

QUALITY IMPROVEMENT OPPORTUNITIES WITH ENTERAL FEEDING TUBES

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Disclosures: None

NUTRITION AND AMYOTROPHIC LATERAL SCLEROSIS (ALS)

- ALS is a progressive neurodegenerative disease where the brain loses connections to muscles. The prevention of complications and palliative treatments become the focus since curative options are not yet available.¹
- Progressive muscle weakness causes compromised respiratory function and dysphagia.¹
- Dysphagia can lead to malnutrition which can further increase aspiration and pneumonia risk.¹
- 'Radiologically inserted gastrostomy tubes (RIG) or percutaneous endoscopic gastrostomy tube (PEG) placement is recommended when the ratio of measured forced vital capacity (FVC) divided by predicted is >50% due to risk of respiratory compromise. However, placement is possible when FVC <30% of predicted in a hospital with experienced physicians and respiratory support.'²

1. Greenwood DJ. Nutrition Management of Amyotrophic Lateral Sclerosis. *Nutr Clin Pract.* 2013; 28:392-399.
2. Kim EY, Kang SW, Suh MR, et al. Safety of Gastrostomy Tube Placement in Patients with Advanced Amyotrophic Lateral Sclerosis with Noninvasive Ventilation. *JPEN J Parenteral Enteral Nutr.* 2021; 45:1338-1346.

NUTRITION AND AMYOTROPHIC LATERAL SCLEROSIS (ALS)

- Adequate nutrition and hydration are crucial for weight maintenance and sustaining quality of life.¹
- The need for a feeding tube includes weight loss, fatigue from eating, or difficulty chewing and swallowing despite texture alterations to the diet, and oral nutrition supplementation are insufficient in meeting nutrient needs.
- Controversies exist on whether patients should receive gastrostomy tubes placed by Gastroenterology (GI) or RIG.³
- G-tube feedings have become a standard of care for treating weight loss and those at risk for malnutrition with dysphagia in the ALS population.¹

1. Greenwood DJ. Nutrition Management of Amyotrophic Lateral Sclerosis. *Nutr Clin Pract.* 2013; 28:392-399.
3. Kawa C, Stewart J, Hilden K, et al. A Retrospective Study of Nurse-Assisted Propofol Sedation in Patients with Amyotrophic Lateral Sclerosis Undergoing Percutaneous Endoscopic Gastrostomy. *Nutr Clin Pract.* 2012; 27:540-544.

TUBE FEEDINGS AND ENTERAL NUTRITION

Methods of tube placement:

- Interventional Radiology (IR)
 - RIG: G-tubes, G-J tubes, replacement J-tubes
- Gastroenterology (GI)
 - PEG, PEJ
- Surgery
 - Referral for any tube placement if unable to place via IR or GI.

Picture courtesy of <https://newleafhomemedical.com>



BACKGROUND

G-tube placement Outpatient Process:

- *Inpatient* RD: Post-procedure education on feedings, formula, and flushes
- *Inpatient* RD: Send information to home medical agency
- Patient to call if issues
- Emergency department admissions



BACKGROUND

G-tube placement *Inpatient* Process:

- *Inpatient* RN: Educate patient on site care.
- *Inpatient* RD: Educate patient on formula, feedings, and flushes.
- *Inpatient* RD: Write orders, obtain provider signature.
- *Inpatient* case management: Communication with home medical agency.



BACKGROUND

Outpatient Process Issues:

- *Outpatient* nurses: not comfortable with feeding tubes.
- Case management: not available for outpatient procedures.
- *Outpatient* nurses: not available to do case management work.
- *Inpatient* RD assumed all roles.



