Small Bore Feeding Tube Insertion (E.g. Entriflex/Avanos Corflo)

Site Applicability

SPH Critical Care units and MSJ High Acuity Unit

Practice Level

Specialized: RNs with additional education. (For ICU, competency is defined as at minimum three successful insertion attempts with Nurse Educator or super-user supervision).

Requirements

- A physician order is required to insert small bore feeding tube. The order should specify either gastric placement or post-pyloric placement.
- A small bore feeding tube placement must be confirmed by x-ray and reviewed by a physician prior to initiating feeds.
- A physician order is required before using feeding tube.
- Never re-insert the stylet/guidewire after a small bore feeding tube has been inserted.

Need to Know

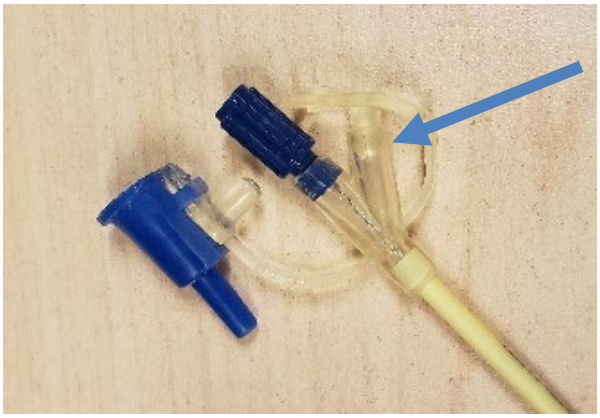
- Do not proceed with nasal insertion of a feeding tube if the patient has a basilar skull fracture; has undergone maxillofacial trauma or surgery, including trans-sphenoidal surgical approaches; or has an uncorrected coagulation disorder.
- Additional contraindications include esophageal varices with recent bleeding, esophageal obstruction, and recent esophageal surgery.
- Consider inserting a nasal bridle securement device for a delirious or restless patient to prevent accidental removal. (see "Nasal Bridle – Nasogastric Tube Securement Device" [B-00-12-10132])
- Small bore feeding tubes should not be aspirated for assessment of residuals as it can collapse the tube (leading to inaccurate measurements of residuals), and increases the likelihood of tube blockage.

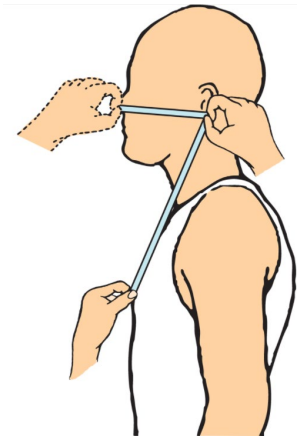
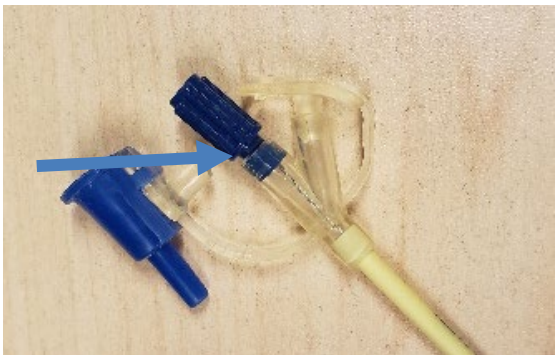
Equipment and Supplies

1. Small bore nasogastric feeding tube with stylet

2. Water-based lubricating gel
3. Nasogastric stabilization device
4. 50 mL slip tip syringe
5. Bottle of sterile water
6. PPE: non-sterile gloves, gown, facemask with eye protection
7. Disposable drinking cup and straw
8. Paper tape
9. Stethoscope

Procedure

For Both Gastric and Post-Pyloric Placement	
Steps	**Rationale**
Check prescriber's orders, confirm patient identification, and explain the procedure to the patient /family.	
Perform hand hygiene, don PPE	Facemask and eye protection is recommended as there is a risk of splash from patient coughing
Position patient in sitting or high Fowler's position as tolerated	The patient should not lean forward, nor should the head and neck be extended to decrease risk of tube entering brain stem in a patient with previous face trauma
Place patient on oximetry monitor	To monitor oxygen saturation during procedure - desaturation could indicate that the tube has entered the trachea
Assess the patency of the nares, observing for potential obstructions to feeding tube passage. Select nare.	
Remove tube from package. Close side port.	

