

Navigating Home Care: Enteral Nutrition—Part One

by Gisela Barnadas

Your patient doesn't need to be in a hospital to receive Enteral Nutrition support—consider home therapy.

- A 65 y/o patient with dysphagia due to Parkinson's is having a PEG placed
 - A 36 y/o patient with pancreatitis just had a feeding jejunostomy placed
 - A 72 y/o patient undergoing radiation to the esophagus
 - A 42 y/o patient with diabetic gastroparesis
-
- *Should this patient be admitted or is this an appropriate patient for home care?*
 - *How many calories? How many grams of protein?*
 - *How much volume will the patient need?*
 - *Should I use a standard formula? Or does this patient need something special?*
 - *Can the patient and /or caregiver and/or family manage this therapy at home?*
 - *What resources are available to help me manage this patient in the home?*
 - *What resources are there available for the patient?*
 - *Will insurance pay for this?*

Enteral feeding is frequently used to provide nutrition support in the home setting. Careful assessment of this patient population prior to initiation of therapy will ensure the safe provision of this therapy in the home. The following article provides the clinician with an "insider's view" of the home enteral population and the factors to consider in preparing these patients for discharge. Suggestions are provided to help the physician anticipate and avoid problems frequently encountered with this therapy. Reimbursement guidelines are also reviewed to better understand the rules for coverage.

INTRODUCTION

Enteral nutrition (EN) has come a long way since the days in ancient Egypt when enemas of wine, milk, barley broth and whey were used to foster good health. As early as 1598, Capivaceaus is reported to have used a hollow tube to put liquid nutri-

tion into a patient's esophagus (1). Provision of home enteral nutrition (HEN/HPN) has grown dramatically in the last few decades but is by no means something new to healthcare. The exact number of people receiving HEN is not known. Attempts were made by Dr. Lyn Howard in the late 1980s and early 1990s to establish a database. At that time it was estimated that 152,000 individuals were receiving HEN (2). Further attempts to maintain such a database have proven to be too cumbersome and expensive. Improved knowledge

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acquired throughout years of research, practice and continuous advancements in technology have made enteral nutrition easier and safer to administer in the home setting. Successful home therapy requires careful patient selection as well as a multi-disciplinary approach to help guide and monitor therapy.

PROVIDING ENTERAL NUTRITION IN THE HOME

Once enteral access is achieved, patients can be discharged from the hospital or out-patient endoscopy (out-patient PEG) and receive enteral nutrition at home. The key to success is the early identification and assessment of the patient as a potential home candidate and the utilization of resources to coordinate their care. Often, problems encountered with this therapy could have been anticipated and avoided. Careful attention to decisions made at the start of therapy will result in reduced complications and good patient outcomes.

AVOIDING PROBLEMS/COMPLICATIONS AT HOME

Patient Selection/Coordination of Care

Patient has an outpatient PEG placement and is released from endoscopy to home without any coordination of service.

Most physicians would be surprised at the number of patients who have a PEG placed only to have feedings delayed because teaching and supplies were not arranged. Patients seen in outpatient areas are often not identified by the same screening and assessment protocol safeguards that exist in the in-patient setting. Implement a system in which your office automatically notifies the dietitian and social worker or care coordinator of the need to assess and implement home enteral nutrition BEFORE an appointment is made for PEG placement. This will result in appropriate nutrition assessment, financial screening, teaching, coordination of skilled nursing care and supplies for the patient.

Who is Going To Pay for the Enteral Therapy?

Enteral nutrition may be less expensive than TPN, but it is more costly than food. Select the least expensive formula to meet a patients needs. Specialty formulas, perhaps meant for metabolically stressed patients during the acute

Ross	1-800-986-8502 www.rosstore.com
Novartis	1-800-828-9194 www.walgreens.com/store/novartis
Mead Johnson	1-800-247-7893 www.meadjohnson.com
Nestle	1-800-776-5446 www.nestleclinicalnutrition.com

phase of care, are rarely needed long term. These specialty formulas typically cost 4–5 times more than standard products. Diabetic formulas are another example. Patients with diabetes do not require a special formula and can be well managed on a standard formula with fiber.