BACKGROUND

Outpatient Process Issues (cont.):

- Most g-tubes placed prophylactically for head/neck cancer patients.
- Patients not homebound- did not qualify for home health nursing.
- Inpatient vs Outpatient RD responsibilities



BACKGROUND

Outpatient radiation oncology g-tube complications included:

- Skin infections
- Leakage
- Reddened skin
- Formula intolerance
- Tube dislodgement
- Granulation tissue
- Tube malposition
- Staff unaware of many prevention measures



BACKGROUND

In summary:

- Frustration on many levels.
- Frequent patient complications.
- Staff unaware of treatment for complications.
- Supplies not available.
- A team was formed:
 - Outpatient oncology RD
 - Outpatient radiation oncology RN
 - Outpatient surgical nurse



BACKGROUND

Patient Barriers:

- Lack of knowledge
- Staff contact information for troubleshooting

Barriers to patient education:

- Scheduling of G-tube placement
- Timing of patient education
- Knowledge of staff providing education
- Hospital supply availability
- Ordering of home supplies
- G-tube site care
- Post-procedure follow-up

BACKGROUND

Most research regarding patient tube feeding education was conducted with pediatric patients and their families.



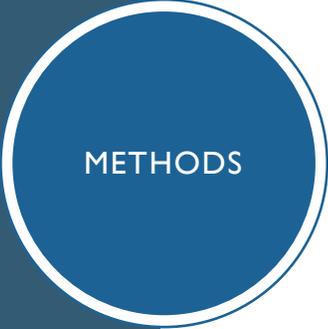
Schweitzer M, et al. Evaluation of a discharge education protocol for pediatric patients with gastrostomy tubes. *J Ped Health Care.* 2014;28(5):420-428.⁴

Schweitzer project utilized:	Our project utilized:
5 education sessions	3 education sessions
4 media methods	3 media methods

BACKGROUND

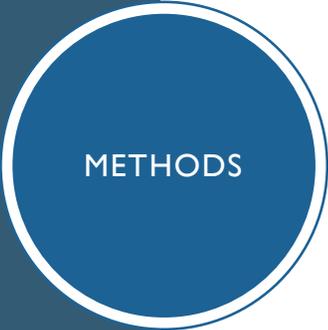
Study overview:

- 85% of outpatient g-tubes/PEG tubes were head/neck patients.
- Thus, outpatient radiation patients became our focus.
- Weekly follow-up in center.
- RIG is the preferred method at our facility.



METHODS

- Pre-intervention group= 11 patients
- Intervention group= 16 patients
 - Patients tracked for 8 months
 - Sex: 94% male
 - Age: 69% were \geq 60 years of age
 - BMI: 44% > 30 and 31% 18.5-24.9
 - Diagnosis: 56% cancer of the tonsil, HPV+
 - 75% received concurrent chemotherapy with radiation therapy
 - 94% of tubes RIG placed



METHODS

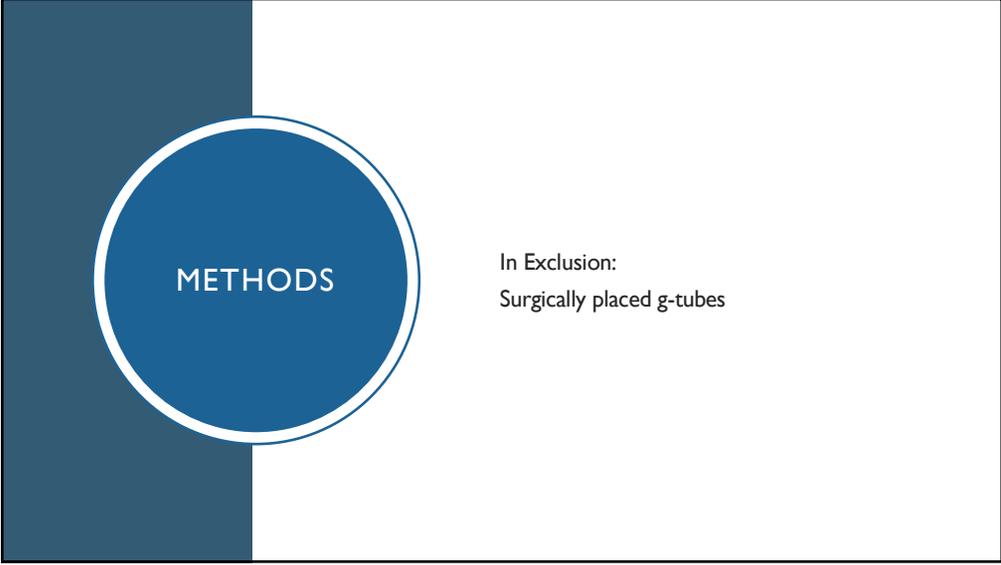
Data collected pre- and post-intervention:

