

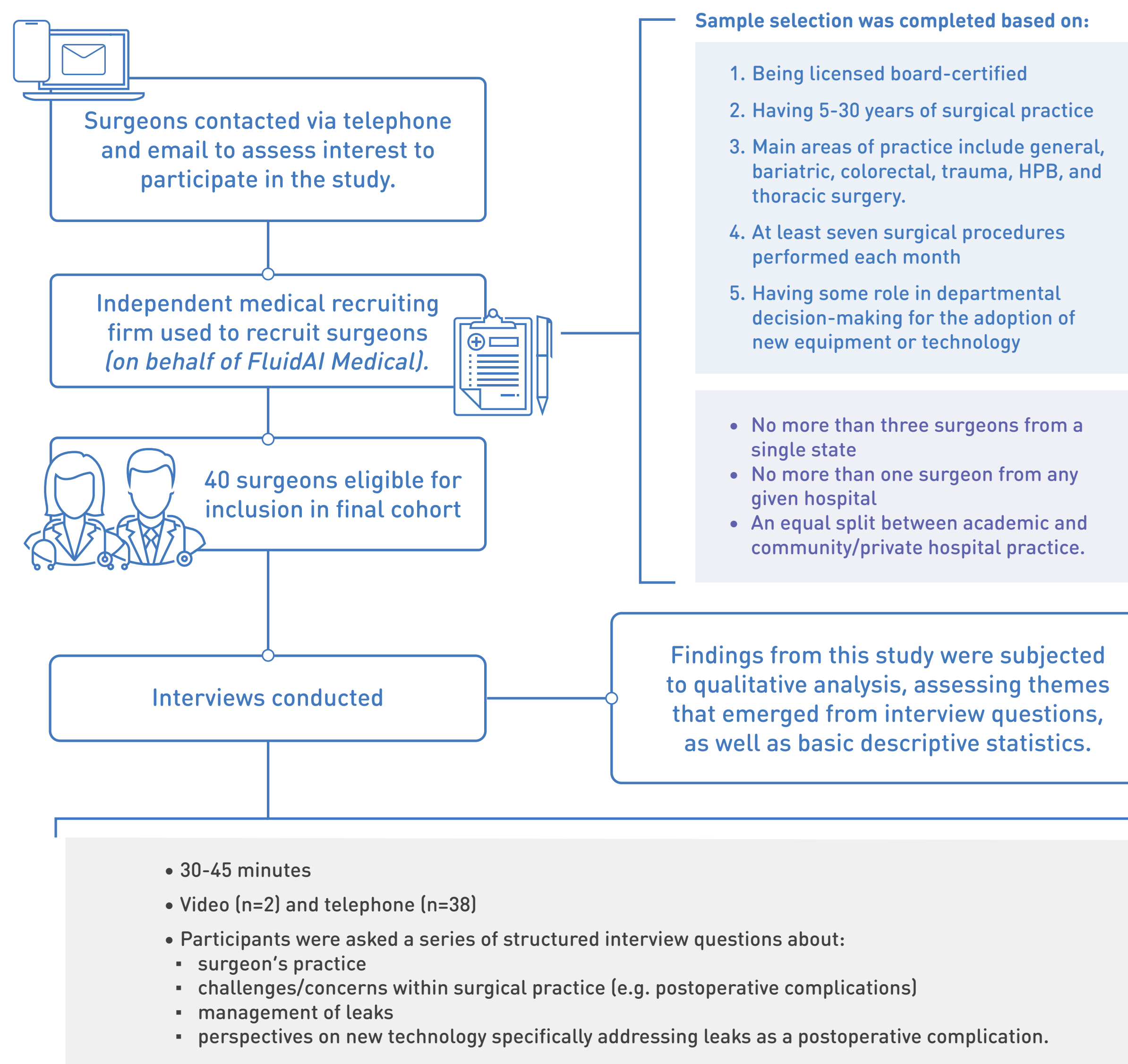
## Background

Despite advancements in medical care, surgical practice- particularly gastrointestinal surgery- continues to be a challenging specialty.

With numerous different postoperative complications that may arise following gastrointestinal surgery, it is critical to explore perspectives from surgeons first-hand. This includes identifying the most prominent complications they may encounter, apprehending their management strategies, and pinpointing the prevailing gaps in patient care delivery.

Considering surgeons' insights is essential for understanding the needs of the medical community and guiding the development of new techniques, procedures, and tools.

## Methods



## Results

By far, the most significant and unprompted concern brought up by surgeons was anastomotic leaks (80%).

Surgeons emphasized that leaks are a critical postoperative complication with high morbidity and mortality rates, imposing substantial economic burdens on healthcare systems.

Leaks were also considered uniquely emotive to surgeons as they were often correlated with suboptimal surgical skill.

Other complications of concern included sepsis (17.5%), arrhythmias/myocardial infarction (20%), pneumonia (30%), bleeding (35%), wound infection (37.5%), and deep vein thrombosis/pulmonary embolism (47.5%).

