined as thicker than water and flows through a straw or syringe (refer to Figure 3.3). The viscosity of the BTF will vary depending on the recipe and may be altered by freezing/ thawing. Diluting the blend to reduce viscosity may lower the nutrient density with a higher volume bolus required to achieve a nutritionally adequate intake. The dietitian should advise the service user/caregiver on appropriate food and fluid choices to ensure a nutritionally adequate BTF is achieved.

A bolus feed should be administered slowly, with short breaks to mimic oral intake to aid gastrointestinal tolerance - if the BTF does not flow via gravity, a gentle pressure can be exerted on the syringe plunger. It is reasonable to expect a full meal should take approximately the same time to administer as if the tube fed individual was to eat the same meal orally.

2.2.5.4. It **is not recommended that a service user/caregiver use a feeding pump to facilitate BTF administration**[14] . Enteral feeding pumps are designed and calibrated to be used with commercial enteral formula. BTF are often thicker than commercial formulas, which can lead to issues pumping at the pre-set rate and delivering a lower volume than programmed. The thicker viscosity of BTF can lead to line occlusions or cause tube blockages, which may also occur if the solids and liquids in the blend 'separate' so that the consistency of the blend is not uniform. Manufacturers of enteral feeding pumps do not support the administration of BTF via feeding pump, including any modifications made to the giving set by the service user to improve the administering of the BTF.

If the service user/caregiver expresses a wish to use a feeding pump to administer BTF, the dietitian should advise them that it is not recommended and explain the risks of proceeding. The dietitian should document the discussion and outcome in their case notes. If the service user makes an informed choice to proceed with using a pump, they should be advised not to exceed a 'hang-time' of 2 hours due to risk of microbial contamination at room temperature, and to discard any surplus BTF at the end of the feeding time.

2.2.5.5. BTF has a higher risk of **microbial contamination** than commercial enteral formulas if not prepared and stored correctly. Service users/caregivers will require access to a drinkable water source, adequate cooking facilities and a clean area to prepare the BTF. The dietitian should advise the service user/caregiver on the importance of good hand hygiene, safe food preparation practices and correct cleaning of equipment used to prepare and administer BTF.

BTF, if not to be used immediately when prepared, should be cooled quickly, and stored in a refrigerator below 5°C for a maximum of 24 hours, or cooled and stored in a freezer at -18°C for 1-3 months. Frozen BTF should be defrosted thoroughly in the refrigerator before use, and not be refrozen once defrosted[15,16].

BTF should be brought to room temperature prior to feeding. Blends which contain meat, chicken and/or previously cooked foods require reheating to 70°C for 2 minutes ('piping hot' or 'steaming hot'). The total time at room temperature should not exceed 2 hours (including warming and feeding time) and remaining unused BTF must be discarded if not used within 2 hours.

Sealed containers of BTF should be stored in a cool bag with an ice block to minimise bacteria growth during transportation e.g., attending education, work, or hospital appointments[16].

2.2.5.6. The service user/caregiver will need to purchase some additional **equipment** required to facilitate the preparation and storage of BTF:

- A high-power blender (Figure 3.2) that generates that generates power >1000 watts is recommended to ensure food is blended to a smooth consistency to reduce risk of tube blockage, to allow for an increase in the variety of foods which can be incorporated into the diet, and enable batch blending.
- A large metal sieve is required to strain the blend to remove any unblended food particles that could block the feeding tube (e.g., seeds, husks).
- Airtight containers (non-porous plastic or glass) or food pouches/zip-lock bags are required to store batch blends in the freezer. All containers should be labelled with the date of preparation.
- A flask to keep liquids hot or cold and/or insulated cooler bags and icepacks will be needed if the BTF is to be transported for feeding outside the home.
- A refrigerator and freezer with reliable thermometer for monitoring the storage temperature.
- Meat thermometer to check the temperature of the BTF when cooking or reheating.
- Weighing scales, measuring cups and spoons to allow for accurate recipe reproduction and estimation of nutritional content per portion.

Equipment should be washed thoroughly in warm/hot soapy water, rinsed well, air-dried, and stored in a clean, cool place and away from direct sunlight. The service user/caregiver should be advised to follow any specific manufacturer's instructions for cleaning, including suitability for dishwasher cleaning.

Figure 3.2: A high power blender

2.2.5.7. BTF does not have a uniform energy and protein density, unlike commercial enteral formula. The **nutritional composition** can change depending on the type and quality of ingredients and volume of fluids used in blending. A higher volume may be required to achieve nutritional adequacy. The dietitian should estimate the service user's nutritional requirements (refer to Section 3.2) and recommend a daily energy, protein and fluid intake target rather than prescribing a volume of

blended diet. The dietitian should work with the service user/caregiver to develop appropriate recipes and a feeding plan to achieve this target intake. A dietary assessment and monitoring of anthropometric measurements should be undertaken regularly to ensure a nutritionally adequate intake is being achieved (refer to Section 3.2), particularly when BTF is being established. Routine micronutrient supplementation of BTF is not required but may be recommended if the blood biochemistry and/or dietary analysis indicate supplementation is needed.

2.2.5.8. Only commercial tube feeds registered with the Food Safety Authority of Ireland (FSAI) for use in Ireland can be recommended or prescribed by a healthcare professional. **Commercially prepared BTF** sourced privately (e.g., by importing from outside the jurisdiction) should not be recommended and are not reimbursable under HSE schemes (GMS/LTI/DPS). If a service user chooses to source and use such a commercially prepared BTF, the dietitian should do a thorough nutritional analysis of the product, as there is wide variation in the presentation and nutritional composition of commercially prepared BTF products. Service users should be advised to use the product in line with the manufacturers labelling.

2.2.5.9. The service user/caregiver should consider potential scenarios in which provision or preparation of BTF may not possible e.g., readmission to hospital or if the person usually responsible for recipe planning and preparation is unavailable. The dietitian should provide an alternative **'back-up' feeding plan** using a commercial enteral formula for use if BTF is not available. The dietitian should request that a prescription be provided for the commercial enteral formula recommended and the service user/caregiver advised to hold a small stock at home.

Further information for healthcare professionals supporting service users/caregivers using a BTF are available at: The BDA Practice Toolkit: The Use of Blended Diet with Enteral Feeding Tubes and

2.2.6. Oral dietary intake

2.2.6.1. A variety of factors, including underlying clinical condition, dysphagia, and appetite, will influence oral dietary intake of service users on enteral feeding. The swallowing status of the service user, together with expectation for future improvement or deterioration in swallowing function, should be clarified prior to discharge on enteral feeding. While every effort should be made to encourage continued oral intake where safe to do so, the goal of oral dietary intake must also be clear. This goal may range from comfort feeding to working towards re-establishing full oral intake, so that weaning from the feeding tube can be progressed.

2.2.6.2. Service users with a **normal swallowing function** may continue to eat and drink normal consistency food and fluids while on tube feeding. The dietitian may recommend adjusting feeding times to promote appetite for oral diet (e.g., overnight feeding) and/or provide advice on high-protein high calorie food choices, food fortification and/or oral nutritional supplements to maximise nutritional intake orally.

2.2.6.3. Service users who are unable or unsafe to eat and drink normally, may be able to tolerate **modified consistency** food and/or fluids instead. The SLT should provide clear recommendations on the consistency required and on suitable portion sizes, using the IDDSI descriptors (refer to Figure 3.3). The contribution of modified consistency food and fluids taken orally to meeting the nutritional requirements of the service user will vary depending on the type, variety and quantity of food and fluids tolerated orally, together with the ability of the service user to achieve oral intake on a

consistent basis. The hospital dietitian should consider this when devising the enteral feeding regimen for home.

2.2.6.4. Service users on home enteral tube feeding who require a modified consistency diet will require close monitoring and where possible should be referred to the SLT and Dietetic services in primary care. The primary care SLT may provide swallow rehabilitation and support service users with dysphagia including their swallow care plan and education where clinically indicated. The primary care dietitian can support the service user/caregiver in implementing the recommendations of the SLT by providing training on food preparation and fortification, monitor oral intake and tailor the enteral feeding regimen in response to an increase or decline in oral intake.

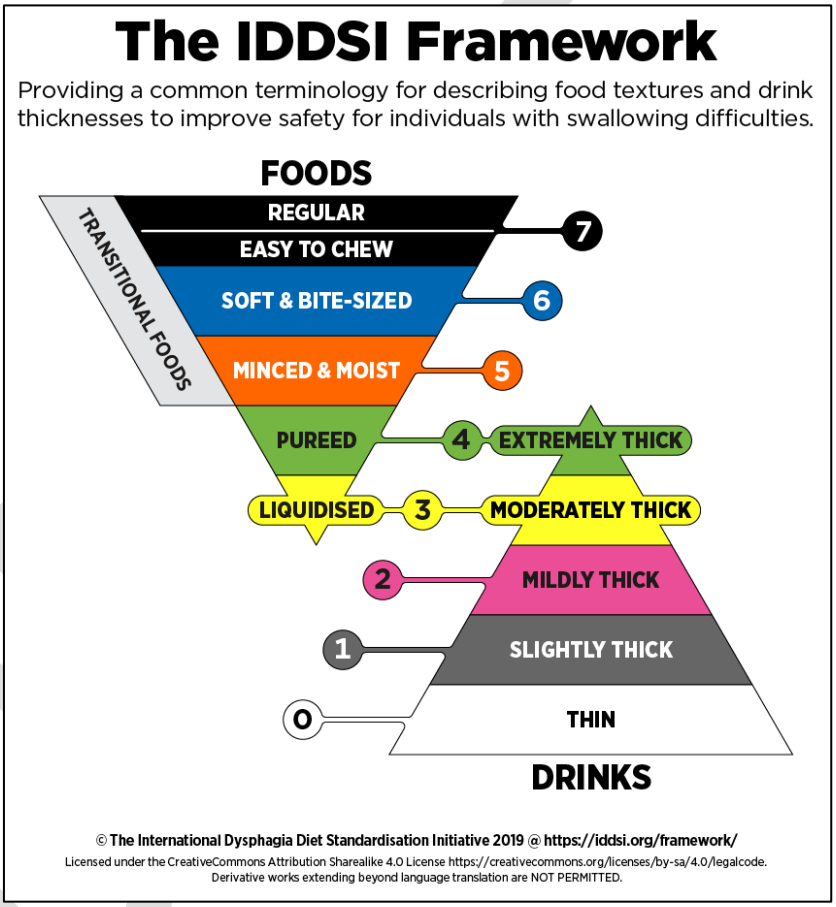


Figure 3.3: The IDDSI Framework

2.2.6.5. Service users who have been recommended to remain **nil per oral (NPO)** will be fully dependent on their feeding tube as an access route for nutrition, hydration and medicines after discharge. They may experience hunger, even if their enteral feeding regimen is meeting their full nutritional requirements and find family mealtimes challenging. The dietitian should support service users by adjusting the feeding times or administration method to reduce sensations of hunger e.g., timing bolus feeds at meal and snack times. The SLT can support service users who are NPO due to oropharyngeal dysphagia and who express a wish to have some oral intake. In some instances, this may be for quality-of-life purposes. The SLT can support a service user to make an informed

decision in the context of their underlying clinical condition and prognosis and provide guidance on most comfortable fluid and food consistencies where clinically indicated.

2.2.6.6. Service users who also require a **therapeutic diet** (e.g., diabetic, gluten-free, renal, high-fibre), should be advised to continue to observe this when taking any food or fluids orally, unless advised otherwise by their doctor or dietitian. The dietitian will take the requirement for therapeutic diet into consideration when devising the enteral feeding regimen.

2.2.6.7. Some service users may only require home enteral tube feeding as a temporary or transitional intervention to support recovery and rehabilitation during a time when they are unable to meet their nutritional requirements orally. **Discontinuation of enteral feeding** and removal of feeding tube may be considered when oral dietary intake is adequate to meet nutritional requirements – refer to Section 6.2.

2.2.7. **Hydration**

2.2.7.1. Accurate estimation of **hydration requirements** of service users on home enteral tube feeding is essential to reduce the risk of dehydration, particularly where service users are nil orally and/or fully dependent on their caregiver to administer their feed and hydration. There is an increased risk of dehydration among those who are unable to communicate, have a reduced sense of thirst or are fluid restricted[17]. Hydration requirements may change e.g., with acute illness, so service users/caregivers should be trained to recognise signs of dehydration such as headache, thirst, dark-coloured urine, reduced urinary output and/or constipation and advised to contact a healthcare professional for advice[18].

2.2.7.2. The dietitian should estimate the total volume of fluid intake required daily, taking volume of enteral feed, any oral intake and other factors which may affect a service users fluid requirement into to consideration (Figure 3.4). The dietitian should consult with the service user's GP or medical team where necessary e.g., where a fluid restriction is required.

2.2.7.3. The dietitian should advise the service user/caregiver on the total volume of additional water required daily and provide the service user/caregiver with clear instructions on how this should be administered e.g., bolus/flush at regular intervals using a syringe, or continuously using a feeding pump (refer to Section 3.3).

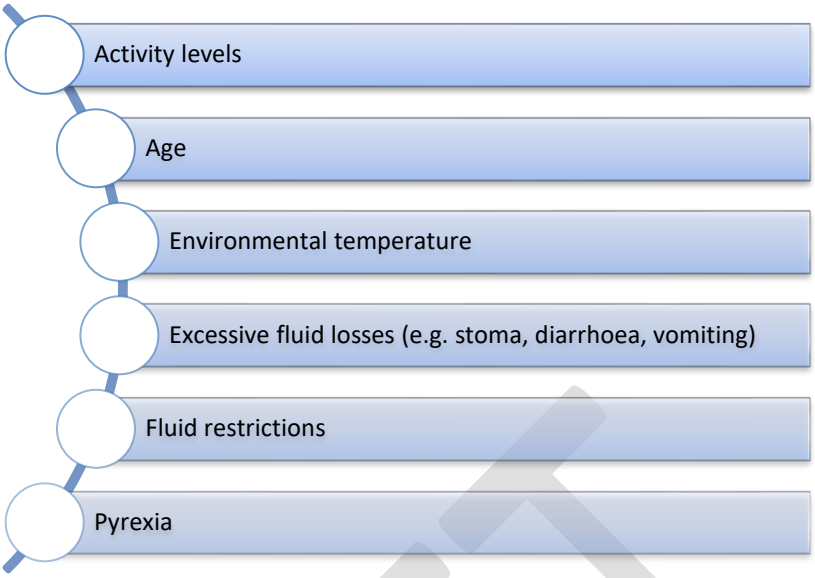


Figure 3.4: Factors that may affect a service user's fluid requirements

2.2.7.4. The type of water recommended to provide additional hydration will depend on the service user's clinical condition, route, and method of administration (refer to Figure 3.4). Flushes of freshly drawn tap water from a drinkable source or cooled boiled water (refer to Figure 3.5), are suitable for most service users with a nasogastric or gastrostomy tube. However, sterile water drawn from a freshly opened container is recommended if immunocompromised or for jejunal feeding. Instructions to make and store cooled boiled water for flushing a feeding tube is shown in Figure 3.6.

Route of administration	Type of water recommended
Gastric	Freshly drawn-tap water or cooled boiled water. **Sterile water from a freshly opened container if immunocompromised.*
Post-pyloric	Sterile water from a freshly opened container

Figure 3.5: Recommended water for hydration

- Fill a kettle with freshly drawn tap water and allow the water to boil
- Pour the boiled water into a clean, designated jug and leave to cool for at least one hour
- Cover the jug with a lid and store at room temperature out of direct sunlight
- Discard any remaining water after 24 hours
- Clean the jug with hot soapy water, rinse with clean water and allow to air dry before re-using

Figure 3.6: Instructions to make and store cooled boiled water for flushing a feeding tube.

2.3. Administration of nutrition and hydration

2.3.1. **Enteral** feeding and water for hydration can be delivered via the feeding tube by using bolus, gravity infusion or pump-controlled techniques. Selection of the **method of administration** should be based on clinical need, safety, type of feeding regimen, activity level and service user/caregiver preference and ability to manage the administration[1,6].

2.3.2. **Correct positioning** of the service user when feed is being administered is important. Ideally the service user should be sitting upright in a chair, but if they are lying down, the head of the bed should be elevated to at least 30°. The caregiver should recheck positioning regularly while the feed is being administered, particularly in service users who require assistance to reposition or who are at risk of aspiration. The head of bed should remain elevated for >30minutes after feeding ends (Figure 3.7).

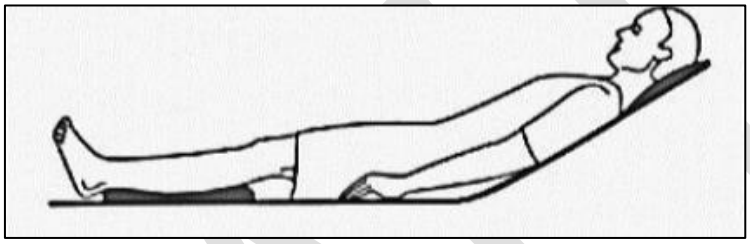


Figure 3.7: Head of bed elevated to >30° for at least 30 minutes after feeding ends

2.3.3. The **dietitian** will **recommend the total volume** of feed to be administered daily to meet the nutritional requirements of the service user (refer to Section 3.5.2) and recommend the most appropriate method for this to be administered. The service user/caregiver should be advised to inform a healthcare professional and/or contact the dietitian for review if the method of feed administration is poorly tolerated and/or the volume recommended is not being achieved on a regular basis.

2.3.4. The dietitian will recommend the **hourly feeding rate**, based on the total volume of feed to be infused and guided by the service user's tolerance. The duration of feeding should be discussed with the service user/caregiver, and tailored to suit their lifestyle and preferences e.g. a higher feeding rate will shorten the time needed to administer the full volume of feed. The service user/caregiver should be advised to inform a healthcare professional and/or contact the dietitian for review if there are any issues with rate tolerance, as this may change over time depending on the underlying clinical condition.

2.3.5. **Pump feeding**

2.3.5.1. Continuous infusion of enteral formula is facilitated by using an **enteral feeding pump**. The feeding pump is calibrated to accurately infuse a required volume of enteral feed over a defined timeframe. The range of infusion rates (e.g., 1-300ml/hour) allows for very small to large volumes of feed to be delivered at a controlled steady pace. An enteral feeding pump can be programmed to best suit the needs of the service user e.g., to deliver feed continuously or administer cyclical or intermittent feeds. Typically, continuous feeding in a primary care setting will be delivered over 16-18 hours, but many service users may choose to use the pump for 10-12 hours overnight only. Some enteral

feeding pumps have a dual feed and flush function, which allows for the infusion of enteral formula and automated water flushes. The dietitian should recommend the rate and volume of enteral formula and water to be administered and provide the service user/caregiver with written instructions. Feeding pumps can be static (using a dripstand or table-top stand) or mobile (by placing the pump in a specially designed backpack to be carried by the service user or hung on the back of a wheelchair)[1,19,20].

2.3.5.2. The enteral feeding pump is part of the enteral feeding system (EFS), which also includes additional EFS **equipment** (i.e. table-top drip stand and back pack) and **consumables** (i.e. giving sets, reservoirs, 2-pack connectors and bolus adapters) required to facilitate administration of enteral formula and hydration via a feeding pump. There is currently a national HBS Procurement Framework in place for the supply of EFS to the HSE. There are 4 EFS vendors on contract (refer to Table 3.2) all of whom meet the mandatory requirements for product quality and aftersales training and support. In line with the national financial regulations, it is expected that the highest ranked vendor is used unless there is a valid clinical indication to use a lower ranked provider. The nationally agreed process for the funding, ordering and supply of **enteral feeding systems** in primary care is detailed in Section 2.4 and an overview of the equipment and consumables required, together with indications for use are included in Appendix I.

Ranking	Vendor Name	EFS System Name
1st	Healthcare 21	Kangaroo Joey
2nd	Abbott	Freego
3rd	Nutricia	Flocare
4th	Vygon	EasyMoov

Table 3.2: Ranking of Vendors on the EFS Framework

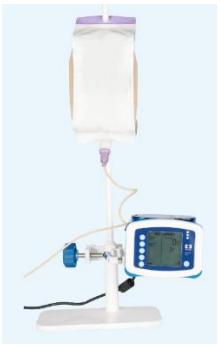


Figure 3.8: Kangaroo Joey EFS

2.3.5.3. The hospital dietitian must register the service user with the relevant EFS vendor prior to discharge, to enable product tracking and traceability, and to access training and support on the use of EFS. At

registration, the hospital dietitian will request that the vendor supply the EFS equipment required on a free-on-loan basis directly to the service user. The hospital dietitian will also specify the EFS consumables to be supplied by the local primary care area on a monthly basis. Typically, the public health nurse or community registered nurse submits the monthly order for consumables required after discharge.

2.3.5.4. The EFS must be set up and used in line with the manufacturer's instructions. The service user/caregiver will require training to achieve competency in the use of the enteral feeding system prior to discharge. The hospital dietitian should request this directly from the EFS vendor when ordering the enteral feeding pump and additional equipment. The EFS vendor must provide sufficient training sessions, together with written and/or video instructions, to ensure that the service user/caregiver feels confident and competent to manage the EFS. The EFS vendor must provide the service user with the contact number of the EFS vendor's technical support helpline for troubleshooting after discharge.

2.3.5.5. If commencing on pump feeding is indicated at some point after the initial discharge e.g., transitioning from bolus feeding to pump feeding, the community dietitian involved in the care of the service user should register them with the EFS vendor for the supply of equipment and training, and specify the consumables required on a monthly basis.

2.3.5.6. **Malfunctioning** of EFS equipment can contribute to feed intolerance and service users not achieving their nutritional requirements. The service user/caregiver should be advised to contact the EFS vendor technical helpline if there are any issues with the feeding pump, such as repeated alarms or failure to deliver the volume required in the expected time.

2.3.5.7. The healthcare professional should assess if the service user is using the EFS equipment correctly to reduce the risk of contamination e.g., are the recommended feed preparation methods (refer to section 3.6.5), hang times (refer to section 3.6.6), feed storage (refer to section 3.2.4) and cleaning of equipment (refer to section 3.6.9) being adhered to?

2.3.6. **Bolus feeding**

A bolus feed is administered using a 60ml enteral (ENFit) syringe instead of a feeding pump. The feed can be infused with or without using the plunger on the enteral syringe

Plunger bolus method:

1. The feed is drawn into the enteral syringe, directly from the RTH feed container where possible, or by first emptying the feed into a clean jug.
2. The syringe is connected to the feeding tube and a gentle pressure is applied to the plunger to slowly push the feed through the tube.
3. The feeding tube is flushed with ≥30ml of water before and after each bolus feed to clean the tube.

Step 1 **Step 2**

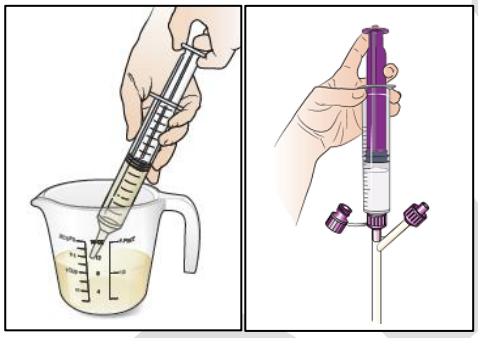


Figure 3.9: Plunger bolus method

Gravity bolus method:

1. The plunger is removed from the enteral syringe and the syringe is connected to the feeding tube.
2. The feed is poured into the barrel of the syringe to infuse via gravity. The rate of flow will depend on the viscosity of the formula and how high the syringe is held above the service user – the rate can be slowed by lowering the syringe.
3. The feeding tube is flushed with ≥30ml of water, again by pouring the water into the barrel of the feeding tube before and after each bolus feed to clean the tube.

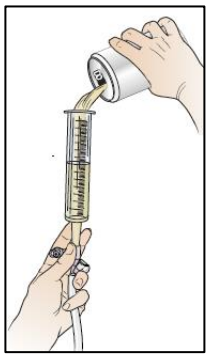


Figure 3.10: Gravity bolus method

2.3.6.1. **ONS presentations can be used instead of RTH formula for bolus feeding but only under the supervision of a dietitian** as there can be variation in the nutritional content, particularly the micronutrient profile, between the RTH and the ONS presentations.

2.3.6.2. Bolus feeding requires the total daily volume of enteral formula to be divided over typically 4 to 6 feeds throughout the day. The number of feeds and the volume of feeds is led by the service user's tolerance i.e., a service user who can tolerate larger volumes may require less feeds. The typical volume of each bolus feed is between 200 and 400ml, and this should be administered slowly, over 15-60 minutes, depending on tolerance of infusion rate. A useful guide is that the infusion time should be equivalent to a mealtime, and bolus feeding can be timed to mimic meal and snack times which is more physiological[1]. The hospital dietitian will recommend the volume of enteral formula and the number of bolus feeds required daily and provide the service user/caregiver with written instructions.

2.3.6.3. The ward nurse will typically train the service user/caregiver on administration of bolus feeds prior to discharge. If bolus feeding is indicated after the initial discharge on HETF, the community dietitian involved in the care of the service user should recommend the volume of enteral formula, the number of bolus feeds required daily and provide the service user/caregiver with written instructions. The community dietitian may also train the service user to administer bolus feeding where this is initiated after discharge.

2.3.6.4. Bolus feeding can also be used in combination with pump feeding. This may be recommended where the full volume of enteral formula required cannot be achieved via bolus feeding alone or when the service user is transitioning from pump to bolus feeding. Combination feeding allows the service user the benefit of having some time during the day where they are not connected to a feeding pump e.g. bolus feeds during the day and pump feeding overnight.

2.3.6.5. Bolus feeding into the jejunum, particularly of higher volumes, is not recommended, due to the limited volume capacity of the jejunum. Feeding into the jejunum also bypasses the acidic environment and digestive processes of the stomach, increasing the risk of food-borne infection and/or feed intolerance[21].

2.3.7. **Gravity feeding**

2.3.7.1. The gravity feeding method allows the enteral formula to flow from the enteral formula container via a specific gravity feeding set into a feeding tube, without the use of a feeding pump. It can be used as an alternative to the gravity bolus method, allowing the enteral formula to infuse at a slower rate than possible if using a syringe.

2.3.7.2. The service user/caregiver should be advised to hang the container of feed 60-90cm above the service user to allow gravity to pull the feed through the feeding set. A roller clamp on the gravity feeding set is used to control the flow rate.

2.3.7.3. The rate of infusion can be estimated by counting the number of drops per minute in the drip chamber of the gravity feeding set. However, the viscosity of the feed will influence the number of drops per minute so equating this to the rate of infusion will need to be done on an individual basis. The rate of infusion is also influenced by the height at which the container of enteral formula is hanging[22].

2.3.7.4. The hospital dietitian should clarify the total volume of enteral formula to be infused and the approximate duration of feeding. The service user/caregiver must be trained by the ward nurse or dietitian to set up the gravity feeds and control the infusion rate using the roller clamp prior to discharge. The service user/caregiver should be advised to recheck the position of the roller clamp regularly to reduce the risk of 'free-flow' of the enteral formula.

2.3.7.5. Feed delivery using the gravity method is less accurate than with an enteral feeding pump, and infusion will continue until stopped manually or the feed container empties.

2.3.8. **Flushing the feeding tube**

2.3.8.1. Regular flushing of the feeding tube is essential to reduce the risk of tube blockages, especially with crushed medicines, higher viscosity feeds, smaller diameter and longer length feeding tubes. **The service user/caregiver must be advised to flush the feeding tube routinely with at least 30ml of water before and after the administration feed or Medicines, and four hourly if continuous feeding**[20].

2.3.8.2. The type of water recommended for flushing the feeding tube will depend on the service user's clinical condition, route, and method of administration (Table 3.4).

2.3.8.3. The service user/caregiver should use a 60ml enteral (ENFit) syringe to administer water flushes. **Single patient use syringes** should be provided for administering water flushes in a primary care setting as these can be washed and reused for up to 7 days or as per manufacturer's instructions (refer to Section 3.6.4.3).

2.3.8.4. The water flush should be administered slowly by applying a gentle pressure to the plunger on the enteral syringe. A stop-start flush action, rather than a single continuous flush, has been suggested to be more effective at cleaning the tube. The service user/caregiver should be advised that if they notice any resistance when flushing the tube, they should administer an extra flush to make sure the tube is clear, as this may be an early sign of the tube blocking.

2.3.9. **Preparation of enteral feeds for administration**

2.3.9.1. The design of an enteral feeding system should allow for minimal handling and use the minimum number of connectors possible. A closed-system comprised of pre-packaged, ready-to-hang (RTH) enteral formula should be used in preference to an open system where formula requires decanting or reconstitution[13,20] (refer to Section 3.6.6.1).

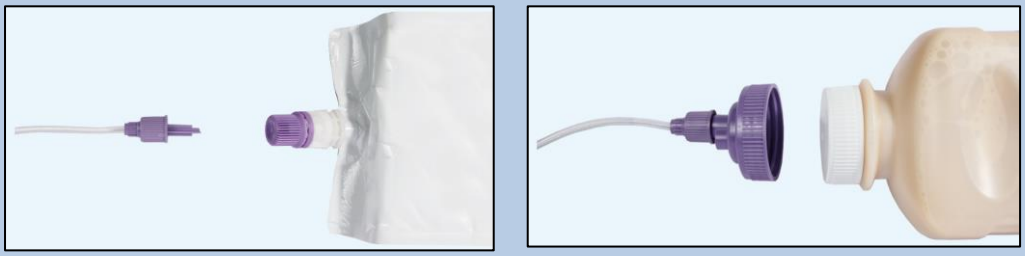
2.3.9.2. Effective hand hygiene is essential to avoid contamination of the enteral feeding system. The service user must be advised to decontaminate their hands before starting feed preparation or

administration, by either washing hands with soap and water, and drying with a paper towel or using an alcohol-based hand gel if hands are not visibly soiled.

2.3.9.3. The service user/caregiver should be trained to use an aseptic (non-touch) technique when preparing enteral formula for administration, to reduce the risk of contamination and potential food borne infection[23,24] (refer to Figure 3.11).

Preparation for Administration of Pump Feeds Using a Non-Touch Technique

1. A clean work area should be prepared, and any equipment required to open or prepare the feed should be cleaned in advance.
2. Hands must be washed with soap and warm water, and dried with a paper towel.
3. Remove the giving set from the packaging and close the clamp. Do not remove the cover/ cap from the distal end of the giving set yet to avoid touch contamination.
4. If using a **RTH enteral formula**, shake the container and open/ remove the lid, ensuring that the foil underneath is not touched or pierced. If using **reconstituted feed**, this should be prepared using cooled boiled water or freshly opened sterile water, and decanted into a reservoir using an aseptic technique, and the giving set attached.
5. Connect the giving set, using the screw or spike connector, onto the RTH container (this will break the foil seal). If decanting formula from a RTH or ONS container into a reservoir, the giving set can be similarly used to break the foil, before the feed is decanted into the reservoir, and the giving set attached to the reservoir.



Spike connector Screw connector

Figure 3.11: Spike and screw connections on a giving set

6. Hang the feed container on the drip stand. Load the giving set into the feeding pump and prime the giving set as per the manufacturer's instructions. Set the feeding rate and volume to be delivered as instructed by the dietitian.
7. Flush the feeding tube with 30mls of water, using a 60ml ENFIT syringe.
8. Remove the cap from the distal end of the giving set and connect it to the feeding tube and select 'run' on the feeding pump. The distal end of feeding set should be covered with cap to reduce risk of touch contamination if disconnection is required at any point during feeding.
9. At the end of the feeding time, wash hands again before disconnecting the giving set from the feeding tube and replacing the cap on the distal end of giving set.
10. Flush the feeding tube with 30mls of water, using a 60ml ENFIT syringe.
11. Giving sets and feed containers are single use items and should be disposed of at the end of the feeding session.

Figure 3.11: **Use of an aseptic (non-touch) technique to prepare enteral formula for administration**

2.3.9.4. The reservoir used to hold decanted or reconstituted enteral formula is single use only and should not be 'topped up' and/or washed and reused[20]. The giving set is also single use only. Therefore, **if more than one reservoir is required daily, a new giving set will be required for each reservoir**, which must be considered when placing the order for the enteral feeding consumables.

2.3.9.5. Modular units (e.g., Calogen, Prosource TF) should not be added to an open feeding system as this may increase the risk of contamination. These should be administered as a bolus instead[20].

2.3.10. **Recommended hang times of an enteral formula**

The 'hang time' of an enteral feeding formula is the maximum recommended time over which the container of feed may hang for administration at room temperature before the risk of microbial contamination begins to increase. It is largely determined by whether the feed is sterile and if a closed or open feeding system is used (refer to Table 3.3). A closed system, using one giving set per RTH container, has the longest hang time and should be used wherever possible [20]. An open system is created when an enteral formula is decanted from a RTH container, reconstituted from powder or has modular products added, and has a shorter hang time.

Table 3.3: Closed versus Open feeding system

Feeding system	Description
Closed	The enteral formula is presented in a ready to hang (RTH) bag or collapsible bottle, which is connected using an aseptic (non-touch) technique directly to the enteral giving set with minimal handling. This closed system lowers the risk of contamination allowing for an extended safe hang time, and is associated with less wastage of formula. It is recommended that only 1 giving set is used per RTH feed container to reduce contamination risk.
Open	The enteral formula is presented in bottles/ cans that require decanting, or in a powdered format that requires reconstitution with water. This open system involves more handling (e.g. when decanting or reconstituting the formula, or transferring to the container) which increases the risk of contamination. An open feeding system will have a reduced safe hang time and is associated with more wastage of formula as formula not used within the hang time must be discarded.

The recommended maximum hang times of enteral formulas is summarised in Table 3.4. The safety of these hang times is conditional on the service user/caregiver using an aseptic (non-touch) technique when preparing and administering the feed to reduce the potential for contamination (Figure 3.11). Although hang times of up to 48 hours for RTH feeds have been shown to be safe, this is not recommended in practice, as the giving sets must be changed every 24 hours as per manufacturer's instructions.

