



CRNAs' Perceptions of a Quick Reference Guide For Aspiration Pneumonitis: A Quality Improvement Project

Johnathan Dockery, BSN, SRNA

Maura McAuliffe, PhD, CRNA, FAAN, Project Chair

Nurse Anesthesia Program
College of Nursing, East Carolina University
Greenville, North Carolina 27858
dockeryj23@students.ecu.edu

INTRODUCTION

- The purpose of this project was to assess CRNAs' perceptions of a newly created QRG for aspiration
- Aspiration Pneumonitis is a leading causes of anesthesia morbidity and mortality¹
- Many factors can increase the risk for peri-operative aspiration^{2,3}
- CRNAs can utilize common aspiration risk mitigation practices²
- Pre-operative Gastric Ultrasound may help identify those at risk for aspiration, especially those taking GLP-1 agonists^{4,5}

METHODS

- A single Plan, Do, Study, Act cycle was completed⁶
- QRG, PowerPoint Presentation, and pre- and post-implementation survey design
- Materials emailed to participants at a partnering Outpatient Surgery Center
- QRG was utilized during a two-week implementation period
- CRNAs were asked to complete pre- and post-implementation surveys via Qualtrics

QUICK REFERENCE GUIDE

Risk Factors for Aspiration

Delirious patient
Aspiration
Pregnancy
Obstructive Pulmonary Disease
Gastroesophageal Reflux Disease
Gastric Stasis
Gastric Outlet Obstruction
Gastric Surgery
Gastric Ulcer
Gastric Cancer

ASA Fasting Guidelines for Elective Procedures for Healthy Patients

Ingested Material Fasting Period
Clear liquids 2h
Breast milk 4h
Infant formula 4h
Nonhuman milk 6h
Light meal 8h
Fried foods, fatty foods, meat 8h

Patients are scanned in 2 positions: supine and right lateral decubitus

Supine: Assess for type and amount of content
R/LD: Assess for grade of risk based on the gastric volume present

Management of Aspiration

Aspiration (aspirated) aspiration
Aspiration (aspirated) aspiration
Aspiration (aspirated) aspiration
Aspiration (aspirated) aspiration
Aspiration (aspirated) aspiration
Aspiration (aspirated) aspiration
Aspiration (aspirated) aspiration
Aspiration (aspirated) aspiration
Aspiration (aspirated) aspiration
Aspiration (aspirated) aspiration

CRG & ASA GLP-1 Agonists Holding Parameters

CRG & ASA GLP-1 Agonists Holding Parameters
CRG & ASA GLP-1 Agonists Holding Parameters
CRG & ASA GLP-1 Agonists Holding Parameters
CRG & ASA GLP-1 Agonists Holding Parameters
CRG & ASA GLP-1 Agonists Holding Parameters
CRG & ASA GLP-1 Agonists Holding Parameters
CRG & ASA GLP-1 Agonists Holding Parameters
CRG & ASA GLP-1 Agonists Holding Parameters
CRG & ASA GLP-1 Agonists Holding Parameters
CRG & ASA GLP-1 Agonists Holding Parameters

Gastric Point-of-Care Ultrasound

Empty Stomach: "No content" or "Minimal" appearance

Fluid Content: "Anechoic" (black) may give a "very light" appearance if fluid is anechoic

Thick Fluid or Solid Content: "Hypoechoic" (grey)

ASPP & ASA GLP-1 Agonists Holding Parameters

ASPP & ASA GLP-1 Agonists Holding Parameters
ASPP & ASA GLP-1 Agonists Holding Parameters
ASPP & ASA GLP-1 Agonists Holding Parameters
ASPP & ASA GLP-1 Agonists Holding Parameters
ASPP & ASA GLP-1 Agonists Holding Parameters
ASPP & ASA GLP-1 Agonists Holding Parameters
ASPP & ASA GLP-1 Agonists Holding Parameters
ASPP & ASA GLP-1 Agonists Holding Parameters
ASPP & ASA GLP-1 Agonists Holding Parameters
ASPP & ASA GLP-1 Agonists Holding Parameters

RESULTS

Figure 1

How confident do you feel in identifying gastric contents on ultrasound pre-and post-implementation? (n=5, n=3)