Estimate the desired depth of the tube insertion: Measure length of tube by placing exit port of tube at tip of nose, then extending tube to earlobe, then to xiphoid process. For **Gastric**: Add 10 cm to your measurement For **Post-pyloric**: Add 20 to 30 cm to your measurement	
Pour sterile water into cup	
Ensure that the connection between the stylet port and the tube are firmly attached, and that the stylet is not exiting at either ends of the tube	
Apply lubricating gel to the tip of the tube	Lubrication facilitates easier passage through the nare. Water-based lubricant reduce mucosal irritation.
Insert the tip of the tube into the selected nare. At a steady pace, smoothly advance it to the posterior pharynx (about 15 cm in). If coughing occurs or if the patient's oxygen saturation falls as the tube is advanced, withdraw it until breathing and oxygen saturation return to baseline before attempting to advance it farther.	Coughing may indicate that the tube has entered the airway. The tube must be withdrawn into the nasopharynx before advancing it. Median distance from the naris to the tracheoesophageal junction is about 20 cm (8 in).
Ask or help patient to tip head down towards chest	This changes the alignment so the tube is more likely to be pointed towards the entry of the esophagus.
If the patient has no contraindications to swallowing water, ask the patient to swallow water in the cup if the patient is able to do so. If the patient is NPO, ask patient to attempt swallowing motion.	Swallowing assists passage of the tube into the esophagus.

As the patient swallows, or if they are unable to, advance the tube to the predetermined measurement. Do not remove the stylet.	The initial swallow helps place the tube in the esophagus, and the tube can be advanced to the desired position without repeated swallowing
Temporarily secure the tube to the patient's nose or face with paper tape	
Auscultate at desired area by instilling 20 mL of air with 50 mL slip tip syringe. For Gastric Placement: auscultate at the left upper quadrant. (see troubleshooting section if gastric bubble is not audible. Skip ahead to "For Both Gastric and Post-Pyloric Placement" For Post Pyloric Placement: see below for additional steps for placement and assessment.	Auscultation of a gastric bubble is one indication that the feeding tube is placed in the correct location, although confirmation with an abdominal X-ray is also required before initiating use. The quadrant where it is loudest is most likely where the tip is located
***For Post-Pyloric Placement Only**	
Position patient to right-side lying	By placing patient right-side lying, it allows peristalsis to assist tip of the tube to migrate to the pylorus of stomach
Instill 300 mL of air and remove paper tape	This helps the stomach distend with air to facilitate passage to the pyloric sphincter
Advance tube slowly (3-5cm) at a time to previously decided measurement, using a twisting motion	Twisting motion aids advancement into the small bowel
Auscultate at desired area by instilling 5 mL of air with 50 mL slip tip syringe. For Post Pyloric Placement: auscultate left and right upper quadrant and assess to see if sound is loudest at the right upper quadrant.	Instilling a bolus of air when tube tip is near the pylorus helps relax the pylorus so that the tube can pass through. Auscultate to assess tube location. If tube tip is past the pyloric sphincter, it should be heard loudest at the right upper quadrant. If loudest sound heard at left upper quadrant, the feeding tube might have coiled in the stomach. Consider pulling back to original gastric length and re-starting.
Continue to repeat last two steps until desired length reached and air bolus audible loudest at right side of abdomen.	
Temporarily secure the tube to the patient's nose or face with paper tape.	

For Both Gastric and Post-Pyloric Placement	
Ask provider to order abdominal x-ray to confirm placement.	
After physician has placed an order confirming placement, flush the feeding tube with 10 mL water.	Flushing with water activates the internal lubricant to ease stylet removal
Remove stylet: hold the end of tube in one hand, and use other hand to pull out the stylet in one smooth motion.	Holding the tube prevents accidental tube removal/re-positioning
Secure tube with nasogastric stabilization device on nose.	