Table 3.4: Recommended hang times of enteral formula in primary care setting

Water presentation	Hang time
Sterile, ready to hang bag (closed system)	24 hours
Sterile, decanted into sterile container (open system)	12hrs*
Sterile, with additions made to feed	4 hours
Reconstituted feed	4 hours

Blended tube feed	2 hours

**If a strict aseptic technique is used when decanting sterile feed into a sterile reservoir, and the reservoir is not 'topped up' during the hang time, it is possible to extend the hang time beyond 12 hours to a maximum of 24 hours. This decision must be made on a case-by-case basis, taking the clinical need to extend the hang time and the ability of the service user/caregiver to adhere to a strict aseptic technique.*

2.3.11. Administering water for hydration

The dietitian should advise the service user/caregiver on the total volume of water required, the type of water to be used and the recommended method of administration to meet daily hydration requirements (refer to Section 3.2).

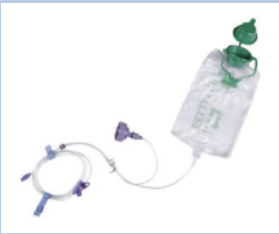
2.3.12. Water flushes

Additional water for hydration can be given as flushes using a syringe, by either increasing the volume of routine water flushes at the beginning and end of feeding times/with medicines and/or by recommending extra water flushes throughout the day. The service user/caregiver should be provided with instruction on the volume and frequency of flushes to be administered. Typically, **cooled boiled water or freshly drawn water from a drinkable source is suitable for regular flushes**, but sterile water must be used if the service user is immunocompromised, or the distal end of the feeding tube is in the duodenum or jejunum.

2.3.13. Water infusion via enteral feeding pump

Using a feed and hydration solution (refer to Table 3.5) allows for enteral formula and water to be administered simultaneously. Some service users may tolerate this infusion method better than larger water flushes. Alternatively, water may be administered when the enteral feeding infusion has ended, although this required the service user to remain connected to the EFS for a longer timeframe.

Table 3.5 : **Methods for administering water for hydration using a feeding pump**

Feed & hydration solution	Instructions for use
Integrated feed & hydration solution Joey 3-in-1 feed & 1000ml flush set + 1 feeding pump 	An integrated giving set and reservoir, which is compatible with the Kangaroo Joey feeding pump. The integrated design and automated flush function on the pump allow for less handling of the EFS, reducing potential microbial contamination.
3-part feed & hydration solution Giving set + reservoir + 2 pack adapter + 1 feeding pump	Several same brand consumables may need to be used together to create the feed & hydration solution compatible with the feeding pump. This 3-part design requires more handling, and manual flushes are necessary.
Separate pump used for feed and water 2 giving sets + reservoir + 2 feeding pumps	2 feeding pumps are required – 1 to administer enteral feed and 1 to administer water. The second giving set is connected to the second feeding port on the feeding tube (where available) or otherwise to the medicine port on the giving set.
Water administered between feeding	The water is administered, using a new giving set and the same

times 2 giving sets + reservoir + 1 feeding pump	feeding pump, when the enteral feed has been disconnected.

2.3.14. **Hang time of water for hydration**

The 'hang time' of water for hydration is determined by whether the water is sterile and if a closed or open feeding system is used (refer to Table 3.6).

Table 3.6 : **Recommended hang times of water for hydration in primary care setting**

Water presentation	Hang time
Sterile, ready to hang bag (closed system)	24 hours
Sterile, decanted into sterile container (open system)	12hrs *
Freshly drawn tap water	4 hours
Cooled boiled water	4 hours
Bottled water	Not recommended

**If a strict aseptic technique is used when decanting sterile water into a sterile reservoir, the hang time can be extended, to a maximum of 24 hours. This decision must be made on a case-by-case basis, taking the clinical need to extend the hang time and the ability of the service user/caregiver to adhere to a strict aseptic technique.*

Sterile water in RTH presentation is not currently GMS reimbursable in primary care. Instead, the service user/caregiver should be trained to decant sterile water into a reservoir using an aseptic (non-touch) technique. A suitable size reservoir (range from 500ml to 1500ml volume) to hold the volume of water to be administered should be used and the reservoir should not be 'topped up' during the hang time.

Cooled boiled water and freshly drawn tap water from a drinkable source have a shorter hang time as they are non-sterile. The service user/caregiver should be advised to only decant the volume to be administered and discard any remaining water with the reservoir and giving set after 4 hours. The service user/caregiver should be cautioned not to reuse the reservoir and giving set and should be provided with sufficient supplies to facilitate this[25].

NOTE: Service users/caregivers should be advised not to decant and hang **bottled water** for hydration purposes[25].

Cleaning and storage of enteral feeding equipment

2.3.15. **Cleaning the feeding pump and dripstand**

The service user should be advised to clean their pump and dripstand daily, using a damp cloth and a suitable cleaning agent, to avoid build-up of enteral formula residue. Suitable cleaning agents will depend on the manufacturer's instructions, as some cleaning agents can damage and crack the plastic surfaces, compromising the ability to decontaminate the device. If the pump cannot be cleaned effectively, it should be returned to the EFS vendor for decontamination, and a replacement pump requested.

2.3.16. **Cleaning enteral feeding consumables for reuse**

The labelling on a product will clarify if the product is licenced for single use only, or if it can be washed and reused in line with manufacturer's instructions.

Single-use products are for use on an individual during a single procedure and then discarded. They are not intended to be reprocessed and used again, even on the same individual.

Single-patient use products may be used more than once, but only on the same individual. The product should be washed and air-dried in line with manufacturer's instructions, before being reused.

The service user/caregiver must be advised whether to discard or clean and reuse their enteral feeding – refer to Table 3.7.

Table 3.7: **Single-use and single-patient use**

Enteral feeding product	Single use/ Single patient use
Enteral feeding consumables (giving set, reservoir, and 2-pack connector)	All are single use. A new giving set is required for each new container of feed
Enteral feeding tubes and accessories	All enteral tubes, and most accessories (e.g. Y adapter) once attached to the feeding tube are single-use. Extension sets (e.g., MICkey extension set) are single-patient use, and can be disconnected from the feeding tube, cleaned in line with manufacturer's instructions and reused. They must be discarded after a

	specified timeframe (e.g., 2 weeks)
Enteral ENFIT syringes (all sizes)	Available as single-use or single-patient use. Single-use syringes: the same syringe can be used to give bolus doses of different liquids (e.g., formula, water, medicines) if they are administered at the same time. Thereafter the single use syringe must be discarded. Single patient use syringes: the same syringe can be washed and reused by the same individual and reused for up to 7 days or as per manufacturer's instructions.

2.3.17. **Storage of Enteral feeding equipment and consumables**

Enteral feeding equipment and consumables should be stored as per manufacturer's instructions, typically in a cool, dry place, out of direct sunlight and avoiding extremes in temperature. Enteral syringes, consumables, feeding tubes and their accessories must be used by the expiry date on the packaging.

2.3.18. **Administration of medicines via an enteral feeding tube**

Medicines should be given orally, or via an alternative route (e.g., transdermal patch, suppositories, buccal) where possible as the co-administration of enteral feed and medicines via a feeding tube may increase the risk of feeding tube blockage, drug-feed interactions, and a potential for adverse drug reactions. The necessity, appropriateness and efficacy of the medicines being administered through an enteral tube should be confirmed. Those prescribing, supplying, and administering the medicines should be aware of their responsibility for any adverse events resulting from the off-label use of licensed medicines[1].

2.3.19. The prescriber and the pharmacist must be aware that the medicine is to be delivered via a feeding tube. The size of the feeding tube and location of the distal tip of the feeding tube in the gastrointestinal tract must be considered e.g., administration of medicines into the jejunum instead of the stomach may alter its effectiveness. Fine bore feeding tubes are at higher risk of blockages. The service user/caregiver should be advised to seek guidance from their community pharmacist if they are initiated on any new medicines after initial discharge[20].

2.3.20. The service user/caregiver must be fully educated prior to discharge on the correct procedure for administering medicines via their feeding tube to reduce the risk of tube blockages and drug-nutrient interactions (refer to Table 3.8). Enteral feed infusion should be stopped before administering medicines and the feeding tube must be flushed with 30ml of water before the first dose. **Medicines must be administered separately with a 10ml flush of water after each medicine.** When all medicines have been administered, a final flush of 30ml of water should be given to clear the tube before restarting the feed. The type of water recommended for flushing the feeding tube will depend on the service user's clinical condition, route, and method of administration[1,20].

2.3.21. Liquid preparations or soluble tablets should be supplied instead of solid tablets or capsules where possible. A dose adjustment may be required if there is a difference in bioavailability between liquid and solid presentations of the same medication. Some liquid preparations may not be suitable if they are suspensions of small granules.

2.3.22. Elixirs and suspensions are preferable to syrup preparations, which may cause gastrointestinal disturbances due to higher osmolality and sorbitol content. Granules in suspensions may be too large or the suspension may be too viscous to pass through narrower feeding tubes e.g., fine bore NG tube. Low volume ENFIT syringes (e.g., 10ml, 5ml, 1ml) and ENFIT medicine bottle adapters should be used where liquid medicines are drawn directly from the medicine bottle, and to allow for more accurate measurement of the dose required. Dosing errors due to the volume of medicine in the tip of the syringe can be reduced by using low-dose tip ENFit syringes (refer to Section 4).

2.3.23. The service user/caregiver should be advised to seek guidance with their community pharmacist before crushing tablets as this may adversely affect absorption and activation e.g., modified release (MR, CR, SR, XL) and enteric-coated tablets should never be crushed as the enteric coating protects the ingredients from gastric acid, allowing activation and absorption in the small intestine.

Administering medicines through an enteral feeding tube

Equipment required:

- 60ml ENFit syringe (and smaller volume syringes if required)
- Cooled boiled water (or sterile water if advised)
- Medicines
- Tablet crusher (if necessary)

How to administer medicines via the feeding tube:

1. Place feeding pump 'on hold'
2. Flush the tube using a 60ml syringe containing 30ml of water (or other volume as recommended)
3. Prepare the medicines *.
4. Administer each medicine separately and flush the tube with 10ml of water in between each medicine.
5. Repeat step 2 once all required medicines have been administered.
6. Restart-feed if required.

*** Tips on preparing the medication**

- Request medicines are supplied in liquid or soluble tablet form if possible.
- Draw liquid medicines directly into the syringe from the bottle, using a bottle adapter and a lower volume/ low-dose tip syringe for accurate dosing.

Soluble tablets can be placed in the barrel of a syringe then draw up 10ml of water to dissolve it.

- If solid tablets are suitable for crushing (check with pharmacist) use a tablet crusher to crush to a fine powder, mix the powder with 10ml of water and draw up into a syringe. The tablet crusher should be thoroughly cleaned with hot soapy water after each use to prevent cross-contamination.
- Open capsules and mix the powder contents with 10mls of water and draw up into a syringe

Figure 3.8: Procedure for administering medicines through a feeding tube

2.3.24. The dietitian must consider the potential for drug-nutrient interactions when devising the feeding regimen. Medicines should never be mixed with enteral feeding formula. The service user should be advised to place continuous feeds on hold while medicines are administered. It may be necessary to adjust the feeding schedule to allow for feed infusion to be held for a specific length of time before and after the administration of certain medicines where the feed is known to adversely affect drug absorption (e.g., phenytoin, ciprofloxacin).

2.3.25. Where a medicine is known to interact with an enteral feed (refer to Table X) the GP should monitor the service user for altered clinical responses or sub-therapeutic drug levels on a consistent basis e.g., there may be a risk of overdose where a medicine has a narrow therapeutic index (e.g., theophylline, phenytoin or digoxin).

Table 3.8: Sample common interactions between medicines and enteral feeds

Drug	Interaction with Enteral Feeds	Best Practice

Phenytoin Suspension	70% reduction in absorption by patient of phenytoin Binding to feeding tube Binding to proteins in enteral feed Binding to Calcium in enteral feed	Space out enteral feed to avoid co-administration with Phenytoin. Higher doses of phenytoin may be prescribed to combat any reduction in absorption due to EN feed binding. Closely monitor serum [Phenytoin] where possible
Carbamazepine	Carbamazepine may adhere to feeding tubes	Dilute Carbamazepine suspension with equal volume of sterile water or saline. Closely monitor serum [Carbamazepine].
Warfarin	Binds to Vitamin K in enteral feeds Binds to proteins in enteral feeds Reduction in bioavailability and anticoagulation effects	Closely monitor INR May need to switch to alternative anticoagulant therapy
Fluoroquinolones Ciprofloxacin Ofloxacin	Bind to Multivalent Cations: Calcium, Magnesium, Aluminium and Iron. Extent of binding varies within the class. Ciprofloxacin suspension binds to enteral feeding tubes.	Do not give quinolones simultaneously with enteral feeds. Hold enteral feeds for 1 hour before and 2 hr after quinolone dosing. Higher doses of Fluoroquinolone antibiotics may be prescribed if given at the same time as EN feed. Crush tablets and dilute in 20ml to 60ml sterile water. Ciprofloxacin tablets should be dispersed in sterile water or water for injection prior to administration. Ciprofloxacin suspension is not recommended as it is a very thick non aqueous granular suspension which may block narrow feeding tubes. As ciprofloxacin is absorbed high up in the duodenum, avoid jejunostomy administration of ciprofloxacin.
Moxifloxacin	Moxifloxacin absorption is not affected by concomitant administration of enteral feed.	
Proton Pump Inhibitors Omeprazole Lansoprazole	Acid labile Inactivated by gastric acid Absorbed in alkaline pH environment of duodenum Formulation: Delayed-release capsules containing enteric coated granules. Lansoprazole oral suspension has increased viscosity and may occlude feeding tubes.	Mix the capsule contents with acidic fruit juice and flush tubes out with juice. The acidic juices keep enteric coated granules intact until the duodenum is reached. Dissolve the intact enteric coated granules with Sodium Bicarbonate 8.4% solution, making a suspension. This suspension raises gastric pH and prevents disintegration of granules in stomach acid. Hold continuous enteral for 3 hours before and 1 hour after administration. Mix suspension with apple juice when delivering through enteral feeding tube. Esomeprazole tablets (Nexium) have been studied by Astra Zeneca and the tablets can be dispersed in non-carbonated water and administered through a gastric tube

Esomeprazole	Formulation: Delayed-release capsules containing enteric coated granules.	
Proton Pump Inhibitors	Acid labile Inactivated by gastric acid Absorbed in alkaline pH environment of duodenum	PPIs should be given on an empty stomach where possible e.g. prior to starting a continuous feed or wait 3 hours after the previous bolus feed – wait 30 minutes after administration to start feeding
Lansoprazole	Lanzoprazole in orodispersible form (Zoton FasTab), rather than the delayed release capsules presentation (which contain enteric coated granules) are the most suitable for administration via an enteral feeding tube. Lansoprazole oral suspension has increased viscosity and may occlude feeding tubes.	Place the orodispersible tablet in the barrel of an ENFIT syringe and draw up 10mls of water, allow to dissolve before flushing through the enteral feeding tube >8fr. Flush with 30mls of water afterwards and allow 30mins before recommencing enteral feeding.
Omeprazole	Delayed-release capsules containing enteric coated granules.	Open the capsule and mix the enteric coated granules with water or apple juice. Draw up into an ENFIT syringe and flush through the feeding tube – there is a risk that the granules may block a narrow feeding tube so care should be taken to flush well with 30mls of water after administration
Esomeprazole	Delayed release tablets	Do not crush the tablets. Dissolve in non-carbonated water prior to administration via the feeding tube.

Further information is available in the "Handbook of Drug Administration via Enteral Feeding Tubes" by White and Bradnam 3rd edition (2015)[26]

2.4. Oral health care

2.4.1. An **oral care plan** is essential for service users on home enteral tube feeding to maintain oral health and comfort, particularly when taking nil by mouth. Factors such as general health, underlying medical condition (including level of dysphagia if present), prognosis, medicines and future treatment plans, as well as previous standard of oral hygiene should be considered. An oral inspection with suitable lighting (pen light) may identify the need for referral to a dentist to resolve any dental issues identified.

2.4.2. An oral care plan that details the daily care required, as appropriate to individual needs, should be developed for each service user prior to discharge on home enteral tube feeding.

2.4.3. The service user/caregiver should be **advised how to perform appropriate mouth care** prior to discharge. Healthcare professionals in primary care should monitor oral hygiene of the service user and reinforce or revise the oral care plan if required.

2.4.4. Service users should be advised to use a fluoride containing toothpaste to reduce the risk of dental decay, and be advised to avoid rinsing their mouth after teeth brushing (i.e. “spit, don’t rinse” advice). The dentist may recommend a **high fluoride toothpaste** (available on prescription only) for those at highest risk of dental decay due to xerostomia (dry mouth) or with existing high levels of dental decay. .

2.4.5. Service users/caregivers should be advised to perform mouth care at least twice daily, including brushing of teeth and gums and/or follow any specific mouth care recommendations. Service users who require a carer to provide their mouth care may benefit from using a smaller child size soft bristle **toothbrush** if gums are sensitive or mouth opening is limited. A three-headed toothbrush (refer to Figure 3.9) which cleans multiple surfaces at once may be used where the service user is unable to follow instruction. A suction toothbrush may be recommended for service users at high risk of aspiration. The toothbrush attaches to suction tubing to assist removal of secretions.

Figure 3.9: Three-headed toothbrush

2.4.6. The service user/caregiver should remove dentures before performing mouth care. The gums should be cleaned with a soft toothbrush moistened with water, or if brushing is difficult, gauze can be used to wipe the gums instead. Dentures should be brushed twice daily to remove plaque and food debris, using a toothbrush, toothpaste and/or chlorhexidine dental gel and rinsed thoroughly with water. Dentures should be checked regularly and replaced if ill-fitting, damaged, or lost.

2.4.7. Poor oral hygiene can lead to increased bacteria in the mouth and in saliva and is one factor that may increase the risk of aspiration pneumonia in people with dysphagia on tube feeding. Food and drink may remain in the mouth for a longer time where swallow function is impaired, coating the teeth or 'pocketing' where there is weakness of facial muscles or a numbness on one side of the mouth which places these service users at higher risk of tooth decay[27,28].

2.4.8. A **non-foaming toothpaste** (Sodium Lauryl Sulphate (SLS) free) may be recommended for service users with dysphagia, dry mouth or who are unable to follow directions due to cognitive issues. A suction toothbrush may be required if the service user is at high risk of aspiration. Refer to Figure 3.10 for guidance on oral care for service users with dysphagia who require assistance with mouth care.

Mouth care with dysphagia or nil by mouth

1. The service user should be sitting up before mouth care is undertaken. If mouth care is being supported or performed by the caregiver, the best position is to stand or sit behind the service user and tilt their head forward to reduce risk of aspiration.
2. Use a soft small toothbrush (or a suction toothbrush if this has been recommended). Apply a pea-size amount of fluoride toothpaste to a dry toothbrush – do not add water.
3. Hold the toothbrush against the teeth with the bristles at a 45-degree angle. Brush the teeth and gums from the inner and outer aspects of the teeth with firm gentle strokes directed outwards from the gums.
4. Clean the tongue by brushing it firmly but gently using the soft toothbrush.
5. Clear the mouth by spitting but do not rinse afterwards. (If the service user is unable to spit, suctioning may be required).
6. If the patient has dry lips, tongue, gums or palate then apply a lubricant or balm to promote comfort and prevent further tissue damage.
7. Wash hands and then dry thoroughly with clean paper towels.

d

ure for providing mouth care for service users with own dentition and dysphagia

2.4.9. **Dry mouth** due to a reduction in saliva production must be managed as it can lead to irritated or infected oral tissue, bad breath, cavities and gum disease, and make eating and swallowing more difficult. Sipping water more frequently, and with meals, can provide some relief. The service user should be advised to avoid or limit intake of sugar-sweetened drinks, as they can cause tooth decay, and caffeine-containing beverages (e.g., tea and coffee) as these can dry the mouth further.

2.4.10. Service users may benefit oral sprays and gels designed to relieve the symptoms of dry mouth. The gel should be massaged into the soft tissues of the mouth (tongue, cheeks, and lips) using a soft

toothbrush, foam swab or a gloved finger (if safe to do so). Oral sprays or gels can also help to soften dried oral secretions, and with the retention of dentures. The oral sprays/ gels for dry mouth are not an alternative to brushing teeth with toothpaste. Toothpaste should be used sparingly as they have a drying effect on the mouth, and a low-foaming SLS-free brand may be preferable.

2.4.11. Service users who are taking nil by mouth and/or experience dry mouth, may develop an aversion or (**sensory defensiveness**) to having their teeth and gums brushed. This can be difficult to overcome but may be reduced by very gradually increasing the duration of oral care and using a soft-bristle or three-sided toothbrush. The type of toothpaste used should be that which is most acceptable to the service user to increase tolerance of oral care – different brands and flavours should be trialled. Unflavoured or low foaming brands may be tolerated best.

2.4.12. **Access to specialist dental services** is essential for advice, support with individual care and treatment where necessary. Staff should be aware how to refer the service user to available dental services. The dentist should be informed that the service user has a feeding tube and if they are at risk of aspiration[29].

2.5. Nutrition care plan

2.5.1. Nutrition assessment

Nutrition assessment is a **systematic approach** to collect, classify, and synthesize important and relevant data needed to identify nutrition-related problems and their causes[7]. This involves initial data collection and allows for continual reassessment and analysis of a client's status compared to accepted standards, to individual client goals and/or to previous assessments. A Registered Dietitian should perform the nutritional assessment as a first step in the international Nutrition Care Process (NCP), developed by the American Academy of Nutrition and Dietetics (refer to Figure 3.11)[30]. A nutritional assessment will be followed by assessment of the requirements.

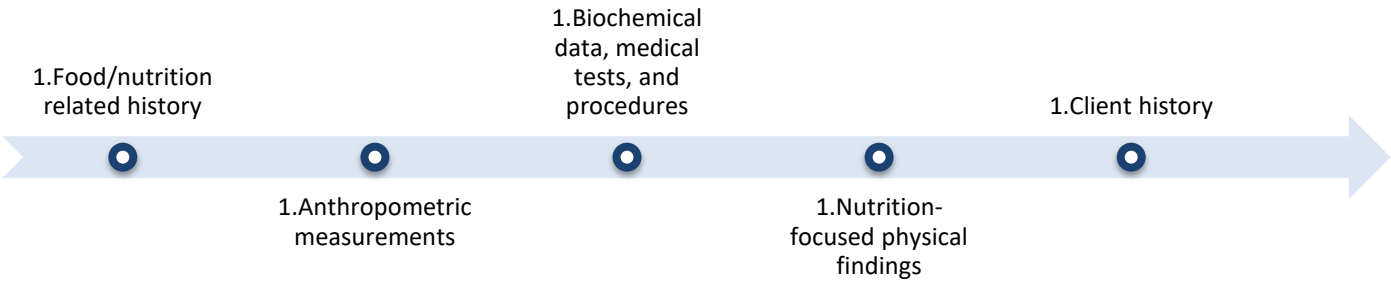


Figure 3.11: Categories in the NCP – nutritional assessment

2.5.1.1. Food/nutrition related history

An assessment of the service user's usual food and nutrient intake and mode of administration (e.g., oral, enteral), medications prescribed, complementary/ alternative medicine use, knowledge and beliefs relating to nutrition, food/feed and supplies availability, physical activity and quality of life are considered here. Where enteral feed is used to supplement oral intake, a dietary assessment is required. This can be established through discussion with the service user/caregiver and analysis of food charts where available. This then allows for an estimate of the proportion of

the patient's nutritional and hydration requirements that are likely to be met orally[5]. This allows the dietitian to meet any predicted deficits with an individualised enteral feeding regimen.

2.5.1.2. **Anthropometric measurements**

This refers to the measurement of the human body and includes weight, height, and measurement of body composition. Body mass index (BMI), growth pattern indices/percentile ranks, and weight history are also considered. Other parameters such as skinfold thickness measurements may be used – but are more commonly a component of assessment in the acute care setting[30,31].

2.5.1.3. **Biochemical data, medical tests, and procedures measurements**

This refers to the Laboratory data (e.g., electrolytes, glucose, lipids, organ function tests), should be included in the assessment of a client's nutritional status and re-evaluated as clinically indicated. Interpretation should consider that results could be affected by a client's clinical condition, disease status, age, medications, hydration, and nutritional status. Patients at risk of refeeding syndrome should be assessed and managed appropriately – see IrSPEN Professional Resources.

2.5.1.4. **Nutrition-focused physical findings**

Consideration is given to physical appearance, presence of muscle and fat wasting, swallow function, appetite (if some PO diet is taken) and affect. A Nutrition Focused Physical Examination (NFPE) is incorporated into the NCP assessment. The NFPE is methodical head-to-toe examination of a patient's physical appearance and function to help determine nutritional status by uncovering signs of malnutrition, nutrient deficiencies, and excesses[31].

2.5.1.5. **Client history**

Consideration is given to a client's personal history. This includes medical history and treatments, family history of relevance and social history. Additional factors to consider include cultural, religious, and ethnic preferences; psychosocial factors such as social support, language barriers and family support; socioeconomic factors such as personal finance and living situations.

2.5.1.6. **Assessment of nutritional requirements**

Nutritional requirements are determined by age, sex, physical activity level and consider the underlying clinical condition. Requirements are commonly estimated using evidence based international guidelines (general or disease specific) and based on individual nutrition assessment results. **Calculating nutritional requirements must be completed by a registered dietitian**.

The nutritional content of the enteral feeding regimen may need to be adjusted based on individual monitoring and reassessment of nutritional status. As with oral diet alone, nutritional adequacy of enteral feeding regimens should be achieved for each individual, including protein, energy, mineral, vitamin, and trace element provision[30]. All sources of intake should be included when assessing adequacy, such as oral diet if taken, and the enteral feeding regimen. Nutrient losses and additional needs identified in the assessment process should be considered when estimating requirements.

2.5.2. **Devising the enteral feeding regimen**

2.5.2.1. **Nutrition care plan for home**

Refer to Section 2.2 for developing a nutrition care plan for home including joint decision-making regarding feeding regimen, the provision of written instructions, considerations for those with

dysphagia, and the plan for monitoring and follow-up. Where possible, the service user/carer should be involved in decision making on all aspects of their-home enteral tube feeding plan.

2.5.2.2. **Choosing an enteral feed**

Refer to Section 3.2 for enteral feed options available. These include a commercially prepared enteral formula option selected to meet the individual needs of the service user, or a blended tube feeding option based on a shared decision-making approach and service user/caregiver preference. The tailored feeding regimen will be based on an individual nutritional assessment and consideration of underlying clinical condition, oral intake, activity level, feeding route and administration method. Adequate hydration will also need to be considered when planning the feeding regimen (refer to Section 3.5).

2.5.2.3. **Method of administration**

The method and timing of administration of feed, medications and flushes should be devised based on each service user's preference, their home routine and their tolerance. Continuous, intermittent, bolus, and ambulatory feeding options are available. Method of choice will depend on individual assessment and collaborative decision making between clinician and service user/caregiver. Refer to Section 3.6 for details on each feeding method and related issues.

2.5.2.4. **Enteral feeding regimen**

The enteral feeding regimen, including written instructions on feed type and volume, method of administration, flushes and/or summary of nutritional content, should be provided to the service user/care giver at discharge and a copy forwarded to the Community Dietitian and/or Public Health Nurse.

The service user/caregiver should be provided with a prescription for feed (if commercially prepared formula) in advance of discharge. The prescription should clearly specify the exact name of the feed(s) required and the volume of feed required monthly along with the presentation format, e.g., 1000ml bottle or 500ml bottle. Any additional requirements such as sterile water should also be specified on the prescription. A letter should be sent to the service-user's GP detailing their prescription needs and the need for this prescription to be repeated monthly pending any change to the enteral feeding regimen following dietetic review. See Table 3.9 for pre-discharge checklist.

Table 3.9: Pre-discharge checklist of documentation/communication needed

Task for completion before patient discharge
Register the service user with the EFS vendor
Provide written information to service user on the feeding tube and feeding regimen.
Copy this to General Practitioner, Public Health Nurse, Community Dietitian, and/or Nursing Home staff.
Apply in writing for funding of enteral feeding consumables (refer to Section 2)
Contact local Pharmacy to order required feed
Provided prescription for feed and equipment required
Give information packs to the service user/carer and include: ✓ **Written information on feeding tube/pump care, stoma care and any supportive manufacturer's information.** ✓ **Contact details for community support team.**

- ✓ **Plan for troubleshooting giving sets and feeding tubes/pumps.**
- ✓ **Instructions for managing balloons in the case of balloon gastrostomy.**
- ✓ **Copy of the feeding regimen.**
- ✓ **Clear plan in the case of dislodged feeding tube.**

Complete discharge letter stating plan and treatment goals

Arrange follow up

2.6. Monitoring of service users on HETF

2.6.1. The type and frequency of monitoring required will vary depending on the service user, severity of the underlying disease state, route of nutrition support, expected duration and individual goals of nutrition support.

2.6.2. All adults on home tube feeding should be **assessed by a dietitian within 10 working days** of initial discharge (or from receipt of referral). This assessment should be provided by a community dietitian with experience in the management of HETF, although service users with more complex underlying clinical conditions may require follow-up by a hospital dietitian as part of a specialist MDT clinic. A checklist of monitoring required at initial dietetic assessment of service users on HETF is included in Appendix V.

2.6.3. The initial dietetic assessment after discharge should be performed in the service user's place of residence to allow the dietitian to practically assess how the service user is managing the administration of enteral feed and check that all equipment required has been delivered and stored correctly. Subsequent reviews may be performed in a primary care clinic or domiciliary setting, depending on the clinical needs of the service user and the dietetic resources available.

2.6.4. Following initial assessment after discharge, the service user should be reviewed by a dietitian at regular intervals as outlined in Figure 3.10. The frequency of review should be determined by clinical need and additional reviews in between scheduled appointments should be provided where required. Refer to Appendix V for checklist of monitoring required on review of service users on HETF.

Review type	Frequency of review
Initial assessment	Within 7-10 days of discharge
First review	Within 2-6 weeks of discharge, or sooner if clinically indicated
Further review	Every 3-6 months
Stable on long term HETF	Minimum of every 6 months

Figure 3.10 Frequency of monitoring of adults on home tube feeding[29]

2.6.5. Service users with dysphagia who have been referred to a community SLT for rehabilitation and/or management of their swallow will be prioritised in line with local SLT prioritisation guidance. The community SLT may consider referring for an objective swallow assessment, such as a Videofluoroscopic Swallow Study (VFSS) or a Fibreoptic Endoscopic Evaluation of Swallowing (FEES), where clinically indicated. The community SLT should inform the dietitian managing the HETF nutrition care plan if there are significant changes to the service user's oral intake so that the enteral feeding regimen can be adjusted if necessary to meet nutritional requirements.

2.6.6. Service users with a **nursing need** related to their enteral feeding should be referred to a public health nurse on discharge, or subsequently by the community dietitian where indicated. The public health nurse should monitor the service users/caregiver's competency in the management of daily stoma site care after initial discharge and provide guidance or treatment in the event stoma site complications such as infection or overgranulation develop. If the service user/caregiver with a BGT or LPGD is unable to reliably perform balloon volume checks, their public health nurse may be able to support them, as per local arrangements. Training on checking balloon volumes is available to public health nurses from the nursing service provided by the enteral feeding device vendors. If the service user/caregiver reports any issues relating to their enteral feeding regimen, e.g., poor tolerance of enteral feed or request to adjust feed administration, the public health nurse should advise the service user/caregiver to contact their hospital or community dietitian for review.

2.7. Key Recommendations

- ✓ The service user/caregiver must be advised to flush the feeding tube routinely with at least 30ml of water before and after the administration feed or Medicines, and four hourly if continuous feeding
- ✓ If more than one reservoir is required daily, a new giving set will be required for each reservoir
- ✓ Cooled boiled water or freshly drawn water from a drinkable source is suitable for regular flushes
- ✓ Calculating nutritional requirements must be completed by a registered dietitian
- ✓ All adults on home tube feeding should be assessed by a dietitian within 10 working days of initial discharge (or from receipt of referral)
- ✓ Carbonated drinks or fruit juices should not be used to unblock a tube as they are acidic and can react with any formula remaining in the tube, worsening the blockage
- ✓ A 60ml ENFit syringe is recommended when attempting to unblock a feeding tube as smaller volume syringes can exert excessive pressure and increase the risk of rupturing the tube
- ✓ ONS presentations can be used instead of RTH formula for bolus feeding but only under the supervision of a dietitian
- ✓ Medicines must be administered separately with a 10ml flush of water after each medicine

SECTION 4: Management of Enteral Feeding Tubes in Primary Care

3.1. ENFit

3.1.1. All feeding tubes, giving sets and syringes used for enteral feeding in Ireland must have ENFit connectors. ENFit is the global enteral feeding device connector design that complies with the new International Standard (**ISO 80369-3**). ENFit connectors are specific to enteral feeding, which reduces the likelihood of misconnections to IV lines, and promote optimum delivery of enteral feed by ensuring compatibility between manufacturers and reducing accidental disconnections[32].

3.2. Enteral feeding tubes

3.2.1. An overview of enteral feeding access routes is available in Section 3.1 and Table 3.1. An overview of the different types of feeding tubes commonly used in a primary care setting is presented in Table 4.1.

3.2.2. **Percutaneous Endoscopic Gastrostomy (PEG)**

A PEG is a gastrostomy tube, which is typically inserted endoscopically, although in some cases it may be surgically placed. The PEG is available in a range of width **sizes,** measured as French (Fr). A PEG has a **rigid internal fixator**, which lies against the gastric mucosa, and kept in position using an **external fixator** on the external abdominal wall. It is recommended that the distance between the external fixator and the abdominal wall be maintained at approximately 3-5mm (refer to manufacturer's instructions). As the external fixator is locked in position, this needs to be opened to manually to adjust the position. The positioning of the external fixator should be monitored regularly and adjusted in response to changes in the service user's weight, where required.