For patients who do not have insurance coverage, formula may be available through local meal delivery programs, cancer societies, mail order, discount pharmacies and buying clubs (see Table 1 for product home delivery programs). Simplifying the therapy helps to decrease out-of-pocket costs. For example, syringes (for bolus feeding) cost *much less* than gravity bag or pump feeding (and all the associated equipment involved). One organization, the Oley foundation (www.oley.org), through their patient equipment exchange, might be a source for a donated pump or other supplies.

Private Insurance

Patients with private insurance may not have coverage for enteral nutrition. Some insurance companies *will not* cover the cost of formula, but will cover the supplies. Their rationale is that enteral feedings are over the counter products, they do not require a prescription and the patient would have to buy food if they were eating. Coverage is sometimes possible if the physician convinces them it is, “more than just food,” but rather, “a medically directed intervention that is an essential part of the medical treatment.”

Medicaid

Most state Medicaid programs tend to cover tube feeding

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Table 2
Examples of Diagnoses that Meet Medicare Criteria

Diagnoses Covered by Medicare

Neurological disorders

- Dysphagia (787.2) due to CVA, Parkinson's, Multiple Sclerosis, ALS, etc.
- Note:* It's important to distinguish that the neurological disorder by itself is not the covered impairment but rather the dysphagia. For example, a patient with Parkinson's who does not eat because of depression does not have an "impairment of the structures which normally permit food to reach the small bowel" and may not be covered.

Esophageal

- Esophageal obstruction (530.3) secondary to cancer or stricture.

Motility disorders

- Gastroparesis (536.3) or gastric outlet obstruction (537.0) due to diabetes or Scleroderma etc.

Head and Neck Cancers

- That impair ability of food reaching the stomach/small intestine either as result of tumor or surgical procedure (impairment would be dysphagia or obstruction).

Diagnoses Not Covered by Medicare

Psychological disorders

- Depression, dementia and anorexia are not covered unless there also is dysphagia or other impairment.

Poor appetite

- Formula used as "supplemental feedings" are not covered. Feeding must provide full nutritional support (sufficient nutrition to be considered essential to maintain weight and strength) and be given through a tube. That's not to say patient cannot eat anything; patients may be allowed to eat for pleasure or to improve overall quality of life.

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Medicare

Medicare will cover enteral nutrition ONLY if specific criteria are met (3).

1. Medicare requires the patient to have a permanent disorder or condition of the structures that normally permit food to reach the small bowel or a disease of the small bowel that impairs digestion and absorption of nutrients (see Table 2 for examples).
2. It is important to note that Medicare (unlike Webster's) defines "permanent" as >90 days.
3. Formula must go through a tube (patient cannot be drinking it).
4. Medicare will pay for the least expensive/ simplest product and supplies which will meet patient's need (Table 3); Medicare also requires special justification when a special formula or a pump is used (Table 4).

Patient cannot get the adapter/or some other "special" equipment needed for feeding

Some feeding tubes, especially jejunal and low profile gastrostomies, require brand specific adapters and extension sets to allow patients to use them (such as for feeding and/or to connect to a syringe or feeding pump). Before switching to a new brand of feeding tube make sure patient will be able to obtain the necessary parts they will need to use it. Many a patient has returned home with a new type of tube only to discover a special extension set is required to access the new tube or button. Due to cost restraints and the need to control inventory, many providers only carry supplies for one or two brands of tubes. If it has been determined that a newer/better tube is available, contact local providers and inquire if they can stock supporting supplies. In addition, some tube companies allow direct sales to patients, many do not.

CARE AND MONITORING

Patient requires tube replacement due to inadvertent dislodgement either by the patient or by a care provider

Original PEG tube lengths are often so long that patients can become entangled unless multiple coils of tubing are taped to the abdomen. Trimming the tube to a reasonable length (~6–8 inches), prior to leaving the

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as long as proper authorization and paperwork are completed. Rules vary from state to state; some Medicaid programs will cover formula taken orally as long as it is the sole source of nutrition. Check with social services or local home care providers. The information can also be obtained through: www.ross.com/reimbursement.

