

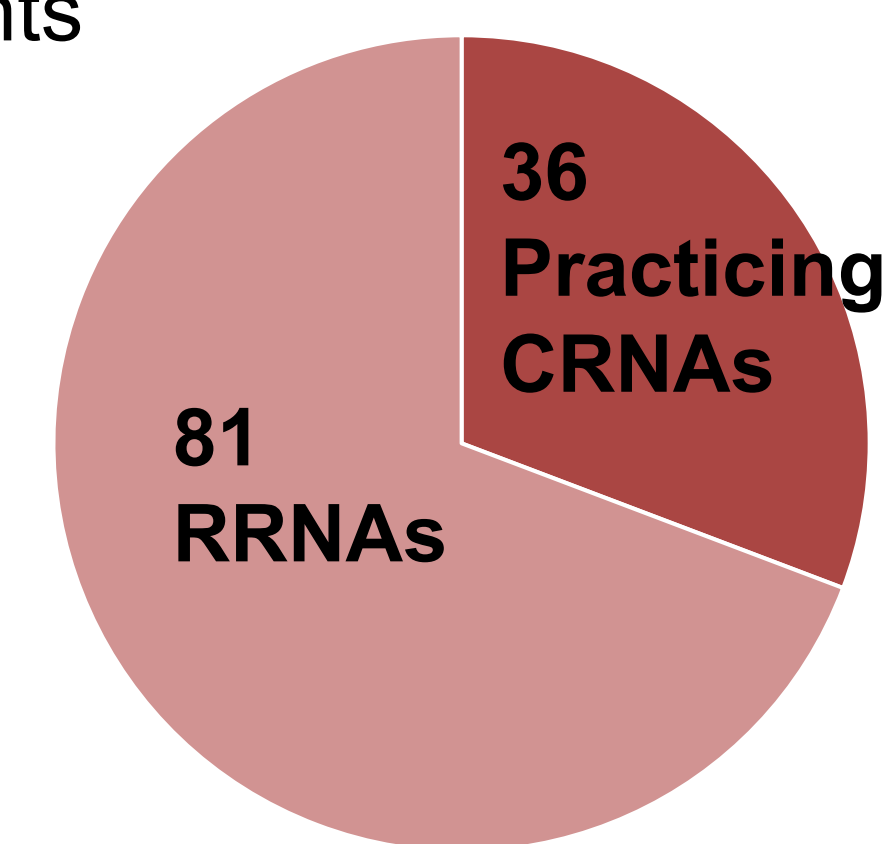
## Introduction & Significance

- 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

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

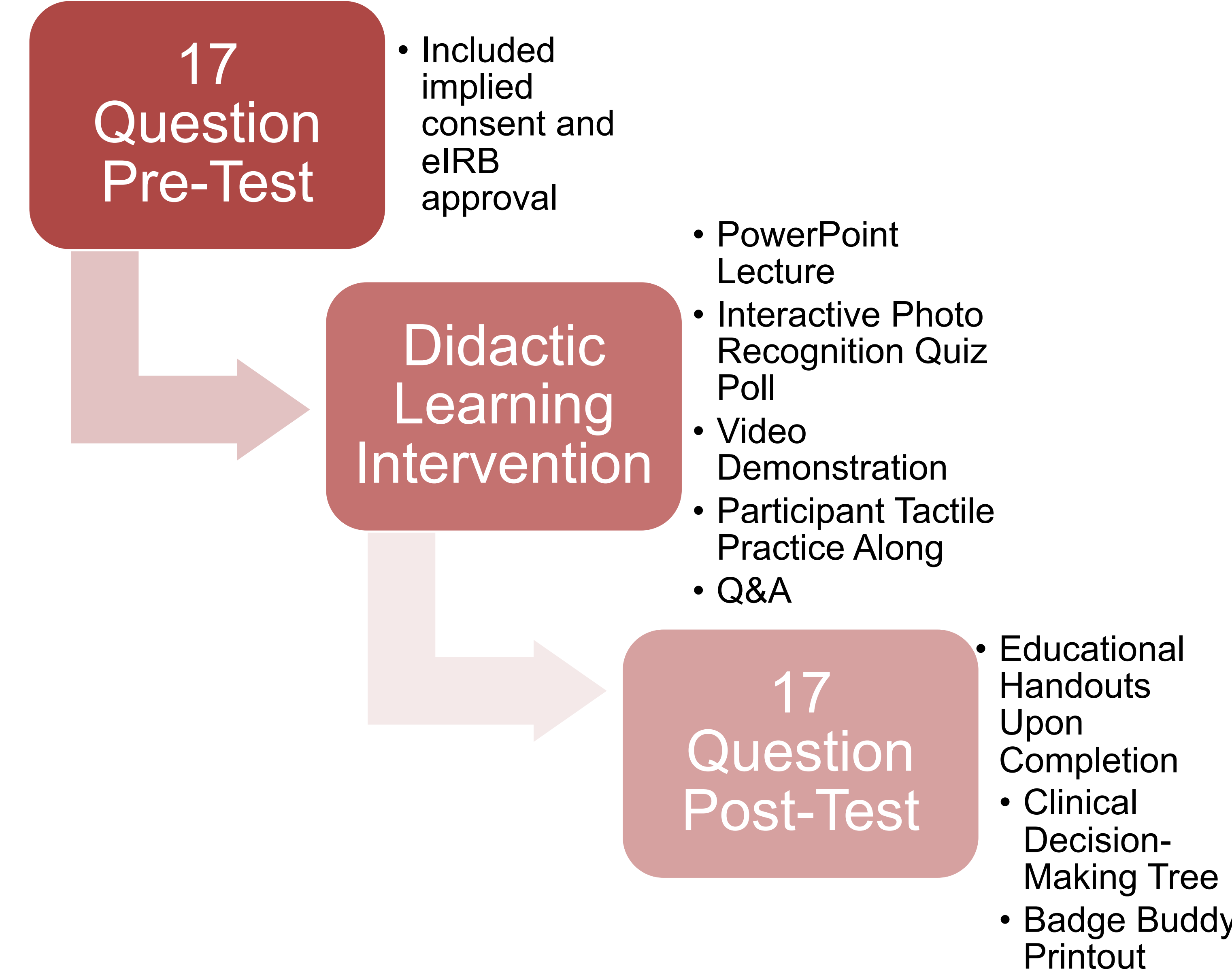
## Methodology

**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

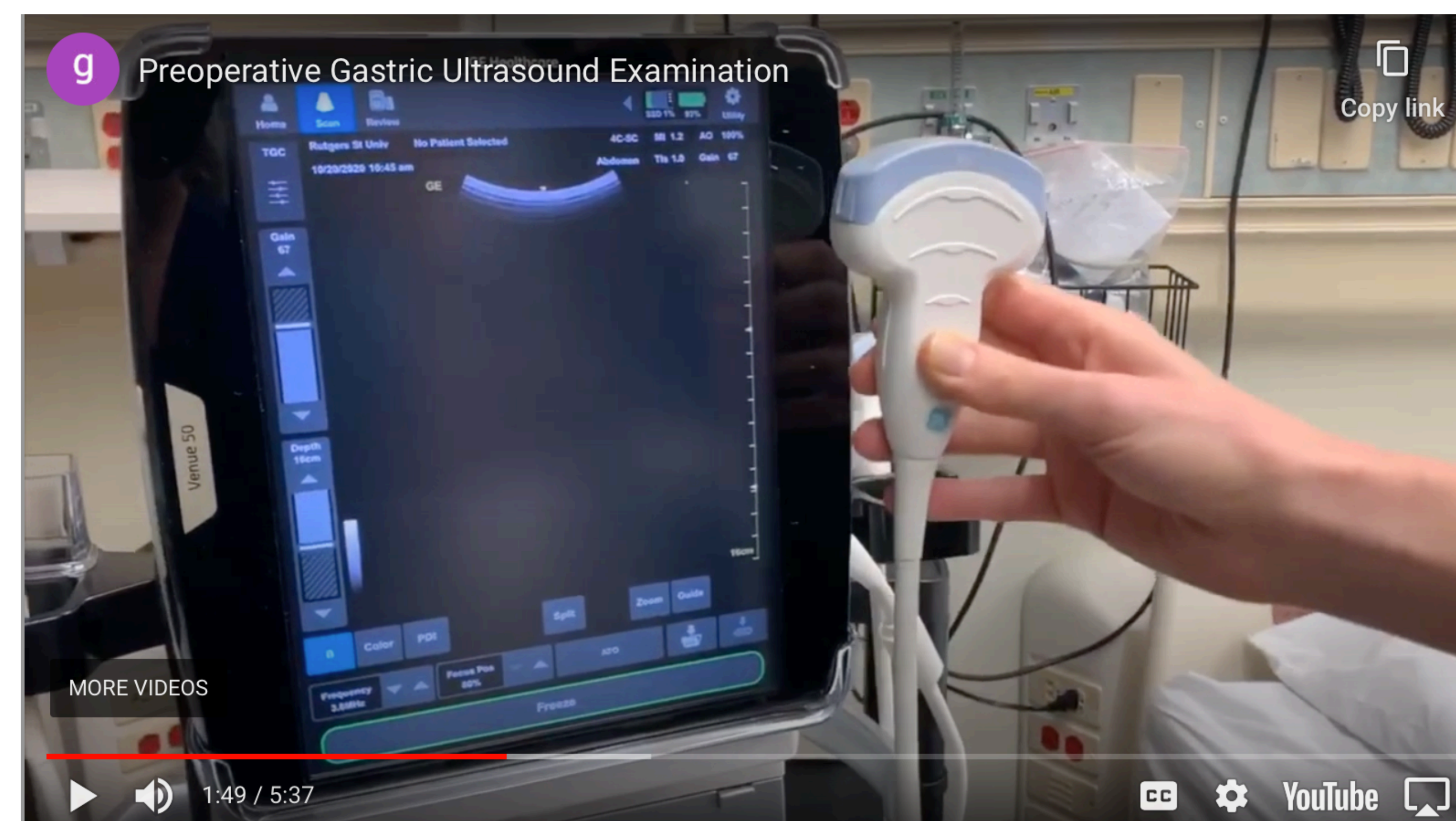