Troubleshooting:

1. Unable to advance in first 20 cm.	The small bore feeding tube could be coiled in the mouth. Use a flashlight to check inside of the mouth for coiled tube. Pull back to the level of the posterior pharnyx (about 15 cm in) and retry advancing If unable to advance very early on (first 5 cm), pull out and attempt in other nare.
2. Unable to advance after first 30 cm, and/or unable to instill air when at desired depth	Tube could be kinked or folded inside the gastrointestinal tract. Pull back 5 cm and attempt to instill air. If able to instill air, continue to advance. If unable to instill air, pull back another 5 cm.
3. Unable to insert into nare	Insertion of a small bore feeding tube is difficult in an agitated patient. Continuing to attempt to advance might cause accidental placement into airway. Please consult ordering physician if patient is resisting.
4. Unable to remove stylet after X-ray confirmation.	There is a hydrophilic internal lubricant in the tube. Flush tube with up to 10mL of water to activate lubricant to assist in stylet removal. If there is still resistance, the tube might have become kinked. Please see Troubleshooting point 2.

Documentation

See Appendix: Documentation of Feeding Tubes in Power Chart

Patient and Family Education

1. Prior to insertion
    a. Explain need for small bore feeding tube
    b. Provide an overview of the procedure
    c. Explain potential for discomfort and positioning requirement
2. After insertion
    a. Teach patient and family strategies on keeping small bore feeding tube in place
    b. Teach patient and family to let care provider know if tube has been dislodged

Related Documents

1. B-00-13-10045 – Tube Feeding: Small Bore Enteral Feeding (Entriflex), ACUTE CARE ONLY
2. B-00-12-10132 – Nasal Bridle: Nasogastric Tube Securement Device
3. B-00-12-40110 – Proning of a Mechanically Ventilated Patient (See section on feeding)

References

Bing, X., Yinshan, T., Ying, J., & Yingchuan, S. (2021). Efficacy and safety of a modified method for blind bedside placement of post-pyloric feeding tube: a prospective preliminary clinical trial. *Journal of International Medical Research*, *49*(2), 0300060521992183. https://journals.sagepub.com/doi/pdf/10.1177/0300060521992183

Bloom, L., & Seckel, M. A. (2022). Placement of Nasogastric Feeding Tube and Postinsertion Care Review. *AACN Advanced Critical Care*, *33*(1), 68–84. https://doi.org/10.4037/aacnacc2022306

Bourgault, A. M., Powers, J., Aguirre, L., Hines, R. B., Sebastian, A. T., & Upvall, M. J. (2020). National Survey of Feeding Tube Verification Practices: An Urgent Call for Auscultation Deimplementation. *Dimensions of Critical Care Nursing*, *39*(6), 329–338. https://doi.org/10.1097/dcc.0000000000000440

Corflo Nasogastric/Nasointestinal Feeding Tubes Instructions for Use (2019). Avanos Medical Sales. Alpharetta, GA.

Ecklund, M. (2015). Small-Bore Feeding Tube Insertion and Care. In D. L. Wiegand (7th Ed.), AACN Procedure Manual for High Acuity, Progressive, and Critical Care (pp. 1221-1226). AACN. https://www.elsevier.com/__data/assets/pdf_file/0019/271117/ch0139.pdf

Elsevier Skills (2020). Feeding Tube: Small-Bore Insertion, Care, and Removal - CE. Retrieved January 18th, 2022. St. Louis, MO. https://point-of-care.elsevierperformancemanager.com/skills/146/quick-sheet?skillId=CC_145

Elsevier Skills (2020). Feeding Tube: Small-Bore Feeding Tube Insertion: Electromagnetic Guidance System (CORTRAK 2 EAS). Retrieved January 26th, 2022. St. Louis, MO. https://point-of-care.elsevierperformancemanager.com/skills/10972/quick-sheet?skillId=CCMS_157

Heuschkel, R., and Duggan, C. (2021) Enteral feeding: Gastric versus post-pyloric. *UptoDate*. Retrieved Jan 26, 2021, from . https://www.uptodate.com/contents/enteral-feeding-gastric-versus-post-pyloric?search=post%20pyloric%20feeding&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1

Judd, M. (2020). Confirming nasogastric tube placement in adults. *Nursing, 50* (4), 43-46. doi: 10.1097/01.NURSE.0000654032.78679.f1

Morgan, B. (2021, February 2). *Procedure: Insertion of an oral/nasal small bowel feeding tube*. LHSC. Retrieved March 25, 2022, from https://www.lhsc.on.ca/critical-care-trauma-centre/procedure-insertion-of-an-oral/nasal-small-bowel-feeding-tube

Rajamani, A. (2019). Description of a simple technique of non-endoscopic insertion of a post-pyloric feeding tube in critically ill patients. *Journal of the Intensive Care Society*, *20*(3), NP21–NP22. https://journals.sagepub.com/doi/full/10.1177/1751143719843425