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Table 3
Medicare Product Categories (5)

<i>Category (Product Code)</i>	<i>Medicare Reimbursement Rate/100kcal*</i>	<i>Products</i>
Products Medicare Does Not Require Additional Justification for Use		
1 (B4150) Semi-synthetic intact protein/ protein isolates \$0.62/100 Kcal		Boost, Ensure, Entrition, Fibersource, Isocal, Isocal HN, Isocal HN Plus, Isosource HN, Jevity, Kindercal, NuBasics, Nubasics with Fiber, Nutren, Osmolite, Pediasure, ProBalance, Promote, Resource for Kids, Similac, Ultracal <i>Disease Specific Formulas in this Category:</i> Glytrol, Resource Diabetic
2 (B4152) Semi-synthetic intact protein/protein isolates-calorically dense \$ 0.52/100 Kcal		Comply, Deliver 2.0, Ensure Plus, Entrition 1.5, IsoSource 1.5, Nestle VHC, NovaSource 2.0, NuBasics 2.0, Nutren 1.5, Nutren 2.0, Resource Plus, Sustacal Plus, Two Cal HN <i>Disease Specific Formulas in this Category:</i> NovaSource Pulmonary, Respalor
Products Medicare Does Require Additional Documentation/Justification Use		
1b (B4151) Natural intact protein/protein isolate \$1.45/100 Kcal		Compleat B, Compleat Pediatric
3 (B4153) Hydrolyzed protein/amino acids \$1.75/100 Kcal		Alimentum, Crucial, Elecare, Impact Glutamine, Neocate, Optimental, Peptamen 1.5, Peptamen Complete, Subdue, Vivonex HN, Vivonex Pediatric
4 (B4154) Special metabolic needs \$1.13/100 Kcal		<i>Diabetic Products:</i> Choice DM, Diabetasource, Glucerna <i>Renal Failure:</i> AminAid, Magnacal Renal, Nepro, Novasource Renal, NutriRenal, RenalCal, Suplena <i>Hepatic Failure:</i> HepaticAid, NutriHep <i>Pulmonary:</i> Nutrivent, Pulmocare, Oxepa <i>GI Malabsorption (peptide/aa):</i> Lipisorb, Peptamen, Peptamen Junior, Peptamen VHP, Pregestimil, Pro-Peptide, Sandosource Peptide <i>Special GI (IBD):</i> Modulen IBD <i>High Metabolic Stress:</i> Alitraq, Impact, Perative, Protain XL, Replete, Traumacal, Vivonex Plus
5 (B4155) Modular component (protein, carbohydrate, fat) \$0.88/100 Kcal		<i>Protein:</i> Boost Breeze , Promix, ProMod, ProSure, Resource Beneprotein, Resource Instant protein powder, SoyPro, Resource Arginaid, Resource GlutaSolve <i>Carbohydrate:</i> Polycose, Moducal <i>Fat:</i> MCT Oil, Microlipid
6 (B4156) Standardized nutrients \$1.25/100 Kcal		Tolerex, Vivonex STD

*Note: Medicare reimburses formula per 100 kcal increments

Table 4
Clinical Conditions Often Accepted by Medicare to Justify Pump Use (3)

- Reflux and aspiration with gravity feedings
- Severe diarrhea unless feedings infused slowly
- Dumping syndrome
- Administration of less than 100 cc/hr is required for tolerance
- Blood glucose fluctuations without pump control
- Circulatory overload
- Jejunal feedings

endoscopy suite is important and allows for easier (and better) securing of the tube.

Use of T-shirts or other loose garments help to keep the area “covered” and away from patients hands. Commercially available bandages, binders and tube anchoring devices are also available (See Table 5 for tube securing devices). Another option is to cut the top off of a stretchy, sleeveless T-shirt leaving about a 12-

Table 5
Tube Securing Devices on the Market

Spandage™

MEDI-TECH International Corporation

- Latex free, circular stretch bandage
- Various sizes and uses
- Common adult size for use in securing abdominal tubes are MT 8–MT 12 (e.g. MT 9 average will fit 175–200 lb)
- Packaged in 7 yd roll or 50 individual 24” packets
www.medi-techintl.com/mtspandage.html
 800-333-0109

Hollister Tube Attachment Device

Hollister Incorporated

- Adhesive ring and clamp secures tubes 5-40 Fr to prevent migration without use of tape or sutures.
- Available as Horizontal (HTAD) #9781 and Vertical (VTAD) #9782 tube attachment devices
- May be left in place up to 10 days and allows visualization of insertion site.
www.hollister.com/us/products/
 800-323-4060

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inch circular band of cloth (will end up looking like a woman’s tube top). The fabric should contain some Lycra type material so that it hugs skin gently. This allows for the tube to be covered without having to use gauze and tape which can add to skin break down. If it is too difficult to slip on over the patient’s head, cut one side and use self-stick Velcro to fasten.