The feeding port on a PEG tube has an ENFIT connection, which is compatible with both the giving set and/or enteral syringe without the need for additional adapters or extension sets. The feeding port can be removed and replaced if broken, which allows the PEG to be repaired without needing

to replace the entire tube (refer to Section X). It is essential to ensure that the same French size feeding port is fitted as they are not universal sizing. The PEG tube will have a clamp to avoid backflow of gastric contents when attaching or removing a giving set or syringe. This clamp can also be removed and replaced if broken. Examples of commonly used PEGs on the Irish market are the Corflo PEG and the Freka PEG – refer to Appendix X.

Table 4.1 Types of feeding tubes used in a primary care setting

Type of feeding tube	Insertion of tube	Internal fixator	Position confirmed if pH of gastric aspirate < 5.5	Removal of tube	Can tube be repaired in primary care if the feeding port breaks?	Can tube be replaced in primary care?
PEG	Endoscopically	Rigid disc	Yes	Endoscopically as internal fixator is fixed	Yes – the feeding port (Y-adapter) on the tube can be removed and replaced	No – endoscopic removal recommended due to rigid internal fixator
BGT	Primary tube – radiologically Replacement tube - bedside	Water filled balloon	Yes	Bedside - hospital or community	No – the entire tube must be replaced.	Yes – tube can be removed at bedside by deflating the internal balloon and a new tube inserted.
LPGD	Primary tube – radiologically Replacement tube - bedside	Water filled balloon	Yes	Bedside – hospital or community	Yes – the feeding port (extension set) can be replaced	Yes – tube can be removed at bedside by deflating the internal balloon and a new tube inserted.
PEGJ	Endoscopically or Radiologically	Water filled balloon	No - jejunal pH is > 5.5	Bedside – in hospital	No – the entire tube must be replaced.	No - must be replaced in hospital
LPGJ	Endoscopically or Radiologically	Water filled balloon	No - jejunal pH is > 5.5	Bedside – in hospital	Yes – the feeding port is on the extension set - can be replaced	No - must be replaced in hospital
Jejunostomy	Radiologically or Surgically	Water filled balloon or stitches	No - jejunal pH is > 5.5	Bedside – in hospital	Yes – the feeding port can be replaced	No - must be replaced in hospital
Nasogastric	Bedside	Nil – weighed tip	Yes	Bedside	No – the entire tube must be replaced.	Not routinely – unless service user/caregiver has been trained

Source: J Soscia, JN Friedman. A guide to the management of common gastrostomy and gastrojejunostomy tube problems. Paediatr child Health 2011;16(5):281-287.Page 282 - Table 1 Common paediatric gastrostomy (G) and gastrojejunostomy (GJ) tube devices [33]

3.2.3. Balloon Gastrostomy Tube (BGT)

A BGT (may also be referred to as a 'G-tube' or a 'replacement gastrostomy') is typically inserted into an established gastrostomy stoma as a replacement for a PEG that has been removed or dislodged. However, a BGT may also be used as a primary radiologically inserted gastrostomy (RIG). The BGT is available in a range of width sizes e.g., 12Fr to 24Fr.

The **internal fixator** on a BGT is a water-filled balloon, which lies against the gastric mucosa, and it kept in position using an **external fixator** on the external abdominal wall. As with a PEG, the correct position of the external fixator is a distance of approximately 3-5mm from the abdominal wall. This should be monitored regularly and adjusted if required. The volume of water in the internal balloon should be checked as per the manufacturer's recommendations e.g., weekly, fortnightly, monthly (refer to Section 4.3.4). The volume of water required to fill the balloon varies between tube sizes and brands of tubes but is typically noted on the balloon inflation port on the feeding tube.

The **feeding port** on a BGT tube has an ENFIT connection, which is compatible with both the giving set and/or enteral syringe without the need for additional adapters or extension sets. However, as the BGT does not have an integrated clamp, an extension set with a **clamp** may be used. Alternatively, a 'side-clamp' can be fitted for use when connecting/disconnecting the giving set or syringe, but this should be removed when the tube is not in use. If the feeding port on the BGT breaks, the entire BGT must be replaced with a BGT of the same size. Examples of commonly used BGT on the Irish market include the MIC GT and the AMT GT – refer to Appendix I.

3.2.4. Low-profile Gastrostomy Device (LPGD)

A LPGD (may also be referred to as a 'button gastrostomy') is typically inserted into an established gastrostomy stoma as a replacement for a PEG or BGT that has been removed or dislodged. However, a LPGD may also be used as a primary radiologically inserted gastrostomy (RIG). The LPGD is available in a range of both width and length **sizes** e.g., 12Fr 3.0cm, 14Fr 2.5cm. The length required is determined by measuring the stoma tract and may need to be remeasured overtime. For example, as the tube length is fixed, the LPGD may become too tight if the service user gains weight. When the correct length tube is in place, there should be approximately 3 - 5mm between the top of the tube and the abdominal wall. The **internal fixator** on a LPGD is a water-filled balloon. The volume of water in the internal balloon should be checked as per the manufacturer's recommendations e.g., weekly, fortnightly, monthly (refer to Section 4.3.4). The volume of water required to fill the balloon varies between tube sizes and brands of tubes but is typically noted on the balloon inflation port on the feeding tube.

The **feeding port** on a LPGD is part of an extension set with a clamp. A giving set or syringe cannot connect to the LPGD without this extension set. The extension set can be disconnected and cleaned when not in use or can remain connected to the LPGD if preferred by the caregiver/service user. If the feeding port on the extension set breaks, the extension set can be replaced without needing to replace the entire tube. The extension set should be discarded and replaced with a new extension set every two weeks (confirm against manufacturer's IFU). The extension set is a universal size, compatible with all sizes of same brand LPGD. Examples of commonly used LPGD on the Irish market include the MICkey LPGD and the Mini one – refer to Figure 4.X and to Appendix I for order codes.

3.2.5. Transgastric jejunal tubes (PEJ, PEGJ)

A transgastric jejunal feeding tube is inserted via a gastrostomy stoma, with the tip of the feeding tube extending into the jejunum under radiological or endoscopic guidance. The internal fixator is located in the stomach and is either a rigid disc (CORFLO* PEJ) or a water-filled balloon (MIC GJ) depending on the brand of tube. The tube may have a jejunal feeding port only (PEJ) or both a gastric and jejunal feeding port (PEGJ). PEJ and PEGJ tubes are available in a range of French sizes. The feeding port on a PEJ and PEGJ are integrated so the entire tube will need to be replaced if the feeding port breaks. There are low profile versions of both the PEJ and PEGJ available, in a range of lengths and width sizes, with detachable extension sets. Refer to Figure 4.X and to Appendix X.

3.2.6. Jejunostomy tubes (JEJ)

Jejunostomy tubes are surgically placed into the jejunum using tunnelling technique for secure placement and to help minimise leakage. They are stitched in position to prevent dislodgement, as there is no internal fixator. JEJ tubes are narrower than PEJ tubes and are more prone to blocking. The feeding port is usually integrated so the entire tube will need to be replaced if the feeding port breaks[29].

3.2.7. Nasogastric tubes (NGT)

NGT are less commonly used by adults on home enteral tube feeding but may be used where a period of short-term feeding at home is indicated. As the there is no internal fixator, the tip of the feeding tube can migrate into the oesophagus or small intestine. The NGT feeding port is integrated and as the lumen of the tube is narrow, NGTs are prone to blocking. The entire NGT must be replaced if it breaks, blocks, or dislodges.

3.3. Routine care of enteral feeding tubes

3.3.1. Daily care routine

As part of the daily care of the gastrostomy or jejunostomy stoma (refer to section 5.2.2), the feeding tube and external retention device should be cleaned with warm soapy water to remove any crusted exudate or congealed feed and dried thoroughly. The feeding tube should be flushed regularly with water throughout the day as part of the enteral feeding regimen, and at least once daily if not in use to clean the internal lumen. A gastrostomy tube (but not a jejunostomy tube) should be rotated 360° daily and the external retention device correctly repositioned after cleaning. The feeding tube should be inspected daily for any cracks, kinks, or changes in the tube integrity. If the tube has a clamp, this should be moved to a different position on the tube shaft daily to prevent the tube breaking.

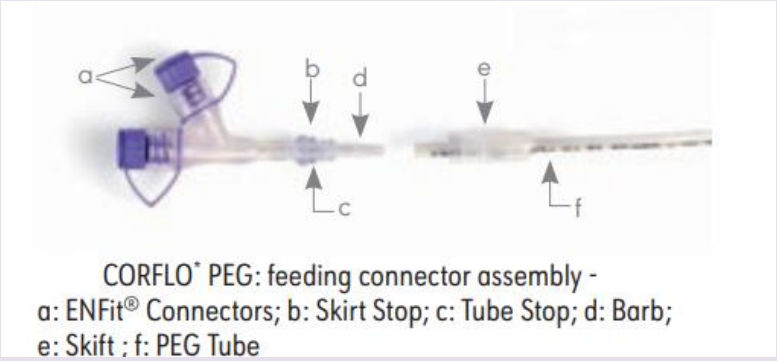
3.3.2. Changing the feeding port connector on a PEG tube

The feeding port connector on a PEG tube is removable and can be replaced in a primary care setting by a healthcare professional or service user/caregiver who has been trained to do the procedure. The feeding port connector does not need to be changed unless broken or if it has become difficult to clean properly. The feeding port connector used must be the same French size and brand as the PEG and the service user/caregiver should be provided with a supply – refer to Appendix I for order codes.

3.3.3. The procedure for changing the feeding port connector on the CORFLO PEG, which is most widely used in primary care, is outlined in Figure 4.2. The procedure for changing the feeding port connector on a FREKA PEG is available at https://www.freseniuskabi.com/gb/documents/Gastrostomy_Feeding_Care_Guideline.pdf.

NOTE: it is not possible to replace the feeding port on any tube with an internal balloon fixator as it is integrated with the feeding tube - the entire tube will have to be replaced if the feeding port breaks.

Replacement of a feeding connector on a PEG tube



CORFLO® PEG: feeding connector assembly -
a: ENFit® Connectors; b: Skirt Stop; c: Tube Stop; d: Barb;
e: Skift ; f: PEG Tube

1. Close the fast release clamp on the PEG tube and disconnect the feeding set from the tube.
2. Cut the tube approximately 1 cm below the old CORFLO* ENFit® feeding connector.
3. Untwist the threaded skirt from the new CORFLO* ENFit® feeding connector
4. Put the PEG tube through the skirt. This skirt is vital for the correct functioning of both the PEG tube and the CORFLO* ENFit® feeding connector.
5. Insert the CORFLO* feeding connector into the tube, making sure the tube goes over the barb and reaches the tube stop at the bottom of the threaded portion.
6. Twist and push the skirt until the skirt stop is reached making sure it is a tight fit.

Figure 4.2: Replacement of the CORFLO* ENFIT® feeding connector

Source: https://avanos.co.uk/wp-content/uploads/2020/03/HC210-01-UK_CORFLO_PEG_PatientBooklet_2019.pdf

3.3.4. Checking the water volume in an internal balloon fixator

A water-filled balloon acts as an internal fixator in several feeding tubes, most commonly the BGT and LPGD. It is normal for some water to evaporate over time, so it is essential to check the water in the balloon at regular intervals to ensure the balloon is inflated. The **frequency** of the balloon checks will depend on the manufacturer's instructions e.g., weekly, fortnightly, or monthly. Ideally, the service user/caregiver will be trained to perform the balloon checks, but they may require the support of their PHN/ CRGN until competent to do so themselves. The nursing aftercare service provided by the vendor of the feeding tube may support both the service user/caregiver and PHN/ CRGN with additional training after discharge – refer to Appendix I for contact details.

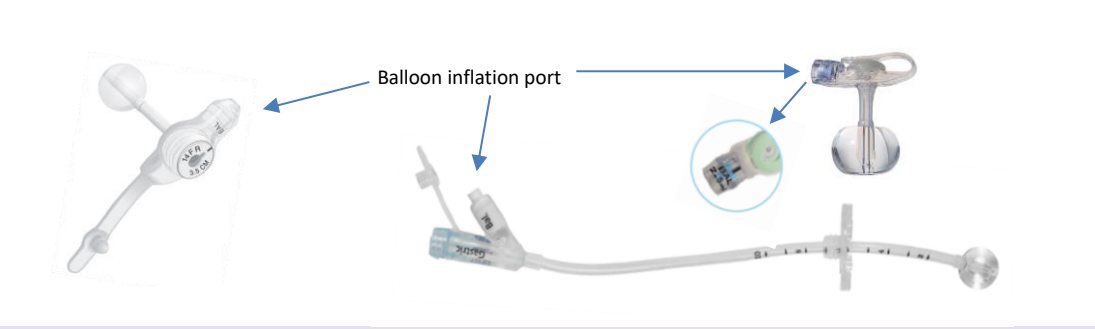
A generic procedure for checking the balloon volume is outlined in figure x, but specific manufacturer's guidance should be checked as there may be some variation between brands.

The internal **balloon should be inflated with sterile or cooled boiled water only** – it should never be inflated with air or saline. The volume of water required to fill the balloon varies between tube sizes and brands of tubes, but **the recommended volume is printed on the balloon inflation port of the feeding tube.** The balloon should never be inflated with more than the recommended volume due to the risk of the balloon bursting.

The **volume of water withdrawn at each balloon check should be recorded** and any reduction in the volume retained between balloon checks noted as this can be a sign that the balloon is beginning to perish, allowing time to arrange an elective tube replacement.

It is not necessary to routinely check the pH of a gastric aspirate before and after each balloon volume check, but this can be done if there are any concerns about the position of the feeding tube after the procedure (refer to Section 4.2.4).

Checking the volume of water in an internal balloon fixator



1. Pre-fill one syringe with the volume of water required to fill the balloon from empty, as per manufacturer's guidance.
2. Hold the tube in place while checking the balloon volume to prevent accidental removal. For a BGT, loosen the external fixator and advance the tube into the stomach to further reduce the risk of dislodgement.
3. Insert the empty syringe into the balloon inflation port, and withdraw water from balloon – note the

Figure 4.3 Checking the volume of water in an internal balloon fixator [34]

3.3.5. Checking the pH of gastric aspirate to confirm tube position of a NGT or gastrostomy tube

Checking the pH of a gastric aspirate is recommended as a first-line test to confirm the correct positioning of a feeding tube in the stomach. Jejunal tubes should not be aspirated. A pH reading of <5.5 is taken as confirmation that the feeding tube is correctly positioned and that it is safe to proceed with using the feeding tube. However, it should always be used in combination with a physical check of tube positioning e.g. the gastrostomy tube can be rotated and advanced freely, and there is no pain when inflating the balloon which might suggest that the tube is incorrectly positioned[34,35].

The pH of gastric aspirate may be raised by medications e.g., PPIs or by the presence of feed in the stomach, or if the tube has migrated into the oesophagus or lungs. A feeding tube should not be used if the pH reading is >5.5.. Refer to Section 4.4.7 for troubleshooting difficulties in obtaining a gastric aspirate or a reading >5.5.

A generic procedure on checking the pH of gastric aspirate is outlined in Figure 4.4[34].

Equipment required – 60ml ENFIT syringes, pH indicator paper (0-9)

1. Remove 1 strip of pH paper from the container, and then reseal the lid.
2. Connect your 60ml ENFIT syringe to your feeding tube, and pull up the plunger to withdraw a small amount of gastric aspirate
3. Pour the gastric aspirate onto the three colour pads on the pH strip, shaking off any excess liquid.
4. Observe for colour changes and match the colour to the guide on the outside of the pH strips container.
5. A reading between **0-5.5 confirms that the tube is correctly positioned** in the stomach, and it is safe to proceed with feeding.
6. Where possible, **gastric aspirate should be checked before and after a tube change** to allow for comparison between readings e.g. if the pH is <5.5 before the tube change, but >5.5 after the procedure, this suggests that the tube is not correctly positioned.
7. Sometimes the pH reading may be greater than 5.5 if non-fasting – wait and recheck after 1 hour. Do not use the tube until the position is confirmed (refer to Section 4.4.7)

Figure 4.4 Checking the pH of gastric aspirate

3.4. Troubleshooting common problems with enteral feeding tubes

3.4.1. Many of the most common problems associated with feeding tubes, such a broken feeding port, a tube blockage, or a dislodged feeding tube, can be managed in a primary care setting, depending on the type of tube in situ. A summary of how to troubleshooting common complications with different types of feeding tubes is outlined in Table 4.2[33].

3.4.2. **Managing a blockage in a feeding tube**

Flushing a feeding tube regularly with water throughout the day reduces the risk of a tube blocking, and flushing should be scheduled more frequently with fine bore tubes which are prone to blocking more easily. All service users/ care givers should be trained to attempt unblocking a feeding tube prior to discharge on tube feeding, as it is important to try to unblock the tube as soon as possible. A generic guide to unblocking a feeding tube in a primary care setting is outlined in Figure 4.5[36].

3.4.3. **Carbonated drinks or fruit juices should not be used to unblock a tube** as they are acidic and can react with any formula remaining in the tube, worsening the blockage.

3.4.4. **A 60ml ENFit syringe is recommended** when attempting to unblock a feeding tube as smaller volume syringes can exert excessive pressure and increase the risk of rupturing the tube.

How to unblock a feeding tube in primary care

Equipment required – 60ml ENFIT syringes, warm water, bicarbonate of soda

1. Check that the clamps are open and that there are no kinks in the tube.
2. Check if the blockage is visible in the tube. If the tube has a right angle fixator (e.g.PEG), open this, straighten the tube and check for any visible blockage under the fixator. If a blockage is visible, the tube should be rolled/ squeezed between the fingers to loosen any blockage.
3. Flush the tube with 30mls of LUKEWARM water using a 60ml syringe. Use a gentle but firm pressure as it may take several minutes to unblock the tube.
4. If the tube remains blocked, try flushing a solution of 1 tsp of bread soda (sodium bicarbonate) mixed with 30mls of water into the tube and allow to sit in the tube for up to 30 minutes. Then try flushing again with LUKEWARM water
5. If the tube remains blocked, it may require replacement.

Figure 4.5. How to unblock a feeding tube in primary care

Table 4.2: Feeding tubes - trouble shooting summary

Type of feeding tube	Feeding port is broken	Feeding tube ruptured	Feeding tube blocked	Tube is starting to dislodge	Tube has already dislodged
PEG	Remove broken feeding port adapter & replace with same size feeding port adapter. (refer to section x)	Tube must be replaced* Contact *endoscopy* department in discharging hospital or refer to ED. Advise service user to bring spare tube.	Attempt to unblock (refer to section x). If unsuccessful, tube must be replaced* Contact *endoscopy* department in discharging hospital or refer to ED. Advise service user to bring spare tube.	Tube must be replaced* If possible, gently push the tube back into the stoma, and tape in position to keep stoma open. Advise that the feeding tube should not be used. Contact *endoscopy* department in discharging hospital or refer to ED. Advise service user to bring spare tube.	A replacement tube must be inserted urgently as the gastrostomy stoma will close within 4 hours. Refer to ED and advise service user to bring spare tube. If the stoma has started to close, the ED team may need to insert a smaller size tube – confirm size of new tube & order spare in the same size.
BGT & LPGD	**BGT:** Entire tube must be replaced* If not possible to replace in primary care setting (refer to section x), refer to ED and advise service user to bring spare tube. **LPGD:** Feeding port is part of the extension set - Replace the extension set only (refer to section x)	Tube must be replaced* If not possible to replace in primary care setting (refer to section x), refer to ED and advise service user to bring spare tube.	Attempt to unblock (refer to section x). If unsuccessful, tube must be replaced*. If not possible to replace in primary care setting (refer to section x), refer to ED and advise service user to bring spare tube.	Internal balloon fixator may be low volume or perished. Deflate internal balloon, gently push tube back into the stoma tract and re-inflate balloon (refer to section x). Tape tube in position. Confirm balloon integrity (refer to section x). Tube can be used if balloon intact. If balloon has perished, advise that feeding tube should not be used. If not possible to replace in primary care setting (refer to section x), refer to ED and advise service user to bring spare tube.	A replacement tube must be inserted urgently as the gastrostomy stoma will close within 4 hours. Refer to ED and advise service user to bring spare tube. If the stoma has started to close, the ED team may need to insert a smaller size tube – confirm size of new tube & order spare in the same size.

* The urgency of tube replacement, where the tube is still insitu, will depend on whether the service user if NPO and if feeding tube can be used in the interim.

Table 4.2 (continued): Feeding tubes - trouble shooting summary

Type of feeding tube	Feeding port is broken	Feeding tube ruptured	Feeding tube blocked	Tube is starting to dislodge	Tube has already dislodged
PEGJ & LPGJ	**PEGJ:** Entire tube must be replaced*. Contact *radiology* department in discharging hospital or refer to ED. Advise service user to bring spare tube with them. **LPGJ:** Feeding port is part of the extension set - Replace the extension set only (refer to section x)	Tube must be replaced*. Contact *radiology* department in discharging hospital or refer to ED. Advise service user to bring spare tube with them.	Do not attempt to unblock a jejunostomy tube in primary care setting. Contact *radiology* department in discharging hospital for advice or refer to ED. Advise service user to bring spare tube with them.	Do not attempt to unblock a jejunostomy tube in primary care setting. Contact *radiology* department in discharging hospital for advice or refer to ED. Advise service user to bring spare tube with them.	A replacement tube must be inserted urgently. Contact *radiology* department in discharging hospital for advice or refer to ED. Advise service user to bring spare tube with them. ***NOTE:*** *Ensure that the ED medical team are aware that it is a jejunostomy (not a gastrostomy tube) that has dislodged and that it will need to be replaced in radiology. If a gastrostomy tube is inserted as a temporary measure in the ED to keep the stoma open, this should be labelled as 'not for use'*
Jejunostomy	Will depend on brand of tube. If possible, remove & replace the feeding port adapter. Otherwise, contact *radiology* department in discharging hospital or refer to ED.	Tube must be replaced*. Contact *radiology* department in discharging hospital or refer to ED. Advise service user to bring spare tube with them.	Do not attempt to unblock a jejunostomy tube in primary care setting. Contact *radiology* department in discharging hospital for advice or refer to ED. Advise service user to bring spare tube with them.	Do not attempt to unblock a jejunostomy tube in primary care setting. Contact *radiology* department in discharging hospital for advice or refer to ED. Advise service user to bring spare tube with them.	A replacement tube must be inserted urgently. Contact *radiology* department in discharging hospital for advice or refer to ED. Advise service user to bring spare tube with them.
Nasogastric	Tube must be replaced*. Refer to ED (or as per local arrangements with discharging hospital) and advise service user to bring spare tube with them.	Tube must be replaced*. Refer to ED (or as per local arrangements with discharging hospital) and advise service user to bring spare tube with them.	Attempt to unblock (refer to section x). If unsuccessful, refer to ED (or as per local arrangements with discharging hospital) and advise service user to bring spare tube with them.	Gently push the tube back in, and confirm position on pH testing (refer to section x). If unsuccessful, refer to ED (or as per local arrangements with discharging hospital) and advise service user to bring spare tube with them.	Tube must be replaced*. Refer to ED (or as per local arrangements with discharging hospital) and advise service user to bring spare tube with them.

Some service users with tubes that are prone to blockages may be provided with a commercial activated pancreatic enzyme solution (e.g., Clog Zapper) to use if the blockage cannot be cleared with water[20].

NOTE: these products are not effective in clearing blockages caused by medications.

3.4.5. Managing a feeding tube that is too tight

If a service user with a gastrostomy or jejunostomy tube gains weight or has abdominal distention, the feeding tube can become too tight, which increases the risk of ulceration, necrosis and buried bumper at the stoma site. Signs that a tube is too tight include redness and/or overgranulation at the stoma site, difficulty/ pain on rotating the tube and visually there will be no gap between the external fixator and the skin level. If the tube has an external fixator, this should be loosened and repositioned. However, if the tube has a fixed length shaft e.g. LPGD, the tube will need to be replaced with a longer length tube – this should be done electively as soon as possible as there is a risk that the internal balloon will rupture.

3.4.6. Managing a feeding tube that is too loose

If a feeding tube appears to be too loose, the tube should be inspected visually to determine the underlying cause as it might be due to several factors, including weight loss, poor positioning of the external fixator or it may be a sign that the tube is dislodging. Signs that the tube is too loose include redness and excoriation due to leakage of gastric contents, and/or overgranulation due to the excessive movement at the stoma site.

If the tube has a rigid internal fixator (e.g., Corflo PEG), the tube can be pulled gently to reposition the internal fixator against the gastric wall, and the external fixator can be repositioned correctly. If the tube has a balloon fixator, then the tube should be advanced into the stoma tract and the balloon volume checked to ensure that the balloon is not leaking or ruptured. Once the balloon volume is confirmed, the external fixator can be repositioned correctly. However, if the volume of water in the balloon cannot be confirmed, the tube may require replacement (refer to Section X). If the tube has a fixed length shaft e.g. LPGD, the tube will need to be replaced with a shorter length tube – this should be done electively as soon as possible to manage excoriation and overgranulation at the stoma site (refer to Section 5.4 and 5.5).

3.4.7. Managing problems with the internal balloon

A common reason for being unable to withdraw water from the internal balloon on a BGT is that the clamp on the tube is closed! Alternatively, the valve in the balloon port may be blocked or the balloon may be empty if the balloon is leaking, ruptured or if the water was not replaced recently (the date of the last balloon change should be verified). The tube should be secured in position before investigating (refer to Figure X).

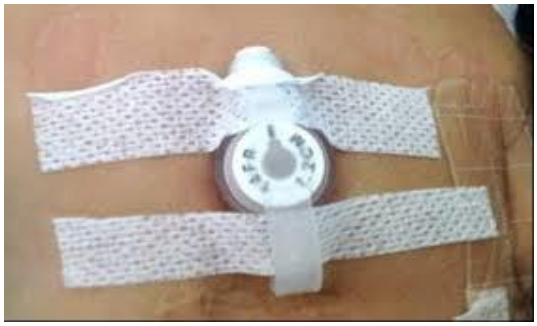


Figure 4.6: LPGD taped in position

Figure 4.7: BGT taped in position

The **balloon port can block** due to a build-up of dried feed, medication or soap in the recess of the balloon port. The recess should be cleaned before firmly seating a 10ml luer-slip syringe in the port, and twisting the syringe a quarter-turn before trying to withdraw the water from the balloon again. If unsuccessful, it may be necessary to use the tip of a large paperclip to depress the valve and release the water. This should be followed by withdrawing any remaining water with the syringe, and refilling the balloon with the correct amount of water. If this is not possible, the valve may be broken and the tube will need to be replaced.

If the valve in the balloon port is working, but it still not possible to withdraw any water from the balloon, it is likely that the **balloon is empty or ruptured**. Using a luer-slip syringe, attempt to refill the balloon with the required volume of water, leave for a few minutes and attempt to withdraw it again. If no water is returned, it can be assumed that the balloon has ruptured, and an elective tube replacement should be scheduled. Note, in some cases gastric contents may be withdrawn via the balloon port if the balloon is ruptured but this can be differentiated from water in that the liquid withdrawn is usually coloured and/or cloudy (refer to Figure X). The tube should remain taped in positioned and not used until the tube is replaced.

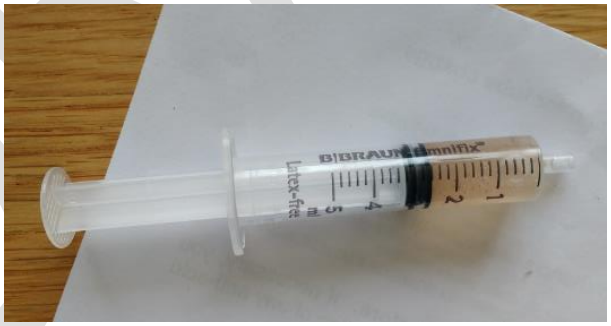


Figure 4.8: Gastric contents withdrawn from the balloon port of a LPGD with a ruptured balloon.

However, if after a few minutes, it is possible to withdraw some or all of the water, then it is likely that the **balloon is leaking** rather than ruptured. The balloon should be refilled, remain taped in position, and checked again after 24 hours, during which time the tube can be used. If after 24hours, the balloon volume is maintained, the tube can be used as usual and the balloon volume rechecked after a week. However, if the balloon volume has reduced within 24 hours, an elective tube replacement should be scheduled.

3.4.8. Managing fungal overgrowth on a feeding tube

Signs that fungal colonisation is present in a feeding tube include a change in the integrity of the tube (e.g. softening and distortion (refer to Figure 4.9) and/or white or black plaques visible in the shaft of the feeding tube that do not clear on flushing. In time, the tube may dislodge or rupture, so the client should be provided with a spare BGT in the same size and advised to present to the ED in the nearest hospital if this happens.

Fungal colonisation should also be considered when there are signs of a fungal rash evident at the stoma site (refer to Figure 4.9) and/or repeated episodes of the balloon leaking or rupturing prematurely (refer to Figure 4.10). Medical review is required to treat the fungal infection, and an elective tube replacement of tubes with a balloon should be arranged.

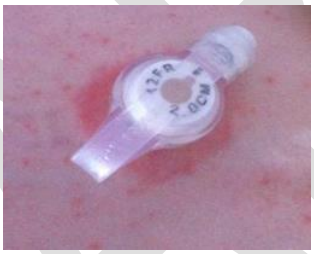


Figure 4.9: Fungal rash at stoma site

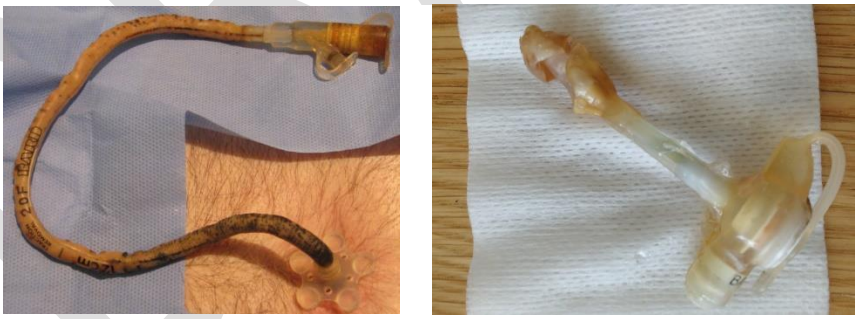


Figure 4.10: Examples of fungal colonisation in feeding tube

3.4.9. Managing difficulty in obtaining a gastric aspirate or pH reading <5.5

It may be **difficult to obtain a gastric aspirate**, particularly if the service user is fasting, lying down and/or has a LPGD. If the service user is safe to take fluids orally, a small drink of water or fruit juice can help increase the volume of gastric contents. Alternatively, a 30ml flush of water can be given if the pH check is being done prior to a routine tube change, but the tube should not be flushed with water after a tube change until the correct position is confirmed.

Opening the external fixator on a BGT or PEG and advancing the tube into the stomach can help the tip of the tube 'reach' the gastric acid. Repositioning the service user to lie on their left side can

also increase the likelihood of obtaining a gastric aspirate, compared to the supine position. If it is still not possible to obtain as aspirate, leaving the tube open/ on free drainage with the tip in a clean container while pressing on the abdominal wall can allow a small sample of aspirate to be collected for testing.

Service users who take PPI's may routinely have a **pH reading >5.5**. It may help to hold the PPI prior to an elective tube change to lower the pH, although there is a lack of evidence to support this. Checking the pH reading prior to doing the tube change is more helpful as if the reading is >5.5 before the tube change, this provides a baseline to compare the result afterwards against. The pH check should be used in combination with a physical check that the tube is correctly positioned (refer to Section 4.3.4). If the service user is not fasting, the pH can be raised by the presence of enteral feed or other food in the stomach. Again, where feasible a pH check before the tube change can provide a baseline, and at times, it will be obvious from the colour and/or smell of the aspirate that it is feed that has been aspirated.

3.4.10. **Managing potential or actual tube dislodgement**

Signs of **potential tube dislodgement** include the external tube appearing longer than usual, pain at the stoma site and/ or difficulty rotating the tube the internal fixator has migrated into the stoma tract. If the internal fixator has broken or the balloon has deflated, there may be new leaking from the stoma site, which is no longer being sealed internally. All service users should be advised how to tape their tube in position (refer to Figures 4.6 and 4.7) if they suspect that the tube may be dislodging and seek medical advice. They should be advised to bring their spare tube with them, if they need to have the tube replaced in a hospital setting. The tube should not be used while awaiting a tube replacement, unless done under medical supervision.

The service user should be advised to present to the ED in the nearest hospital immediately if their **tube has dislodged**, as the stoma site will close quickly, often in less than 4 hours. If they have a spare tube at home, they should bring this with them to the ED. If the stoma has begun to close and a smaller size tube or a different type of tube is inserted, the service user/caregiver should inform their CD or PHN, as soon as possible so that a new suitable spare tube can be ordered.

If a service user has been provided with and trained to insert a stoma plug (e.g. ENPlug, CorStop) this can be inserted into the stoma and taped in position to prevent the stoma closing while awaiting tube reinsertion which can be done in a primary care setting if available staff are trained to do the procedure. Otherwise, the service user must present to the ED, and bring their spare tube with them.

3.5. Reinsertion of gastrostomy tubes in a primary care setting

3.5.1. Facilitating tube changes in a primary care setting (e.g. at home, in health centres or GP practices, or in residential care sites) reduces the need for the service user to attend a hospital OPD or ED, and can prevent hospital admissions. Both BGT and LPDG are suitable for reinsertion in a primary care setting, once the stoma site is well established. This procedure can be performed by CDs, PHN/ CRGNs and GPs who been trained and deemed competent, and who perform the procedure with sufficient frequency to maintain their competency. It is also possible for caregivers to be trained to perform gastrostomy replacements – this training is usually facilitated by the nursing service provided by the tube manufacturers or distributors.