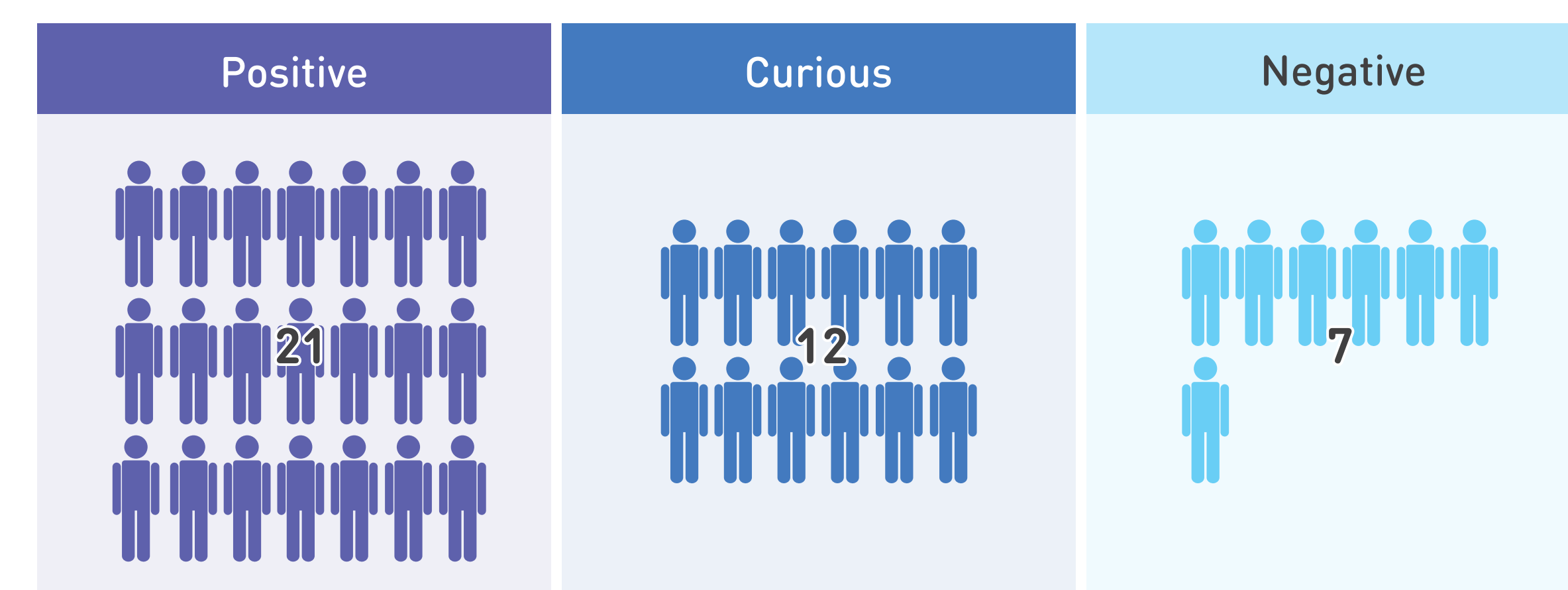
When discussing leak prevention in current surgical practices, respondents mentioned options such as sealants/glue, stents, staplers, and fluorescent imaging to monitor vascular perfusion at the anastomosis. However, they acknowledged that these techniques have limited impact on clinical outcomes.

Surgeons emphasized the need for early leak detection using novel inflammatory biomarkers such as CRP, cytokines, and interstitial pH for better patient management.

82% were positive or curious about a non-invasive technology for the early detection of anastomotic leaks, such as FluidAI's Stream™ Platform

Anastomotic leaks	Bleeding	Sepsis/Infection
"You can do everything perfectly and still get a leak."	"Bleeding patients can deteriorate very quickly."	"These patients become really sick."
"A leaking anastomosis can be catastrophic. The hospital stay can go from days to weeks or even months."		"This can lead to so many other problems. In a patient that's already sick we are potentially looking at organ failure or other complications."
"Patients can die."		
"It often means taking the patient back to the OR and redoing the anastomosis."		

Direct quotations from participants regarding complications that are significant enough to 'keep them awake at night.'