Enteral Access Complications:

- Reddened site
- Technique issues
- Gastrointestinal intolerance
- Infection
- None

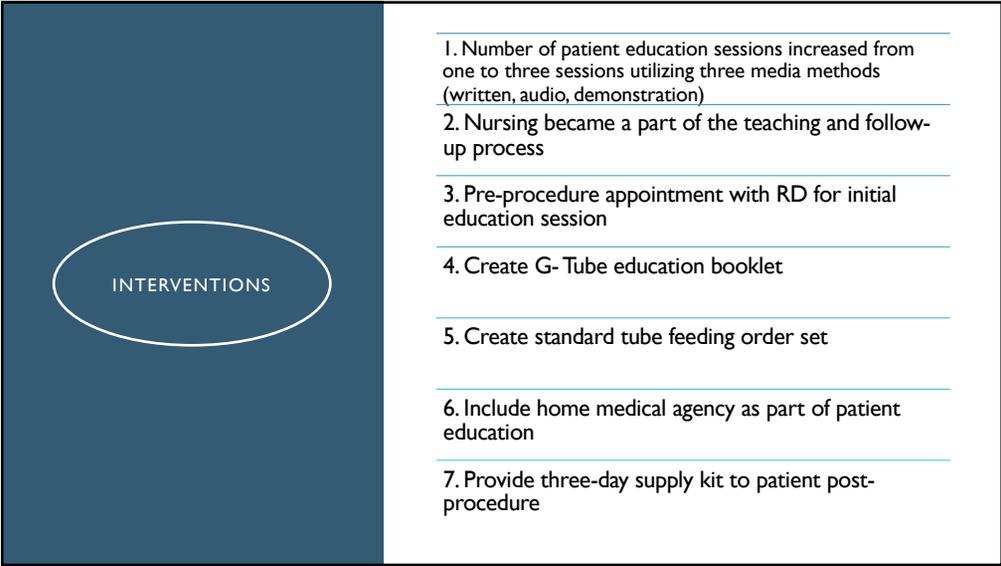
Treatment:

- Additional education
- Review

A slide with a dark blue vertical bar on the left side. A white circle with a blue border is centered on the bar, containing the word "METHODS" in white capital letters. To the right of the bar, the text "In Exclusion: Surgically placed g-tubes" is displayed in a black sans-serif font.