3.5.2. **The original gastrostomy tube must be situ for at least 3 months before a replacement tube is inserted in a primary care setting** to ensure the gastrostomy tract is well established. In the event that the original tube dislodges earlier, the service user should be referred to hospital to have a replacement tube inserted.

3.5.3. **Elective balloon gastrostomy replacements should be scheduled every 3-6 months**, or in line with manufacturer's guidance, to reduce the occurrence of sudden tube dislodgement. The service user should be supplied with a spare BGT/ LPGD in the same size at their original tube at discharge.

3.5.4. Checking pH of gastric aspirate should be used to confirm the feeding tube is correctly positioned post insertion (refer to section 4.3.4). To increase the likelihood of obtaining a successful gastric aspirate, the service user should, where feasible, fast for at least 4 hours and hold any PPI's for 24hours prior to the procedure. Checking the pH of gastric aspirate before the procedure, can provide a reference to compare the result after the procedure, which is useful if the pH >5.5 prior to the procedure. If pH cannot be confirmed, (refer to section 4.4.7) the tube should not be used and the service user should be referred to the ED for a tubogram.

3.5.5. A brief overview of the procedure for performing an elective replacement is outlined in Figure 4.11. It is the responsibility of each primary care setting to develop a more detailed standard operating procedure.

Overview of the procedure for performing an elective replacement

Equipment required Dressing pack, sterile gloves, normal Saline & gauze (to clean stoma), sterile water (for inflating the balloon and flushing the tube), BGT/ LPGD, stoma measuring device (if inserting LPGD), water soluble lubricating gel, pH indicator strips, 2 x 10ml leur tipped syringe (for deflating & inflating balloon)

1. Obtain and document consent
2. Request that the service user is lying on a couch, bed or in a reclining chair.
3. Wash hands in line with HSE IPC guidelines. Open the dressing pack and set up the clinical waste bag. Open the tube packaging. Put on sterile gloves.
4. Fill a luer-tip syringe with the volume of water required to inflate the balloon (this is indicated on the balloon port).
5. Using the syringe, inflate the balloon on the new tube to confirm the balloon is intact and symmetrical. Deflate the balloon and close the feeding port on the tube. Lubricate the tip of the new tube with water-soluble lubricant, and place the tube into the tray in the dressing pack ready for insertion.
6. Using a 60ml ENFit syringe, withdrawn a small amount of gastric aspirate and test the pH on the indicator paper (refer to sections 4.3.4 and 4.4.7).
7. Using the second luer-slip syringe, withdraw the water from the balloon port of the current tube, ensuring all water is removed before proceeding.
8. Apply water-soluble lubricant to the stoma site to ease removal. Place index and middle finger on either side of the stoma site to create a counter pressure and gently pull out the tube. Discard the tube into the clinical waste bag.
9. Clean the stoma site with normal saline. If there is any bleeding post removal, use gauze and apply a firm pressure to the site to stop the bleeding.
10. Re-measure the stoma tract if required (for LPGD only), following manufacturer's guidance.
11. If inserting a BGT, slide the external fixator away from the balloon end of the tube.
12. Re-measure the stoma tract if required (for LPGD only), following manufacturer's guidance.
13. If inserting a BGT, reposition the external fixator closer to the feeding port, for ease of insertion.
14. Remove gloves and put on a fresh pair of sterile gloves.
15. Gently guide the lubricated tip of the BGT/ LPGD through the stoma tract and into the stomach. Hold the tube in position, attach the pre-filled syringe to the balloon port and inflate the balloon with the required volume of water (as per manufacturer's guidance). Check that the tube can be freely rotated in the tract with the balloon inflated.
16. Clean any fluid or lubricant from the tube and stoma using gauze and normal saline.
17. Attach an extension set if using an LPGD.
18. Using a 60ml ENFit syringe, withdrawn a small amount of gastric aspirate and test the pH on the indicator paper to confirm the correct positioning of the tube (refer to sections 4.3.4 and 4.4.7).
19. Position the balloon against the stomach wall by gently pull the tube up until resistance is felt, and then repositioning the external fixator against the abdominal wall, allowing a gap of 2-3mm. Check the measurements on the BGT shaft and document the position of the external fixator. This step is not required with a LPGD.
20. Flush the tube with 50mls of water
21. Document the procedure, recording date, time, tube details, balloon volume and pH reading.
22. Order a new spare tube in the correct size, to be retained by the service user for future tube changes.

Figure 4.11: A brief overview of the procedure for performing an elective replacement

3.5.6. **Stoma plugs** are designed for emergency use to keep a stoma tract from closing when a feeding tube dislodges. The stoma plug is inserted into the stoma tract using a water-based lubricant and taped in position until a new tube can be inserted. Stoma plugs are a useful alternative to a spare feeding tube, particularly where the service user is discharged with PEG in situ, which will not require elective replacement in primary care. The service user/caregiver and/or primary care health professionals can be trained to insert the stoma plug.

3.5.7. The replacement of a gastrostomy tube in a primary care setting is often performed outside a clinical setting e.g. in the clients home. It is the responsibility of the clinician to assess~~es~~ if it is safe to proceed with the tube change in that setting. Some examples of **when not to proceed with a tube change** in a primary care setting are outlined in Figure 4.12.

When not to Proceed with a Tube Change in a Primary Care Setting

1. The internal balloon in the feeding tube cannot be deflated.
2. If the new tube cannot be freely inserted into the stoma site, or if there is resistance to movement, the procedure should be stopped and the service user referred to the ED for urgent tube replacement (as the old tube will have been removed).
3. If significant overgranulation or infection is evident at the stoma site, this should be treated where possible before proceeding with a tube replacement.
4. If the original (initial insertion) tube dislodges but has been in situ for less than 3 months, the service user should be referred to the ED for tube replacement
5. If the client has documented evidence of an unusual anatomy, has had difficulties with tube replacements in the past or is agitated, the clinician must use clinical judgement and/or seek medical advice prior to proceeding with tube replacement in a primary care setting

Figure 4.12: When not to proceed with a tube change in a primary care setting

3.6. Removal of gastrostomy tubes in a primary care setting

3.6.1. The decision to remove a feeding tube should be multidisciplinary and made in consultation with the service user/caregiver. **In general, the service user should be able to meet their nutrition and hydration requirements via oral intake alone for >1 month before a recommendation to remove a tube is made**. The decision to proceed with tube removal is in the context of the underlying clinical condition[29].

3.6.2. BGT/LPGD tubes can be removed in a primary care setting by a clinician trained to insert gastrostomy tubes, provided that the original tube insertion was >12 weeks prior to the removal. It is preferable to manage any infection or overgranulation at the stoma site prior to an elective tube removal to optimise wound healing for stoma closure. Service users should be advised when scheduling the tube removal that it is preferable to fast prior to the procedure, and only take a light diet in the initial hours after the tube is removed to minimise the output from the stoma site and allow the stoma to close. A generic outline of the procedure is included in Figure 4.13. It is the

responsibility of each primary care setting to develop a more detailed standard operating procedure.

3.6.3. Some feeding tubes are not suitable for removal in a primary care setting e.g. PEG tubes due to the rigid internal fixator, or any jejunostomy tubes.

How to remove a feeding tube in primary care

Equipment required: Dressing pack, sterile gloves, normal Saline & gauze (to clean stoma), water soluble lubricating gel, 1 x 10ml leur tipped syringe (for deflating balloon), foam dressing, mepore dressing.

1. Obtain and document consent
2. Request that the service user is lying on a couch, bed or in a reclining chair.
3. Wash hands in line with HSE IPC guidelines. Open the dressing pack and set up the clinical waste bag. Open the tube packaging. Put on sterile gloves.
4. Using the luer-slip syringe, withdraw the water from the balloon port of the current tube, ensuring all water is removed before proceeding.
5. Apply water-soluble lubricant to the stoma site to ease removal. Place index and middle finger on either side of the stoma site to create a counter pressure and gently pull out the tube. Discard the tube into the clinical waste bag.
6. Clean the stoma site with normal saline. If there is any bleeding post removal, use gauze and apply a firm pressure to the site to stop the bleeding.
7. Apply a foam dressing to the stoma site, and cover with a mepore dressing. Advise the service user to rest in a reclined position to allow the stoma to close.
8. Provide spare dressings and instruct the service user on how to apply the dressings if needed to keep the stoma site as dry as possible.
9. Arrange a nursing review of the stoma site within 24 hours to ensure that it has closed. If there is a delay in the stoma closing, the service user should be referred to their GP or to hospital for medical review

Figure 4.13: How to remove a feeding tube in primary care

3.7. Enteral feeding Syringes

4.7.1 All syringes used for enteral feeding must have an ENFit™ connector, which was designed to improve patient safety by preventing misconnections with intravenous or luer connections. The ENFit™ enteral syringes are designed for delivering enteral feed, water, and medications via an enteral feeding tube, and/or to aspirate a feeding tube[32].

4.7.2 ENFit syringes are designated at single-use or single-patient use. Single-use syringes are designed to be used once and then discarded, and are not suitable to be washed and reused, even by the same service user. Single-use devices are identified by the symbol in Figure 4.14. Single-patient use syringes are designed to be washed and reused by the same user for up to 7 days.

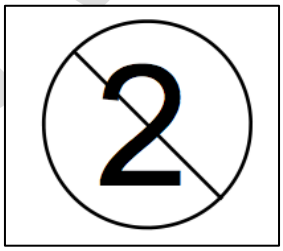


Figure 4.14: Single patient use symbol

4.7.3 **Single-patient use syringes are recommended for use in primary care settings**, as they can be washed any reused by the same service user, meaning that the same syringe can be used to administer bolus feeds, water flushes and medications daily. Service users should be provided with the manufacturer's instructions on washing and drying the syringes correctly between uses.

4.7.4 All adults on HETF should be supplied with 1 x 60mls single-patient use ENFit syringe daily.

4.7.5 **Single-use syringes** are not recommended for primary settings unless the service user is immunocompromised or on post-pyloric feeding. They may also be provided for service users on tube feeding in a residential setting. If the service user is provided with single-use syringes, they must be informed that these syringes should not be washed and reused, and they must be provided with an appropriate quantity of syringes daily to facilitate the administration of enteral feed, water flushes and medication[37].

4.7.6 Lower volume ENFIT syringes (1-20mls) are available for the more accurate dosing and administration of medications via the enteral feeding tubes. A **low-dose tip syringe** is available where the accurate dosing of small volumes of medication is essential – the low-dose tip reduced the amount of medication that is lost in the well of the syringe tip.

4.7.7 **Syringe caps** are available to allow medication and bolus feeds to be drawn-up in advance and stored in the syringe until required.

4.7.8 **Medicine bottle adapters and medicine straws** are available to support accurate dosing and minimising of waste when using an ENFit syringe to draw medication directly from the medicine bottle.

3.8. Education and training supports provided by enteral feeding tube vendors

4.7.9 The vendors of enteral feeding tubes provide written **IFU** on the correct care and management of their enteral product range to support ongoing education and training of both healthcare professionals and service users/caregivers. These resources are available in hardcopy or for download from the vendor's website. In addition, short **online training videos** are available. Further information is provided in Table 4.3.

Table 4.3: Sourcing online education and training

Vendor/ Distributor	
Avanos	https://www.tubefed.co.uk
Technopath	https://www.techno-path.com/nursing-support-service/

4.7.10 Some vendors of enteral feeding tubes, as part of their aftersales, offer an **enteral feeding nursing support service** to provide education and training to both healthcare professionals and service users/caregivers. Training provided may include care of feeding tube, checking balloon volume and pH of gastric aspirate, as well as training on replacement of gastrostomy tubes, and is specific to the vendor's product range. Further information on the nursing support services available are outlined in Table 4.4.

Table 4.4: Examples of aftersales nursing support services provided by Vendors of enteral feeding tubes

Vendor/ Distributor	
Avanos	https://www.pochealth.com
Technopath	https://www.techno-path.com/nursing-support-service/

3.9. Key Recommendations

- ✓ The original gastrostomy tube must be situ for at least 3 months before a replacement tube is inserted in a primary care setting
- ✓ Elective balloon gastrostomy replacements should be scheduled every 3-6 months
- ✓ In general, the service user should be able to meet their nutrition and hydration requirements via oral intake alone for >1 month before a recommendation to remove a tube is made
- ✓ Single-patient use syringes are recommended for use in primary care settings
- ✓ All adults on HETF should be supplied with 1 x 60mls single-patient use ENFit syringe daily
- ✓ Gastrostomy tube should be rotated 360^{o} daily and and the gap under the fixator should be readjusted to 3-5mm after cleaning
- ✓ External fixator should be opened and the tube advanced and rotated weekly to protect against buried bumper
- ✓ Jejunostomy tubes should never be rotated

SECTION 5.0 Management of Gastrostomy and Jejunostomy Stoma Sites in Primary Care

3.10. Routine management of the stoma site

3.10.1. The point of entry of a feeding tube inserted through the abdominal wall, endoscopically, radiologically, or surgically, into either the stomach or small intestine is referred to as the **stoma site** (e.g., gastrostomy stoma site or jejunostomy stoma site). Refer to Section 3.1 and table 3.1 for overview of enteral feeding access routes.

3.10.2. The specific management of the stoma site, particularly in the initial few weeks post tube insertion, will vary depending on the type of feeding tube in situ and the method of tube placement. **The service user or their caregiver must be trained by the hospital nurses and/or hospital dietitian to manage the routine care of their stoma site prior to discharge on HETF.** Written instructions on

care of the stoma site must be provided for reference after discharge and a referral should be made to their PHN/ RGN to review and monitor the stoma site after discharge.

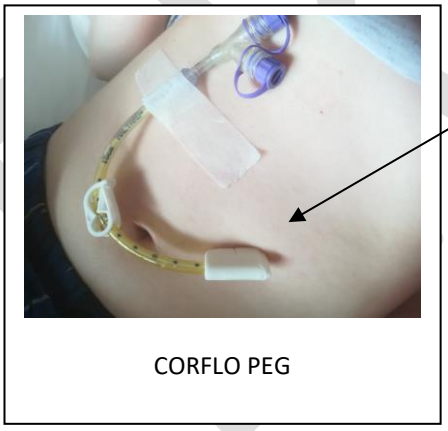
3.10.3. The service user/caregiver should be informed by the hospital nurses and/or hospital dietitian prior to discharge where they should contact to seek review should the stoma site become painful, inflamed, or begin to leak. Depending on local arrangements, the GP, PHN, CRGN or dietitian in primary care may perform this stoma site review, or the service user may need to return to the discharging hospital. Healthcare professionals should refer to the *HSE National Wound Management Guidelines 2018* for more detailed guidance on the management of moisture-associated skin damage, over granulation and signs of infection.

3.11. Management of a gastrostomy stoma site

3.11.1. **Initial care of the stoma site after gastrostomy tube insertion**

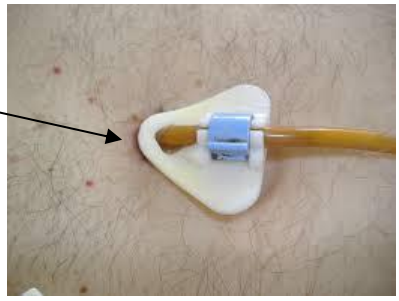
The stoma site should be left undisturbed for 24 hours. Then the stoma site should be cleaned with saline using aseptic technique for the first 48 hours. Thereafter, a clean cloth and water should be used to clean the stoma, ensuring that it is dried thoroughly afterwards. The service user should be advised to wait at least 2 weeks (or until the stoma site has fully healed) to have a bath or go swimming, to reduce the risk of bacterial entry to the peritoneum.

The external fixator should not be adjusted for 4 weeks following initial tube placement to allow the stoma tract to form (Figure x). If it is necessary to adjust the external fixator during this time e.g., due to weight gain, the service user should be referred back to the gastroenterologist or upper GI surgeon at the discharging hospital.



CORFLO PEG

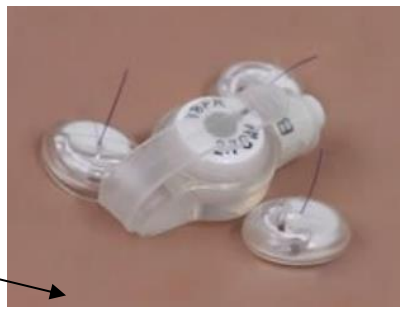
External fixator



FREKA PEG

Figure 5.1 External fixator should not be opened/ adjusted during the first 4 weeks post PEG insertion

When a gastrostomy is inserted radiologically, the stomach is fastened to the abdominal using gastropexy fasteners (refer to Figure 5.1) called T-tacks, which typically fall out within 10 days. If the T-tacks remain in situ >10 days, and the service user has been discharged home on enteral feeding in the interim, the PHN/ CRGN or GP should cut and remove the T-tacks.



RIG – low-profile gastrostomy tube

RIG – balloon gastrostomy tube

T-Tacks

Figure 5.2: Radiologically inserted gastrostomy with T-tacks still in situ

If there is pain on feeding, leakage of fluid around the tube, or new bleeding within first weeks of insertion, the service user should be advised to stop feeding and contact their gastroenterologist or upper GI surgeon at their discharging hospital for urgent advice[5,29,38,39].

3.11.2. Routine care post gastrostomy tube insertion

3.11.2.1. Daily care

The service user or caregiver should clean the stoma site daily and report any signs of infection, overgranulation or leaking to their PHN/ CRGN, GP or Dietitian for further assessment. Good hand hygiene is essential, and the service user/caregiver should wash and dry their hands thoroughly before performing any stoma care. Gauze or a clean lint-free cloth and warm soapy water should be used to clean the stoma site, and the area thoroughly afterwards. The use daily dressings or creams at the stoma site should be avoided, unless specifically recommended by a healthcare professional. Once the stoma site had been cleaned and dried, the service user/caregiver should **rotate the gastrostomy tube 360° daily** to prevent scar tissue forming and reduce the risk of buried bumper. The tube should rotate freely and without pain – the service user or caregiver should report any pain or difficulty rotating the tube to their PHN/ CRGN, GP or Dietitian for further assessment. Finally, the correct positioning of the fixator should be checked by gently pulling the tube upwards in the stoma and observing if the **gap under the fixator is no more that 3-5mm**. The external fixator, particularly on a balloon gastrostomy tube, may need to repositioned. When cleaning of the stoma site is complete, the external tubing should be secured in position to reduce the weight of the tube pulling on the stoma, or accidental dislodgement of the tube. Service users or caregivers should be cautioned against tucking the tubing into underwear for hygiene purposes[40,41].

3.11.2.2. Weekly care

Once the initial PEG tube is in situ >4 weeks, the external fixator on a PEG tube should be opened and cleaned weekly. The external fixator cover should be separated from the base (refer to Figure 5.3) to release the tubing and the fixator moved further away from the stoma. The internal aspect of the fixator should be cleaned using a cotton swab. The tube should then be advanced 1-1.5cm into the stoma and rotated 360°, before pulling back gently out of the stoma until the resistance of the internal fixator against the stomach wall is felt. The external fixator should be moved back down the tubing and closed to maintain position within 3-5mm of the stoma site. The service user or caregiver should be trained to perform this procedure prior to discharge, but as the external

fixator should not be opened <4 weeks post initial insertion the service user may have been discharged in the interim. Training at home may be provided on request by the nursing service of the relevant tube manufacturer, or by a PHN/CRGN or Dietitian who is competent to perform the procedure[40,41].

CORFLO PEG fixator closed

CORFLO PEG fixator open

Figure 5.3: Opening and cleaning of external fixator on a PEG tube

3.11.3. **Stoma site care of a gastrostomy with a jejunal extension**

A gastrostomy tube with a jejunal extension (e.g., PEGJ – refer to Section 4.2.5) can be cleaned daily in the same way as a PEG or RIG, but **a PEGJ should never be rotated** as there is a risk of displacing or kinking the tube in the jejunum[42].

3.12. Management of a jejunostomy stoma site

3.12.1. **Initial care of a jejunostomy stoma after tube insertion**

The new jejunostomy stoma site should be left undisturbed for the first 24 hours, and thereafter cleaned with saline using an aseptic technique. A sterile film dressing (e.g., Tegaderm) should be applied to help anchor the tube and allow observation of the stoma site. A radiologically inserted PEJ can be cleaned with gauze or a lint-free cloth and water after 48 hours. Immersion bathing should be avoided for the first 14 days post insertion. Showering is permitted.

3.12.2. **Routine care of a jejunal feeding tube**

Routine stoma site care of a transgastric jejenual tube (e.g., PEGJ) is like a gastrostomy stoma site (refer to Section 5.2.2) but **jejunostomy tubes should never be rotated** as there is a risk of displacing or kinking the tube in the jejunum. Good hand hygiene is essential prior to performing any routine care. An aseptic technique should be used when cleaning a surgical needle-catheter inserted jejunostomy. The PHN/ CRGN should support the service user/ caregiver to clean the stoma and apply a new sterile dressing twice weekly or more frequently if discharge is observed. It is necessary to clean around the stoma site and suture sites and dry thoroughly, and apply a new sterile film dressing (e.g., Tegaderm). The service user/caregiver should be advised to contact their hospital team if there are any signs of infection at the suture sites, or if the suture breaks. The service user/caregiver must be informed prior to discharge of their contact point in the discharging hospital to contact if the jejunal tube shows signs of dislodging and/or ruptured sutures need to be replaced[5,43] .

3.13. Management of overgranulation at a stoma site

3.13.1. Granulation tissue is produced as a response of the body to foreign material, with friction and fluid leakage contributing to its development. Overgranulation at a gastrostomy or jejunostomy site typically presents as an overgrowth of tissue around the stoma, which is usually pink to dark red in colour, with a 'cauliflower-like' appearance. Granulation tissue is highly vascularised but lacks a protective epithelial layer — it therefore tends to remain moist and is unable to withstand even minor trauma, bleeding easily and is prone to infection[33,44,45] (Figure 5.4).

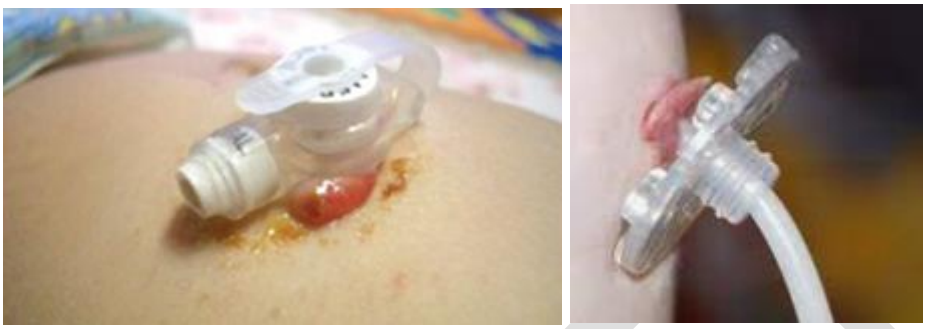


Figure 5.4: Over granulated tissue at stoma site

Potential causes of overgranulation
Excessive movement of a feeding tube that is not securely anchored to the abdominal wall
The external fixator of the tube is poorly positioned (too loose or too tight)
Incorrect sizing of a low-profile tube (too long or too short)
Inflammatory response to the presence of a feeding tube perceived as a 'foreign body'
Trauma at the stoma site caused by intentional or accidental removal of a feeding tube, or pressure due to a tube being too tight
Persistent moisture at the stoma site
Infection

Figure 5.5 Possible causes of overgranulation [45]

3.13.2. The first step in treating overgranulation is **to check and correct the positioning of feeding tube**. Long external tubing should be anchored by taping to the abdominal wall (Figure 5.6) to prevent excessive movement. The tube should be rotated and the external tubing anchored in a different position daily, e.g. move clockwise in one-quarter increments[33]. Extension sets for BGT and LPGT are designed to be removed when not in use, but if the service user prefers to leave the extension set attached, then it should also be anchored to the abdominal wall.

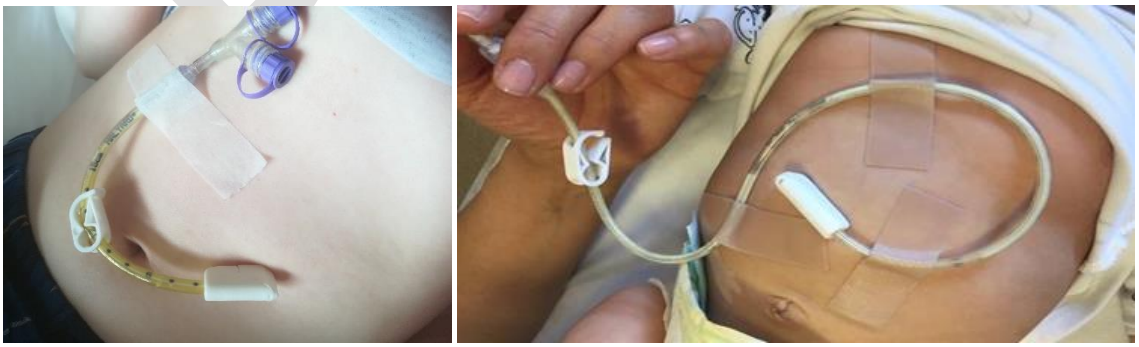


Figure 5.6: Samples of anchoring a PEG tube

The positioning of the external fixator should be checked regularly. and repositioned to allow a gap of approx. 3-5mm between the fixator and the abdominal wall. If the external fixator if too tight, it will exert a pressure on the stoma or if the external fixator is too loose, it will allow too much movement of the tube in and out of the stoma, both of which may trigger the development of overgranulation tissue. The external fixator on a BGT may loosen spontaneously, which will require more frequent repositioning – if this cannot be resolved, then switching to a LPGT which has a fixed length shaft should be considered.

3.13.3. If a LPGT is in situ, the length of the shaft should be checked regularly and if the tube is too short or too long (Figure 5.7), the stoma tract should be re-measured and the correct length tube inserted.

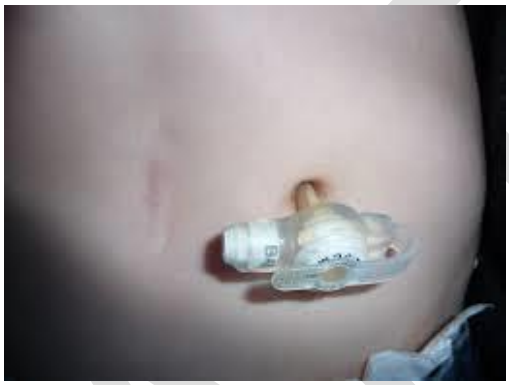


Figure 5.7: LPGT which is too long for the stoma tract.

3.13.4. An absorbent **foam antimicrobial dressing (AMD)** should be used to manage exudate and address potential infection of the overgranulated tissue. The foam dressing should be placed beneath the external fixator where possible and secured in position to allow the dressing to exert a compression on the overgranulated tissue beneath (Figure 5.8). The AMD should be changed regularly in line with local nursing practice, with more frequent changes indicated if there is heavy exudate or leaking, so the site remains as dry as possible. Alternatively, an iodine or a silver dressing can be used e.g. Inadine, Silvercel, Aquacel AG, with a second a foam or mepore dressing to hold in place.

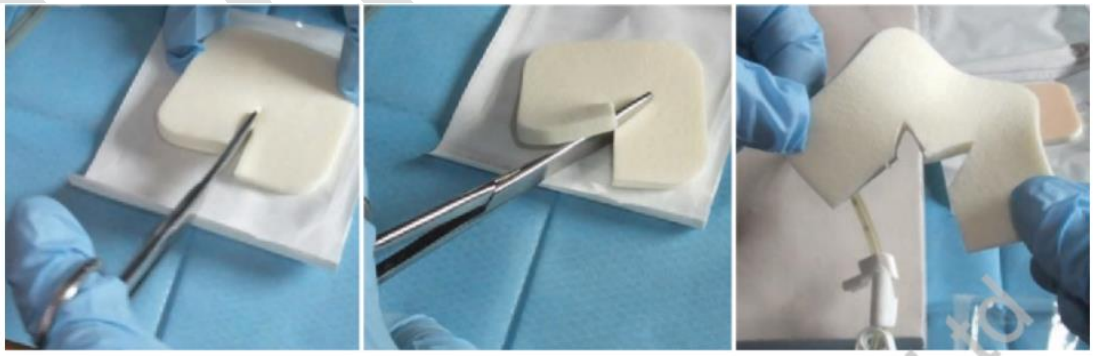


Figure 5.8: Cutting Kendall™ AMD Antimicrobial Foam Dressing to fit around feeding tube[46]

3.13.5. Topical application of a **corticosteroid cream** (e.g., hydrocortisone 1%) has an anti-inflammatory effect and can be an effective, non-invasive means of treating overgranulation at the stoma site. The cream should be applied sparingly to the overgranulated tissue only, **twice daily for no more than 10 days**. The stoma site should be then covered with a non-adhesive foam dressing

(which will also serve to compress the overgranulated tissue). Corticosteroid cream should not be used, or should be discontinued, if there are signs of infection at the stoma site (e.g., redness, swelling, pain, exudate) and medical review sought. The overgranulated tissue may recur when the hydrocortisone treatment is discontinued, so the priority should be to ensure that any co-existing issues with tube positioning are resolved in the interim.

3.13.6. Topical application of **silver nitrate** may be considered to treat overgranulation where a trial of hydrocortisone or AMD dressings have not been effective (Figure 5.9). Silver nitrate applicators are firm wooden sticks with 75% silver nitrate and 25% potassium nitrate embedded on the tip. Moistening the tip sparks a chemical reaction that burns organic matter (skin), coagulates tissue, and destroys bacteria. **Silver nitrate may be applied daily to the overgranulated tissue only for up to 5 days.** Silver nitrate is highly caustic and care must be taken to protect the normal surrounding skin by applying a barrier cream (e.g., petroleum jelly) prior to the procedure. **It is not recommended for prolonged use**[47]**.**

Figure 5.9 Application of silver nitrate to overgranulated tissue

3.14. Management of moisture-associated skin damage at a stoma site

3.14.1. A small amount of secretion from the stoma site is normal. These secretions are clear or light brown in colour and become 'crusty' when they dry (Figure 5.10). The dried secretions should be removed as part of usual daily stoma care, and the site left uncovered unless the volume of secretions is significant. However, some service users will experience leakage of gastric contents including enteral formula, which can lead to moisture-associated damage of the peristomal skin (Figure 5.11), with breakdown and enlargement of the stoma. Checking the pH of the fluid that is leaking from the stoma, using enteral pH test strips, may help confirm that it is gastric contents. Peristomal leakage is more likely to occur in malnourished patients and those with diabetes mellitus who may have poor tissue healing and are prone to wound breakdown.

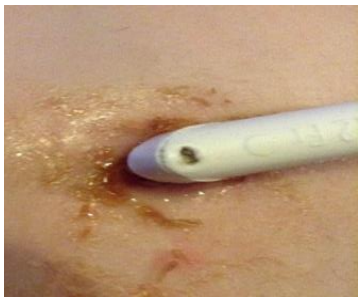
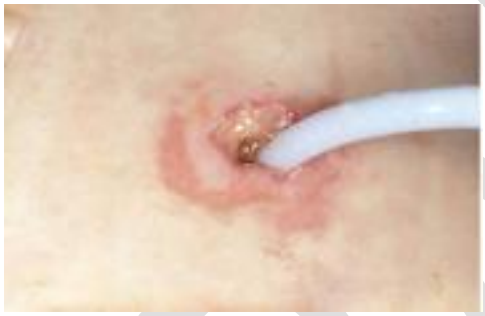


Figure 5.10 'Crusting' at stoma site **Figure 5.11 Moisture associated skin damage at stoma site**

3.14.2. The first step in managing moisture-associated damage (MAD) at the stoma site is to **check the positioning of the feeding tube** (refer to Section 5.4.3). Correcting the position of the external fixator will ensure that the internal fixator/ balloon is also correctly positioned against the internal abdominal wall, which itself acts to reduce leakage of gastric contents.

3.14.3. Leakage may occur if the size of the gastrostomy or jejunostomy stoma has increased (Figure 5.12). **Replacing the tube with a larger diameter tube should be avoided** until the underlying cause(s) of stoma site breakdown have been managed first, as an unhealthy stoma may continue to breakdown (Figure x). Removing the tube completely for several hours can allow the stoma site to being to close and downsize before a new tube is inserted. However, this should only be done in a hospital setting as it is difficult to predict how quickly the stoma site may close and there is a risk that the new tube may not fit. If despite all interventions the stoma site continues to breakdown, the feeding tube may need to be removed and the site allowed to close completely. A **new tube** can be inserted at a new site.



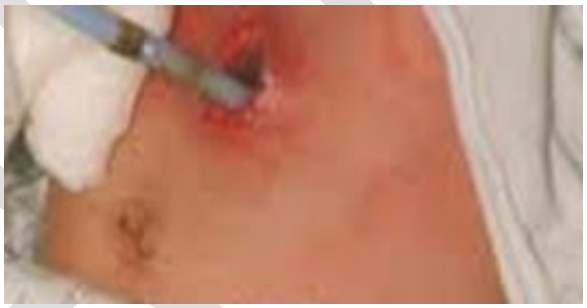


Figure 5.12: Enlarged stoma site allowing leakage of gastric contents

Figure 5.13: Ongoing stoma site breakdown following insertion of larger diameter feeding tubes

3.14.4. Examine the feeding tube itself to identify if there is any **split in the feeding tube** close to stoma site. This can be checked by visual inspection of this tube and/or by flushing the tube with water and observing for leakage immediately after flushing. If a split in the tube is identified close to the stoma site, the tube will need to be replaced. If the feeding tube has an internal balloon fixator, the volume of the balloon should be checked – an **underinflated balloon** can contribute to leakage from the stoma site. The balloon should be reinflated with the correct volume of water as per manufacturer's guidance, or in the event the balloon has perished, the tube will need to be replaced.

