Enteral Pump Prioritization/Substitution and Gravity/Syringe Feeding

Site Applicability

All VCH and PHC Sites

Practice Level

Profession	Setting	Basic Competency	Advanced Competency (requiring registration with Restricted Activity)
LPN, RPN RN	**All VCH and PHC sites**	Administering enteral feeding [by syringe, gravity or pump]	
RD	**All VCH and PHC acute sites**		**With Restricted Activity A** • Enteral feeding orders

Requirements

- The tube feeding plan is ordered by the Provider in consultation with the Dietitian and Nurse.
- If "Tube Feed as per Dietitian" has been ordered, the Dietitian writes the tube feed orders. Dietitians determine the most appropriate enteral feeding delivery method (pump, gravity or syringe) and schedule (continuous, cyclic, intermittent, or bolus) in consultation with the healthcare team.
- Nurses administer tube feeds as per Prescriber/Dietitian orders, following established enteral feeding protocols.

The use of an enteral feeding pump is required for the following:

- Critically ill patients
- Post-pyloric feeding
- Closed system formula if equivalent open system formula not available
- Need for precise feeding rate. Examples include patients with:
  - high risk for reflux combined with communication challenges
  - unstable glycemic control on insulin
  - symptoms of GI intolerance such as nausea, vomiting, diarrhea and dumping syndrome

Need to Know

This guideline is intended:

- To guide dietitians on how to prioritize enteral feeding pumps in situations where the demand for enteral feeding pumps exceeds the supply.
- To guide nursing staff on the administration of enteral feeding through alternative methods to an enteral feeding pump.

This Decision Support Tool consists of:

1. Strategies for conserving enteral feeding pumps, and
2. Administering Tube Feeds by Gravity
3. Administering Tube Feeds by Syringe

In the event of a shortage of enteral feeding pumps, the Dietitian should consider modifying the enteral feeding delivery method for patients/residents who receive feeds by a feeding pump to conserve [enteral feeding] pumps for those who require it.

In collaboration with the healthcare team, the Dietitian monitors and evaluates the transition to the new feeding regime on an on-going basis. Patients/residents/family should be engaged in the change process.

Strategies to be considered by Dietitian for Conserving Enteral Feeding Pumps:

1. For stable, acute care patients or long-term care (LTC) residents who have demonstrated tolerance to enteral nutrition via pump, assess if patient can be transitioned to gravity or syringe feeding regimens.
2. Consider transitioning patients receiving nocturnal feeds to daytime feeds by gravity or syringe.
3. For patients on oral diets with supplemental tube feeds, consider administering post-meal feeds by gravity or syringe.
4. Coordinate with the Patient Care Coordinator/Clinical Nurse Leader to ensure gravity feeding bags are included in standard unit supplies so they are available to facilitate a quick transition from pump to gravity delivery.
5. Coordinate with food services to ensure supply of open system formula.

Administering Tube Feeds by Gravity

Patients who are able to tolerate variable infusion rates may be able to receive tube feeds by gravity. The Dietitian assesses appropriateness of the patient, and writes orders for gravity feeds. Nursing should be aware that the infusion rate for gravity feeds are *not* precise and may change over the course of the feed. The drip rate should be checked hourly to ensure the feeds are running at the appropriate rate.

Equipment and Supplies

- Kangaroo™ Enteral Feeding Gravity Set
- IV Pole
- 50 to 60 mL catheter tip syringes for tube flushes
- Open system enteral formula
- Water
- Alcohol swab

Procedure

1. Wash hands thoroughly. Gather equipment and supplies.
2. Check tube placement as per tube feeding administration guidelines

3. Write the date and time on feeding bag. Ensure the roller clamp is closed.
4. Wipe top of the formula container with alcohol swab and let dry. Shake formula container well before opening. Pour no more than 4-hour supply of formula into the feeding bag and close cap. Cover, label and refrigerate any unused open formula. Dispose after 24 hours.
5. Hang feeding bag on IV pole at least 50 cm above patient. Ensure head of the bed is elevated at 30 to 45 degrees.
6. Remove the cover from the end of the feeding set. Open the roller clamp on the tubing and prime the feeding set by allowing the formula to flow into the tube. Close the roller clamp.
7. Use syringe to flush feeding tube with water as per enteral feeding orders prior to feeding.
8. Insert the tip of the feeding set into the feeding tube.
9. Slowly open the roller clamp on the tubing and set the flow according to the prescribed drip rate. Increase the rate by opening the clamp and decrease it by partially closing. See Appendix A for drip rate calculations.
10. When feeding is completed, close and disconnect gravity set from feeding tube. Flush feeding tube with water, as directed.
11. Replace feeding sets every 24 hours.