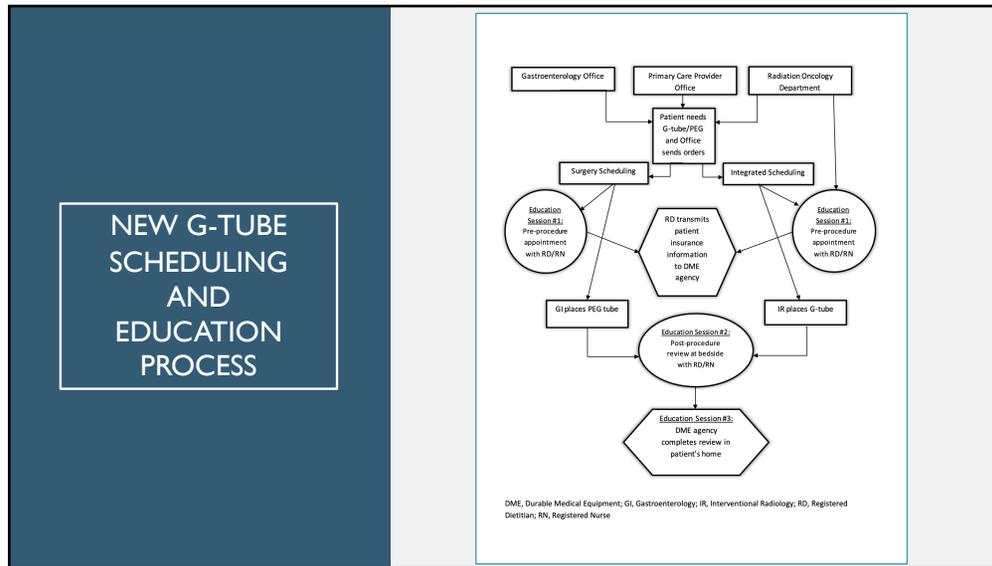
METHODS

In Exclusion:
Surgically placed g-tubes

A slide with a dark blue vertical bar on the left side. A white oval with a blue border is centered on the bar, containing the word "INTERVENTIONS" in white capital letters. To the right of the bar, a list of seven numbered items is displayed, each separated by a horizontal light blue line.

INTERVENTIONS

1. Number of patient education sessions increased from one to three sessions utilizing three media methods (written, audio, demonstration)
2. Nursing became a part of the teaching and follow-up process
3. Pre-procedure appointment with RD for initial education session
4. Create G- Tube education booklet
5. Create standard tube feeding order set
6. Include home medical agency as part of patient education
7. Provide three-day supply kit to patient post-procedure



PHYSICIAN LETTER

Elkhart General Hospital

Date

Dear Dr. XXX (Gastroenterologist or Surgeon),

We have created a more streamlined process for outpatient PEG/G-tube patient education and home supply setup. For this to be successful, we need you to schedule tube placements at least 3-4 days out to allow for education prior to procedure.

Patients with new tube feedings require comprehensive education. We have found it is not the best time to educate patients right after tube placement because they are not alert, in pain, or overwhelmed with information.

A preadmit appointment will be scheduled 1-2 days prior to tube placement. Both a nurse and dietitian will meet with the patient/family. Having the patient's insurance information prior to placement ensures timely ordering and receipt of supplies. On the day of surgery, only a brief recap will be done with the patient/family prior to discharge.

Please include the following with your scheduling sheet:

Documents for outpatient PEG placements:

1. H&P, includes dysphagia documentation
2. Insurance
3. INTWT
4. Medications
5. Food Allergies
6. Labs
7. Demographics

*****Preadmit appointment not needed for tube replacements and nursing home patients.*****

We appreciate your referrals and assistance in improving our process. Thank you so much for your consideration.

The new process will GO LIVE on 7/26/23!

Sincerely,

Name
Position
Hospital
Phone
e-mail

Nutrition Services
600 East Boulevard • Elkhart, IN 46514 • (574) 523-3235 • www.egh.org

**NEW STANDARD
ROLES FOR
RD AND RN WITH
PATIENT EDUCATION**

- Patient education by the RN:
 - Tube site care
 - Pain control
 - Water flush review
- Patient education by the RD:
 - Review post-op diet
 - Review DME logistics
 - Review formula, schedule, and amount if pertinent
 - Review MD and RD contact information



**NEW STANDARD
PATIENT G-TUBE
BOOKLET**

G-tube
PEG tube
Instructions



BEACON
HEALTH SYSTEM

Post-op Instructions

Cleaning & Dressing Change

Tube Placement

Preparation

Positioning

Use of the G-tube/PEG tube

Medication

After your G-tube/PEG tube placement

Your ordering physician is: Dr. _____ Ph: _____

Dietitian: _____ Ph: _____

Your product: _____

Supplied by:

Lincare 1-800-965-2689

Alick's Home Medical (574) 522-2273

NEW STANDARD
TUBE FEEDING
ORDER SET

ELKHART
GENERAL HOSPITAL
CENTER FOR CANCER SERVICES

Radiation Oncology Tube Feeding Orders
Phone: 574-523-7657 Fax: 574-523-7656

Patient Name: _____ DOB: _____ Date of Service: _____
Diagnosis: _____
Address: _____

Height: _____ Weight: _____
Tube Feedings per: G-Tube J-Tube
Tube Feedings via: Gravity/Bolus Pump; Deliver at: _____ cc/hr
Formula Type: _____ Tetrabik per day
 Osmolite 1.5 Jevity 1.5 Glucerna 1.5