3.14.5. **Overgranulation and infection** may be associated with increased exudate and poor healing/ breakdown of the stoma site allowing leakage of gastric contents onto the surrounding tissues, causing excoriation at the stoma site. Overgranulation and infection should be managed as outlined in Sections 5.4 and 5.6

3.14.6. **Absorbent foam dressings** should be changed frequently to keep the stoma site dry. The regular application of a **barrier ointment or spray** (e.g., Cavilon or Orobase) to the skin around the stoma can offer some protection against acid gastric contents. In the event of significant excoriation, medication (e.g., omeprazole) to **reduce the acidity of the leaking gastric contents** should be

considered. If the service user is already prescribed a regular dose of antacid medication, a higher does may be indicated in the short term until the stoma heals.

3.14.7. A **build-up of gas or feed in the stomach or small intestine** can create a pressure that contributes to leaking from the stoma site. 'Venting' the stomach before and after enteral feeding decompresses the stomach by allowing gas to escape via the tube (refer to Figure x). Delayed gastric motility may be improved by the prescription of prokinetic medication (e.g. Motilium) and adjusting the enteral feeding regimen. In some cases, a trial on post-pyloric feeding may be considered, requiring the gastrostomy to be replaced with a PEGJ tube. Constipation should be managed by ensuring adequate fibre and fluid intake orally or via the feeding tube, and use of regular laxatives if required.

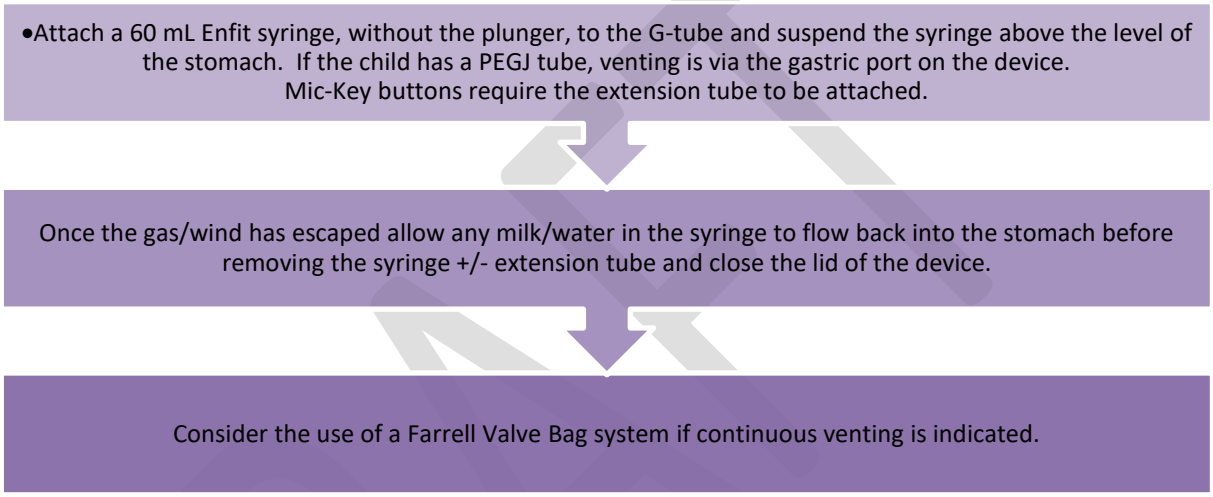


Figure 5.14: How to venting the stomach via a gastrostomy or transgastric jejunostomy tube e.g. PEGJ48

3.15. Management of infection at a stoma site

3.15.1. Signs of infection at the stoma site are outlined in Figure 5.15. Pain at the stoma site is not normal once the tract is mature (refer to Section 5.7.1) so an internal stoma infection should be considered even if there is no on the no visible inflammation or discharge but pain when the feeling tube is touched, advanced, or rotated. Temporarily loosening the external fixator, where possible, can relieve the pressure at a stoma site that is swollen and/or painful.

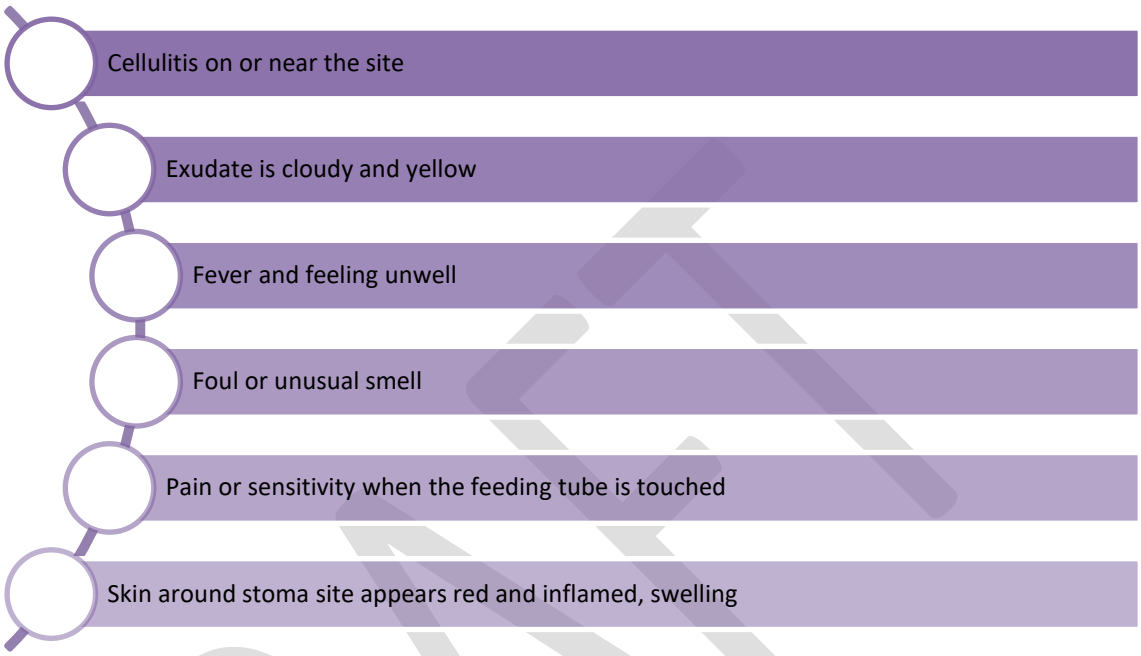


Figure 5.15 Signs of infection at a stoma site

3.15.2. **Bacterial infection**

Most infections at the stoma site are bacterial and if treated early can be managed with an antimicrobial dressing (e.g. Kendell AMD, Inadine, Aquacel Ag) or a topical antibiotic cream (e.g. Fucidin). Infections that are more significant, or do not respond to topical treatment, may require an oral antibiotic. The service user should be reviewed by their GP and a swab of the infected site taken and sent for culture sensitivity, to inform the most appropriate choice of antibiotic. More severe and/or persistent infections may require IV antibiotics. The service user/caregiver should be reminded to wash their hands thoroughly before and after applying dressings and creams to an infected stoma site. Poor hand hygiene practices should be considered if the service user experiences recurrent infections at the stoma site.

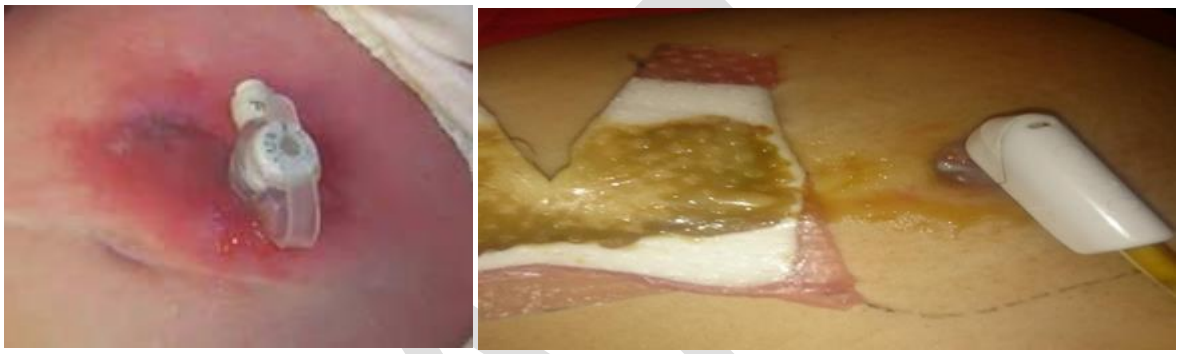


Figure 5.16: Infection at stoma site

3.15.3. **Fungal infection**

Fungal infections (e.g. candida) are common at the stoma site, particularly if the area is moist and/or the service user has oral candida. A fungal infection usually presents as a pin-point rash at the stoma site (Figure x) and may be worse under a disc external fixator as the area will be moist and warm.

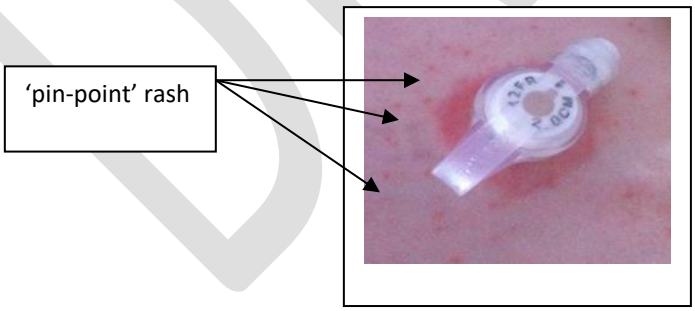


Figure 5.17: Fungal infection at stoma site

3.15.4. A medical review will be required to prescribe the most appropriate antifungal medication (e.g., nystatin, clotrimidazole, difflucan). A topical antifungal cream is most frequently indicated but an oral antifungal may be required if candida is also present in the gastrointestinal tract (e.g., oral candida). Colonisation of the feeding tube with Candida may lead to degradation of the feeding tube Candida colonisation is a long-term complication that is reported to cause up to 70%, increasing the risk of the tube cracking, puncturing, or dislodging spontaneously failure (Figure

5.17). The aim should be to treat the fungal infection prior to elective tube replacement, continuing the antifungal treatment for 2 weeks afterwards.

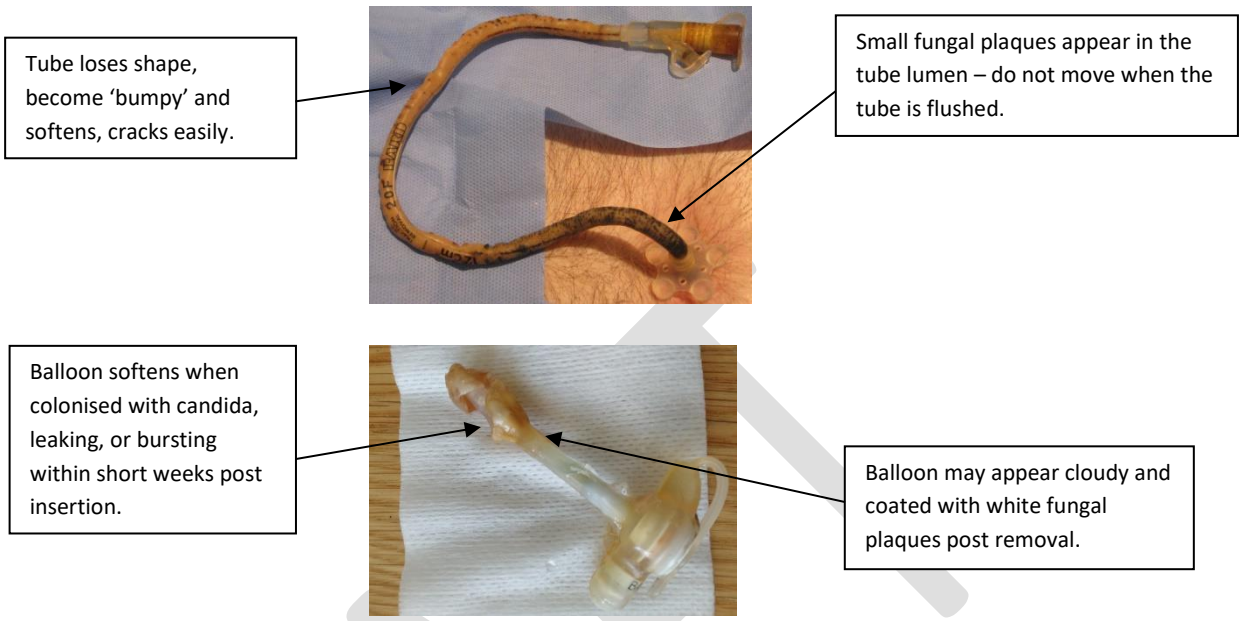


Figure 5.18: Signs of candida in a feeding tube

3.16. Management of pain at a stoma site

3.16.1. Pain at the stoma site is not normal once the tract has matured and any new-onset pain must be investigated. The underlying causes of pain at the stoma site range from tube related issues or infection, which can usually be managed in primary care, to rarer causes that are more serious and require hospitalisation like buried bumper syndrome or peritonitis.

3.16.2. **Pain associated with the feeding tube**

The most common cause of pain associated with the feeding tube occurs if the service user's abdominal girth increases e.g., weight gain, abdominal distention, and the tube becomes too tight. This is most likely to occur with a PEG tube that has a fixed position external fixator (refer to Section 4.2.2) which must be opened manually to lengthen the shaft. The service user/caregiver should be trained to open, clean, and reposition the fixator so it can be adjusted if it becomes too tight. A LPGD has a fixed length shaft so may also become too short and exert pressure on the stoma site. The LPGD will need to be removed, the stoma tract remeasured and a longer length LPGD inserted.

3.16.3. Another potential cause of pain at the stoma site is **migration of the internal fixator into the tract**. This is most likely to occur with a LPGD where the balloon is underinflated, and the shaft length is too short. However, it may also occur if the balloon is reinflated in the stoma tract after a routine balloon volume check (refer to Section 4.3.4) there is likely to be some resistance noted when

trying to reinflate the balloon if it is in the tract. The clinician should check if the balloon is inflated in the tract by firstly attempting to rotate the tube – if the balloon is inflated in the tract, the tube is unlikely to rotate easily and the service user may report increased discomfort or pain. The clinician should then deflate the balloon by withdrawing the water, and if the reported pain level reduces, consider re-measuring the tract and replacing with a longer LPGD.

3.16.4. **Tube displacement**, with migration of the internal fixator into the tract should be considered if the service user has intentionally or inadvertently pulled at the tube but not removed it – the external fixator will appear looser without having been opened/ repositioned. Alternatively, if the tube has been fully dislodged, the pain may be associated with trauma at the stoma site.

3.16.5. Gastric outlet obstruction may develop if the internal fixator or balloon of the tube migrates and lodges in the pylorus or duodenum. Migration of the internal balloon to the pylorus may occur if the external fixator on a BGT is not checked and repositioned regularly. The service user is likely to present with abdominal pain and distension, vomiting and/or aspiration pneumonia.

3.16.6. Pain at the stoma site may be associated with an **infection at the stoma site** – refer to Section 5.7.1

3.16.7. **Buried bumper syndrome** is an uncommon complication of gastrostomy placement (estimated incidence of 1%[49]), where the internal fixator on the PEG migrates through the gastric mucosa and lodges between the gastric wall and the stoma tract. The underlying cause is usually an excessive tension between the internal and external fixator. The gastric mucosa may 'grow over' and block the internal outlet on the PEG tube, resulting in resistant to feeding and abdominal pain. There will be resistance to rotating or advancing the feeding tube into the stomach. Urgent referral to hospital is indicated. The risk of developing buried bumper is reduced by daily rotation of the feeding tube, as well as regular opening of the external fixator, advancing the tube, and correct repositioning of the external fixator (refer to Section 4.5)

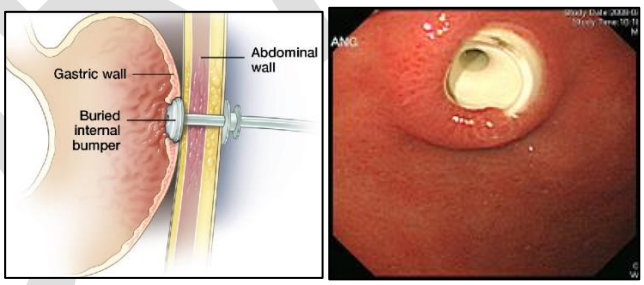


Figure 5.19: Buried bumper

3.16.8. **Peritonitis** should be considered if the service user is pyrexial with worsening abdominal pain, particularly in the initial months post initial gastrostomy placement or if there has been recent tube dislodgement. If peritonitis is suspected, the service user should be referred to the nearest emergency department for further investigations.

3.17. Management of skin sensitivity at a stoma site

3.17.1. Skin sensitivity may present as dry skin around the stoma site redness, itching, but no infection or exudate. Skin sensitivity may be caused by a sensitivity to the stoma site **cleaning solution** e.g., soap. The service user/caregiver should be advised to clean with water only and ensure the stoma

site is dried thoroughly. If the skin is very dry, an emollient can be recommended. Applying 1% hydrocortisone 1-2 times daily for a week may reduce redness and itching. Dressings should be avoided.

3.17.2. Skin sensitivity may also be caused by a **sensitivity to a silicone or polyurethane feeding tube**. If the area of sensitivity is under the external fixator, a trial using gauze or mepore dressing as a barrier under the fixator may lead to improvement. Alternatively, a barrier cream or spray e.g., Cavilon may be used. If a sensitivity to the material in the feeding tube is suspected, referral to gastroenterology should be initiated if there are signs of stoma breakdown and leakage that persist when usual management (refer to Section 5.5) has been unsuccessful[50].

3.18. Key Recommendations

- ✓ ENFit is the global enteral feeding device connector design that complies with the new International Standard (ISO 80369-3)
- ✓ The service user or their caregiver must be trained by the hospital nurses and/or hospital dietitian to manage the routine care of their stoma site prior to discharge on HETF
- ✓ The external fixator should not be adjusted for 4 weeks following initial tube placement to allow the stoma tract to form

Section 6.0 Discontinuation of Home Enteral Tube Feeding in Primary Care

5.1. Criteria for discontinuation of home enteral tube feeding

5.1.1. Regular monitoring and review by the multidisciplinary team is essential to identify when it is appropriate to discontinue home enteral tube feeding. The decision to discontinue enteral feeding should be multidisciplinary and should include the service user/caregiver in the decision-making.

5.1.2. Discontinuation of home enteral tube feeding should be considered where the service user's full nutritional requirements are being provided by oral diet. It may also be considered where the risks and/or burden of continuing with feeding are judged to exceed any potential benefits.

5.2. Discontinuation of enteral feeding when oral dietary intake is adequate to meet nutritional requirements

5.2.1. Some service users may only require home enteral tube feeding as a temporary or transitional intervention to support recovery and rehabilitation during a time when they are unable to meet their nutritional requirements orally (e.g., post oesophagectomy, during radiotherapy for head and neck cancer or with dysphagia post stroke). Where a patient's swallowing function improves and/or

gastrointestinal function has recovered, and they are able to meet their nutritional requirement orally, enteral feeding is no longer required and can be discontinued. The decision to proceed to weaning the service user from enteral feeding should be multidisciplinary, and the underlying diagnosis and prognosis should be considered.

5.2.2. **Frequent monitoring by a dietitian** is required during the transitional phase to oral feeding to ensure the service user is achieving an adequate oral intake prior to recommending tube removal. The service user/caregiver should keep a record of all oral and enteral nutrition intake to assist the dietitian in assessing the nutritional adequacy of oral intake and to guide the weaning from enteral feeding at a pace appropriate to the individual. A target for weight maintenance (and specifically the avoidance of weight loss) should be explained to, and agreed with, the service user/caregiver. The service user/caregiver should be advised to monitor blood glucose levels more closely during the transitional phase where the service user has diabetes, and to seek medical review where indicated.

5.2.3. A **speech and language therapist (SLT)** should assist service users who previously had dysphagia transition to oral diet by recommending the consistency of food and fluids, which can be consumed safely and in adequate quantities. The SLT should provide the service user/caregiver on information relating to their recommended modified diets and/or fluids as per the IDDSI framework. Information regarding safe swallow/feeding guidelines may also be provided. An objective swallow assessment such as a Videofluoroscopic Swallow Study (VFSS) and/or a Fiberoptic Endoscopic Evaluation of Swallowing (FEES) may be considered to further evaluate a service user's swallow function and guide the management plan. This may also assist with the evaluation of a service user's swallow rehabilitation and guide the decision-making regarding tube removal.

5.2.4. A **dental consultation** be considered for service users with oral health issues e.g., xerostomia (dry mouth), oral candida or poor dentition, as this may impact on their oral feeding. Modified consistency food and fluids may cause oral health problems due to poor clearance around the teeth. The sugar content of feed choices should be considered, and where higher sugar content foods are necessary to achieve a more calorie-dense meal, particular attention to oral hygiene is required to avoid escalating dental issues.

5.2.5. **Transitional enteral feeding**

Adequate nutritional intake from oral diet must be demonstrated prior to discontinuing enteral feeding. The dietitian should discuss the process of weaning from enteral feeding and agree the plan for proceeding with the service user/caregiver. The volume of enteral feed administered should be reduced gradually as oral dietary intake increases so that overall, an adequate nutritional intake is sustained. This may be achieved in several different ways e.g., by gradually reducing the rate of feed infusion and/or the duration on enteral feeding for service users using an enteral feeding pump and/or gradually reduce the volume of bolus feed, before progressing to oral nutrition supplements in lieu of bolus feeds.

5.2.6. The dietitian should monitor the service user more frequently during the transitional phase. A minimum **target weight** to maintain during the transitional phase should be agreed with the service user. The dietitian should check the service user's weight at each review to ensure weight loss is not occurring and review the food intake records kept by the service user/caregiver to assess the nutritional adequacy of oral diet. The dietitian may recommend further gradual reductions in nutritional intake from enteral feed once the service user's weight is stable and they are progressing with a nutritionally adequate oral intake.

5.2.7. Where the service user demonstrates that they can achieve a nutritionally adequate oral intake (which may include oral nutritional supplements taken orally), the dietitian should advise them to discontinue using the enteral feeding tube for nutritional intake for a **trial period**. The aim of this trial period is to assess if the service user can sustain their oral intake to meet their nutritional requirements over a defined length of time (e.g., 4-6 weeks). During this trial period, the service user should be advised to continue to flush their feeding tube to keep it patent. The dietitian may recommend that the service user resume enteral feeding if their oral intake is insufficient to maintain their weight during this trial period.

5.2.8. The ability of the service user to meet their **hydration needs** orally must also be assessed during the transitional phase. Service users with dysphagia who require modified consistency fluids may have difficulty achieving adequate hydration orally. The speech and language therapist should review the service user to guide the most appropriate modified consistency fluids and to provide information on safe swallowing/ feeding guidance during the transition period. The service user/caregiver should keep a record of all fluid taken orally and note where drinks are not consumed due to the modified consistency. A service user who is not able to safely consume an adequate volume of fluids orally during the transitional phase should be advised to continue using their feeding tube for regular water flushes during the trial period.

5.2.9. The service user must also be able to take all **medication** orally before tube removal can be considered. The community pharmacist can advise on alternative presentations of the medication (e.g., liquid or effervescent) if the service user is unable to swallow tablets, and/or where crushing of the tablet is contraindicated.

5.2.10. The **decision to proceed to remove the feeding tube** should be multidisciplinary (refer to Section 4.7). The dietitian should only recommend the elective removal of a feeding tube where there is evidence that the service user is able to meet their nutritional and hydration requirements orally over a sustained trial period. This evidence, in the form of weight records and food intake records, should be shared and discussed with the multidisciplinary team and GP. This evidence should be considered in context of the service users underlying clinical condition and prognosis, together with the wishes of the service user. In some cases, the GP must also consult with the service user's hospital consultant before making a final decision. The decision and rationale for recommending removal of the feeding tube must be documented in the service user's clinical records.

5.3. Discontinuation of home enteral tube feeding when risks and burden outweigh the benefits

5.3.1. With respect to decisions regarding the discontinuation or withdrawal of enteral feeding, the decision should be guided by the same ethical principles (autonomy, beneficence, non-maleficence, and justice) that guide decisions to withdraw other treatments or interventions.

5.3.2. The multidisciplinary team must observe the right to autonomy and self-determination of the service user who may express the wish to discontinue enteral feeding and/or have the feeding tube removed, where this decision would not be clinically indicated. Their GP or hospital doctor must explain and ensure that the service user understands the risks and likely outcomes of proceeding with discontinuing feeding/ tube removal. A service user, with the capacity to make an informed choice, has the right to refuse enteral tube feeding[51].

5.3.3. Discontinuation of home enteral tube feeding is legally and ethically justified for service users who may have a life-limiting underlying medical condition and are approaching their final weeks or days

of life. In this case, if it is demonstrated that there is no overall benefit to the service user or that the risks of continuing with feeding are judged to exceed the potential benefits, then the feed should be withdrawn. Quality of life of the service user, including psychological and spiritual wellbeing, should be considered in conjunction with any medical benefits or risks when making this decision.

5.3.4. The decision to discontinue enteral feeding at end of life should be made in consultation with the service user and their family members and their palliative care team where possible. It may be helpful to explain that sensations of hunger and thirst decrease approaching end of life, and nutritional requirements are reduced so attempting to provide more feed may cause distress or exacerbate symptoms. Reassurance should be given that comfort care, with optimal symptoms management, will continue.

5.3.5. The feeding tube may function as an access route for fluids and medication after enteral feeding is discontinued. Medications can be administered subcutaneously or intravenously instead but the challenges that this may pose in the community setting should be given full consideration prior to the removal of the feeding tube.

5.4. Risk based feeding

5.4.1. A service user with dysphagia should be supported in making an informed decision if they choose to eat and drink orally where risks of aspiration have been identified. Their GP or hospital doctor must explain and ensure that the service user understands the risks and likely outcomes of proceeding with oral intake. The SLT may advise on food and drink consistencies that can reduce but not eliminate the risk of aspiration but in some instances food or fluid modification will not improve the safety of the swallow at all, and the service user may decide to eat and drink whatever they wish[52].

5.5. Elective removal of the enteral feeding tube

5.5.1. The method of permanently removing a gastrostomy tube or device depends on its type (Table X). It is essential that healthcare workers are fully informed of the type of feeding tube insitu before attempting to remove a feeding tube and manufacturer's instructions for removal of the specific tube type should be adhered to.

NOTE: gastrostomy tubes should remain in place for a **minimum of 14 days** after the initial primary insertion, even if the decision is made within this timeframe to discontinue enteral feeding.

Table 6.1: Gastronomy tube/device type and removal processes

Tube/device type	Removal process
Non-ballooned gastrostomy tubes and devices	Collapsible internal flange - external traction/vigorous pulling at the bedside. These devices may also be removed by endoscope to reduce trauma.[22, 23, 66, 69, 70, 82, 92, 150, 151, 167-170] (GRADE D)
	Rigid internal flange - endoscopy. The "cut and pass" method should not be used - there is a risk of small bowel obstruction.[20, 22, 26, 69, 150, 171, 172] (GRADE C)
	Obturated devices – Should be removed using manufacturer's specific instructions and purpose built removal kit/equipment. This process should only be undertaken by experienced clinicians.
Balloon gastrostomy tubes or devices	Deflation of balloon and gentle external traction *NOTE: if the balloon does not deflate, seek specialist advice.*
Self-retaining tubes (e.g. pig-tail catheter)	Release of the loop or "pig tail" (as per manufacturers guidelines) and traction

5.5.2. Overgranulation or infection of the stoma site should be managed prior to scheduling elective tube removal to optimise stoma closure (refer to Section 5.5).

5.5.3. Most feeding tubes will need to be removed in a hospital setting. The GP should make a referral to the service user's medical/ surgical team or to the relevant hospital department (e.g., endoscopy or radiology) where the tube was inserted originally to request the feeding tube be removed. However, some feeding tubes can be removed in primary care, in either a clinic or domiciliary setting by a clinician trained to perform the procedure.

5.6. Removal of gastrostomy tubes in primary care

5.6.1. Service users on home enteral tube feeding commonly use gastrostomy tubes with a balloon retention device. These tubes are suitable for removal in primary care. This procedure should only be performed by a clinician trained to do the procedure (e.g., HETF dietitian), in line with local policy, and under the governance of the service user's GP. It is the responsibility of the individual clinician to acknowledge any limitations in competence. The clinician should not proceed with the removal of the gastrostomy tube unless they deem themselves competent to do so.

5.6.2. The clinician performing the procedure should liaise with the service user's PHN/ RGN when scheduling the appointment to remove the tube, as the stoma site will require a nursing review on the day following the procedure.

5.6.3. The tube removal procedure may be performed in either a primary care clinic or domiciliary setting depending on the needs and preferences of the service user / caregiver.

5.6.4. The service user should be advised to remain fasting overnight prior to tube removal. Medication can be taken as usual, including proton pump inhibitor medication (where already prescribed) which may reduce the acidity of any gastric leakage after tube removal.

5.6.5. The clinician must explain the procedure to the service user/caregiver to inform consent. The clinician must inform the service user/caregiver, that they will not proceed with the tube removal if it is deemed inappropriate (e.g., if the feeding tube cannot be removed from the stoma with gentle pressure) and that in this case the service user will be referred to hospital to have the tube removed.

5.6.6. The service user must sign a form consenting to the procedure (a sample consent form for use in primary care is provided in Appendix X). If consent is verbal rather than written, the clinician must document this. The signed consent form should be filed in the service user's clinical record.

5.6.7. The procedure for removal of a gastrostomy tube with a balloon retention device is outlined in Figure 6.1[53].

5.6.8. Once the tube has been removed, the gastrostomy stoma will begin to close within a few hours and will usually fully closed within 24 hours, although it can take 2-4 days. The service user should be advised to remain fasting for 2 hours post procedure and then consume small frequent meals until the stoma has closed. The procedure and outcome should be documented in the service user's clinical file (Figure 6.1)[53]

Documentation required in the medical record post tube removal

- ✓ Date and time of procedure
- ✓ Method of removal
- ✓ Complete or incomplete device removal
- ✓ Condition of stoma site and surrounding skin
- ✓ Type of dressing applied (if applicable)
- ✓ Spare dressings given to patient/family/carer
- ✓ Any follow-up required
- ✓ The provider of the tube or device should be notified to cease supply (where relevant)

Figure 6.1: Documentation required in the medical record post tube removal[53,54]

5.6.9. The service user should have their stoma site reviewed by their PHN/RGN within 24 hours of tube removal, with further reviews as indicated if the stoma is slower to heal. If there are concerns

about the time taken for the stoma to heal, or if there are any signs of infection at the site post removal, the PHN/ RGN should refer the service user to their GP for review.

Procedure for removal of a gastrostomy tube with a balloon retention device in primary care

Equipment required:

- Dressing Pack
- Sterile Gloves
- Normal Saline
- Gauze
- Water-soluble lubricating gel
- 10ml leur tipped syringe
- Absorbent dressing e.g. Allevyn

Prior to procedure:

1. Confirm that the tube in situ has an internal water filled balloon retention device and that the primary insertion was performed >3months previously.
2. Ensure all equipment required is available.
3. Explain the procedure to the service user/ caregiver and request consent form is signed.
4. Request that the service user lie down in a bed or couch, or reclining chair

Procedure:

1. Wash hands and wear sterile gloves in line with HSE Infection Control Guidelines.
2. Open the dressing pack and set up plastic bag for disposal of waste.
3. Clean the stoma site with normal saline and dry with gauze.
4. Deflate the internal balloon by attaching the 10ml luer-slip syringe to the balloon port on the feeding tube and withdrawing the water from the balloon. Ensure all water has been removed prior to proceeding to tube removal.
5. Apply the water-soluble lubricant to the stoma site to facilitate easier removal.
6. Gently pull out the gastrostomy tube, while placing index finger and middle finger on either side if the gastrostomy to create a counter pressure on the abdomen.
7. Clean the stoma with normal saline. If there is any bleeding post tube removal, using gauze apply a firm pressure to the site to stop bleeding.
8. Cover the stoma site with an absorbent dressing.
9. Advise the service user to remain fasting for 2 hours post procedure and minimise bending during the first 24 hours post tube removal to allow the stoma site to close.

Figure 6.2: Procedure for removal of a gastrostomy tube with a balloon retention device in primary care

5.7. Process for return of enteral feeding equipment and consumables

5.7.1. **EFS equipment (feeding pump, drip stand, backpack)**

The service user/caregiver should contact the EFS Vendor to arrange for return of the EFS equipment when it is no longer required. The cost of collecting and cleaning/ recycling the EFS equipment is borne by the EFS Vendor.

5.7.2. **EFS consumables (giving sets, reservoirs, 2-pack connectors), enteral devices, accessories, and syringes**

The service user/caregiver should dispose of any unused items where the outer box has been opened. If outer box is not opened or damaged, the service user/caregiver should contact their community dietitian or public health nurse to clarify if items can be returned. (Check local infection control policy in place at the time in the CHO).

5.7.3. **Enteral feed and oral nutrition supplements**

The service user/caregiver should dispose of any unused items where the outer box has been opened. If outer box is not opened or damaged, the service user/caregiver should contact their community pharmacist to clarify if items can be returned.