Administering Tube Feeds by Syringe

Patients who are able to tolerate gastric bolus feeds can potentially be transitioned to syringe feeds. For those deemed to be appropriate for syringe feeds, the Dietitian writes an order specifying the route, formula, volume, and water flushes.

Equipment and Supplies

- Two 50 – 60 mL catheter tip syringes (one for formula, one for water flushes)
- Open system enteral formula
- Two clean cups or containers
- Water
- Alcohol swab

Steps

1. Wash hands thoroughly. Gather equipment and supplies.
2. Ensure head of the bed is elevated at 30 to 45 degrees.
3. Check tube placement as per tube feeding administration guidelines
4. Fill one clean cup or container with water. Use syringe to draw up water and connect to feeding tube.
5. Flush feeding tube with water as ordered prior to feeding.
6. Wipe top of the formula container with alcohol swab and let dry. Shake formula container well before opening
7. Pour desired volume of enteral formula into a clean cup or container.
8. Draw up formula using syringe. Attach filled syringe to feeding tube.
9. Slowly push the plunger to administer the formula. Remove syringe.
10. Repeat steps 5 to 7 until the desired amount of formula has been administered.
11. Flush feeding tube with water as ordered.
12. Ensure patient remains upright for 30 to 60 minutes after each feed.

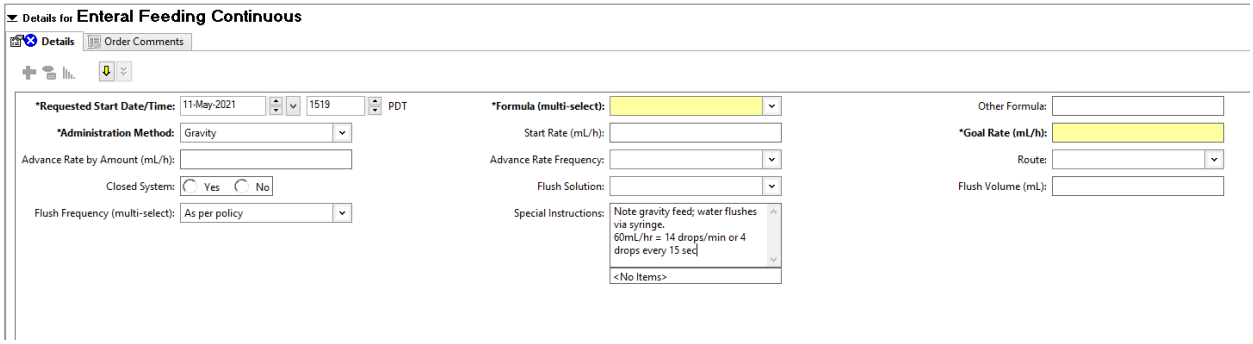
Documentation

Tube Feeding by Gravity

For sites using paper charts: the Dietitian writes an order in the Prescriber's Orders, specifying the formula, rate, route, and water flushes. Include a copy of the Roller Clamp Positioning & Drip Rate tables for Nurses to refer to (See Appendix A).

Example Order: *Isosource 1.2™ at 60 mL/hr via nasogastric tube by gravity feeding set.*
Drip rate = 20 drops per minute, or 5 drops every 15 seconds.
Flush with 30mL water q4hr using 50 mL syringe.

For sites using Cerner: the Dietitian completes an "Enteral Feeding Continuous," "Enteral Feeding Cyclic" or "Enteral Feeding Intermittent" order. Select 'No' for closed system and 'Gravity' under administration method. Within 'Special Instructions,' include instructions for the feeds to be administered at the appropriate drip rate.