Patient tube is clogged (again!)

There are many reasons why a feeding tube may clog. Feeding tubes are more likely to be unclogged if action is taken as soon as possible after the occlusion occurs. The most common are due to the administration of medications and inadequate flushing. The first step is to evaluate all medications and formula additives being used to determine if they are still needed and if they are appropriate to administer through a tube. Evaluate the use of protein powders or other modular products, which may have been ordered during a patient’s hospital stay. If a patient’s protein need is not being met with their formula alone, perhaps a higher protein formula can be used.

Any medication that is time-released, enteric coated or should not be crushed, requires changing to an alternative. While the use of the liquid form of the drug might be an option, these often contain sorbitol and if a patient receives multiple liquid medications, or frequent doses of meds in liquid form, the cumulative sorbitol dose may cause diarrhea (6). The use of a pill crusher (available at most pharmacies) may be helpful to pulverize the drug into small particles.

Patient/caregiver should be instructed to **always** flush the tube before and after any administration of meds or formula. Often, the medication and gastric contents coming in contact with formula will cause clogging (7). If meds are given at meal times, water should also separate drug from formula (water-med- water-formula-water). **Routine flushing of the tube with water is the single, most effective and preventive action to maintain tube patency.** Use of other liquids such as cranberry juice and carbonated drinks have not been proven to be more effective. One study compared flushing a tube with either 30 mL of cranberry juice or 30 mL of water and found that the tubes irrigated with water had a lower incidence of occlusion than those with cranberry juice, which can, in itself cause tube occlusion (8).

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If a tube occlusion occurs, instruct the patient to first try using a 60 cc syringe filled with **lukewarm** water. The key is not to try to force the water in, but to gently and firmly push and pull the plunger of the syringe back and forth. Clamp the tube for a few minutes and allow water to “soak” the area, then repeat the procedure a few times. Most clogs will resolve with the use of warm water and the back and forth motion of the syringe. Use of pancreatic enzymes with sodium bicarbonate have also been suggested as effective treatment for dislodging a clogged feeding tube.

One formulation reported in the literature is (9):

1. 1 crushed Viokase tablet or 1 teaspoon Viokase powder with,
2. 1 non-enteric-coated sodium bicarbonate tablet (324 mg) OR 1/8 teaspoon baking soda and
3. Dissolve above in 5 mL lukewarm water.

Use of a larger diameter feeding tube may be a better choice for patients who will be using the tube to administer multiple medications or additives. Patients who have tubes that tend to clog or are very difficult to replace (such as jejunal tubes) may benefit from having the above mixture or a similar commercial product such as “Clog Zapper” by Corpak readily available. In addition to chemical decloggers, there are also plastic devices and brushes available. These are meant to be inserted into the clogged tube with a twisting action to scrape and penetrate the clog. An example is DeClogger by Bionix and PEG cleaning brush by BARD. Table 6 provides a list of a few commercially available decloggers.

Leaking at Skin Site

It is not uncommon for gastrostomy tubes to leak at the skin site. A small amount of skin level serosanguinous drainage can be expected initially, however, continued drainage could lead to patient discomfort, infection and skin breakdown. Foul smelling drainage may indicate infection; it is important to identify the cause and to correct it. Dressings are only used (at most) during the first 24–48 hrs when the PEG site is considered an open wound (10), but should not be routinely needed. If leakage is due to excessive gastric acid, use of acid reducing drugs should be considered. Other causes associated with gastric leakage are the use of high levels of vitamin C, prolonged use of hydrogen peroxide

Table 6
Commercially Available Tube Decloggers

Clog Zapper™
CORPAK

Viasys MedSystems

- Combines a “multi-enzyme cocktail,” acids, buffers and anti-bacterial agents in its formulation. Will break up formula clogs but may not work with clogs from medications.
- Kit contains chemical powder, syringe and applicator. Unopened kit has a shelf life of 12 months. Once reconstituted should be used within 24 hours.