5.8. Key Recommendations

- ✓ The decision to remove the feeding tube and related processes should be multidisciplinary
- ✓ Frequent monitoring by a dietitian is required during the transitional phase to oral feeding to ensure the service user is achieving an adequate oral intake prior to recommending tube removal.
- ✓ A minimum target weight to maintain during the transitional phase should be agreed with the service user
- ✓ The ability of the service user to meet their hydration and medication needs orally must be assessed during the transitional phase
- ✓ Process for return of enteral feeding equipment and consumables should be followed

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8.0 Appendices Part A

Appendix I: Procedure for Processing and Approval of Enteral Feeding Systems Products & Consumables in Community Healthcare Organisations

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Procedure for Processing and Approval of Enteral Feeding Systems Products & Consumables in Community Healthcare Organisations

Is this document a:

Policy [ ] Procedure [√] Protocol [ ] Guideline [ ]

Community Operations and all Community Healthcare Organisations

Title of PPPG Development Group:	**Enteral Feeding Systems Technical Subgroup of the National Service Improvement Programme for Community Funded Schemes Nutrition Group**
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PART A: PROCEDURE FOR THE APPROVAL & SUPPLY OF ENTERAL FEEDING SYSTEMS EQUIPMENT & CONSUMABLES IN CHO AREAS

1.0 INTRODUCTION

KEY MESSAGE: <u>This is not a clinical guideline</u> for enteral tube feeding but an outline of the procedure for the ordering, supply and use of Enteral Feeding Systems (EFS) under the terms of National Drawdown Framework Agreement for the provision of Enteral Feeding Systems (HSE 8932)

1.1 National Drawdown Framework Agreement for the provision of Enteral Feeding Systems (HSE 8932)

1.1.1 The *National Drawdown Framework Agreement for the provision of Enteral Feeding Systems (HSE 8932)* is a multi-vendor drawdown framework agreement for the supply of Enteral Feeding Systems (EFS) to all HSE Statutory Hospitals, Community Healthcare Organisations and entities funded under Section 38 of the Health Act 2004 (as amended) (a "Section 38 Body"). The Framework is valid for a 2-year period initially, until October 2021, with the option to be extended for a further 2 years at 12 monthly intervals.

1.1.2 An **Enteral Feeding System (EFS)** is required to facilitate enteral feeding where a feeding pump is necessary to administer the feed. For the purposes of this Procedure, the EFS is comprised of a number of different medical devices including reusable devices termed *'equipment'* and single use devices termed *'consumables'* (See *Figure 1.1*).

Figure 1.1 Medical Device Components of Enteral Feeding Systems (EFS)

EFS Equipment (Reusable)	**EFS Consumables (Single use)**
Enteral Feeding Pump	Giving sets
Table-top Drip Stand	Reservoirs
Backpack	2 Pack connectors
	Bolus adapters

NOTE: Other medical devices required to facilitate enteral feeding (e.g., enteral feeding syringes or feeding tubes) may also be requested. These items are outside the scope of the Framework and this document and should be checked and approved as per current CHO arrangements.

1.1.3 There are 4 ranked EFS Vendors appointed to the Framework (refer to *Figure 1.2*), all of whom meet the mandatory requirements for product quality and aftersales training and support. EFS Service Users should be registered with the relevant EFS Vendor to enable product tracking and traceability, and to access training and support in the use of EFS. All roles and responsibilities assigned to the Vendors throughout this document are as specified under the terms of the Framework Agreement.

1.1.4 Vendors are ranked on the Framework (refer to *Figure 1.2*). **It is intended orders will be issued to the highest ranked Vendor unless there is a valid clinical indication to depart from the ranking to meet the needs of the Service User.**

Figure 1.2 Ranking of EFS Vendors on the Framework and the name of the EFS supplied.

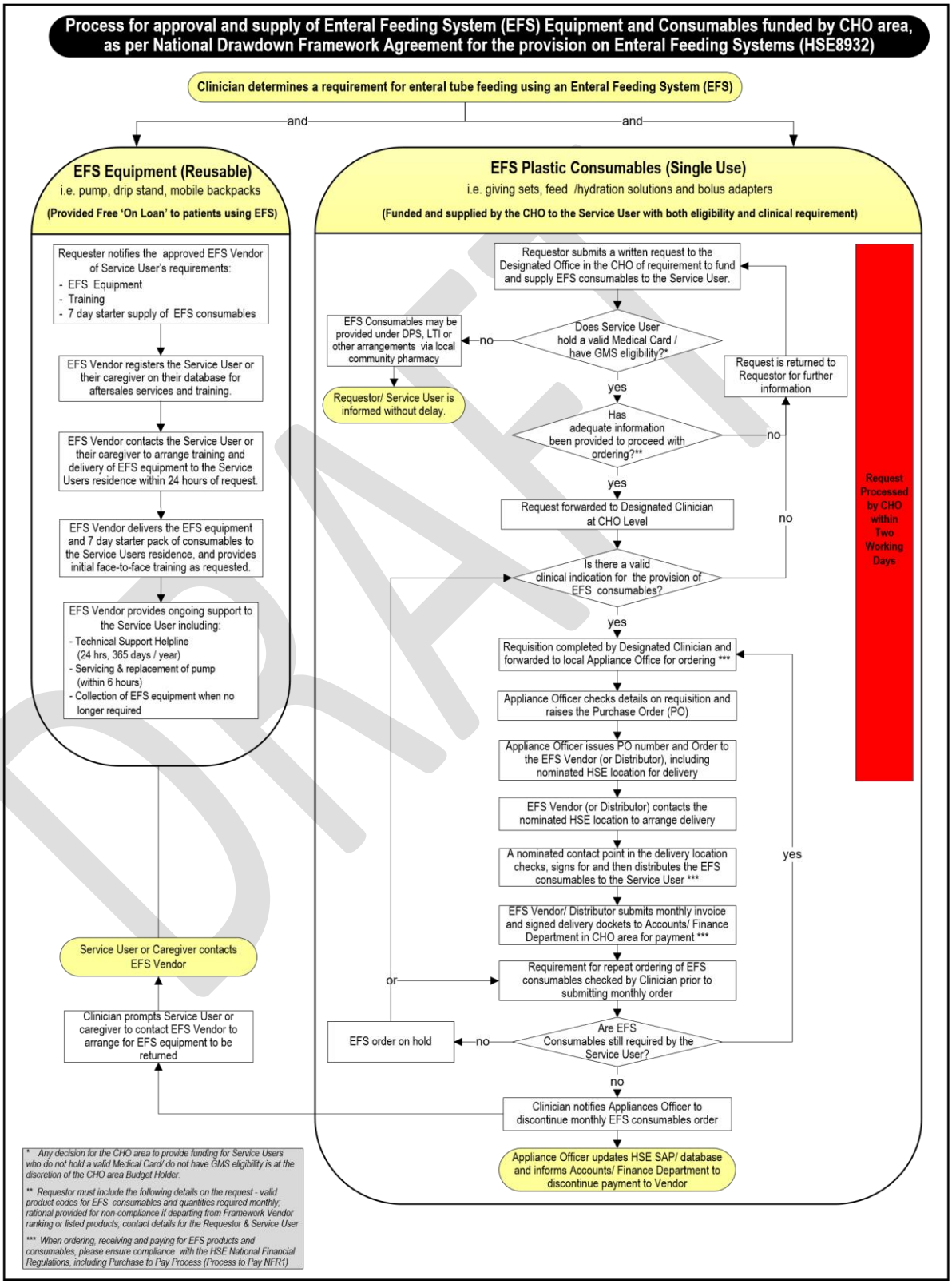
Ranking on EFS Framework	Vendor Name	EFS System Name
1st	Healthcare 21	Kangaroo Joey
2nd	Abbott	Freego
3rd	Nutricia	Flocare
4th	Vygon	EasyMoov

1.1.5 IMPORTANT: Orders should only be issued to those Vendors appointed to the Framework, and for the EFS products listed on the Framework, to ensure compliance with EU and National Procurement regulations. The issuing of EFS orders to Vendors that have not been appointed to the Framework, or for EFS equipment and consumables outside the approved list, should be considered only in 'exceptional' circumstances and CHOs should place a higher level of scrutiny / clinical verification on such ordering.

1.1.6 The Contract Book and User Guide (CBUG) for the *National Drawdown Framework Agreement for the provision of Enteral Feeding Systems (HSE 8932)* contains a full list of EFS products on the Framework, as well as product codes and pricing. The CBUG is available online for review and safe purchasing information. Relevant staff can access the CBUG in the HSE HBS Procurement Assisted Sourcing System (PASS) www.hbspass.ie. Staff who do not have access to the PASS, may request a copy of the CBUG on an individual basis by contacting National Procurement by email at mps1@hse.ie

2.0 ORDERING OF EFS EQUIPMENT AND CONSUMABLES

2.1 Process flow for CHO approval and supply of EFS Equipment and Consumables



2.2 Ordering EFS Equipment

2.2.1 EFS equipment, which are medical devices designed for repeated use, include the enteral feeding pump, table-top dripstand and optional enteral feeding backpack to facilitate ambulatory enteral feed infusion.

A complete list of approved EFS equipment and indications for use is included in Appendix V.

2.2.2 EFS equipment is typically ordered when the Service User is required to continue enteral feeding via a feeding pump on discharge from hospital to community, or where it is recommended that they commence using a feeding pump at some point after discharge from hospital. The EFS equipment is designed for longer term use and not replaced frequently thereafter unless faulty.

2.2.3 EFS equipment must be ordered before the Service User is discharged from hospital to community on enteral feeding, or without delay should it be recommended that a Service User is initiated on EFS at some point after discharge. All EFS Service Users are required to be registered with the EFS Vendor to enable product tracking and traceability. The Dietitian or Enteral Clinical Nurse Specialist should register the Service User with the EFS Vendor by completing a company specific registration form, specifying the EFS equipment required. Under the terms of the Framework, EFS equipment must be delivered to the Service User within 24 hours of initial request, and within 6 hours if a replacement pump is required.

2.2.4 The EFS Vendor is responsible for the delivery of the EFS equipment requested to the Service User's place of residence. They are responsible for contacting the Service User or their carer to arrange a suitable time to deliver the equipment. In the event of a dispute regarding delivery, the onus is on the EFS Vendor to prove that the delivery was made to the location specified on the order, and in accordance with the HSE location's policy on delivery requirements.

2.2.5 The cost of all EFS equipment deliveries must be borne by the EFS Vendor and shall not be passed on to the HSE.

2.2.6 EFS equipment is supplied 'free-on-loan' to the Service User by the EFS Vendor under the terms of the Framework and should be returned to the EFS Vendor when no longer required.

KEY MESSAGE: All EFS Service Users are required to be registered with the EFS Vendor to enable product tracking and traceability.

2.3 Ordering EFS Consumables

KEY MESSAGE: Please ensure full compliance with the HSE Financial Regulations when ordering, receiving and paying for EFS consumables

2.3.1 EFS consumables are single use medical devices and include giving sets, reservoirs, 2-pack connectors, and bolus adapters. Refer to Appendix V for complete list of approved EFS consumables and indications for use.

2.3.2 **IMPORTANT: EFS consumables are only compatible with the same brand EFS equipment** i.e. the feeding pump and giving set ordered must be the same brand. For example, Kangaroo Joey Giving Sets are only compatible with a Kangaroo Joey Enteral Feeding Pump.

2.3.3 Under the terms of the Framework, the EFS Vendor must include an initial 7-day 'starter' supply of EFS consumables with each new order for an EFS enteral feeding pump. The Dietitian or Enteral Clinical Nurse Specialist should specify which EFS consumables are required for the 7-day 'starter'

supply when registering the Service User with the EFS Vendor to provide the EFS enteral feeding pump (refer to 2.2.3).

2.3.4 EFS consumables are typically ordered monthly by the CHO as these are bulky items and to reduce wastage. The Dietitian or Enteral Clinical Nurse Specialist should advise the CHO in writing which EFS consumables will be required, with funding approval, administrative and clinical checks performed in the CHO before the PO is raised with the EFS Vendor.

2.3.5 Under the terms of the Framework, EFS consumables must be delivered to a designated HSE location e.g., primary care centre or HSE stores location, within 2 days of initial request. Home delivery of EFS consumables is not included in the terms of the Framework.

2.3.6 The cost of all EFS consumables deliveries must be borne by the Vendor and shall not be passed on to the HSE.

KEY MESSAGE: All EFS consumables are single use items and are only compatible with the same brand EFS equipment.

2.4 Process for initial ordering of EFS Consumables

2.4.1 The Requestor (usually a Dietitian or Enteral Clinical Nurse Specialist) submits a written request for funding for the EFS consumables required by the Service User to a designated HSE office (as nominated by the Chief Officer) within the CHO area. This written request should include the following, at a minimum:

a) A list of products required (including product order codes) and quantities required per month.

b) The contact number/ email of the referring clinician should be supplied in case of any queries.

c) Details of all funding eligibilities held by the Service User i.e. GMS, DPS, LTI

d) Service User address and contact details

e) **A valid clinical indication for departing from the Framework ranking (refer to 1.1.4) where a Vendor other than the highest ranked has been recommended to best meet the needs of the service user.**

Note: A hospital prescription is not required for EFS consumables supplied via the local CHO area.

It is the responsibility of the Requestor to ensure that the request is submitted to the correct designated office in the correct CHO area. CHOs should communicate the designated office to relevant acute hospital services.

IMPORTANT: A written request for funding is not a clinical referral. A separate referral must be sent to the relevant clinician where an intervention or follow-up is required after discharge from hospital.

KEY MESSAGE: The Requestor should provide a valid clinical indication for recommending the use of an EFS from a lower ranked EFS Vendor.

2.4.2 Administrative and Eligibility Checks at CHO Level

On receipt by the designated office, the request should be checked to ensure that EFS consumables order codes and quantities required monthly have been specified, and that EFS consumables requested are listed on the Framework. In addition, where EFS consumables from

a lower ranked provider have been recommended, it should be checked that a clinical indication for this recommendation has been provided.

The request may need to be returned to the Requestor where more information is required.

NOTE: Other medical devices required to facilitate enteral feeding (e.g. enteral feeding syringes or feeding tubes) may be also requested. These items are outside the scope of the Framework and this document and should be checked and approved as per current CHO arrangements.

2.4.3 The eligibility of the Service User for funding and supply of EFS via the local CHO area should be checked and confirmed. It is expected that all Services Users with valid GMS eligibility will be provided with EFS consumables via the CHO area. The Requestor should be advised without delay when a Service Users is found to be ineligible for funding under the GMS scheme as these Service Users may be provided with the EFS consumables required via their local community pharmacy funded under DPS Scheme or other arrangements instead.

2.4.4 Clinical Checks at CHO Level

When the above details are confirmed, the funding request should be forwarded to a designated clinician at CHO level e.g. DPHN/ ADPHN, AMO/CMD or Dietitian Manager for clinical approval - in the event of any queries, the designated clinician should contact the referrer directly for clarification.

(Alternatively, the CHO may agree to accept the initial funding request from the Hospital Clinician as clinical approval for the initial order only).

2.4.5 Once clinical approval is granted the designated clinician or their nominee should, without delay, complete a requisition form for the EFS consumables required and forward to the local appliance office. The request should be documented by the clinician in the service user's care record.

2.4.6 The Appliance Officer/ Administrator checks the order details on the requisition form, enters the details on SAP (or alternative system in use) and raises a Purchase Order (PO) with the Vendor or the relevant Distributor. The PO should state the designated point of delivery. **The PO should be raised within 2 working days of the original request being received in the designated HSE office within the CHO area.**

2.4.7 As specified in the terms of the Framework, the Vendor or their distributor must deliver the EFS consumables to a designated HSE location e.g. primary care centre or HSE stores location, with no additional delivery charges. Home delivery of EFS consumables is not included in the terms of the Framework.

2.4.8 Large scale delivery locations receiving multiple orders should have a process in place to ensure that orders are re-distributed to the relevant local collection points within the CHO in a timely fashion.

2.4.9 A nominated contact point in the delivery /distribution location e.g., PHN/ CRGN, Porter, Administrator or Dietitian checks, signs for and then distributes the EFS consumables to the Service User by checking the contact details on the PO and contacting the Service User or their carer to arrange collection.

2.4.10 The Vendor should submit invoices (with signed delivery documents) on a monthly basis to the relevant HSE Accounts Department ~~for~~ payment by the CHO. Payment is made within the

defined payment period ensuring full compliance to HSE National Financial regulations Purchase to Pay Process.

KEY MESSAGE: The PO for EFS consumables should be processed within 2 working days of receipt of request to avoid delays in enteral feed administration.

2.5 Process for repeat or changes to orders of EFS Consumables

2.5.1 EFS consumables should be ordered and supplied monthly by the CHO. Requests for repeat orders should be submitted to the local appliance office a minimum of 10 working days before required to avoid interruptions in supply to the Service User. Bulk ordering (>1 month supply) is not recommended as the Service User's requirements may change. However, orders of up to 2 months' supply can be considered to cover holiday periods or other extenuating circumstances.

2.5.2 To ensure appropriate repeat ordering, the Clinician that is co-ordinating enteral feeding care, or their nominee, should contact EFS Service Users monthly to confirm that the EFS consumables are still required before completing the requisition form and forwarding to the local appliance officer/ administrator for processing. However, and where agreed locally, for stable / long term EFS Service Users where orders are unlikely to change frequently, the clinician may instruct that the monthly order for EFS consumables be repeated for a longer period.

2.5.3 The CHO should have a process in place to confirm multiple orders from the same location (e.g., congregated residential settings, private nursing homes) are in accordance with National Drawdown Framework Agreement for the provision of Enteral Feeding Systems (HSE 8932) and have the appropriate administrative and clinical checks in place.

2.5.4 The Appliance Officer/ Administrator checks the order details on the requisition form, enters the details on SAP (or alternative system in use) and raises a PO with the Vendor or the relevant distributor. The PO should state the designated point of delivery. The PO should be raised within 2 working days of the original request being received in the designated HSE office within the CHO area.

2.5.5 As specified under the terms of the Framework, the Vendor or their distributor must deliver the EFS consumables to a designated HSE location e.g., primary care centre or HSE stores, with no additional delivery charges. Home delivery of EFS consumables is not included in the terms of the Framework.

2.5.6 A nominated contact point in the delivery /distribution location e.g., PHN/ CRGN, Porter, Administrator or Dietitian checks, signs for and then distributes the EFS consumables to the Service User by checking the contact details on the PO and contacting the Service User or their carer to arrange collection.

2.5.7 The Vendor should submit invoice on a monthly basis to the relevant HSE Accounts Department in the CHO for payment. Payment is made within the defined payment period ensuring full compliance to HSE National Financial regulations Purchase to Pay Process.

KEY MESSAGE: Clarification of the need to repeat or modify the order for EFS consumables should be sought in advance of processing the monthly requisition.

2.6 Process for discontinuing orders of EFS Consumables.

2.6.1 Monthly orders for EFS consumables may be placed **'ON HOLD'** where enteral feeding at home has been suspended temporarily e.g., where the Service User has been admitted to hospital or other care facility and will be recommenced when confirmation is received by the Clinician that the Service User is to resume enteral feeding at home and instructs appliance officer to resume monthly orders. EFS equipment will remain in the Service User's home during the 'ON HOLD' period.

2.6.2 Monthly orders for EFS consumables must be **DISCONTINUED** where enteral feeding at home is no longer indicated or where the Service User has been advised on clinical review to discontinue using an EFS. The Clinician should instruct the Appliance Officer/ Administrator to discontinue monthly order. The Appliance Officer/ Administrator should update SAP or alternative system and instruct the local Accounts Department to discontinue payment to Vendor.

2.7 Process for return of EFS Consumables.

2.7.1 It is the responsibility of the Service User or their carer to dispose of any unused EFS Consumables where the outer box has been opened. If outer box is not opened or damaged, the Service User can contact the Clinician responsible for co-ordinating their enteral nutrition care to clarify if items can be returned. (Check local infection control policy in place at the time in the CHO).

2.8 Process for <u>return</u> of EFS <u>Equipment</u>.

2.8.1 It is the responsibility of the Service User or their carer, or the nursing staff in a residential setting, to contact the EFS Vendor to arrange for return of the EFS equipment when it is no longer required. The Clinician coordinating enteral feeding care may assist this process by prompting the Service User.

2.8.2 The cost of collecting and cleaning/ recycling the EFS equipment is borne by the EFS Vendor.

KEY MESSAGE: EFS equipment is supplied 'free-on-loan' to the Service User and must be returned directly to the EFS Vendor when no longer required. EFS consumables should be disposed of by the Service User/ their caregiver.

3.0 TRAINING AND SUPPORTS FOR SERVICE USERS, THEIR CAREGIVERS AND HEALTHCARE PROFESSIONALS

IMPORTANT: Key points of information are included below – refer to CBUG for National Drawdown Framework Agreement for the provision of Enteral Feeding Systems (HSE 8932) for full details.

3.1 Specified training and supports for use of EFS

3.1.1 All vendors appointed to the Framework are required to provide aftersales training and supports for both patients, their caregivers and healthcare professionals who need to use EFS products.

3.1.2 The EFS Vendor will provide training on the use of the EFS equipment and consumables to the Service User and/or their carers prior to and following discharge, with additional training provided as deemed necessary to achieve competency. This training will be facilitated at the request of the Dietitian or other clinician managing the enteral feeding care of the Service User.

3.1.3 The EFS Vendor will provide training as required to Healthcare Professionals, including out of hours provision.

3.1.4 The EFS Vendor will provide Technical Support 24hrs/ 365 days a year, including a telephone helpline and a pump replacement where required within 6 hours of request.

KEY MESSAGE: Each EFS Vendor must provide Technical Support 24hrs/ 365 days a year. A replacement pump must be issued, where required, within 6 hours of request.

3.0 CONTRACT MANAGEMENT, COMPLAINTS AND SAFETY NOTIFICATIONS

IMPORTANT: Key points of information are included below – refer to CBUG for National Drawdown Framework Agreement for the provision of Enteral Feeding Systems (HSE 8932) for full details.

4.1 Contract Manager

4.1.1 EFS Vendor must ensure that a named **Contract Manager** is available to the HSE Monday to Friday, 9am – 5pm to deal with any queries. A list of the contract managers is available in the CBUG (HSE 8932) which can accessed via the HSE HBS Procurement Assisted Sourcing System (PASS) www.hbspass.ie or requested by email from National Procurement via msp1@hse.ie

4.2 Customer Complaints

4.2.1 EFS Vendors must have a comprehensive complaints procedure for dealing with Customer Complaints.

4.2.2 EFS Vendors must investigate, resolve and report back in writing to the HSE HBS Procurement regarding any product complaints received and the outcome of the complaints within a specified time frame: productrelated complaint either from a service user within 48 hours; service complaint either from HSE administration, a Service User or a Healthcare Professional within 5 working days.

4.2.3 Complaints and operational issues which are not resolved at a local level between the CHO and the EFS Vendor (Contract Manager) can be escalated to national procurement via the email address msp1@hse.ie

4.3 Product changes, withdrawal, or replacement

4.3.1 All proposed product changes (e.g. features, functions, material, packaging, manufacturing methods, etc.) or withdrawals/ replacement/ substitution due to discontinuation MUST be communicated to the relevant HSE HBS Procurement, Sourcing and Contracts Category Specialist and the participating HSE Locations within a notice period of at least three months.

4.4 Safety Notifications

4.4.1 All product recalls, Field Safety Notices (FSN) advisories or alerts occurring for products supplied under the Framework must immediately be communicated to the relevant HSE HBS Procurement, Sourcing and Contracts Category Specialist and HSE Locations, and the HSE must be kept up to date of the progress on any action required until there is full resolution of the situation.

4.4.2 In the event of a product recall, Field Safety Notice (FSN), advisory or alert the Vendor must have procedures in place for identifying the products, communicating to the HSE Locations, removing from the HSE Locations all products that are subject to a product recall, and offering

replacement / alternative products. The implementation of these procedures should result in no cost and disruption to the HSE Locations. Note that, if the product recalls, advisory and alert procedures proposed do not meet the HSE's needs, the HSE and participating HSE Locations reserve the right to prescribe recall, advisory, or alert procedures to be adopted by the Vendor.

4.4.3 The Vendor must have a comprehensive product tracking system in place. This must include product traceability from manufacture to invoicing of sales to HSE Locations.

4.4.4 Any product recall, field safety notice advisories or alerts brought to the attention of the CHO should be recorded in line with HSE Incident Management Framework 2020 available at www.hse.ie/eng/about/qavd

5.0 SUMMARY OF KEY MESSAGES

1.	This is not a clinical guideline for enteral tube feeding but an outline of the procedure for the ordering, supply and use of Enteral Feeding Systems (EFS) under the terms of *National Drawdown Framework Agreement for the provision of Enteral Feeding Systems (HSE 8932)*
2.	All EFS Service Users are required to be registered with the EFS Vendor to enable product tracking and traceability.
3.	Please ensure full compliance with the HSE Financial Regulations when ordering, receiving and paying for EFS products and consumables
4.	All EFS consumables are single use items and are only compatible with the same brand EFS equipment.
5.	The Requestor should provide a valid clinical indication for recommending the use of an EFS from a lower ranked EFS Vendor.
6.	The PO for EFS consumables should be processed within 2 working days of receipt of request to avoid delays in enteral feed administration.
7.	Clarification of the need to repeat or modify the order for EFS consumables should be sought in advance of processing the monthly requisition.
8.	EFS equipment is supplied 'free-on-loan' to the Service User and must be returned directly to the EFS Vendor when no longer required. EFS consumables should be disposed of by the Service User/ their caregiver.
9.	Each EFS Vendor must provide Technical Support 24hrs/ 365 days a year. A replacement pump replacement must be issued, where required, within 6 hours of request.
10.	Other medical devices required to facilitate enteral feeding e.g., enteral feeding syringes or feeding tubes and their accessories, are outside the scope of the Framework and should be processed as per current CHO arrangements.

PART B: PPPG DEVELOPMENT CYCLE

1.0 INITIATION

1.1 Purpose

1.1.1 To set out the national HSE procedure for ordering and approval of EFS equipment and consumables for persons who hold a medical card or have GMS eligibility and are living in the community (i.e. outside the acute hospital).

1.1.2 To develop a standardised national process and replace any previously existing local procedure with this national procedure.

1.1.3 To provide an outline of the pathway that a request for supply and funding of EFS equipment and consumables will follow from the point of ordering, prior to discharge from hospital or where initiation on an EFS is indicated in a community setting, to the point of supply to the service user.

1.1.4 To improve access and ensure that Service Users who require EFS equipment and consumables receive them in line with this procedure.

1.2 Scope

1.2.1 This procedure applies to EFS equipment and consumables specified in the *National Drawdown Framework for the supply of Enteral Feeding Systems - HSE 8932*, (refer to Figure 2.1) and supplied by Vendors appointed to this Framework (refer to Figure 1.2). The scope does not extend to other equipment required to support the delivery of enteral feeding (e.g., feeding tubes and accessories or adapters, enteral feeding syringes, pH paper, sterile water), nor does it extend to other Vendors.

Figure 2.1 Categories of EFS equipment and consumables

Enteral Feeding Pump
Standard interoperable giving set
Mobile interoperable giving set
Interoperable gravity feeding set
Interoperable feed & hydration giving set
2 pack connectors
Reservoirs
Table-top dripstand
Backpack

1.2.2 This procedure applies to service users of all ages who hold a medical card or have GMS eligibility and require EFS equipment and consumables in their home settings. It does not cover procedures for ordering and supply of EFS equipment and consumables in the acute setting.

1.2.3 This procedure is relevant to all health care professionals involved in the care of such Service Users and to relevant staff within the Community Healthcare Organisation involved in the ordering, approval or supply of EFS equipment and consumables.

1.3 Objectives(s)

1.3.1 To set out the processes to be followed in ensuring that the nationally approved list of EFS equipment and consumables, requested in accordance with best practice standards by authorised clinicians, are provided to the service user in the community with minimal delay.

1.3.2 To set out the processes that would ensure:

- Maximum efficiency in the processing of funding applications involving the minimum number of HSE staff at the appropriate grade handling the request for EFS consumables.
- Compliance with the HSE Governance Framework, HSE Procurement and Financial regulations, data collection and management system requirements.
- Decision making at all stages at the lowest appropriate grade.
- Clearly assigned responsibility, authority, and accountability at all stages.
- Appropriate key performance indicators are agreed.
- Ongoing monitoring, audit and evaluation is undertaken.

1.4 Outcome(s)

1.4.1 To improve access and ensure that service users who require EFS equipment and consumables receive them in line with the national standardised process outlined in this document.

1.4.2 To serve as a resource for healthcare professionals and relevant staff in CHO areas.

1.4.3 To provide practical, clear, and unambiguous processes.

1.4.4 To replace existing local policies and procedures with this national procedure.

1.5 PPPG Development Group

1.5.1 See Appendix II for membership of the PPPG development group and Appendix III for conflict of interest declaration form.

1.6 PPPG Governance Group

1.6.1 See Appendix IV for membership of the approval governance group.

1.7 Supporting Evidence

- National Drawdown Framework Agreement for the provision of Enteral Feeding Systems – HSE 8932 Contract book and users guide

- National survey of current processes for ordering enteral feeding equipment in different CHO areas.
- National Guideline on the management of HETF in Primary Care (under development)
- Medical Device Equipment Management Policy (Incorporating Medical Equipment Management Best Practice) 2016.

1.8 Glossary of Terms / Abbreviations

Term/ Abbreviation	Definition (for the purposes of this procedure)
ADPHN	Assistant Director of Public Health Nursing
AMO	Area Medical Officer
CFS	Community Funded Schemes
CHO	Community Health Organisation
CMD	Community Medical Officer (formerly Area Medical Officer)
CRGN	Community Registered General Nurse
Dietitian	Dietitian refers to either a hospital dietitian or community dietitian. In the majority of cases, it is the hospital dietitian which will request the initial EFS order, but this may also be facilitated by the community dietitian where a service user is commenced on an EFS subsequent to initial discharge (e.g. where a service user was originally on bolus feeding)
DPHN	Director of Public Health Nursing
DPS	Drug Payment Scheme
EFS	Enteral Feeding System. An EFS is required to facilitate enteral feeding where a feeding pump is necessary to administer the feed.
Enteral Clinical Nurse Specialist	Clinical Nurse Specialist supporting service users and their caregivers in the management of enteral feeding, typically in paediatric hospitals only.
Enteral feeding	Enteral feeding is the delivery of a nutritional feed directly into the stomach or intestine of a person via a feeding tube and is indicated for those who cannot meet their nutrition requirements by normal dietary intake (Bischoff et al 2020).
Framework	National Framework Agreement for the provision of Enteral Feeding Systems
FSN	Field Safety Notice
GMS	General Medical Services Scheme
HSE	Health Service Executive
LTI	Long Term Illness Scheme
PASS	Procurement Assisted Sourcing System
PCRS	Primary Care Reimbursement Service
PHN	Public Health Nurse
PO	Purchase Order
PPPG	Policy, Protocol, Procedure, Guideline
SOP	Standard Operating Procedure

Requestor	The Requestor is the Clinician who submits the initial funding request to the CHO for the supply of EFS to the Service User.
Vendor	The Vendor is the company supplying the EFS consumables to the HSE

2.0 DEVELOPMENT OF PPPG

2.1 Due to awareness of variations in the practice of ordering, approval, and supply of Enteral Feeding Systems equipment and consumables across the HSE, it was apparent that a standardised process was required.

2.2 For the purposes of drafting a national procedure, a survey of existing practice for ordering, approval and supply of Enteral Feeding Systems equipment and consumables across the HSE areas was carried out and the findings reviewed.

2.3 The information gathered and reviewed informed the development of a standardised procedure applicable to all CHO areas where such products require approval.

2.4 The procedure is illustrated in sequential steps in Part A using a flowchart, as developed and recommended by the PPPG development group.

2.5 Refer to Section 8 (References) for evidence.

2.6 Refer to Section 5 (Implementation) for additional resources required to implement this procedure.

2.7 Refer to Part A (page 6) for diagrammatic outline of the process.

3.0 GOVERNANCE AND APPROVAL

3.1 The governance and approval arrangements rest with the CFS Nutrition Group. This group reviews and signs the PPPG checklist.

3.2 The checklist accompanies the final procedure on submission to the CFS Governance group for approval. The checklist is used in assessing the PPPG is meeting the standards outlined in the HSE National Framework for developing PPPGs.

3.3 The final document is submitted to the National Community Operations. Once approved the final version is converted to a PDF document to ensure the integrity of the PPPG.

3.4 A signed copy of the checklist is attached to the master copy.

4.0 COMMUNICATION AND DISSEMINATION

4.1 The National Director of Community Operations will ensure widespread awareness of the procedure to relevant HSE services and other stakeholders, using existing communications channels:

- HSE staff via Chief Officers in CHO areas and all Hospital Group CEO's
- The procedure will be available and accessible via www.hse.ie/nutritionsupports

5.0 IMPLEMENTATION

5.1 **Procedure should be adopted and implemented by each CHO from the date of approval and publication.** A working group of key stakeholders should be established at CHO level to agree a plan to support implementation of this standardised procedure. Key stakeholders include Dietitian Manager, DPHN/ Director of Nursing in residential settings, Finance, Appliances

5.2 Resources required

Resources required to implement this standardised procedure within each CHO are for determination at CHO level.

5.3 Training required

Training and information sessions will be required locally to brief relevant staff on this new procedure.

5.4 Specific roles and responsibilities:

5.4.1 The CFS National Nutrition Service Improvement Group is responsible for communicating this national procedure to all HSE CHO and HSE (Section 38 bodies) funded locations.

5.4.2 The Chief Officer in each CHO area is responsible for the implementation of this procedure within their area and for reporting on the implementation and operation of this procedure to the National Director for Community Operations.

5.4.3 The Chief Officer in each CHO area is responsible nominating a designated office(s) within the CHO to accept and process funding requests for EFS consumables. In addition, a designated clinical approval person(s) should be nominated.

5.4.4 The Chief Officer of the CHO is responsible for ensuring that administration staff are fully briefed on this procedure. There should be minimum delay in processing all funding requests. Ideally requests for EFS consumables should be processed within 2 working days of receipt.