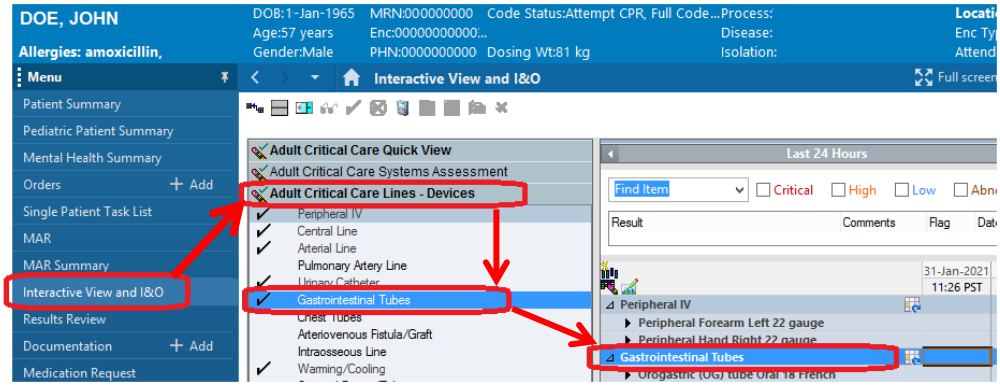
Xiao, J., Mao, Z., Hua, M., Chen, T., Liu, H., Hu, P., Tang, S., Kang, H., & Zhou, F. (2019). Auscultation-assisted bedside postpyloric placement of feeding tube in critically ill patients: a prospective, observational study. *Asia Pacific Journal of Clinical Nutrition*, *28*(3), 435–441. https://doi.org/10.6133/apjcn.201909_28(3).0002

Appendices

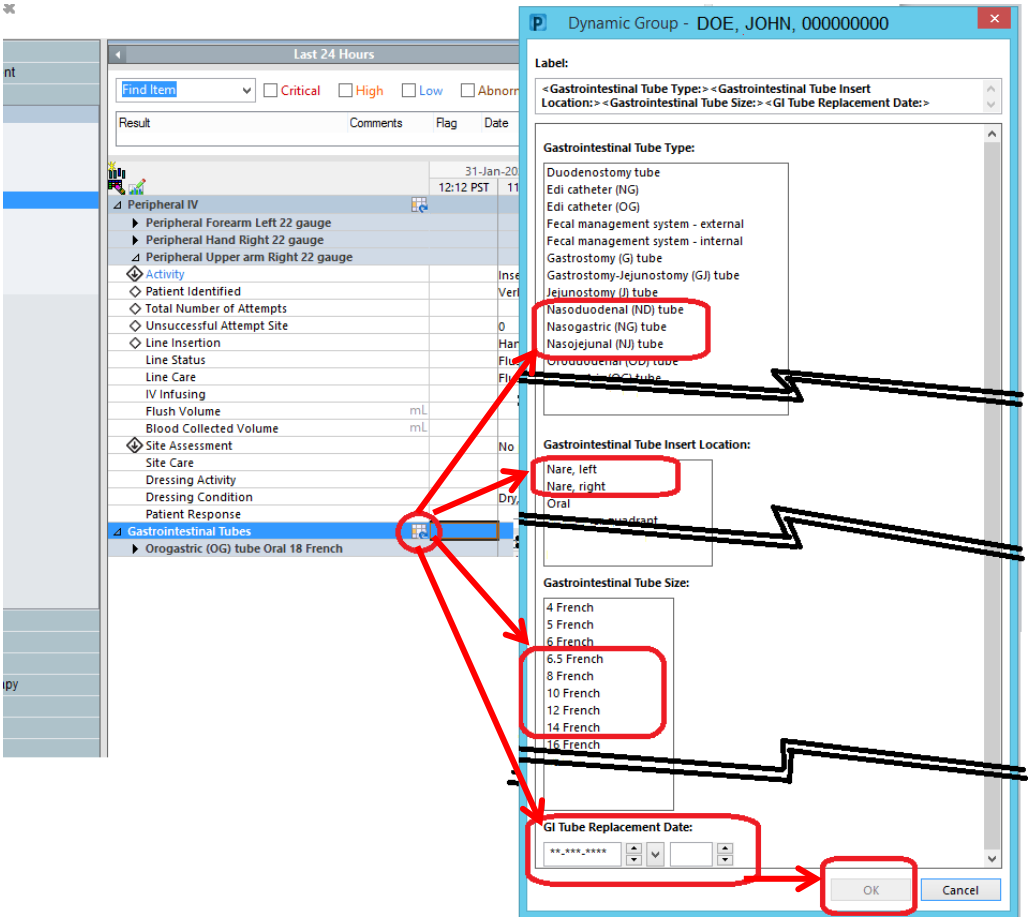
- Appendix: Documentation of Feeding Tubes in Power Chart