www.corpakmedsystems.com

800-323-6305

PEG Cleaning Brush

BARD

- Flexible catheter with feather cut brush at distal end
- #000396

www.crbard.com

800-826-BARD (2273)

DeCloggers™

Bionix

- Soft, flexible screw threaded device to be inserted down the tube to clear build-up or clog
- Available in various lengths and sizes

www.bionix.com

800-551-7096

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for cleaning the site, improper fitting tube and deflation of the internal balloon. Occasionally, if the tube leaks enough to soil clothing, a 4×4 gauze pad may be used over the site. A more economical method is to use generic, thin maxi-pads (sanitary napkins). Cut them in half and then cut a slit horizontally to fit around the tube. They are very absorbent and the outer layer of plastic protects clothing (11).

Also, monitor skin site for indication that the tube is too tight. Weight gain and increased abdominal girth can cause pressure necrosis and an imbedded bumper (buried bumper syndrome) (12–15). Encourage patients to clean and monitor tube daily but to avoid

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<p>Table 7 Commercially Available Tube Adapters</p> <p>Bard Y-Port adapter • 16 Fr # 000317 • 20 FR # 000333 • 28 Fr # 000318 www.crbard.com 800-826-BARD (2273)</p> <p>Ross Y-Port Connector • 14–16 Fr # 835 • 18–20 Fr # 836 Magna Port Y Port Connector • 14–16 Fr # 52440 • 18–20 Fr # 52442 www.ross.com 800-986-8502</p> <p>Novartis Compat Enteral Feeding Adapters • Small fits 8–15 Fr # 087013 • Medium fits 18–22 Fr # 087503 • Large fits 24–28 Fr # 088030 www.novartisnutrition.com 800-333-3785</p> <p>CORPAK Viasys MedSystems Enteral Y extension set # 20-1007 www.corpakmedsystems.com 800-323-6305</p> <p>Used with permission: Barnadas, G: Nutrition in Homecare: EN module (4)</p>

when connecting to the feeding tube. Replacement tip adapters are available which will allow a new tip to be inserted without having to replace the entire tube (see Table 7 for some common brands of tube adapters).

The Family is Weary

An overwhelmed caregiver and caregiver burnout is always a concern. Patients on tube feedings often have multiple needs. Occasionally, a patient or family is under the impression that a home health nurse will be coming out to the house to do the therapy. They become overwhelmed and frightened when they realize they will be taught to administer the therapy themselves. The nursing goal is to provide supervision and equip the patient and their caregiver with the knowledge and skills they need to perform the therapy. Typically, anywhere from 1–3 nursing visits are required the first week, at which point education is usually completed and the patient will be discharged from service. Seldom, will nursing continue to routinely visit the patient unless there are other skilled nursing needs beyond enteral therapy. See Table 8 for suggestions to make the nutrition regimen a little easier for the patient and family. Support groups and organizations such as the Oley Foundation can be very helpful also. Table 9 provides a few nutrition support resources available to patients and physicians.

The Enteral Therapy is Going Well, but Clinical Progress is Lacking . . . Who can help monitor?

The care of HEN patients can be labor intensive with much of the time spent by the physician not reimbursed by insurance. In addition, many of these patients are homebound, making direct sight assessment by a physician difficult. Home care nurses and HEN providers become the physician’s eyes and ears to help identify problems before they alter clinical outcome. As a rule, skilled nursing is available for just a few visits at the start of therapy, ending once the patient and their caregiver have demonstrated competency in the therapy.

It is important that patients select a provider (home care company) that utilizes a clinical staff specially trained to oversee the care of the patient and not just clerks and delivery personnel who call to check on supply needs once a month. Ideally, the home care company

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using any special ointments or cleaners, which can promote skin breakdown and cause tube degradation (9,16,17) See Appendix for one institution’s post-PEG/PEG/J discharge instructions.