5.4.5 Requestors are responsible for ordering in line with relevant best practice clinical guidelines, and in compliance with the terms of the Framework.

6.0 MONITORING, AUDIT AND EVALUATION

6.1 Monitoring:

6.1.1 Each CHO area should implement a systematic process of gathering information on the supply of EFS over time to achieve the objectives within this procedure.

6.1.2 A database of EFS Service Users should be considered at CHO level.

6.2 Audit:

6.2.1 Each CHO area should audit compliance with this procedure at least annually and the outcome of the audit to be reported to the Audit function within Primary Care Division.

6.2.2 Refer to Appendix VI for sample audit tool. Each statement in the audit tool has been taken from this procedure for the processing and approval of EFS equipment and consumables. Each CHO area can assess to what degree they comply with the statements in their own area of approval and provision of EFS products. It is intended that this audit tool will provide each area with a baseline tool through which they can identify areas which require improvement. Users of this audit tool are free to add in additional statements, as they deem appropriate and adopt this tool for use in their own setting. This audit tool is to be used to retrospectively audit processes.

6.3 Evaluation:

6.3.1 Each CHO area will define a mechanism to measure how access has improved for service users who require EFS equipment and consumables. Sample process measures example: *% of purchase orders issued to the supplier within 2 working day of receipt of order request.*

7.0 REVISION / UPDATE

7.1 This procedure should be reviewed three years from date of issue or in line with any changes to the terms of the Framework including the end of the Framework Agreement.

7.2 In the event of new supporting evidence identified by findings from audit and evaluation, scope of practice changes or advances in technology or research the CFS Nutrition Group (or alternative expert working group as nominated by the HSE) will review the new evidence and amend and update as necessary.

8.0 REFERENCES

- National Drawdown Framework Agreement for the provision of Enteral Feeding Systems (HSE8932), 2019
- Medical Device Equipment Management Policy (Incorporating Medical Equipment Management Best Practice) (2016),HSE. http://www.hse.ie/eng/services/publications/corporate/Medicaldevicesequipment.pdf
- National Financial Regulations 2016, HSE.

9.0 APPENDICES

Appendix I	Signature Sheet
Appendix II	Membership of the PPPG Development Group
Appendix III	Conflict of Interest Declaration Form
Appendix IV	Membership of the Approval Governance Group
Appendix V	Enteral Feeding Systems Framework – products & indications for use
Appendix VI	Sample Audit Tool

Appendix I: Signature Sheet

I have read, understand and agree to adhere to this Policy, Procedure, Protocol or Guideline:

Print Name	Signature	Area of Work	Date

Appendix II: Membership of the EFS Framework Technical Working Group

MEMBER	REPRESENTING
Niamh Maher (Chair) Home Enteral Tube Feeding Dietitian	Nutrition Support PPPG Development Group – Enteral Feeding Lead
Sharon Kennelly Clinical Specialist Dietitian	EFS Framework Product Evaluation Group (Chair)
Mairead Aherne Dietitian Manager	Community Dietitian Managers
Sinead Glover Senior Dietitian	Community Dietitians
Sinead Lawlor National Practice Development Co-ordinator	Public Health Nursing
Sheena Kennedy Financial Analyst, Primary Care	Finance
John Nally Capital Projects Lead	Appliances
Fiona Garvey Quality and Patient Safety Manager	Quality and Patient Safety

Appendix III: Conflict of Interest Declaration Form

CONFLICT OF INTEREST DECLARATION

This must be completed by each member of the PPPG Development Group as applicable.

Title of PPPG being considered:

Procedure for processing and approval in the CHO's of Enteral Feeding Systems Framework

Please circle the statement that relates to you:

1. I declare that I DO NOT have any conflicts of interest.

2. I declare that I DO have a conflict of interest.

Details of conflict (Please refer to specific PPPG)

_____
_____
_____
_____
_____
_____
_____

(Append additional pages to this statement if required)

Signature: _____

Printed name: _____

Registration number (if applicable): _____

Date: _____

The information provided will be processed in accordance with data protection principles as set out in the Data Protection Act. Data will be processed only to ensure that committee members act in the best interests of the committee. The information provided will not be used for any other purpose.

A person who is covered by this PPPG is required to furnish a statement, in writing, of: (i) The interests of the person, and;
(ii) The interests, of which the person has actual knowledge, of his or her spouse or civil partner or a child of the person or of his or her spouse which could materially influence the person in, or in relation to, the performance of the person's official functions by reason of the fact that such performance could so affect those interests as to confer on, or withhold from, the person, or the spouse or civil partner or child, a substantial benefit.

Appendix IV: Membership of the Approval Governance Group

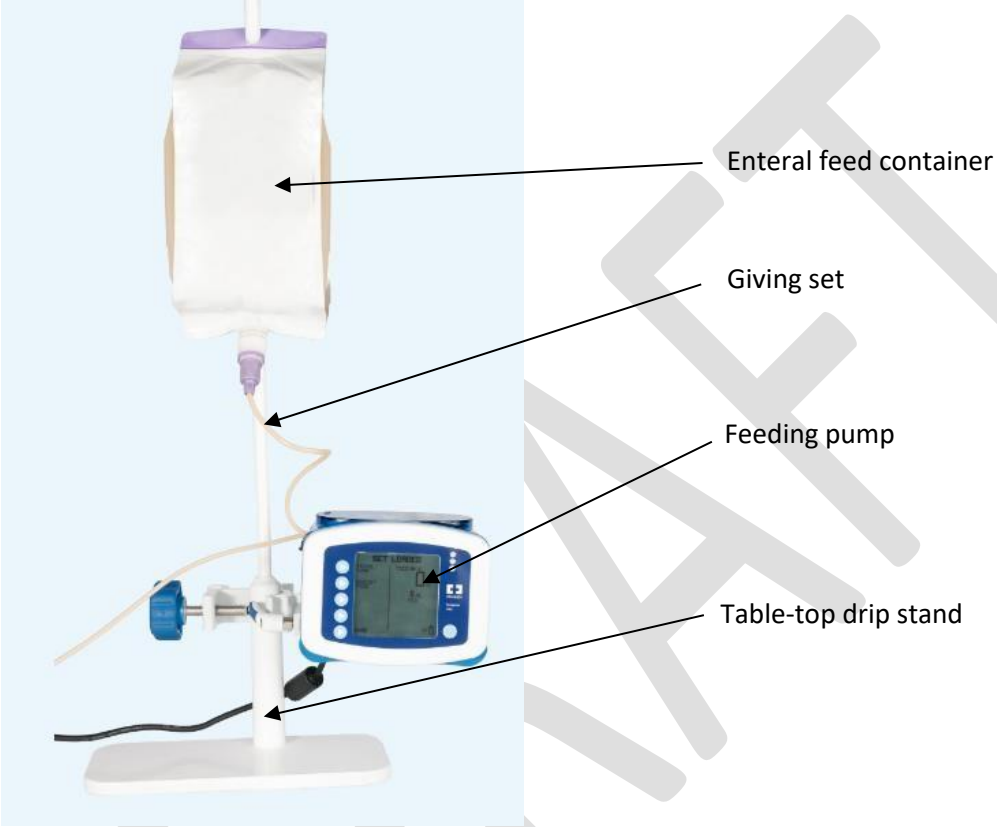
CFS National Nutrition Service Improvement Group members

MEMBER	REPRESENTING
Mary O'Kelly (Chair)	Primary Care – Head of Service
Margaret O'Neill	Dietetics – National Dietetic Lead
Richard Doheny	HBS Procurement Contract Sourcing
Sheena Kennedy	Finance (Primary Care)
Sharon Kennelly	EFS Framework Product Evaluation Group (Chair)
Niamh Maher	Community Dietitians – Home Enteral Tube Feeding
Mairead Aherne	Community Dietitian Managers
Michelle Hurley	Acute Dietitians, Paediatrics
Liam Hackett	Medical Devices
Mel Cox	PCRS - Pharmacy
Anne Marie Bennett	PCRS - Dietetics
Una McCarthy	Primary Care Operations
Sandra Hogan	Communications

Appendix V: Enteral Feeding Systems Framework – products & indications for use

ENTERAL FEEDING SYSTEM

An **Enteral Feeding System (EFS)** is required to facilitate enteral feeding where a feeding pump is necessary to administer the feed. For the purposes of this Procedure, the EFS is comprised of a number of different medical devices including reusable devices termed *equipment* and single use devices termed *consumables.*

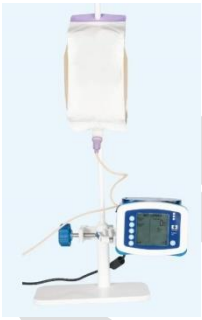


Refer to the **Contract Book and User Guide (CBUG)** for the *National Drawdown Framework Agreement for the provision of Enteral Feeding Systems (HSE 8932)* for a full list of EFS products on the Framework, as well as product codes and pricing. The CBUG is available from National Procurement by emailing mps1@hse.ie

Other medical devices required to facilitate enteral feeding e.g., enteral feeding syringes or feeding tubes and their accessories, are outside the scope of the Framework and should be processed as per current CHO arrangements.

VENDORS & RANKING ON FRAMEWORK

To ensure compliance with the Terms of the *National Drawdown Framework Agreement for the provision of Enteral Feeding Systems (HSE 8932)* **orders should be placed with the highest ranked EFS Vendor** (Healthcare 21) unless there is a clinically valid indication to use a lower ranked Vendor to best meet the needs of the Service User.

Ranking on EFS Framework	Vendor	Enteral Feeding System	Contact details	Technical Support helpline	Distributor
1st	Healthcare 21	 **Kangaroo Joey**	21 Fonthill Business Park, Fonthill Road, Clondalkin, Dublin 22. www.healthcare21.eu	1800 911 921	Healthcare 21
2nd	Abbott Laboratories (Ireland) Ltd	**Free -go** 	Abbott Laboratories Ireland Ltd Block B, Liffey Valley Office Campus, Quarryvale Dublin 22 D22 XOY3 www.ie.abbott	1800 221166	United Drug

3rd	Nutricia Medical Ireland Ltd	 **Flocare Infinity**	Block 1, Deansgrange Business Park Co Dublin Ireland www.nutricia.ie	1800 22 1800	United Drug
4th	Vygon Ireland Limited	 **Easy-Moov**	Vygon Ireland F10 Baldonnell Business Park Baldonnell Dublin D22 X998 www.vygon.com	01 4105715	Vygon

All codes for EFS equipment and consumables in Appendix 5 are as listed in the CBUG. Please contact the EFS Vendor directly with any queries.

EFS EQUIPMENT

ENTERAL FEEDING PUMP

An enteral feeding pump used to control the timing and volume of feed and water delivered via an enteral feeding tube.

- The pump is supplied free-on-loan by the EFS Vendor and must be returned to the EFS Vendor when no longer required.
- In the event of pump breaking or malfunctioning, the EFS Vendor must deliver a replacement pump to the service user within 6 hours.
- Each EFS Vendor has a freephone technical support helpline, operating 24 hours a day, 365 days per year

Ranking on EFS Framework	Vendor	Enteral Feeding Pump	Product code
1st	Healthcare 21	Kangaroo Joey 	383400
2nd	Abbott Laboratories (Ireland) Ltd	Free-go 	S40000114
3rd	Nutricia Ireland Ltd Medical	Flocare Infinity 	40407
4th	Vygon Limited Ireland	Easy-Moov 6 	0VEPM6GO2

TABLE-TOP DRIPSTAND / INFUSION STAND

A small portable dripstand is used to hang a container of feed or water above the level of the feeding pump to allow accurate feed/ water infusion.

- The dripstand is supplied free-on-loan by the EFS Vendor and must be returned to the EFS Vendor when no longer required.
- The dripstand is only compatible with same brand enteral feeding pump but will be able to hang any brand of enteral feed on the Irish market.

Ranking on EFS Framework	Vendor	Table-top dripstand	Product code
1st	Healthcare 21	Kangaroo Joey 	1814340236
2nd	Abbott Laboratories (Ireland) Ltd	Free-go 	S40700114
3rd	Nutricia Medical Ireland Ltd	Flocare 	35782
4th	Vygon Ireland Limited	Easy-Moov 6	PORTSTAND

ENTERAL BACKPACK

A backpack specifically designed to hold the feeding pump and container of feed, allowing ambulatory infusion of feed or water.

- The enteral backpack is supplied free of charge by the EFS Vendor to Service Users on request.
- The backpack is compatible with same brand enteral feeding pump.
- Enteral backpacks are available in both adult and paediatric sizes.

Ranking on EFS Framework	Vendor	Enteral Backpack	Product code
1st	Healthcare 21	**Kangaroo Joey Backpack** 	770036 (large, black) 770026 (mini, blue) 770034 (mini, pink)
2nd	Abbott Laboratories (Ireland) Ltd	**FreeGo Backpack** 	20002993 (adult, black) 20002991 (adult, red) 20002992 (adult, blue) S40400114 (paed, black) S53300114 (paed, blue) S53100114 (paed, red)
3rd	Nutricia Medical Ireland Ltd	**Flocare backpack** 	35785
4th	Vygon Ireland Limited	**Vygon backpack** 	0VEENTP1251

EFS CONSUMABLES

GIVING SETS

A giving set is the tubing which connects the container of feed, via the enteral feeding pump to the service user's feeding tube to facilitate feed infusion.

Typically, 1 giving set is required per day, although additional sets may be required especially in paediatric service users. The quantity required daily should be determined by the Dietitian or Enteral Nurse Specialist

- The **giving set must be the same brand as the enteral feeding pump** in use, they are not interchangeable.
- Some vendors supply a 'mobile' version of a giving set designed for use with the enteral backpacks.

Interoperability

- All giving sets on the Framework are **interoperable between the different brands of feed** on the Irish market – they will connect to either a screw or spike connection on the feed container. Separately purchased adapters are not required when using an interoperable giving set.

Interoperable giving set

Interoperability

Spike connection

Screw connection

NOTE: Alternative giving sets supplied by EFS Vendors may be requested - to ensure compliance with the Terms of the Framework, only those giving sets listed on the Framework should be ordered.

Ranking on EFS Framework	Vendor	Giving set category	Giving set name	Product code
1st	Healthcare 21	Standard giving set	Joey 3 in 1 giving set	777503
		Feed & hydration set	Joey feed & flush set	777506
2nd	Abbott Laboratories Ire Ltd	Standard giving set	Freego Universal giving set	20003758
3rd	Nutricia Medical Ireland Ltd	Standard giving set	Flocare infinity pack and bottle set	89825
		Mobile giving set	Flocare infinity pack and bottle set - mobile	130599
4th	Vygon Ireland Limited	Standard giving set	ENFIT pump set with screw cap	0VENEP14SCS
		Mobile giving set	ENFIT pump set with screw cap - mobile	0VENEP14SA

RESERVOIRS

Reservoirs are containers used to hold decanted feed or water which attach to the giving set for infusion via a pump.

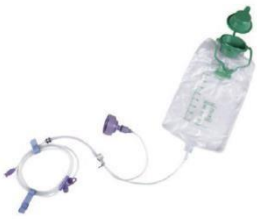
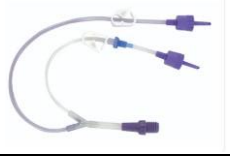
Typically, 1 reservoir is required per giving set required daily, although additional quantities may be required especially in paediatric service users. The quantity required daily should be determined by the Dietitian or Enteral Nurse Specialist

Ranking of EFS Framework	Vendor	Product category	Reservoir	Product code
1st	Healthcare 21	Reservoir 500ml (Integrated with giving set)	Kangaroo Joey 500ml reservoir set 	666064
		Reservoir 1000ml (Integrated with giving set)	Kangaroo Joey 1000ml reservoir set	666106
2nd	Abbott Laboratories (Ireland) Ltd	Reservoir, 500mls	Flexiflo Flexitainer 500mls 	20003555
		Reservoir, 1000ml	Flexiflo Flexitainer 1000mls	20003554
3rd	Nutricia Medical Ireland Ltd	Reservoir, 500ml	Flocare Container 500ml 	35746
		Reservoir, 1000ml	Flocare Container 1000ml	35724
		Reservoir, 1300ml	Flocare Container 1300ml	570139
4th	Vygon Ireland Limited	Reservoir 500ml (Integrated with giving set)	ENFIT pump set with 500ml bag 	0VENP1P14S
		Reservoir 1000ml (Integrated with giving set)	ENFIT pump set with 1000ml bag	0VENP2P14S
		Reservoir 1600ml (Integrated with giving set)	ENFIT pump set with 1600ml bag	0VENP3P14S

DUAL LINE/ 2-PACK CONNECTORS

A dual line or 2-pack connector is used to hang and infuse two containers of feed/ water simultaneously using a single giving set.

Typically, 1 2-pack connector is required per giving set required daily. The quantity required daily should be determined by the Dietitian or Enteral Nurse Specialist

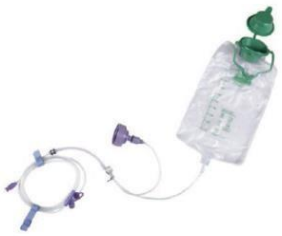
Ranking of EFS Framework	Vendor	Product category	Dual line/ 2- pack connector	Product code
1st	Healthcare 21	Dual line/ 2-pack connector (Integrated with giving set and reservoir)	Kangaroo Joey 3-in-1 Feed  and 1000ml Flush Set	777506
2nd	Abbott Laboratories (Ireland) Ltd	Dual line/ 2-pack connector	Abbott Feed and Flush Adaptor	F00150
3rd	Nutricia Medical Ireland Ltd	Dual line/ 2-pack connector	Flocare 2 pack connector 	569915
4th	Vygon Ireland Limited	Dual line/ 2-pack connector	Double line adapter 	0VEACC126

FEED & HYDRATION SOLUTIONS

A feed & hydration solution allows feed and water to be infused simultaneously via an enteral feeding pump

- Several same brand consumables may need to be used together to create the feed & hydration solution compatible with the feeding pump

All parts must be ordered to achieve the feed & hydration solution compatible with the brand of pump used. The quantity required daily should be determined by the Dietitian or Enteral Nurse Specialist

Ranking of EFS Framework	Vendor	Product category	Consumables required	Product code(s)
1st	Healthcare 21	Feed & hydration solution: **1 part required** as includes integrated giving set & reservoir	 Joey 3-in-1 feed & 1000 ml flush set	1 part required 777506
2nd	Abbott Laboratories (Ireland) Ltd	Feed & hydration solution: **3 parts required**	Freego Universal giving set + Flexiflo reservoir 1000mls + Abbott Feed & Flush adapter	20003758 + 20003554 + F00150
3rd	Nutricia Medical Ireland Ltd	Feed & hydration solution: **3 parts required**	Flocare infinity pack and bottle set + Flocare Container 1000mls + Flocare 2-pack connector	89825 + 35724 + 569915
4th	Vygon Ireland Limited	Feed & hydration solution: **4 parts required**	ENFIT pump set with screw cap + Flexiflo reservoir 1000mls + Double line adapter + Screw top adapter	0VENEP14SCS + 20003554 +0VEACC126 +0VTACC300ENT

GRAVITY SETS

A gravity feeding set uses the force of gravity rather than a feeding pump to administer the enteral feed. A roller clamp is used to deliver the feed at a user-controlled rate.

Typically, 1 gravity set is required per day, although additional sets may be required especially in paediatric service users. The quantity required daily should be determined by the Dietitian or Enteral Nurse Specialist

Ranking of EFS Framework	Vendor	Product category	Gravity Set Pack	Product code(s)
1st	Healthcare 21	Gravity Set Pack	n/a	n/a/
2nd	Abbott Laboratories Ireland Ltd	Gravity Set Pack	Abbott Gravity Feeding set	20003759
3rd	Nutricia Medical Ireland Ltd	Gravity Set Pack	Flocare Infinity Gravity Giving Set Pack 	86460
4th		Gravity Set Pack		0VENE74GCS

BOLUS ADAPTER

A bolus adapter is used to allow feed to be drawn directly from a feed container with a spike (ENPlus) design using an ENFIT syringe.

- The bolus adapter is a single use item. Once attached to the feed container, it can be left in situ and used to seal it between bolus feeds. A new adapter is required for each feed container.

Typically, 1 adapter is required per feed container daily. The quantity required daily should be determined by the Dietitian or Enteral Nurse Specialist

Ranking of EFS Framework	Vendor	Product category	Bolus adapter	Product code(s)
1st	Healthcare 21	Bolus adapter	n/a	n/a/
2nd	Abbott Laboratories Ireland Ltd	Bolus adapter	n/a	n/a/
3rd	Nutricia Medical Ireland Ltd	Bolus adapters	Flocare bolus adapter 	89740
4th	Vygon Ireland Ltd	Bolus adapter	n/a	n/a

Appendix VI: Sample Audit Tool for the Approval in the Community of Enteral Feeding Systems Products and Consumables

Methodology: Population: A sample of Service Users requiring approval in the community of EFS Equipment and Consumables

Sampling: A total of 10% or 10 patients, whichever is greater, should be selected.

Frequency: To be determined locally at least annually.

Method: Record **Y** for **Yes**, if the criteria are met. Record **N** for **No**, if criteria are not met or **N/A** for **Not applicable.**

CHO Area: **Area of Practice:**	**Yes**	**No**	**NA**	**Evidence**
Statement 1 EFS funding request checked that order codes and quantities required have been specified? Statement 2 Valid reason provided for non-compliance if consumables requested depart from the Framework Vendor ranking or listed consumables? Statement 3 Eligibility for funding & supply of EFS by CHO checked? Statement 4 Clinical check to confirm requirement for EFS consumables requested? Statement 5 Purchase order generated & forwarded to Vendor/ Distributor within 2 working days of initial request? Statement 6 Clinical check of need to repeat order monthly?				
Date of Audit: **Audited By:** **Compliance Rate %:**				

Calculation of Compliance Rate % The score, expressed as a percentage, is calculated by dividing the number of "yes" answers by the total of "yes" and "no" answers. "Not applicable" answers are excluded from the calculation of the percentage score **Example:** If there are 6 "yes" and 2 "no" answers, the score is calculated as follows:
6 (yes answers) divided by 8 (total of yes and no answers) multiplied by 100 = 75%.

Appendix II: Sample checklist of equipment and consumables for discharge

Items to instruct before the patient can be discharged;

- ✓ The quantity of EN, anc which brand should be administered
- ✓ Total amount of fluid administered
- ✓ Duration of administration, during day or night
- ✓ The use of the enteral feeding pump and what to do in case of dysfunction of the pump (if a pump is used at all)
- ✓ Whether the patient is allowed to have oral intake next to HETF (are there any restrictions?)
- ✓ Personal care, impact of HETF on daily life (e.g. shower, swimming, holiday, party)
- ✓ Who will take care of the administration of the EN (e.g. patient, family, nurse, carer)
- ✓ How to secure to tube adequately
- ✓ How to administrate medications through the tube
- ✓ Who will change or reinsert the tube in case of dislocation?
- ✓ What to do in case of a blocked tube
- ✓ Who to contact in case of material or physiologic complications (material; dislocation, blocked tube and/or breaking material, and physciologic complications (diarrhea, constipation, aspiration, weight change, dehydration)
- ✓ How often the patient should be evaluated, by whom and where

Appendix III: Transfer of an Adult on Home Enteral Tube Feeding from Hospital to Primary Care

Will need to include direction on where this form should be sent in CHO

DISCHARGING HOSPITAL: _____ **transfer to PRIMARY CARE LOCATION:** _____

REFERRED BY: Print name _____ **Contact No.** _____□ Dietitian □ Other _____

Nutrition care plan to be managed by: □ Hospital Dietitian □ Community Dietitian □ Other _____

DATE FOR DISCHARGE: _____ **CONSENT:** Has client/carer been informed of this referral? □ Yes □ No

---

CLIENT DETAILS:

Name: _____

Address Discharged to: _____

_____ **Eircode:** _____

Date of birth: _____

Phone number: _____

Main carer: _____

Phone no: _____

Relationship to patient: _____

Marital status □ Single □ Married/Co-habiting □ Widowed

Living arrangements □ Alone □ With family

Medical Card □ Yes □ No _____

NUTRITION CARE PLAN:

Reason for tube insertion: □ Aspiration □ Nutritional repletion □ Mechanical dysphagia □ Other _____

Feeding route: □ Nasogastric □ Gastrostomy □ Jejunostomy □ Other _____

Feeding regimen:

Continuous feed: _____ Feed rate: _____mls/hr Feeding time: _____hrs

Bolus feed name: _____ Feed volume: _____mls No of bolus feeds: _____day

Additional flushes: _____

Has a prescription for the enteral feed required been supplied? □ Yes □ No

Does this client take any diet orally? □ Yes □ NPO

Is a modified consistency diet required? □ Yes □ No

□ easy to chew □ soft □ minced □ pureed □ liquidised

Are thickened liquids required? □ Yes □ No

□ level 1 □ level 2 □ level 3 □ level 4

Is this client able to stand on a scales? □ Yes □ No

Target weight: _____

	Usual	On Discharge
Date		
Height		
Weight		
BMI		

Has client/carer been trained to correctly modify the consistency of food/ fluids if required? □ Yes □ No
Has client been referred to community SLT for rehabilitation of swallow post discharge? □ Yes □ No
FOLLOW-UP: Nutrition care plan to be managed by: □ Hospital Dietitian □ Community Dietitian □ Other _____

MANAGEMENT OF FEEDING TUBE & STOMA

Type of feeding tube: □ Nasogastric □ Gastrostomy □ Jejunostomy □ Other _____ Tube Size: _____

Tube size _____ **Brand name of feeding tube:** _____

Date of tube insertion: _____ in □ Endoscopy □ Radiology □ Surgical □ Other _____

When is next elective tube change due? _____ □ Not for elective tube change

FOLLOW-UP: Feeding tube repair & replacement to be managed by: □ Hospital Dietitian □ Community Dietitian
□ Endoscopy □ Radiology □ Emergency Dept □ Other _____

Does this feeding tube have a retention balloon? If yes, volume of balloon _____mls, frequency of checks _____

Has the client/ carer been trained to check the balloon volume? □ Yes □ No □ N/A

Has the client/ carer been trained to care for the feeding tube and stoma? □ Yes □ No □ N/A
Does the client/ carer require additional support in management of feeding tube & stoma care? □ Yes □ No □ N/A

If yes, please specify support required_____
_____

ENTERAL FEEDING EQUIPMENT:

Enteral Feeding System (EFS) *(i.e. pump, dripstand, giving sets and accessories)*
What brand of EFS is the client to be discharged from hospital on?
☐ Kangaroo Joey (*Healthcare 21)* □ Freego *(Abbott)* □ Flocare Infinity *(Nutricia)* □ Easymoov6 *(Vygon)* □ N/A

Has the client been referred to the EFS provider for training & support? □ Yes □ No
Has an application for funding and supply of all enteral feeding equipment required been submitted to the CHO prior to discharge? □ Yes □ No **Where was application sent to**: _____**Date:** _____

PLEASE NOTE: Healthcare 21 is the 1st ranked contracted EFS supplier to the HSE – to ensure compliance with National Financial Regulations, a valid clinical rationale must be provided if recommending a lower ranked EFS supplier.

Specify clinical rationale if recommending a lower ranked supplier: _____

Has the following enteral feeding equipment been supplied/ ordered for the client prior to discharge, if required?

Enteral Feeding System
□ Feeding pump
□ Tabletop dripstand
□ Backpack
□ Interoperable Giving Set (code: _____)
□ Dual feed/ hydration giving set (code: _____)
□ 2-pack connector (code: _____)
□ Reservoir (code: _____)

Enteral Feeding Devices
□ Spare feeding tube (code: _____)
□ Y-adapter (code: _____)
□ Extension set (code: _____)
□ 60ml ENFIT syringe (code: _____)

Other
_____
_____

SIGNED BY: _____ **DATE:** _____

Appendix IV: INDI BTF position statement and resource pack

Appendix V: A checklist of monitoring required at initial dietetic assessment of service users on HETF

PART B

Home Enteral Tube Feeding Policy Development Cycle

1.1 Purpose

1.1.1 To set out evidence-based guidance and processes for the management of home enteral tube feeding for adults in a primary care setting

1.1.2 To facilitate a standardised and consistent approach across the CHO areas to the management of home enteral tube feeding for adults in a primary care setting and replace any previously existing local procedure with this national procedure.

1.1.3 To provide an outline of the pathway that the transfer of an adult on enteral tube feeding from hospital to primary care will follow from the point of preparing for discharge from hospital to the provision of follow-up care in a primary care setting.

1.1.4 To improve access and support the provision of safe and quality care to service users transferring to primary care services on home enteral tube feeding.

1.2 Scope

1.2.1 This procedure applies to all service users aged over 18 years who require enteral tube feeding in a primary care (domiciliary) setting.

1.2.2 It does not apply to service users aged over 18 years residing in community residential care facilities or private nursing homes, pregnant women or persons with eating disorders who require enteral feeding, nor does it apply to any service users aged under 18years who require enteral tube feeding outside a hospital setting.

1.2.3 This procedure is relevant to all health care professionals involved in the care of such service users in a primary care setting.

1.3 Objectives(s)

1.3.1 To set out evidence-based guidance and processes for the management of home enteral tube feeding for adults in a primary care setting to support the provision of safe and quality care to service users.

1.3.2 To set out the processes that would:

- Ensure consistency in the standard of care delivered to service users on home enteral tube feeding by the healthcare professionals involved in their care.
- Support delivery of care and support for service users on home enteral tube feeding in their local area where appropriate and feasible, reducing the need to attend the acute setting for monitoring and follow-up.
- Empower and upskill healthcare professionals to deliver a safe and quality service in primary care to service users on home enteral tube feeding.
- Support the development of integrated care pathways and model of care for the management of home enteral tube feeding.
- Ensure that service users who require enteral feeding equipment, consumables, devices and accessories receive them in a timely manner by clarifying the process for their funding, ordering and supply in primary care.

- Assign responsibility, authority, and accountability at all stages.
- Agree appropriate key performance indicators.
- Ensure ongoing monitoring, audit and evaluation is underpin delivery of a quality service are undertaken across the CHO areas.

1.4 Outcome(s)

1.4.1 Healthcare professionals who are involved in the care of service users on home enteral tube feeding in primary care will have access to evidence-based guidance to inform their practice, which will underpin the delivery of care for these service users in a primary care setting wherever feasible, reducing the need for hospital admissions.

1.4.2 Service users will experience a safe and high quality service from healthcare professionals skilled in the management of their home enteral tube feeding in a primary care setting.

1.4.3 These evidence-based guidelines, relevant to the primary care setting in Ireland, will drive the development of integrated care pathways and model of care for the management of home enteral tube feeding for adults.

1.4.4 Existing local policies and procedures for the management of home enteral tube feeding in the local areas will be updated and aligned with this national guideline.

1.5 PPPG Development Group

1.5.1 A Guideline Development Group (GDG) was established to develop this guidance document – refer to Appendix II for membership of the GDG, and to Appendix III for the conflict-of-interest declaration form.

1.5.2 An Expert Opinion Group was convened to inform the GDG in making to make recommendations based on expert consensus that were important for the practical management of home enteral tube feeding but for which the evidence to support the recommendations in the scientific literature was limited or based on good practice points – refer to Appendix IV for membership.

1.5.3 The GDG collaborated with the Irish Society of Clinical Nutrition and Metabolism (IrSPEN) in the development of this guidance and drew on an advanced unpublished draft guideline on the management of HETF in Ireland previously developed by IrSPEN – refer to Appendix V for membership of the IrSPEN Home Enteral Tube Feeding Guideline working group.

1.6 PPPG Governance Group

1.6.1 This guideline was developed under the governance of the CFS Service Improvement Programme Nutrition Group – refer to Appendix VI for membership of the approval governance group.

1.6.2 This guideline was developed in collaboration with IrSPEN – refer to Appendix VII for membership of the IrSPEN Board and Management Committee.

1.7 Supporting Evidence

Relevant legislation/PPPGs/Standards/Reports were identified and aligned to the development of the Policy. These were identified as:

1.7.1 ACI. Agency for Clinical Innovation (ACI) Home Enteral Nutrition Network, Guidelines for Home Enteral Tube Feeding (HETF) Services, 2nd Edition. 2012.

1.7.2 Armer SW, R. McNair, H. Enteral nutrition. In: Gandy J. Manual of Dietetic Practice . 5th Edition. John Wiley & Sons Ltd. Vol. 64. 2014:351 - 363. https://www.bda.uk.com/uploads/assets/9e450355-1ff7-432f-874e85f759fd974e/Manual-of-Dietetic-Practice-Chapter-64-Enteral-nutrition.pdf

1.7.3 AuSPEN. Australasian Society of Parenteral and Enteral Nutrition (AuSPEN). Getting Started with Blended Tube Feeds. 2021.

1.7.4 Bischoff SC AP, Boeykens K, Chourdakis M, Cuerda C, Jonkers-Schuitema C, Lichota M, Nyulasi I, Schneider SM, Stanga Z, Pironi L. ESPEN guideline on home enteral nutrition. . Clin Nutr 2019;39 doi: Epub 2019 . PMID: (5-22)(1)doi:10.1016/j.clnu.2019.04.022

1.7.5 Clinical Resource Efficiency Support Team (CREST). Guidelines for the management of enteral tube feeding in adults. CREST, Northern Ireland. 2004.

1.7.6 European Commission. Commission Delegated Regulation 2016/128 supplementing Regulation (EU) No 609/2013 of the European Parliament and of the Council as regards the specific compositional and information requirements for food for special medical purposes (FSMP). Official Journal of the European Union. 2016:L25/30 - L25/43.

1.7.7 European Commission. Commission Notice on the classification of Food for Special Medical Purposes (2017/C 401/01). Official Journal of the European Union. 2017:C401/1 - C401/15.