Other: _____
Procedures: _____
Water Flushes: _____
Schedule: _____
Length of feed: _____

Supplies:

- 60cc Syringes, catheter tip
 - for bolus feeding 7 days/week
 - for water flushes
- Split 4 x 4s
- Filter-Trak Anchoring Device-Large (5 per month)
- IV Type-Killer
 - Mediport
 - Paper
- IV pole, bags/tubing for pump feedings
- IV pole, bags/tubing for gravity feeds
- Ambulatory bag/backpack for pump

Agency to Follow: _____
Comments: Incare External Services

Electronically Approved by: <Approved By>, <Approved date time>
Radiation Oncologist: _____ License NO: _____ DEA: _____

MO Orders for Tube Feeding Page 1 of 2

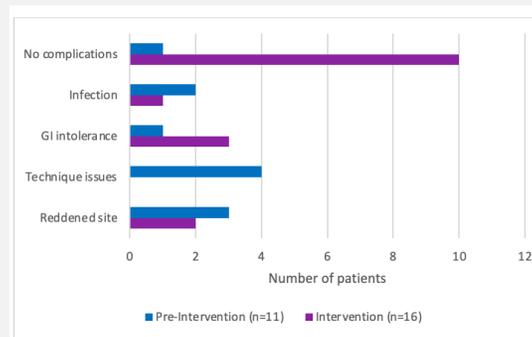
NEW STOMACH
MANIKIN



NEW G-TUBE SUPPLY KIT



QI RESULTS



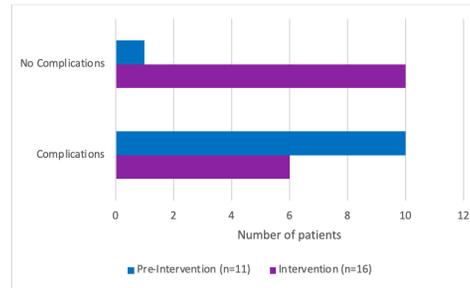
- Emmons D. Reducing outpatient gastrostomy tube complications. *Nutr Clin Pract.*2021;1-10.
- Emmons D. Reducing outpatient gastrostomy tube complications: A quality improvement project within a community hospital (P53). Poster presented at: ASPEN Nutrition & Practice Conference: March 20-23, 2021, virtual. *JPEN J Parenter Enteral Nutr.* 2021 Mar;45(5):S111-114.

QI RESULTS

54% Reduction among outpatient G-tube complications

Created:

1. Multidisciplinary team
2. Protocols for each discipline
3. Multi-format patient education sessions



5. Emmons D. Reducing outpatient gastrostomy tube complications. *Nutr Clin Pract.* 2021;1-10.
6. Emmons D. Reducing outpatient gastrostomy tube complications: A quality improvement project within a community hospital (P53). Poster presented at: ASPEN Nutrition & Practice Conference: March 20-23, 2021, virtual. *JPEN J Parenter Enteral Nutr.* 2021 Mar;45(S1):S111-114.

DISCUSSION

Conclusion:

Creating a multidisciplinary team can reduce patient complications.

- Consistent information provided to the patient.
- Educating patients multiple times with multiple learning methods.
- Regular patient follow-up.



DISCUSSION

Conclusion (cont.):

- The timing and number of education sessions crucial to patients understanding.
- The delineation of tasks provided ownership to each team member.
- Patient satisfaction improved
- Although not formally measured, patient anxiety reduced and confidence improved.



DISCUSSION

Delineation of tasks-Who is responsible?