Tubes can also leak at the adapter end. This is sometimes caused by tube material stretching or tearing from forceful manipulation and repeated use when connecting syringes or administration sets. Caregivers should be instructed that a slight twisting action is best

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Table 8
Suggested Guidelines to Simplify Enteral Nutrition Plan

- Simplify the Method: Use the simplest method of feeding which will meet the patient's need. For most patients that means syringe feeds 4–5 times /day (**i.e., do not ask patient or caregivers to get up in the middle of the night to do a feeding**).
- Consider gravity feedings before switching to a pump: Use of the gravity method to administer feedings might help by eliminating the need for the caregiver to be actually administering the feeding. They are able to fill the feeding bag, adjust the rate and do other things while the patient is being fed.
- Encourage daytime feedings: Try to have patient receive feedings during the day thus allowing nighttime for the patient and caregiver to sleep. Nighttime feeds while appropriate in a hospital setting with 24 hr nursing may pose problems at home. Such as:
 - Patient and caregiver may have interrupted sleep due to the therapy (such as pump alarm).
 - Increased need to use the bathroom (due to fluid infusion during the night).
 - Difficulty in maintaining HOB elevation of 30–45 degrees during sleep.
 - Tube gets tangled or disconnects.
- Ensure patient has the right equipment: Does the patient have the appropriate supplies?
 - Example: The caregiver who was given 20 cc leuc lock syringes to administer 480cc of formula 4× per day. Caregiver had to use the plunger to push the formula through the small leuc lock hole and each feeding was taking almost two hours to administer. By the time she finished and cleaned up, it was time to give the next feeding. Not knowing there were other options she did her best but quickly became overwhelmed. A catheter tip syringe would have been more appropriate.
- Selective use of pumps: Pumps are often used in the hospital because it allows consistent administration with reduced nursing time. In the home, using a pump adds a layer of complexity and cost that may not be necessary. Reserve the use of a pump for those who require controlled delivery such as patients with volume sensitivity, brittle diabetes, and some types of malabsorption or jejunal feeding. It is often thought that the use of a pump will prevent aspiration, this has not been documented in the literature. Maintain the head (and shoulders) at 30–45 degrees while infusing EN.

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provides not only supplies but also nutrition oversight by trained clinicians who routinely monitor patient tolerance to formula and tracks weight and other clinical progress of the patient. Some companies have a pathway that incorporates a dietitian routinely to assess the patient and alert the physician when intervention is necessary. Availability of competent, experienced clinicians to intercept minor problems before they become major concerns will reduce the number of calls to physician's offices.

Avoiding Dehydration and Electrolyte Imbalance

Monitoring of the home EN patient is often not perceived to be as complicated as those on TPN. The reality is that this population is often very debilitated and can have significant metabolic disturbances. Unlike the person who eats a varied diet, the tube fed patient does not make up for poor intake unless adjustment in formula or fluid is made. Likewise, they may not be able to express thirst or hunger. Most formulas are

quite low in electrolytes compared to a usual diet, which may lead to insufficient intake for patients who have excess losses or increased needs. A patient with unchecked diarrhea can easily become dehydrated and have electrolyte losses that will need to be replaced. Too often, fluid requirements are not addressed when the formula order is written. Although most formulas typically provide 80%–85% water (calorie-dense products may be as little as 70%), additional water will need to be given to meet hydration needs. Unless there is a need to restrict fluids, an average adult may need at least 2–4 cups (480–960 mL) of additional water per day. Water can be distributed throughout the day with medication and water flushes. In patients with increased losses such as those with excessive sweating or drooling, vomiting and diarrhea, hyperglycemia, ostomies, gastric venting or tracheostomies, additional water, with or without electrolytes may be necessary.

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Table 9
Nutrition Support Resources (18)

- Oley Foundation www.oley.org 800-776-OLEY
 - Has a large patient network that allows patients and caregivers to communicate with others in similar situations
 - Provides website information
 - A free newsletter for patients
 - A toll free network
 - Equipment exchange
 - Strong parents support group
 - Annual national conference for patients, families/caregivers
- American Society of Parenteral and Enteral Nutrition (ASPEN) www.nutritioncare.org (800) 727-4567
 - Established Standards of Practice and Clinical Guidelines for Enteral Nutrition Therapy and Home Nutrition Support
- Canadian Parenteral-Enteral Nutrition Association www.cpena.ca/home.html 613-825-4341 (Ottawa)

The initial nutrition plan should anticipate these needs, but periodic reevaluation is necessary to identify changes in clinical status. Ideally, labs should be evaluated initially and at least every 3-6 months or as indicated by the patients medical condition. Once it is determined that the patient is medically stable, the frequency of labs is decreased or perhaps obtained only at routine office visits.