**SETTING:** Virtual video platforms  
**MEASURES/INSTRUMENTS:** Pre- and post-intervention tests

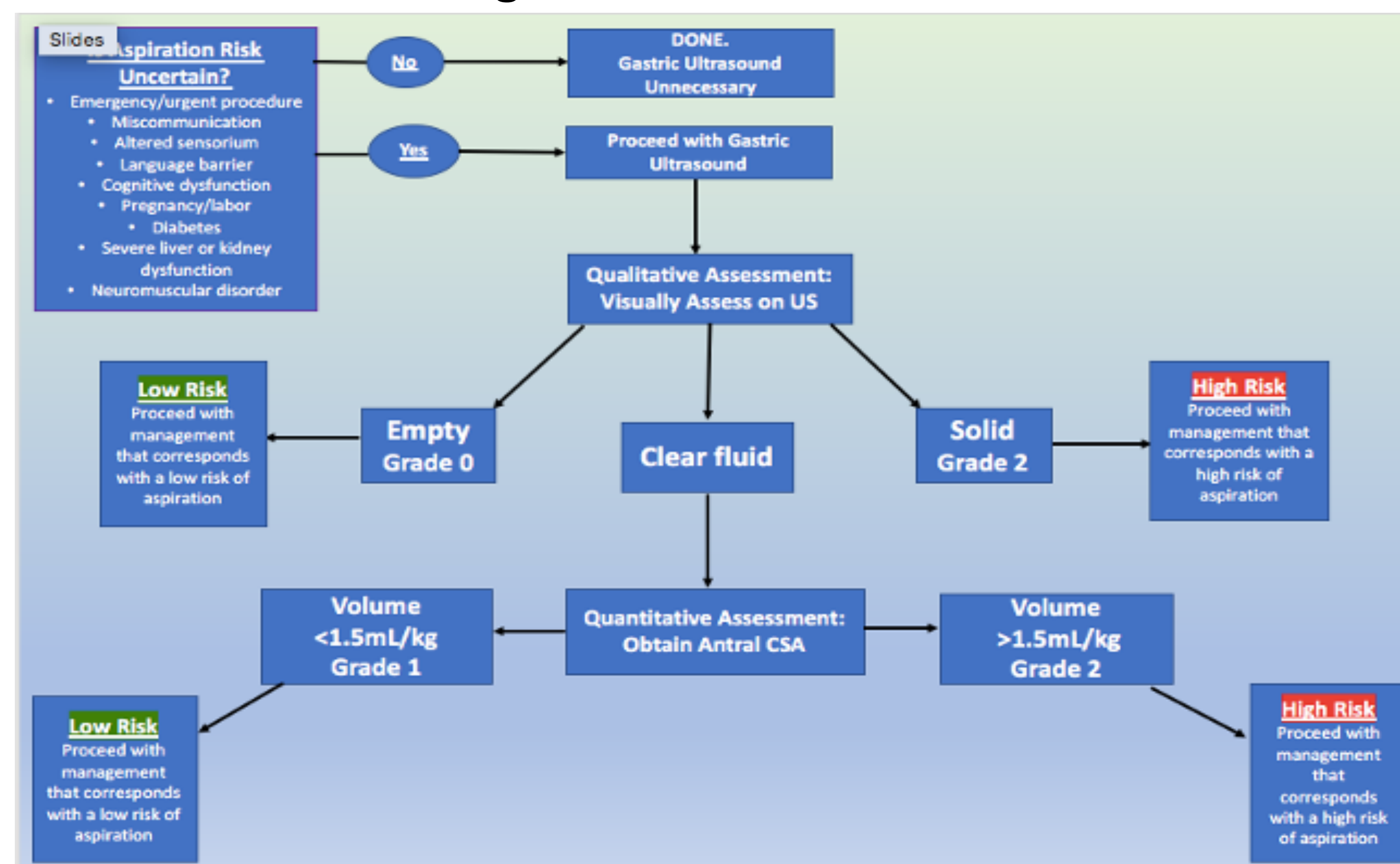
Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I believe that ultrasound can be used to identify aspiration risk in the operating room.					
2. I believe that ultrasound can be used to identify aspiration risk in the operating room.					
3. I believe that ultrasound can be used to identify aspiration risk in the operating room.					
4. I believe that ultrasound can be used to identify aspiration risk in the operating room.					
5. I believe that ultrasound can be used to identify aspiration risk in the operating room.					
6. I believe that ultrasound can be used to identify aspiration risk in the operating room.					
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9. I believe that ultrasound can be used to identify aspiration risk in the operating room.					
10. I believe that ultrasound can be used to identify aspiration risk in the operating room.					



