

## IREDELL HEALTH SYSTEM

| <b>Medication Administration through Enteral Feeding Tubes</b> |  |
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| Approved by:<br>Laura Rollings, PharmD, BCPS, BCGP             | Last Revised/Reviewed Date:<br>04/2023 |
| Nursing Leadership<br>P&T Committee                            | Date: 02/2020<br>Date: 04/2023         |

**Purpose:** To ensure appropriate medication administration with enteral nutrition.

### **Background:**

Patients unable to tolerate oral feedings may meet daily nutrient and caloric requirements with Enteral Nutrition (EN). Tube feedings maintain gastrointestinal health and limit the risk of infections from parenteral nutrition. If patients require EN, medications may also be delivered via an enteral administration device (EAD), also known as a feeding tube. When medications are administered through an enteral feeding tube, several factors must be considered – location (gastric vs small bowel) of delivery, width of tube, medication’s stability, available formulations, and potential interactions with tube feeding products.

### **Personnel:**

- Registered Nurses (RN) and Licensed Practitioner Nurses (LPN) to administer medications through an EAD when appropriate.
- Registered Pharmacists (RPh) to assess the appropriateness of each medication to be administered through an EAD.

### **Policy:**

Considerations for Enteral Administration of Medications:

- Administer medications via the oral route when possible.
- Buccal or Sublingual preparations should not be altered as these medications are not formulated for absorption within the GI tract.
- Determine enteral feeding characteristics:
  - Feeding Tube Size – small bore or large bore
  - Insertion Site – nasal or percutaneous
  - Distal Site – stomach or jejunum
  - Delivery Method – continuous or bolus
- Liquid dosage formulations are preferred over the manipulation of solid dosage forms.
- Elixirs/Suspensions are favored over syrups (due to risk of occlusion).
- Liquid formulations should be dispensed in an ORAL SYRINGE to avoid accidental parenteral administration. Syringes should be labeled “For ENTERAL USE” unless prepared outside the pharmacy for immediate use.
- Not all available liquid preparations are appropriate for tube feeding administration, such as: (list is not all-inclusive)
  - Acyclovir (Zovirax)
  - Ciprofloxacin (Cipro)
- Managing Gastrointestinal Intolerance:

- Sorbitol is used as an inactive sweetening agent and may have an osmotic laxative effect resulting in cramping and diarrhea. It is recommended to keep total sorbitol dose less than 10 grams/dose. (See **Appendix A** for Liquid preparations with higher amounts of sorbitol)
- Large volumes of hyperosmolar solutions may result in osmotic diarrhea. Hypertonic medications should be diluted with 10-30 mLs of water (See **Appendix B** for liquid preparations with higher osmolarity)
- If solid dosage forms are to be used, ensure tablets may be crushed or capsules may be opened.
  - Do NOT Crush medications contain suffixes: 12-hour, 24-hour, CC, CD, CR, ER, LA, Retard, SA, Slo-, SR, XL, XR, XT, EN, or EC.
  - Consult *Oral Dosage Forms That Should NOT Be Crushed* list from ISMP (available at [https://fparchives.com/iredell/documents/ISMP\\_DNC\\_List.pdf](https://fparchives.com/iredell/documents/ISMP_DNC_List.pdf) )
- Certain medications require tube feedings to be held around administration times. See list (not all-inclusive) below for recommendations:
  - Hold 30 minutes before and 30 minutes after
    - Alendronate
    - Guaifenesin
  - Hold 1 hour before and 1 hour after
    - Amiodarone
    - Carbamazepine
    - Cefdinir
    - Ciprofloxacin
    - Fluconazole
    - Itraconazole
    - Ivermectin
    - Ketoconazole
    - Levothyroxine
    - Phenytoin
    - Theophylline
    - Voriconazole
    - Warfarin
  - Hold 1 hour before and 2 hours after
    - Captopril
    - Doxycycline
    - Levofloxacin
    - Penicillin V
    - Risedronate (2 hours before)

Nursing shall, with the use of an EAD:

- A. Determine if patient is able to take medications by mouth or requires administration through enteral feeding tube.
- B. Place Communication to Pharmacy – to assess the appropriate route of administration requirements for each medication in patients receiving tube feedings.
- C. Prior to administration, review appropriateness of medications through feeding tube.

- D. Proper administration of medications through enteral tubes are as follows: (*Flush-Administer-Flush*)
1. Place tube feeding on hold
  2. Flush tube with 10-30 mLs of water
  3. Administer each medication individually, flushing between medication with 5-10 mLs of water
  4. Flush tube with 10-30 mLs of water
  5. Restart tube feeding at previous rate

Pharmacy shall, with the use of an EAD:

- A. Complete daily Pharmacy Communication – evaluate medication route of administration requirements for each medication in patients receiving tube feedings.
- B. Automatically substitute an oral solid dosage form to the oral liquid dosage form, if available and with appropriate bioequivalence.
- C. Assess the products for interactions and the need to hold feedings before and after medication administration. In the event a tube feeding needs to be held for medication administration, pharmacy shall place a comment within the specific medication order detailing appropriate instructions for nursing (ex. “Hold tube feed 1 hour before and 1 hour after administration of this medication”).
- D. If no acceptable dosage form exists, contact the provider with alternative recommendations, such as:
  1. Change to another product within same drug class
  2. Change to another product within different drug class
  3. Change to a product for parenteral administration (IV, IM, SQ, SL, Buccal, Transdermal)

**Resources:**

1. Boullata JI. Guidebook on Enteral Medication Administration. Silver Spring, MD: American Society for Parenteral and Enteral Nutrition; 2019.
2. Fish J, Hager D, Heim M, et al. Dosing of Medications in Patients Receiving Continuous Enteral Feedings – Adult – Inpatient Clinical Practice Guidelines. University of Wisconsin Hospitals and Clinics Authority. 2015.
3. Williams NT. Medication administration through enteral feeding tubes. Am J Health-Syst Pharm. 2008; 65:2347-57

INITIAL EFFECTIVE DATE: 02/2020

DATES REVISIONS EFFECTIVE: 04/2023

DATES REVIEWED (no changes):

**Appendix A:** Partial medication list of liquid formulations with higher amount of sorbitol

- Acetaminophen liquid
- Amantadine HCl solution
- Aminocaproic acid syrup
- Charcoal liquid, with sorbitol
- Cimetidine solution
- Guaifenesin/Dextromethorphan syrup
- Isoniazid syrup
- Lithium citrate syrup
- Metoclopramide HCl syrup
- Phylephrine HCl/Brompheniramine maleate elixir
- Sodium polystyrene sulfonate suspension
- TetracyclineHCl suspension
- Theophylline oral solution

**Appendix B:** Partial medication list of liquid formulations with osmolarity > 3000 mOsm/kg

- Acetaminophen elixir
- Acetaminophen with codeine elixir
- Amantadine HCl solution
- Chloral hydrate syrup
- Dexamethasone suspension
- Dextromethorphan HBr
- Diphenoxylate HCl-Atropine sulfate susp
- Docusate sodium syrup
- Ferrous sulfate liquid
- Hydroxyzine HCl syrup
- Lactulose syrup
- Lithium citrate syrup
- Metoclopramide HCl syrup
- Multivitamin liquid
- Potassium chloride liquid
- Potassium iodide saturated solution
- Promethazine HCl syrup
- Sodium phosphate liquid