Appendix: Documentation of Feeding Tubes in Power Chart

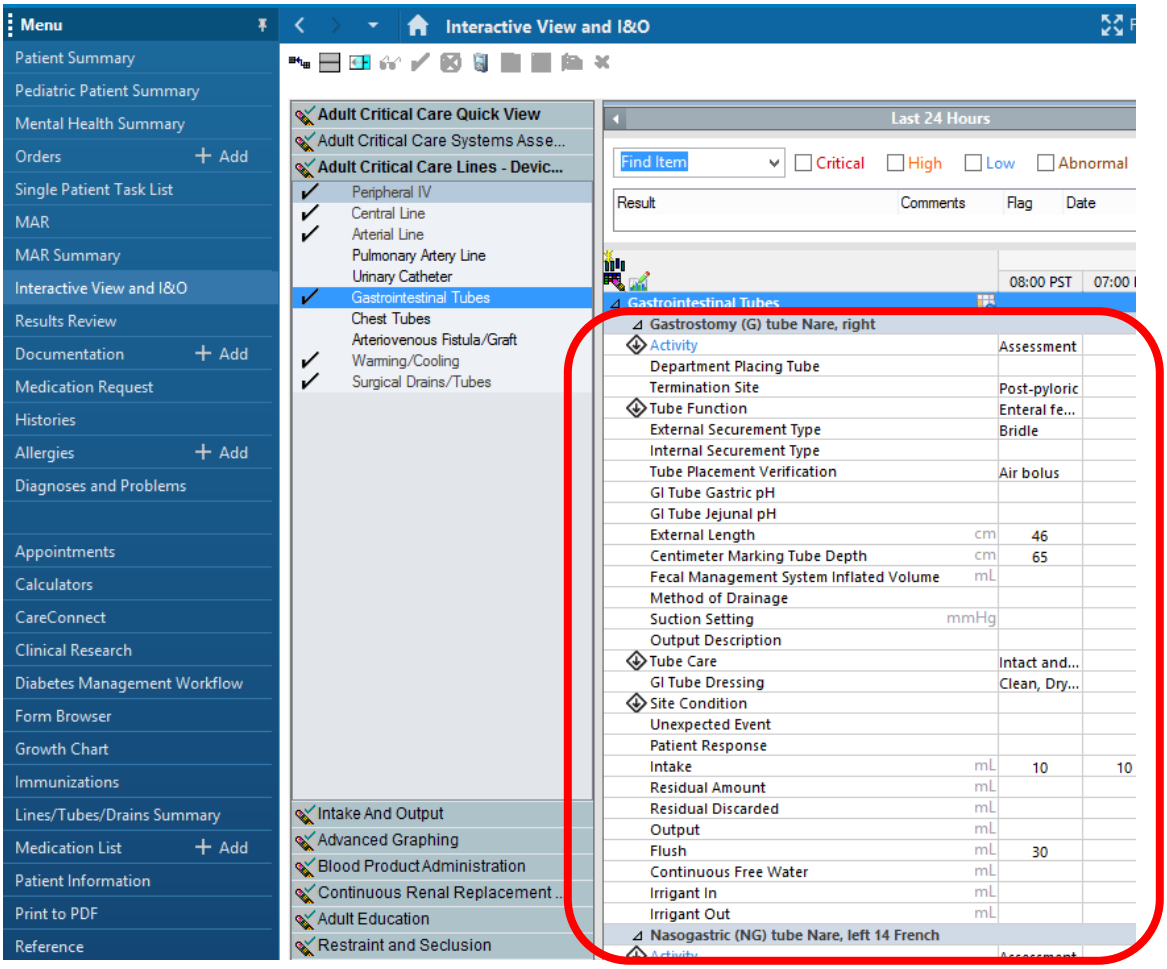
1. Select “Gastrointenstinal Tubes” located in Interactive view, under the “Adult Critical Care Lines-Devices” band.