Patients who are bed-bound or have limited mobility may not be able to be weighed without special scales, typically available only in a hospital or clinic setting. However, general parameters such as physical appearance, fit of clothing or belts, functional status, strength and skin integrity will give insight to their overall status. One problem that can occur when the volume of formula is reduced to stop unwanted weight gain, is that the protein, vitamins and minerals will also be reduced, sometimes below what the patient may need. This may cause the patient to be more vulnerable to malnutrition and skin breakdown. An alternative plan would be to switch the formula to one which provides a higher combination of protein/electrolytes/vitamins and minerals in relation to calories. A home care company with a good clinical support staff

routinely monitoring these patients will identify this early on and notify the ordering physician.

CONCLUSION

The availability of home care enables patients who might otherwise require institutional living to return home with their family to familiar surroundings. Enteral nutrition is an appropriate therapy for many patients who are not able to eat. Proper assessment, evaluation and monitoring are essential to safely provide HEN therapy and avoid complications and potential repeat hospitalizations. Resources are available for the ordering physician, the patient and their caregivers to assist in the provision of safe and effective enteral therapy at home. ■

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APPENDIX

POST-PEG OR PEG/J GUIDELINES FOR PATIENTS

A PEG tube (percutaneous endoscopic gastrostomy tube) is a tube that is placed through the skin of the belly directly into the stomach. These tubes are used to provide nutrition, fluid, and medications.

Care of the PEG Tube

1. Always wash hands before handling your PEG tube.
2. Cleanse the site with soap and water daily. DO NOT use hydrogen peroxide or any special cleansers. You may use a q-tip or gauze to swab gently around the site. Rinse well and pat dry. This may be done in the shower.
3. If needed for drainage, you may apply a clean dressing to the site. This should be changed once a day or more often if soiled.
4. When cleansing the site or changing the dressing, look for redness of the skin around the site, drainage present on the old dressing, or leakage at the site of insertion.
5. Secure the tube to the skin surface to prevent tugging on the skin and skin breakdown.
6. Rotate the bolster (piece of soft plastic that sits on the skin to prevent the tube from slipping back into the stomach) and tube **daily** to prevent skin breakdown. Also gently push and pull tube in and out ~ 1/4 inch each day.
7. Flush tube with 30 cc of water at least once a day.

Bathing

1. You may shower 24-48 hours after tube placement.
2. You may bathe after your PEG check appointment typically 7–10 days after tube placement, if the physician gives the OK.

Medications

1. Flush tube with 30 cc of water before any medication is put down the tube.
2. Every medication must be in liquid form or crushed finely and mixed with water.

3. **Note:** Review medications with nurse or pharmacist to ensure that it is ok to crush. Draw up medication in syringe and push into tube.
4. Flush with 30 mL of warm water after each medication.

Tube Placement

1. Check the markings at the base of the tube before feeding/medications.
2. Slight in-and-out movement of the tube is normal and can help prevent complications resulting from the bolster being too tight against the abdomen.
3. If the number at the base of the tube changes by 2 or more, call your health care provider.

Clogged Tube

1. Try to irrigate the tube with 30 mL of warm water.
2. Try to draw back with a 60 mL syringe.
3. Gently rocking the syringe back and forth may help to dislodge to blockage.

Possible Problems

Call your health care provider with the following problems:

1. Redness, swelling, leakage, sores, or pus around the tube.
2. Blood around the tube, or in the stool.
3. A change of more than two numbers at the bolster near the base of the tube.
4. A clogged tube that you cannot clear.
5. The tube falls out. Call Immediately.
6. Nausea that lasts more than 24 hours.
7. Recurrent vomiting of more than 8 hours.
8. Diarrhea that continues for more than 24 hours.
9. Gas or bloating that lasts for more than 24 hours or prevents you from giving the next tube feeding.
10. Constipation that lasts for more than 3 days, depending on your normal frequency of bowel movements, or hard stool for more than 5 days.
11. Weight loss of more than 2 pounds in one week.
12. Any unusual weakness or fever.

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