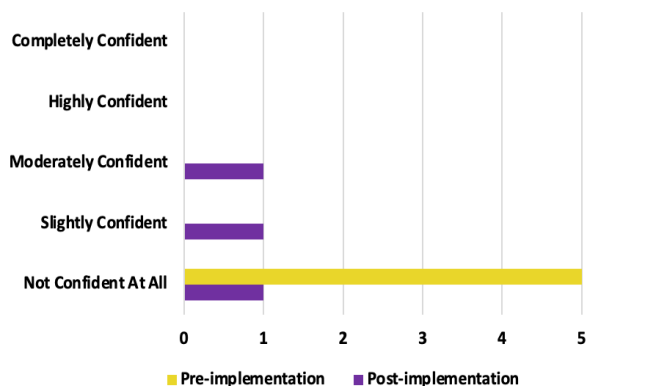
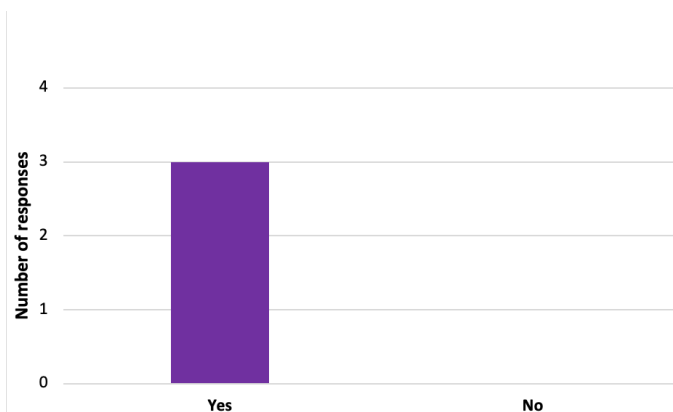


Figure 2

Would you be interested in an in-service on gastric POCUS (n=3)



DISCUSSION

- Five CRNAs completed the pre-implementation survey
- Three CRNAs completed the post-implementation survey
- Mixed feedback on accessibility and usefulness
- Improvement in identification of aspiration risk factors, including gastric volumes calculated via ultrasound
- High interest in hands-on on gastric ultrasound workshop

CONCLUSIONS

- Limitations include small sample size, brief implementation period, and absence of on-site presence during part of the implementation.
- An electronic QRG was cost-effective to produce and easy to distribute.
- Recommendations for future quality improvement cycles include onsite presence and providing a physical copy of the QRG in every operating room
- Future studies could explore the use of gastric ultrasound to assess the risk of aspiration in the perioperative setting.

REFERENCES

- Zdravkovic, M., Berger-Estilla, J., Sorbello, M., & Hagberg, C. A. (2020). An international survey about rapid sequence intubation of 10,003 anaesthetists and 16 airway experts. *Anaesthesia*, 75(3), 313-322. <https://doi.org/10.1111/anae.14867>
- Pytko, S., & Crosby, E. (2017). Aspiration: Risks and prevention. In O. R. Hung & M. F. Murphy (Eds.), *Hung's difficult and failed airway management* (3rd ed.). McGraw-Hill Education. <https://accessanesthesiology.mhmedical.com/content.aspx?bookid=2206§ionid=171075369>
- Beam, B. B., & Guevara, L. R. (2023). Are serious anesthesia risks of semaglutide and other GLP-1 agonists under-recognized? *Anesthesia Patient Safety Foundation*, 38(3), 69-71. <https://www.aspa.org/article/are-serious-anesthesia-risks-of-semaglutide-and-other-glp-1-agonists-under-recognized/>
- Cieslak, J. R., Rice, A. N., Gadsden, J. C., & Vacchiano, C. A. (2020). Does ultrasonographic measurement of gastric content influence airway management decisions? *AANA Journal*, 88(2), 107-113. <https://www.proquest.com/scholarly-journals/docs-ultrasonographic-measurement-gastric-content/docview/2392482503/sc-2>
- American Association of Nurse Anesthetists. (2024, March 11). AANA publishes considerations for anesthesia care of the patient on a GLP-1 receptor agonist [press release]. <https://tinyurl.com/5n6hxyw1>
- Institute for Healthcare Improvement. (2022). Model for improvement: Plan-Do-Study-Act (PDSA) cycles. Science of improvement: Testing changes. <https://www.ihi.org/resources/Pages/Howtoimprove/ScienceofImprovement/TestingChanges.aspx>