NURSING SERVICE GUIDELINES
GENERAL

Guideline: **Standard Gastric Residual Volume (GRV)**

Effective Date:
May 2025

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May 2025

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Responsibility: Registered Nurse (RN)

Purpose of Guidelines: To assess tolerance of enteral feeding and minimize the potential for aspiration.

Procedure:

(a) **Gastric Residual Volume (GRV)** refers to the amount of fluid/contents that are in the stomach. Excess residual volume may indicate an obstruction or some other problem that must be corrected before tube feeding can be continued. High GRV may increase the risk for pulmonary aspiration (the most severe complication of tube feedings). However, aspiration can occur without the presence of "high" GRV. Further, GRV is more predictive for vomiting and reflux, not aspiration. Therefore, physical exams are equally important when assessing tube feeding tolerance.

(b) Risk factors most commonly associated with aspiration in tube-fed persons include:

(A) Depressed level of consciousness.
(B) Impaired cough or gag reflex.
(C) Inadequate gastric emptying.
(D) Increased/"high" gastric residual volume.
(E) Lying flat in bed.
(F) Inadequate oral care.
(G) Vomiting, regurgitation, reflux.

(c) **Continuous feeding**. Continuous drip feeding which may be delivered without interruption for an unlimited period of time each day. Check GRV q12hr. For

patients who have reached their goal and established TF tolerance, GRV check is not necessary in the absence of physical s/s of intolerance.

(d) **Bolus feeding**. A set amount of feeding is usually delivered four to eight times per day; each feeding lasts about 15 – 30 minutes. Check GRV prior to bolus feedings.

(e) **Considerations/limitations**.

Location and diameter of feeding tube: GRV checks are not applicable for tube feeding through Entriflex or NJ/J-tubes.

1. Viscosity and temperature of the formula.
2. Technique of the clinician (Example: force used, angle the syringe is held).
3. Administration schedule: gravity vs pump vs syringe.
4. Recent medication and/or free water flushes.

Gastric Residual Volume Procedure

Procedure	Point of Emphasis
1. Review physician order.	The physician order will be individualized for each patient's nutritional requirements.
2. Gather equipment.	60ml oral syringe Graduated cylinder Water Clean gloves
3. Confirm patient's identity with two patient identifiers.	Using two patient identifiers will reduce the number of medical errors.
4. Educate patient and/or family on procedure.	Focus on purpose and risk for aspiration.
5. Position HOB 30+ degrees.	Patients on spinal precautions may be placed in reverse Trendelenburg at 30-45 degrees if no contraindication exists for that position. Patients with femoral lines can be elevated up to 30 degrees.
6. Perform hand hygiene and don clean gloves.	
7. Connect 60ml oral syringe to the opening of gastric/nasogastric (NG) tube and gently aspirate gastric contents.	Use a new 60ml oral syringe daily. Empty contents of syringe into a graduated cylinder if volumes reach over 60ml and repeat process until no further content is aspirated into syringe. Make note of total GRV obtained.

8. Flush tube with 30ml water after the complete residual volume is obtained.	
9. For GRV > 500ml: Re-instill up to 500ml of aspirate. Flush tube with 30ml water. Hold TF for 1hr and reassess. If GRV remains > 500ml, assess for additional s/s of intolerance. <u>If additional s/s of intolerance are NOT present, and GRV remains > 500ml after 1hr</u>: restart TF at the last known, previously tolerated rate.	Note total amount of intake (flushes and re-infusing of aspirate) administered. **Physical signs of intolerance**: abdominal distension/discomfort, bloating/fullness and/or nausea/vomiting. **Holding TF for GRV < 500ml, in the absence of other signs of intolerance should be avoided. Too frequent starts/stops and GRV check can contribute to development of an ileus.**
10. <u>If additional s/s of intolerance ARE present, and GRV remains > 500ml</u>: continue to hold the TF and notify the provider for additional orders.	If GRV is consistently > 500ml, and no beneficial effect from promotility agent noted, glycemic control has been maintained, bowel regimen orders have been addressed, and ileus has been ruled out, **consider small bowel feeding tube placement**.
11. Remove contaminated gloves, discard and wash hands.	
12. Maintain elevation of patient's HOB 30+ degrees, unless medically contraindicated, not only during feedings, but during all aspects of the patient's daily routine.	
13. Document date, time, procedure performed, amount of residual obtained, description of residual, patient's tolerance, and any signs/symptoms of intolerance observed (or absence thereof) in the patient's medical record.	
14. Document the total amount of intake (flushes and re-infusing of aspirate) and output (waste of GRV, if any) for each GRV checked in the I&O section of the patient's medical record.	

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