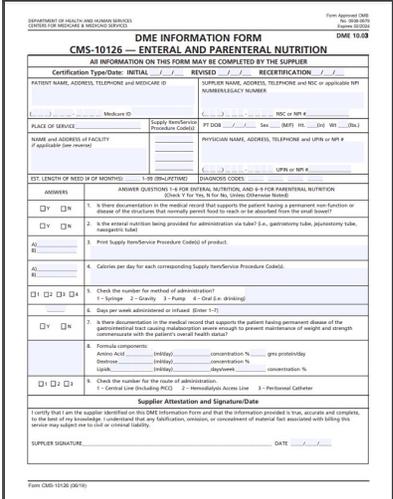
- Initial patient/family education
- Writing/adjusting tube feeding orders
- Knowledge of insurance coverage
- Sending orders to home medical agency (DME-Durable Medical Equipment agency)
- Where to obtain formula if lack of insurance coverage

DISCUSSION

Delineation of tasks- Who is responsible? (cont.)

- Follow-up with DME for issues
- Ongoing follow-up with patient
- Ongoing provider signature required for formula and supply refills from DME
- Patient transportation to appointments
- Appointment with RD and insurance coverage?

DISCUSSION



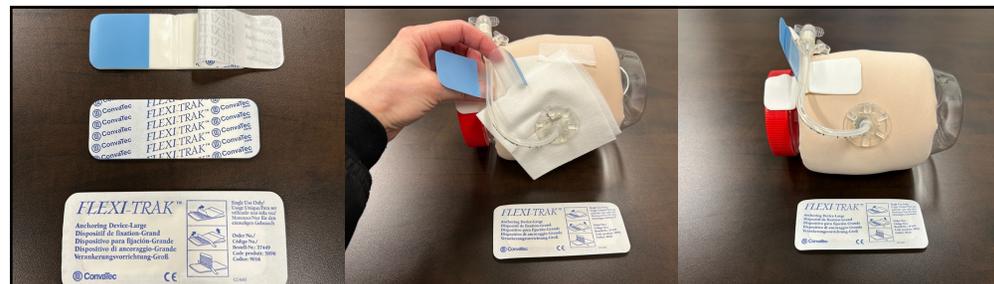
7. <https://www.cms.gov/Medicare/CMS-Forms/CMS-Forms/Downloads/CMS10126.pdf>

DISCUSSION

Enteral Nutrition Coverage:

If not covered by insurance, options include:

- Local resources
- Navigator at your facility
- Patient donations
- Oley Foundation (<https://oley.org>)
- Purchasing directly from manufacturer
- Online purchasing



TUBE SECURE DEVICE

- Flexi-Trak™ by ConvaTec: Anchoring device- Large
- Holds tube in place to prevent pulling at tube site, which prevents leakage from around tube site.
- Remains on skin for 5 days or more.

FEEDING TUBE BELT

Nel-Med™ feeding tube holder
by Core Products



helps reduce skin irritation and discomfort associated with taping

adjustable, elastic band

easy-access panel with grip tab

Picture courtesy of <https://www.amazon.com>

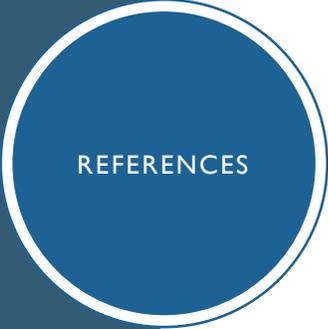
NUTRITION SUPPORT RESOURCES

<p style="text-align: center; font-weight: bold;">American Society for Parenteral and Enteral Nutrition (ASPEN)</p> <ul style="list-style-type: none"> Adult Core Curriculum books Enteral and Parenteral Nutrition Handbooks Parenteral Nutrition Workbook 	<p style="text-align: center; font-weight: bold;">Academy of Nutrition and Dietetics (AND): Dietetic Practice Groups</p> <ul style="list-style-type: none"> Dietitians in Nutrition Support Oncology Nutrition
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 LEADING THE SCIENCE AND PRACTICE OF CLINICAL NUTRITION
American Society for Parenteral and Enteral Nutrition

 Academy of Nutrition and Dietetics



REFERENCES

1. Greenwood DI. Nutrition Management of Amyotrophic Lateral Sclerosis. *Nutr Clin Pract.* 2013;28:392-399.
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7. <https://www.cms.gov/Medicare/CMS-Forms/CMS-Forms/Downloads/CMS10126.pdf>. Accessed 3/7/2023.



THANK
YOU!