1.7.8 HSE Food, Nutrition and Hydration Policy for Adult Patients in Acute Hospital (2019).

1.7.9 HSE National Frameowrk for developing Policies, Procedures, Protocols and Gudelines (PPPGs) 2016 https://www.irspen.ie/wp-content/uploads/2014/10/IrSPEN_Special_Report_No1.pdf

1.7.10 IrSPEN Special Report No 1: A Review of Home Parenteral Nutrition in Ireland (2013) Available at: https://www.irspen.ie/wp-content/uploads/2014/10/IrSPEN_Special_Report_No1.pdf

1.7.11 NICE. National Collaborating Centre for Acute Care. Nutrition Support for Adults Oral Nutrition Support. Enteral Tube Feeding and Parenteral Nutrition. Methods, Evidence & Guidance. Commissioned by the National Institute for Clinical Excellence (NICE). 2006. 0-9549760-2-9. https://www.rcseng.ac.uk/

1.7.12 NSIG. Nutrition Support Interest Group (NSIG) of the Irish Nutrition and Dietetic Institute (INDI). Home Enteral Feeding Resource Pack. INDI, Dublin. 2015. Available at: https://www.indi.ie/fact-sheets/fact-sheets-on-clinical-conditions/433-home-enteral-nutrition-resource-pack.html

1.7.13 Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety.

1.7.14 Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs.

1.7.15 Report on the Scientific Committee of the Food Safety Authority of Ireland 2018. The Safety of Vitamins and Minerals in Food Supplements- Establishing Tolerable Upper Intake Levels and a Risk Assessment Approach for Products Marketed in Ireland.

1.7.16 Wanden-Berghe C, Patino-Alonso MC, Galindo-Villardón P, Sanz-Valero J. Complications Associated with Enteral Nutrition: CAFANE Study. Nutrients. Sep 1 2019;11(9)doi:10.3390/nu11092041

Table B1 PICO literature review framework

Key question #1

What are the **indications for and outcome benefits** of using enteral feeding to provide nutritional support for adults in community setting who have difficulty achieving their nutritional requirements orally?

P (Population)

Inclusion:
Adult & Children using enteral feeding in a primary care or residential care setting in community

- including neonates, babies, paediatrics, child, young adult, middle-aged adult, older person
- including specific populations with underlying conditions that impact on ability to achieve adequate dietary intake orally (Cancer e.g., head & neck, upper GI; Neurology e.g., Motor Neurone Disease, Multiple Sclerosis, Parkinson's Disease, Stroke; Brain Injury e.g., Acquired or Traumatic Brain Injury; Cystic Fibrosis, Intellectual or Physical XXXX e.g., Cerebral Palsy)
- Place of residence in community may include (not exhaustive): own home/ domiciliary, residential care, nursing home, care home,

Exclusion:
Home Parenteral Nutrition (TPN/HPN/PN)
Pregnant
Eating disorders
Patients receiving enteral nutrition in a hospital setting

I (Intervention)

Treatment/Care
Enteral feeding
- only if enteral feeding is administered primarily in a community setting
- via all feeding routes (gastrostomy, jejunostomy, nasogastric, nasojejunal…)
- including all feeding tube placement methodology (endoscopically, Radiologically, surgically, bedside insertion)

Professionals
nurses, dietitians, speech and language therapists , gastroenterologist, radiologist, general practitioner, nutrition support team, multidisciplinary team

C (Comparison)

Compared with usual care or no intervention

O (Outcomes)

Outcomes

Primary

Avoidance of malnutrition

- Sensitivity and specificity
- Positive predictive values, negative predictive values and likelihood ratios
    - Standardised regression co-efficient
    - Correlations

Secondary

Survival, mortality, hospital readmissions, length of hospital stay, complications/ morbidity, quality of life, improved nutritional status; effect on direct and indirect system costs, and non-financial resources constraints/ consequences.

Secondary

Any measure of economic outcomes:

Resource use

- Service utilisation (number of GP, dietitians or other healthcare professional consultations)
- Time taken for nutritional assessments and the protocols used (including criteria used within the discharge of patients on HETF for accessing dietitians).
- Number of hospital admissions, re-admissions
- Length of stay (hospital, or ICU/HDU), including percentage differences
- Care requirements on discharge
- Number of prescriptions/polypharmacy

S (Study Design)

Cohort
Case control
Randomised controlled trial
Meta-analysis
Systematic Review
Practice guideline
Protocol

1.8 Glossary of Terms

Term	Definition
AMT-GT	
AMD	
BGT	
Bolus feed	A set volume of formula given at the same rate as normal drinking
Continuous feed	A set volume of formula given over a number of hours
CORFLO	
CRGN	
Dietitian	Dietitians are registered healthcare professionals, who assess specific nutritional requirements of population groups or individuals through the lifespan. They translate this into interventions, which maintain health, reduce risk of poor health or restore health. Using evidence based approaches dietitians work to empower individuals, families and groups to provide or select food that is nutritionally optimal, safe, tasty and sustainable. Beyond healthcare dietitians improve the nutritional environment for all through goverments, industry, academia and research.
Dysphagia	Dysphagia refers to an impaired swallow leading to a difficulty in the passage of food and fluids. The impairment can occur from the mouth to the stomach.
EFS	
Enteral nutrition	Any form of nutrition which uses the stomach or small bowel
FEES	
Gastrostomy tube (or G-tube)	A tube or a low profile device which is inserted through the skin into the stomach
GDPR	
GMS	
Gravity feed	A set volume of formula given through a feeding set using gravity or syringe
Health Care Professional	A healthcare professional is a person associated with either a specialty or a discipline and who is qualified and allowed by regulatory bodies to provide a healthcare service to an individual.
Hyper-granulation	Overgrowth of tissue around the site of the G-tube or J-tube
IrSPEN	The Irish Society for Clinical Nutrition and Metabolism (IrSPEN) is a multi-disciplinary organisation dedicated to optimising the identification and management of patients at nutritional risk, both in hospital and community settings.
Jejunal tube (or J-tube)	A tube inserted directly into the small bowel
LPDG	
MAD	
Malnutrition	A state of nutrition in which a deficiency, excess or imbalance of energy, protein or other nutrients, including minerals and vitamins, causes measurable adverse effects on body function and clinical outcome.
MICGT	
Multi-disciplinary team (MDT)	A multidisciplinary team is a group of health care professionals who work together as a team, members of different disciplines are represented (professions such as doctor, nurse, Dietitian, SLT, OT, Physiotherapist, Social Worker, Psychologist etc.), each providing specific services to the individual based on their area of expertise.
Nasogastric tube	A tube inserted through the nose into the stomach
Nasojejunal tube	A tube inserted through the nose into the small bowel

NICE	The National Institute for Health and Care Excellence (NICE) in the United Kingdom provides national guidance and advice to improve health and social care. An independent organisation responsible for providing national guidance on promoting good health and preventing and treating ill health.
Nutrient Standards	These are targets defined for minimum/maximum provision of a range of nutrients that should be provided in a meal/menu.
Nutrition	The process of providing or obtaining the food necessary for health and growth.
Nutrition Care Plan	A nutrition care plan is developed by a dietitian outlining the individual nutritional interventions and outcomes to be monitored. The nutrition intervention chosen is directed to the root cause of the nutrition problem identified by nutrition assessment and is aimed at alleviating the signs and symptoms of the problem.
Nutrition Screening	A rapid, simple and general procedure used by nursing, medical or other staff, often at first contact with the resident, to detect those who have significant nutritional problems or are at significant risk of such problems, in order that clear guidelines for action can be implemented, e.g. simple dietary measures or referral for expert help.
Nutrition support healthcare professional	The healthcare person who helps you manage your HETF e.g. dietitian, nurse etc.
Occupational Therapist (OT)	Occupational Therapists have a broad education in the health, social, psychological and occupational science which equips them with the skills and knowledge to work collaboratively with people, individually or in groups, to bring about positive life changes to enable them to participate in the activities of everyday life. OTs work with people with a wide range of health needs, including those who have an impairment of body structure or function, to enhance their ability to engage in the activities and occupations they aspire to, or by modifying the environment to better support occpational independence.
ONS	
Oropharyngeal Dysphagia	Oropharyngeal Dysphagia is the term used to describe a feeding, eating, drinking and swallowing disorder usually resulting from a neurological or physical impairment of the oral, pharyngeal or oesophageal mechanisms.
PCRS	
PEG (Percutaneous Endoscopic Gastrostromy)	A procedure to insert a gastrostomy tube.
PEG J	
Percutaneous Endoscopic Gastrostomy (PEG)	Percutaneous endoscopic gastrostomy is a procedure in which a flexible feeding tube is placed through the abdominal wall and into the stomach. PEG feeing allows nutrition, fluids and/or medications to be put directly into the stomach, bypassing the mouth and oesophagus.
Percutaneous Endoscopic Gastrostomy (PEG)	Percutaneous endoscopic gastrostomy is a procedure in which a flexible feeding tube is placed through the abdominal wall and into the stomach. PEG feeing allows nutrition, fluids and/or medications to be put directly into the stomach, bypassing the mouth and oesophagus.
PHN	
Polypharmacy	Polypharmacy is the concurrent use of multiple medications by an individual.
Polypharmacy	Polypharmacy is the concurrent use of multiple medications by an individual.
pH	

PPI	
Procurement	The action of obtaining or buying goods and services.
Renal	Relating to, involving, affecting, or located in the region of the kidneys.
RGN	
RIG	
RTH	
Satiety	The feeling of being full after eating
Saturated Fats	Saturated fat is a type of dietary fat that is considered one of the unhealthy fats, along with trans fat. These fats are most often solid at room temperature e.g. butter, cheese, coconut oils, red meat.
Speech and Language Therapist (SLT)	Speech and language therapists provide screening, assessment, diagnosis, management and prevention of speech, language and communication disorders and dysphagia. The objective of speech and language therapy is to improve individuals' quality of life by optimising their ability to communicate and/or swallow safely in their environment.
Standard	A level or quality or achievement that is acceptable
Texture Modified Diet	Foods that have been physically altered to change their texture/ consistency for those with a diagnosis of dysphagia. Altering food texture has demonstrated a therapeutic benefit for reducing the risk of choking.
Therapeutic diet	A therapeutic diet is modified from a 'normal' diet and is prescribed to meet a medical or special nutritional need e.g. diabetes, coeliac disease. It is part of a clinical treatment and in some cases can be the principle treatment of a condition
Thickened Drinks/Modified fluids	Fluids to which there has been an addition of a commercially available thickener.
Uraemia	Uraemia refers to a raised level in the blood of urea and other nitrogenous waste compounds that are normally eliminated by the kidneys. Uraemia more commonly develops with chronic kidney disease (CKD), especially the later stages of CKD.
Vascularised	Providing a body tissue or structure with vessels, especially blood vessel. A highly vascularised organ (e.g. eyes) means it has many blood vessels.
VFSS	
World Health Organisation (WHO)	The WHO is a specialised agency of the United Nations concerned with international public health.

2.0 Development of the HETF Policy

2.1 Search Methods

A review of grey literature was conducted, including policies, resources and guidelines already in existence, both nationally and internationally. In reviewing and adapting existing resources for inclusion in the policy specific focus was placed on ease of interpretation and to provide flexibility to enable local implementation. A list of national and international grey literature is contained in Section 3.1 of Part A of this policy.
A primary literature search was then conducted to address the research questions outlined in next section.

2.2 Research Question

What are the **indications for and outcome benefits** of using enteral feeding to provide nutritional support for adults in community setting who have difficulty achieving their nutritional requirements orally?

2.3 The Literature Search Strategy

A primary literature search was undertaken in collaboration with HSE library servers to address the two research questions, using the search strategy outlined in Table 10. Two rapid reviews were also completed by University College Dublin on Management of Home Enteral Nutrition and Blended Tube Feed in the Home Setting and in the Community (Appendix X).

Table B2: Search Strategy for nutrition relating to enteral feeding - evidence and resources

Date	30/03/2021	
Research Topic	Enteral Feeding in a Primary Care or Residential Care Setting in Community	
Search Strategy	**Key concepts**	**Synonyms/alternative terminology (consider regional variations here also) – combine using OR**
	Enteral Nutrition * or Enteral Feeding* or Home Enteral Feeding* or Home Enteral Nutrition* or Home Enteral Tube Feeding* or Tube Feeding AND Enteral Feed* or Tube Feed* or Blended Tube Feed* or Blended Diet AND Pump feeding* or Bolus Feeding AND Feeding Tube* or Gastrotomy* or Percutaneous Endoscopic Gastrstomy* or Radiologically Inserted Gastrstomy* or Jejunostomy* or Nasogastric Tube AND Feeding tube repair* or Feeding tube reinsertion* or Feeding tube replacement* or Overgranulation of gastrostomy Buried bumper* or Infection at gastrostomy site* or Leaking of feeding tube* or Hydration Needs* or Fluid Requirements AND Drug Nutrient Interactions with Enteral Formula	

2.4 Evidence Appraisal

Results from the literature search were then reviewed by members of the technical working group (see appendix III for membership of group) which provided a degree of confidence that all relevant literature and current practice was identified.

2.5 Summary of the Evidence

A summary of the evidence is not included as it was considered that part A identifies each recommendation clearly and provides a comprehensive summary of evidence at the beginning of each section.

2.6 Formulation of Recommendations

The recommendations in this policy were formulated by the technical group (see Appendix II) based on the evidence gathered. Using a systematic approach to content development, this policy provides a number of recommendations for food, nutrition and hydration care of adults requiring HETF. A set of recommendations are provided for each section within Part A of the policy.

2.6 Target Population Preference and Views

A study on the . X questions were devised (see list in Appendix V) with input from Speech and Language Therapists working in HETF services. Details of the focus group sessions are summarised in Table X.

Table X: Focus Group Details

Venue	Date	No. Of Attendees	Description of Focus Group

See Appendix V for further details on the target population preferences and views.

2.7 External Stakeholders

Once the policy was agreed by the national working group it went for wider consultation to external stakeholders in Month 2022.

List of External Stakeholders

3.0 Governance and Approval

3.1 The governance and approval arrangements rest with HSE Community Operations CFS Nutrition Group. This group reviews the PPPG, signs the checklist used in assessing the PPPG is meeting the standards outlined in the HSE National Framework for developing PPPGs and recommends it the National Director of Community Operations.

3.2 The final document is submitted to both the National Director of Community Operations and the National Director for Primary Care Strategy and Planning.

3.3 Once approved the final version is converted to a PDF document to ensure the integrity of the PPPG. A signed and dated copy of the checklist is attached to the master copy, which is retained with National Community Operations.

4.0 Communication and Dissemination

4.1 The National Director of Community Operations will ensure widespread awareness of the guideline to relevant audiences of HSE services and other stakeholders using existing communications channels.

4.2 The guideline will be available and accessible via www.hse.ie/nutritionsupports and www.irspen.ie

5.0 Implementation

5.1 Each CHO area should adopt and implement the recommendations within this guideline from the date of approval and publication. Sample tools to assist in the implementation are included in the appendices of this document. This guideline does not replace the clinical judgement of a qualified healthcare professional, and where there are clinical concerns, it is the responsibility of the healthcare professional to refer to their line management and/or seek appropriate specialist input.

5.2 **Resources** required to implement this guideline within each local area are for determination at CHO level. It is recommended that a senior community dietitian, with experience and/or upskilled in home enteral tube feeding, would be best placed to lead and co-ordinate the management of HETF service users within the CHO area.

5.3 **Training and information sessions** on this guideline will be required locally to brief relevant staff in both primary care, and those in hospital settings who are initiating the discharge of these service users to primary care on home enteral tube feeding. Key staff should be provided with access to the relevant **clinical training** required to support them in implementing the recommendations of this guideline.

5.4 **Specific roles and responsibilities:**

5.4.1 The National Director for Community Operations or CFS National Nutrition Service Improvement Group is responsible for communicating this national guideline to all HSE CHO areas and HSE (Section 38 bodies) funded locations. What about acutes?

5.4.2 The Chief Officer in each CHO area is responsible for the implementation and ongoing evaluation of this guideline within their area by assigning personnel with responsibility, accountability and autonomy to implement this guideline locally and supporting recruitment

and upskilling of key staff where necessary. The Chief Officer will report on the implementation and operation of this guideline to the National Director for Community Operations.

5.4.3 It is the responsibility of all Heads of Discipline and Network Managers to ensure that the relevant staff reporting to them are aware of this guideline, and to ensure that their staff have received training on the management of home enteral tube feeding as appropriate to their role.

5.4.4 It is intended that this guideline will assist all healthcare professionals in delivering a safe and quality service. It is the responsibility of each healthcare professionals to adhere to their professional scope of practice guidelines, to maintain competency and to be aware of the role of appropriate delegation.

6.0 Monitoring, Audit and Evaluation

6.1 Monitoring:

6.1.1 Each CHO area should implement a systematic process of gathering information and tracking over time to achieve the objectives of this guideline.

6.2 Audit:

6.2.1 Each CHO area should audit implementation of this guideline at least annually and the outcome of the audit to be reported to the Audit function within Primary Care Division.

6.2.2 Refer to Appendix VIII for a sample audit tool. It is intended that this audit tool will provide each CHO area with a baseline tool through which they can identify areas that require improvements. Users of this audit tool are free to add in additional statements, as they deem appropriate and adopt this tool for use in their own setting. This audit tool is to be used to retrospectively audit processes

6.3 Evaluation:

6.3.1 Each CHO area will define a mechanism to measure how access to appropriate care and support in the management of their home enteral tube feeding has changed for service users in a primary care setting. The following measurements should be considered:

- Feedback from service users on home enteral tube feeding in the local area on their experience of the support and care they receive and their suggestions for service improvements
- Number of service users aged >18 years on home enteral tube feeding (a) referred to and (b) accepted by the Community Nutrition and Dietetic Service in the local area.
- Number of service users aged >18 years on home enteral tube feeding (a) referred to and (b) accepted by the Public Health Nursing Service in the local area.
- Number of specific procedures performed in primary care setting that may have averted a hospital admission or OPD attendance e.g. repair or replacement of feeding tube
- Expenditure on provision of enteral feeding equipment, consumables, devices and accessories in the local area
- Compliance with the terms of the National Drawdown Framework Agreement for the provision of Enteral Feeding Systems – HSE 8932. Refer to SOP for suggested audit tool

7.0 Revision / Update

7.1 This guideline should be reviewed three years from date of issue.

7.2 The CFS Nutrition Group will review any new supporting evidence identified by findings from audit and evaluation, scope of practice changes or advances in technology or research and amend and update as necessary.

9.0 Appendices (Part B)

Appendix I: Membership of the Nutrition Support PPPG Development Group

Niamh Maher	Senior Dietitian CHO 9 (HETF Project Lead)
Sharon Kennelly	HSE Clinical Specialist Dietitian
Carmel O' Hanlon	Hospital Dietitian Beaumount
Karen Boland	Consultant Gastroenterologist Beaumount
Myra Herlihy	Principal Dental Surgeon
Helga Gerlitz	Community Dietitian CHO 9
Sinead Glover	Community Dietitian CHO 3
Tara O Riordan	Community Dietitian CHO 9
Helena McCloskey	Palliative Care Dietitian
Elaine Kerins	Speech & Language Therapist
Sinead Lawlor	National PHN Practice Development Coordinator
Fiona Garvey	National Quality & Patient Safety Community Operations
Chairperson: Una McCarthy HSE National Community Primary Care	Standards Lead CFS SIP Signature: _____ Date: _____

Appendix II: Conflict of Interest Declaration Form

CONFLICT OF INTEREST DECLARATION

This must be completed by each member of the PPPG Development Group as applicable

Title of PPPG being considered:

_____

Please circle the statement that relates to you

1. I declare that I DO NOT have any conflicts of interest.

2. I declare that I DO have a conflict of interest.

Details of conflict (Please refer to specific PPPG)

_____
_____
_____
_____
_____
_____

(Append additional pages to this statement if required)

Signature

Printed name

Registration number (if applicable)

Date

The information provided will be processed in accordance with data protection principles as set out in the Data Protection Act. Data will be processed only to ensure that committee members act in the best interests of the committee. The information provided will not be used for any other purpose.

A person who is covered by this PPPG is required to furnish a statement, in writing, of:

(i) The interests of the person, and

(ii) The interests, of which the person has actual knowledge, of his or her spouse or civil partner or a child of the person or of his or her spouse which could materially influence the person in, or in relation to, the performance of the person's official functions by reason of the fact that such performance could so affect those interests as to confer on, or withhold from, the person, or the spouse or civil partner or child, a substantial benefit.

Appendix III: Membership of the Expert consensus Working Groups

The expert consensus group is a technical subgroup of the HSE Nutrition Support Guideline development group, which reports into CFS primary care operations with clinical governance provided via primary care strategy and planning development group.

The expert consensus groups were jointly chaired by Niamh Maher, Home Enteral Nutrition Project Lead (on behalf of the HSE) and Carmel O'Hanlon, Clinical Specialist Dietitian (on behalf of IrSPEN). Expert consensus meetings took place on June 19th 2017, and Tuesday November 16th, 2021.

In developing the guidance, there be will some recommendations which have limited evidence to underpin them but are important to inform the practical management of HETF in primary care. An expert consensus group reviewed the evidence available together with current practice, to agree if the recommendations should be included in the guideline.

Management of Adults on Home Enteral Tube Feeding in a Primary Care setting
Registered Participants at the Expert Consensus Meeting on Tuesday 16th November 2021

Member	Profession	Email address
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Attendees IrSPEN Consensus Meeting June 19th 2017

Appendix IV: Membership of the Governance Review Committee

Mairead Aherne Annemarie Bennett Mel Cox Richard Doheny Liam Hackett Sandra Hogan Sharon Kennelly Sheena Kennedy Niamh Maher Una McCarthy **Chairperson:** Dr. Fergal Flynn CFS Lead Community Primary Care	Standards Lead CFS SIP Community Primary Care Signature: _____ Date: _____

Appendix V: Patient Consultation Process

Patient experience was a key consideration in the development of the current guidelines. A study surveying domiciliary HETF clients, with an aim to document and analyse user experience, attitudes and complications associated with HETF was completed and published in 2017.

Research was carried out through a retrospective multicentre qualitative study, with patients randomly selected from 17 secondary and tertiary hospitals in Ireland to complete a self-administered questionnaire. Eighty-eight clients in 17 hospitals completed this questionnaire with a response rate of 77%. Fifty-two per cent (n=46) of respondents were carers or guardians, 38% (n=33) were HETF recipients and 10% (n=9) did not disclose their status. Fifty-seven percent (n=50) of survey responders were adults and 57% (n=50) were male. Forty-two per cent (n=37) of patients had their first feeding tube placed within 2 years of questionnaire completion. The results of this study were used to inform the current guidance. The study is available at https://pubmed.ncbi.nlm.nih.gov/28133532/

Appendix VI: Signature Sheet

I have read, understand and agree to adhere to this Policy, Procedure, Protocol or Guideline:

Print Name	Signature	Area of Work	Date

Appendix VII: PPPG Checklist

Title of PPPG:

Standards for developing the Policy	Checklist
Stage 1 Initiation	
The decision making approach relating to the type of PPPG guidance required (policy, procedure, protocol, guideline), coverage of the PPPG (national, regional, local) and applicable settings are described.	☐
Synergies/co-operations are maximised across departments/organisations (Hospitals/Hospital Groups/Community Healthcare Organisations (CHO)/National Ambulance Service (NAS)), to avoid duplication and to optimise value for money and use of staff time and expertise.	☐
The scope of the Policy is clearly described, specifying what is included and what lies outside the scope of the Policy.	☐
The target users and the population/patient group to whom the PPPG is meant to apply are specifically described.	☐
The views and preferences of the target population have been sought and taken into consideration (as required).	☐
The overall objective(s) of the Policy are specifically described.	☐
The potential for improved health is described (e.g. clinical effectiveness, patient safety, quality improvement, health outcomes, quality of life, quality of care).	☐
Stakeholder identification and involvement: The Policy Development Group includes individuals from all relevant stakeholders, staff and professional groups.	☐
Conflict of interest statements from all members of the Policy Development Group are documented, with a description of mitigating actions if relevant.	☐
The Policy is informed by the identified needs and priorities of service users and stakeholders.	☐
There is service user/lay representation on Policy Development Group (as required).	n/a
Information and support is available for staff on the development of evidence-based clinical practice guidance.	☐

Stage 2 Development	Checklist
The clinical question(s) covered by the Policy are specifically described.	☐
Systematic methods used to search for evidence are documented (for PPPGs which are adapted/adopted from international guidance, their methodology is appraised and documented).	☐
Critical appraisal/analysis of evidence using validated tools is documented (the strengths, limitations and methodological quality of the body of evidence are clearly described).	☐
The health benefits, side effects and risks have been considered and documented in formulating the Policy.	☐
There is an explicit link between the Policy and the supporting evidence.	☐
Policy guidance/recommendations are specific and unambiguous.	☐
*The potential resource implications of developing and implementing the Policy are identified e.g. equipment, education/training, staff time and research.	☒
There is collaboration across all stakeholders in the planning and implementation phases to optimise patient flow and integrated care.	☐
*Budget impact is documented (resources required).	☒
Education and training is provided for staff on the development and implementation of evidence-based clinical practice guidance (as appropriate).	☐
Three additional standards are applicable for a small number of more complex PPPGs: Cost effectiveness analysis is documented. A systematic literature review has been undertaken. Health Technology Assessment (HTA) has been undertaken.	☐
***Resource implications will need to be identified at local communioty level; any additional costs associated with implementation of the policy will need to be included in the respective community annual estimates submission**	
Stage 3 Governance and Approval	**Checklist**
Formal governance arrangements for Policy at local, regional and national level are established and documented.	☐
The PPPG has been reviewed by independent experts prior to publication (as required).	☐

Stage 4 Communication and Dissemination	Checklist
A communication plan is developed to ensure effective communication and collaboration with all stakeholders throughout all stages.	☐
Plan and procedure for dissemination of the PPPG is described.	☐
The PPPG is easily accessible by all users e.g. PPPG repository.	☐
Stage 5 Implementation*	**Checklist**
Written implementation plan is provided with timelines, identification of responsible persons/units and integration into service planning process.	☒
Barriers and facilitators for implementation are identified, and aligned with implementation levers.	☒
Education and training is provided for staff on the development and implementation of evidence-based PPPG (as required).	☐
There is collaboration across all stakeholders in the planning and implementation phases to optimise patient flow and integrated care.	☐
***Implementation is the responsibility of the local site. A toolkit has been developed to support local implementation**	
Stage 6 Monitoring, Audit, Evaluation*	**Checklist**
Process for monitoring and continuous improvement is documented.	☐
Audit criteria and audit process/plan are specified.	☐
Process for evaluation of implementation and (clinical) effectiveness is specified.	
***Monitoring audit and evaluation is the responsibility of the local site, Audit tool is included in Implementation Toolkit**	
Stage 7 Revision/Update	**Checklist**
Documented process for revisions/updating and review, including timeframe is provided.	☐
Documented process for version control is provided.	☐

I confirm that the above Standards have been met in developing the following:

Title of PPPG: HSE Guidance on Adults and Children Using Enteral Feeding in a Primary Care Setting in Community

Name of Person(s) signing off on the PPPG Checklist:

Name: Title:	Signature: Date

This signed PPPG Checklist must accompany the final PPPG document in order for the PPPG to be approved.

Appendix VII: Audit tool: Managing nutritional care of adults on HETF

1. Sample Audit Tool

Objective of Audit tool:

Each statement in the audit tool has been taken from the accompanying national home enteral tube feeding management guidelines. Each care setting can assess to what degree they comply with the statements in their own area of practice. It is intended that this audit tool will provide each care setting with a baseline tool through which they can assess their own practice and identify areas which require improvements. In the event of non-compliance, action plans should be developed and reviewed regularly as part of local quality improvement process.

Completed audit tools should be kept locally for good practice assurance. Users of this audit tool are free to add in additional statements, as they deem appropriate and adopt this tool for use in their own setting. This audit tool is to be used to retrospectively audit practices.

Methodology:

Population:	A sample of adult service users requiring home enteral tube feeding within primary care
Sampling:	A total of 10% or 10 patients, whichever is greater, should be selected
Frequency of Audit:	To be determined locally, at minimum annually
Method:	This is a retrospective audit

Part 1: Demographic Details

Name of Registered Dietitian/Nurse/ Doctor:
Personal Identification Number (i.e., CORU/NMBI/ MCRN No):

Work Address:

CHO area:
Area of Practice:
Date of Audit:

Audited by:

Part 2: Data Collection Tool

(Record **Y** for **Yes**, if the criteria are met. Record **N** for **No**, if criteria are not met or **N/A** for **Not applicable)**	**Yes**	**No**	**NA**	**Evidence/ comment**
General Management of Nutritional care of adult on HETF				
Assessment				
Statement 1 A full HETF regime is in place in liaison with Service User/Caregiver.				
Statement 2 The service user (SU) should receive an individual nutritional assessment that reflects the intrinsic and extrinsic factors which have the potential to impact on home tube feeding. Underlying clinical condition, oral intake, activity level, feeding route and administration method, should be considered.				
Statement 3 Assessment carried out within 10 workings days of initial discharge or from receipt of referral.				
Statement 4 The SU/Caregiver has received training re preparation, management and administration of enteral feeding? e.g. awareness of safe storage, check of expiry dates, cleaning of equipment and effective hand hygiene.				
Treatment				
Statement 5 The type, access route of feeding tube has been determined and management plan outlined.				
Evaluation				
Statement 6 The clinician has conducted a systematic, comprehensive re-evaluation of the progress/response to the treatment regime.				

Initial review = within 7-10 days of discharge
First review = 2-6 weeks of discharge or sooner if clinically indicated
Further review = 3-6 months
Stable on long term HETF = every 6 months
Enter date of last review _____

Nutrition and Hydration

Assessment

Statement 7

For SU requiring commercially prepared enteral formula. The dietitian has recommended the most appropriate formula to meet the needs of the SU.

Statement 8

Has the dietitian confirmed that the product recommended has GMS approval for reimbursement in primary care, before requesting the service user's GP or hospital doctor issue a prescription?

Treatment

Statement 9

If a blended tube feed (BTF) is used, is there a shared decision making approach to its use.

Is it under the guidance and supervision of a dietitian?

Evaluation

Statement 10

BTF does not have a uniform energy and protein density and nutritional composition can change.

- Has the dietitian recommended a daily energy, protein and fluid intake target?
- A dietary assessment and monitoring of anthropometric measurements has been undertaken?
- In the event that BTF is not available, the dietitian has arranged a 'back-up' feeding plan using a commercial enteral formula.

Hydration

Assessment

Statement 11

Accurate estimation of hydration requirements of service users is essential to reduce risk of dehydration, particularly where service users are nil orally and / or fully dependent on their caregiver to administer their feed & hydration.

- Has the dietitian estimated the total volume of fluid intake required daily,
- Dietitian consulted with service user's GP or hospital medical team where necessary
- Has the dietitian advised on the total volume of additional water required daily
- Is there clear instructions on how this should be administered e.g.

(bolus/flush at regular intervals using a syringe or continuously a feeding pump, type of water recommended)

- Caregiver trained to recognise signs & symptoms of dehydration e.g headache, thirst, dark coloured urine, reduced urinary output, constipation & advised to contact HCP for advice.

Administration of nutrition & hydration

Statement 12

Has the method of administration been based on service user's clinical need, safety, type of feeding regimen, activity levels and their preference & ability to manage the administration.

Statement 13

Correct positioning when feed is being administered is important:

- Sitting upright in a chair
- If lying down, head of bed elevated to at least >30°
- Head of bed remains elevated at >30° after feeding ends

Statement 14

The dietitian has recommended the hourly feeding rate based on total volume of feed & guided by the SU preference.

Evaluation

Statement 15

Advise SU to inform a HCP and or contact the dietitian for review if there are any issues with rate tolerance.

Statement 16

All aspects of care, including assessment, treatment plan, implementation and evaluation should be documented clearly and comprehensively to meet national and local policies/guidelines.

Administration of medication via enteral tube feeding

Assessment

Statement 17

Prescribers have confirmed the necessity, appropriateness and efficacy of the medication being administered through an enteral tube.

Statement 18

Has the service user/caregiver been sufficiently educated prior to discharge on the correct procedure for administering medication via their feeding tube to reduce the risk of tube blockages and drug nutrient interactions?

Statement 19

Is service user aware to check with their Community Pharmacist if they are initiated on any new medication after initial discharge?

Treatment

Statement 20

Where possible, have liquid preparations or soluble tablets been supplied instead of solid tablets or capsules.

Statement 21

Has the dietitian considered the potential for drug-nutrient interactions when devising the feeding regimen?

Evaluation

Statement 22

Assess if necessary to adjust the feeding schedule to allow for feed infusion to be held for a specific length of time before and after the administration of certain medications where the feed is known to adversely affect drug absorption.

Statement 23

Where a medication is known to interact with an enteral feed has the

relevant HCP/GP monitored the SU for altered clinical responses or sub-therapeutic drug levels on a consistent basis?	
Oral Health care	
Assessment **Statement 24** Is an oral health care plan in place prior to discharge? Does the plan detail the daily care required as appropriate to individual needs. **Evaluation** **Statement 25** Was the SU or caregiver trained to perform appropriate mouth care prior to discharge? **Statement 26** HCP monitors oral hygiene of SU and reinforces or revises the oral health care plan, if required? **Statement 27** HCP are aware of how to refer SU to specialist dental services, if required?	

Calculation of Compliance Rate Percentage

The audit tool calculates the score for the audit. The score, expressed as a percentage, is calculated by dividing the number of "yes" answers by the total of "yes" and "no" answers. "Not applicable" answers are excluded from the calculation of the percentage score.

Example: If there are 9 "yes" and 2 "no" answers, the score is calculated as follows: 9 (yes answers) divided by 11 (total of yes and no answers) multiplied by 100. The score in this example would be 81.8%