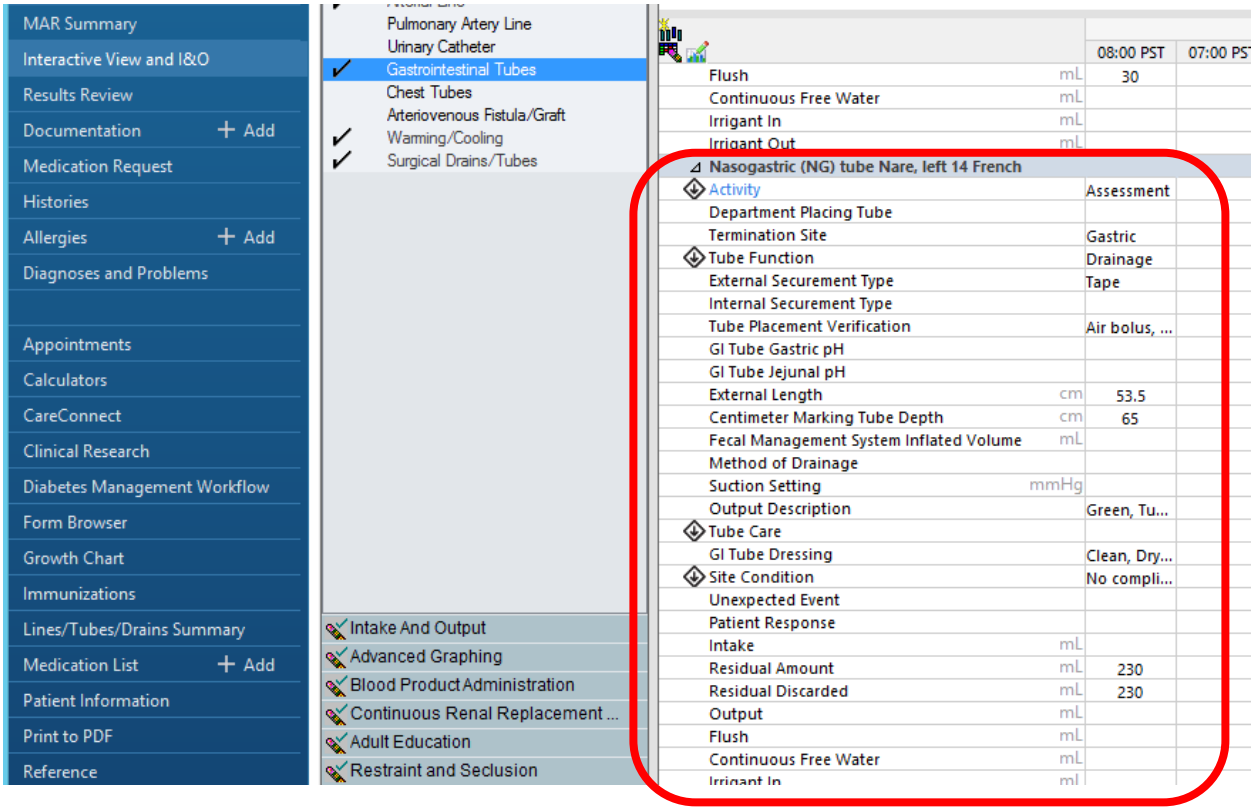
2. Add a dynamic group for “Nasogastric Tube”, or “Nasoduodenal Tube” (as appropriate) and document the type, size and location of the tube.



3. Once a dynamic group is created, document the insertion, tube function, securement device type, tube placement verification, centimeter marking tube depth or external length, and the site condition



4. Ongoing: Document external length or tube marking q4h



Persons/Groups Consulted

Nurse Educators ICU SPH

Nurse Educator HAU MSJ

Clinical Nurse Specialist ICU SPH/VGH

Registered Dietician ICU

Registered Nurses ICU SPH

Created by

Nurse Educator ICU SPH

First Released Date:	29-AUG-2022
Posted Date:	24-OCT-2023
Last Revised:	24-OCT-2023 (minor edit)
Last Reviewed:	24-OCT-2023
Approved By: *(committee or position)*	PHC
	Professional Practice Standards Committee
Owners:	PHC
	Critical Care