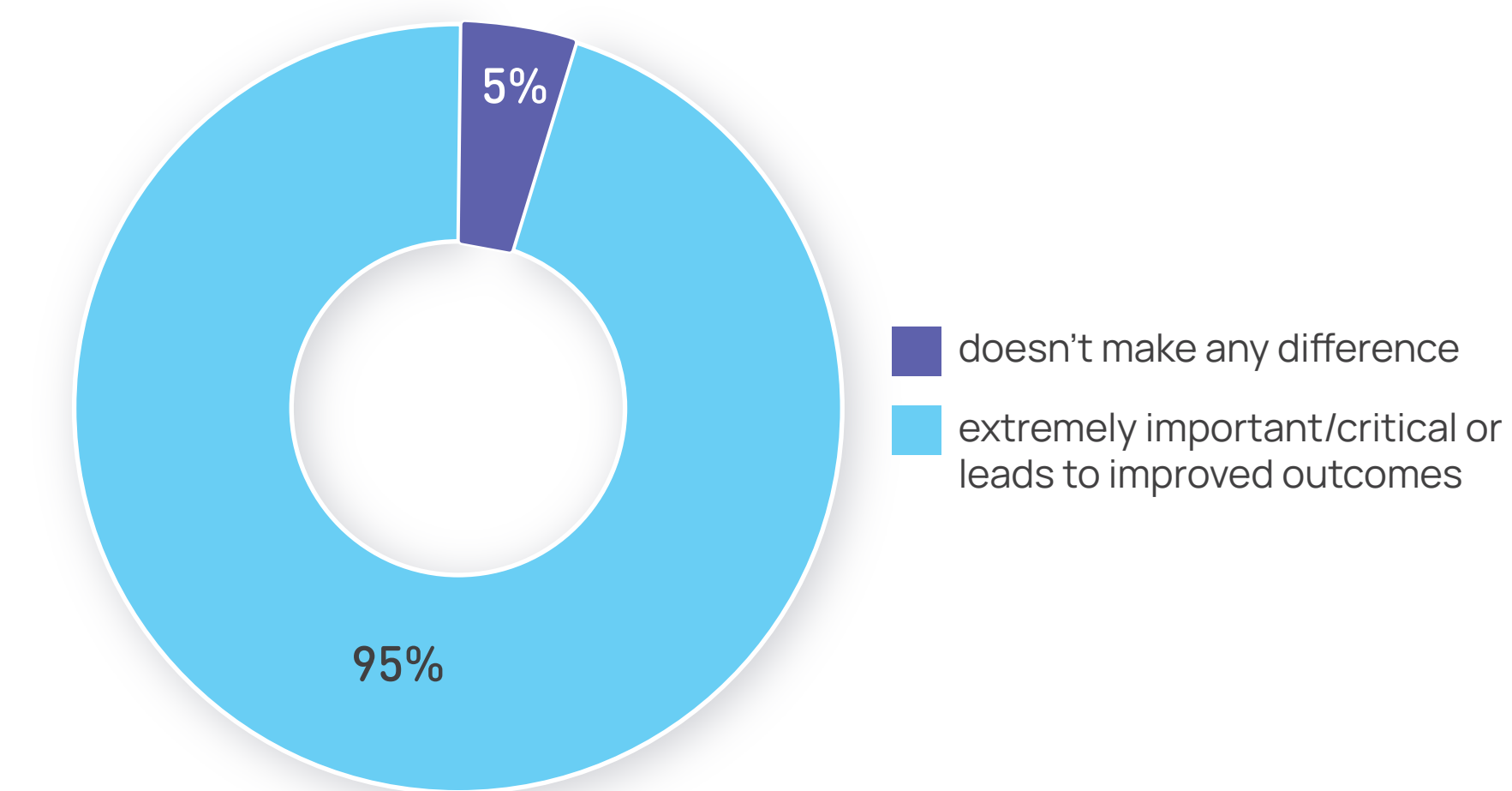
First reaction to technology that would non-invasively detect anastomotic leaks

**42.5%** of participants could not think of any technologies for leak prevention acquired in the past three of four years.

As one surgeon described, "I don't think anything has changed in the last six years."



## Results Contd.



In exploring concerns surrounding anastomotic leaks further, the idea of earlier detection was considered to be of great importance across nearly all participants. As shown in the figure on the left, 95% of surgeons reported early detection of AL to be extremely important or critical, feeling that early detection leads to improved outcomes - the direct objective of FluidAI's Stream™ Platform.

### Advantages/Benefits

- "It gives me another data point."
- "This is good for patients where you don't want to go back in."
- "This fills a gap if we can diagnose leaks before they become clinically evident."
- "This is better than waiting to see if effluent is cloudy."
- "Allows trending rather than just spot checks."
- "It's non-invasive. It doesn't add steps."
- "We can intervene before there is inflammation."
- "This will be great for higher risk procedures or patients."
- "This will help younger, less experienced surgeons."
- "We can be more proactive. We don't have to wait for the patient to get sick."
- "Earlier intervention means we can avoid surgery, stoma or sepsis."

Reported advantages/benefits from surgeons in response to FluidAI's product concept for a technology allowing non-invasive, early detection of anastomotic leaks.

## Conclusion

Anastomotic leaks are the most critical concern among gastrointestinal surgeons, despite current advancements in surgical techniques.

Surgeons expressed a clear need for novel, innovative tools that allow for the early detection of postoperative complications, such as anastomotic leaks, to enhance surgical outcomes. FluidAI's Stream™ Platform is a powerful technology to address these needs, allowing for non-invasive, continuous monitoring of leaks - filling a critical gap in postoperative care.



## References

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