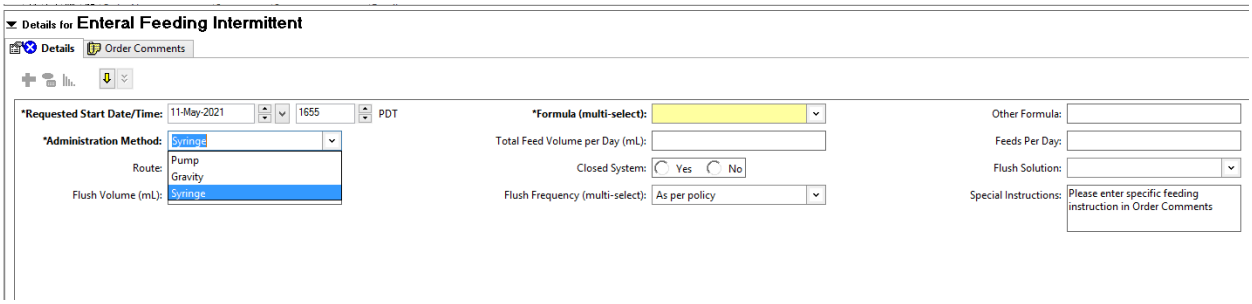


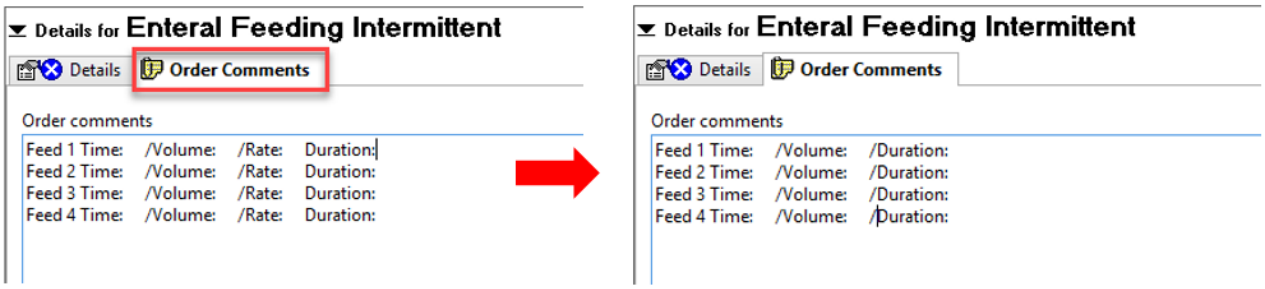
Tube Feeding By Syringe

For sites using paper charts: the Dietitian writes an order in the Prescriber's Order section, specifying the formula, route, and water flushes.

Example Order: *Infuse one 250 mL tetra of Isosource 1.5™ TID via PEG-tube using a 50 mL syringe.*
Infuse each 50 mL bolus
Feed at 0600, 1200 and 1800 hr.
Flush with 30mL water before and after feeds.

For sites using Cerner: the Dietitian completes an "Enteral Feeding Intermittent" order. Select 'No' for closed system and 'Syringe' for administration method. Use the 'Order Comments' tab to detail the feed schedule; feed rate may be deleted for order clarity with syringe feeds.





Related Documents

PHC-VCH Documents

- Enteral (Tube) Feeding – Dietitian Guidelines (in Acute Care)

VCH Documents

- Tube Feeding: Care and Management
- Enteral Nutrition

PHC Documents

- Enteral (Tube) Feeding Guidelines
- Tube Feeding: Small Bore Enteral Feeding (Entriflex), ACUTE CARE ONLY
- Tube Feeding: Long Term Enteral Feeding (PEG, PEJ, G Tubes)

References

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Appendices

- Appendix A: Drip Rate Conversion Table for Gravity Feeds

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Note:

- 20 drops equals 1 millilitre (mL)
- The caloric density (kcal/mL) and viscosity of the formula affects drip rate. A 1.0 kcal/mL formula will flow more quickly than a 1.5 or 2.0 kcal/mL formula.

Formula Rate (mL/hour)	Number of drips per 15 seconds	Number of drips per 60 seconds
15	1	5
20	2	7
25	2	8
30	3	10
35	3	12
40	3	13
45	4	15
50	4	17
55	5	18
60	5	20
65	5	22
70	6	23
75	6	25
80	7	27
85	7	28
90	8	30
95	8	32
100	8	33
105	9	35
110	9	37
115	10	38
120	10	40
125	10	42
130	11	43
135	11	45
140	12	47
145	12	48
150	13	50

Formula Rate (mL/hour)	Number of drips per 15 seconds	Number of drips per 60 seconds
155	13	52
160	13	53
165	14	55
170	14	57
175	15	58
180	15	60
185	15	62
190	16	63
195	16	65
200	17	67
205	17	68
210	18	70
220	18	73
225	19	75
230	19	77
235	20	78
240	20	80
245	20	82
250	21	83
255	21	85
260	22	87
265	22	88
270	23	90
275	23	92
280	23	93
285	24	95
290	24	97
300	25	100

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