**Introduction & Significance**

- Pulmonary aspiration is an anesthesia-related complication
- Incidence 1 in 2 – 4,000 operations
- Significant perioperative morbidity and mortality:
  - Acute respiratory distress
  - Pneumonia
  - Multiple organ dysfunction
  - Mechanical ventilation
  - Mortality 5-9%
  - One case of aspiration pneumonia costs $30,280
- Current ASA NPO Guidelines does not take into account many patient factors:
  - Emergent and urgent surgeries
  - Communication and comprehension issues
  - Cognitive impairment
  - Pediatric population
  - Patient may not be truthful
  - Medical conditions that delay gastric emptying
- Incidence 1 in 2
- Significant perioperative morbidity and mortality:
  - Pulmonary aspiration is an anesthesia-related complication

**Aims:**
Increase anesthesia provider’s confidence and competency in identification of the gastric antrum’s contents

**Participants:**
Nurse Anesthetists anesthesia providers

**Gastric Ultrasound:**
A simple, noninvasive diagnostic tool to clinical evaluate the perioperative patient's aspiration risk

**Methodology**

**Aims:** Increase anesthesia provider’s confidence and competency in identification of the gastric antrum’s contents

**Participants:** Rutgers University RRNAs & New Jersey Association of Nurse Anesthetists anesthesia providers

**Sample:** 117 participants

**Setting:** Virtual video platforms

**Measures/Instruments:** Pre- and post-intervention tests

**Video Demonstration**

**Clinical Decision-Making Tree**

**Results**

**Barriers Identified:**
- Lack of training (39.84%)
- Lack of time (30.68%)
- Lack of access (27.89%)
- Other: Not a common practice/resistance (1.59%)

**Willingness to Integrate GUS Into Practice:**
- 0% were NOT willing to integrate
- 50.57% Agreed
- 49.43% Somewhat Agreed
- 0% thought it was NOT useful

**Pre-Test vs. Post-Test Correct Responses to GUS Image Recognition**

<table>
<thead>
<tr>
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<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error of Mean</th>
<th>95% CI (Upper)</th>
<th>95% CI (Lower)</th>
<th>Critical t</th>
<th>df</th>
<th>p-value</th>
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<tbody>
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</table>

- The mean pre-intervention score was 27.48. The mean post-intervention score was 71.52%.
- Between the pre and posttest, image recognition scores significantly improved by a mean of 44% ± 9.98 (95% CI, t (124.8), p < 0.05, d = 7).

**Pre-Test vs. Post-Test Participants Confidence in Identifying GUS Images**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
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<th>95% CI (Upper)</th>
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- The mean pre-intervention score was 12.67. The mean post-intervention score was 92.33.
- Likert scores demonstrated improved confidence in image recognition of solid, liquid, and empty antrum by 79.67% ± 2.52 (95% CI, t (64.83), p < 0.05, d = 2) from pre to post-tests.

**Summary**

- Anesthesia providers & RRNAs are able to quickly improve their confidence and competence in GUS image recognition after a single comprehensive 30-minute virtual lecture and demonstration
- GUS' high sensitivity can rule out or positively identify a full stomach
- Allows the provider to curate an individualized anesthetic plan of care for each patient
- Prevent unnecessary medical costs related to aspiration pneumonia
- Anticipate that GUS will become more prevalent at the educational, institutional, and organizational levels

**For references and educational handouts please contact or scan the QR code:**
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**Gastric Ultrasound**

*Gastric ultrasound is a simple, noninvasive diagnostic tool to evaluate the perioperative patient’s aspiration risk.*