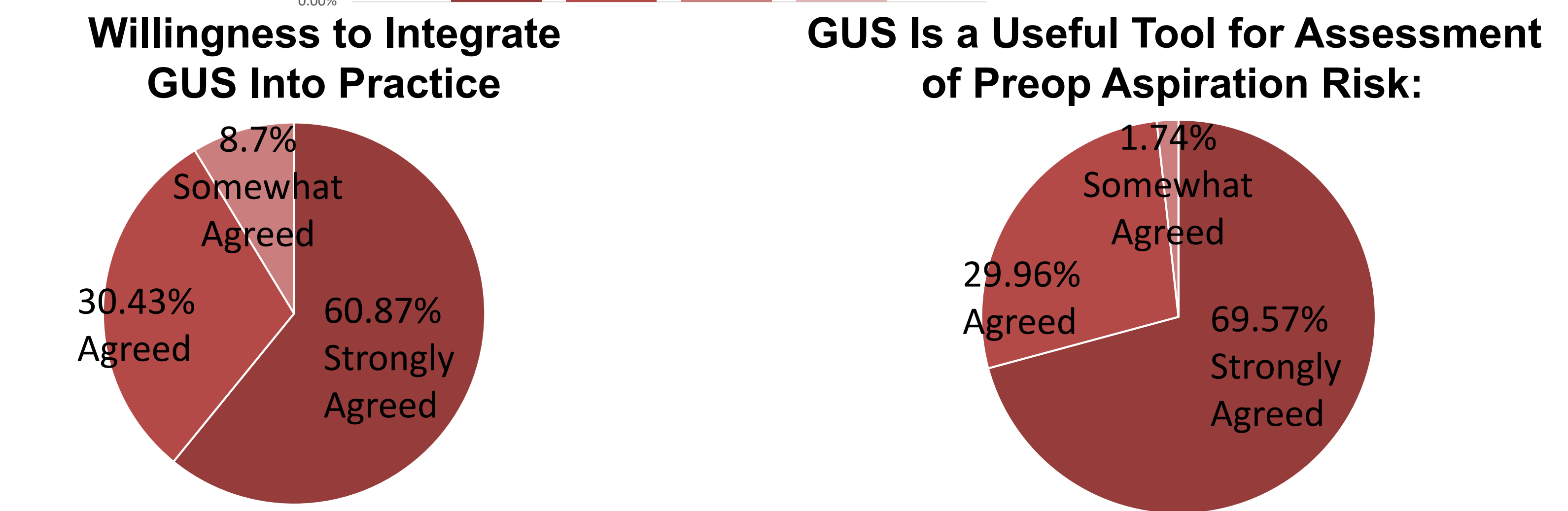
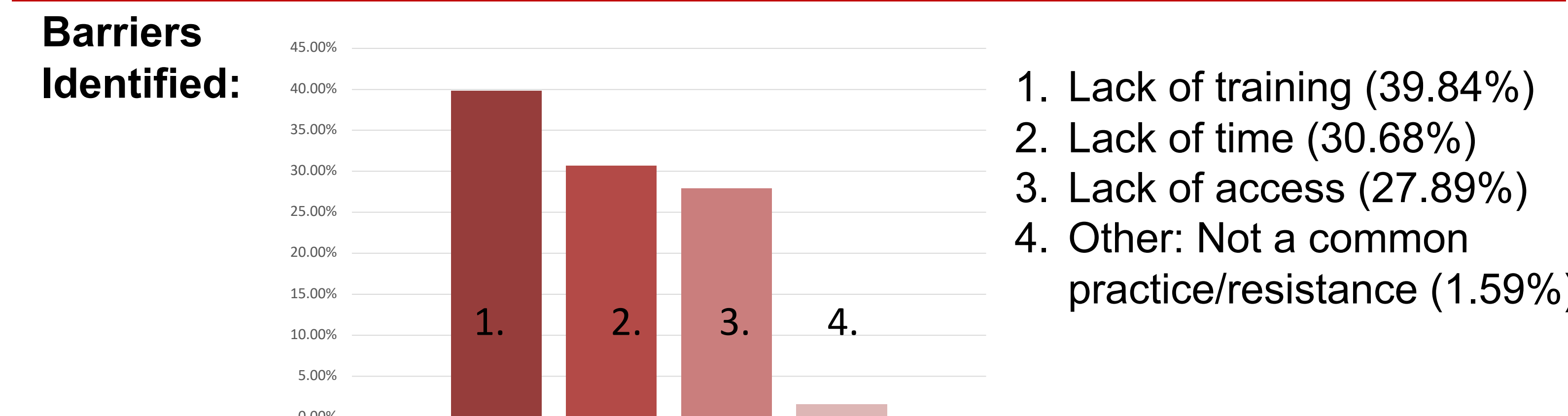
## Video Demonstration



## Clinical Decision-Making Tree



## Results



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

Mean	Std. Deviation	Std. Error of Mean	95% CI (Upper)	95% CI (Lower)	t	Critical t	df	p-value
44.04	9.98	3.53	52.38	35.69	12.48	2.36	7	0.00645

- 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 (12.48), p < 0.05, d = 7).

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

Mean	Std. Deviation	Std. Error of Mean	95% CI (Upper)	95% CI (Lower)	t	Critical t	df	p-value
79.67	2.52	1.45	85.92	73.42	54.83	4.30	2	0.00157

- 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's by 79.67% ± 2.52 (95% CI, t (54.83), 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:

Michelle Horton  
mh1197@sn.rutgers.edu  
Ginamarie Martucciello  
gm597@sn.rutgers.edu

