GASTROINTESTINAL ENDOSCOPY VOLUME, EFFICIENCY, AND SAFETY ISSUES: A CASE REPORT

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BACKGROUND

Over 20 million gastrointestinal endoscopies are performed each year in the United States.[1] Given this high volume, healthcare facilities face the issue of balancing efficiency and safety. If either of these variables fall short, the entire practice's operations can come to a halt due to either patient backlogs or contaminations. The purpose of this study was to analyze the endoscope reprocessing steps performed and measure the time required to reprocess gastroscopes at a high-volume endoscopy center.

METHODS

- Eleven upper gastrointestinal endoscopies (diagnostic EGD or intraoperative EGD during bariatric surgery) with reusable gastroscopes were observed at a high-volume ambulatory surgery center in the southern United States.
- Observations and the time taken for each part of the endoscope's use-cycle (preparation, use, reprocessing, and storage) were recorded.
- Procedural times were not included due to their variability.
- The average time for a full use-cycle was calculated.

RESULTS

- A total of eleven procedures were followed from scope preparation through scope reprocessing and storage.
- The average time required to prepare, reprocesses, transport, and store a reusable gastroscope was found to be 43'46".
- During data collection, the observers noticed the reprocessing technicians regularly skipped or shortened many of the reprocessing steps outlined by endoscope manufacturers and advocacy organizations.
- 64% of the observed scope reprocessing cycles omitted manual cleaning with a scope brush to clean the working channel.
- The facility skipped the following recommended reprocessing steps outlined in ANSI/AAMI ST91: 2021 in all cases observed:
  - Wiping the endoscope immediately after procedure completion
  - Leak testing prior to cleaning
  - Cleaning verification
  - Visual inspection with a borescope
  - Cleaning sinks between uses,
  - Forced air drying after AER reprocessing
  - Protecting the scope from contamination during transportation after reprocessing.

Table 1: Outlines how often the facility completed the recommended steps
Percent of Completed Reprocessing Steps

ANSI/AAMI ST91: 2021 Recommended Steps[2]	Percent Completed
Wipe insertion tube immediately upon procedure completion	0%
Leak testing immediately upon arrival in reprocessing area and before immersion into processing solutions	0%
Manual Cleaning Steps	
Prepare fresh cleaning solution for each endoscope	100%
Place the endoscope in the cleaning solution, keeping it completely immersed in the cleaning solution	0%*
Clean the endoscope's exterior surfaces with a fresh non-linting cloth or sponge	100%
Clean accessible channels with a cleaning brush	46%
Aspirate (suction) cleaning solution through the instrument/suction channel	100%
Flush all channels with clean water	100%
Using cleaning verification indicators after manual cleaning	0%
Inspect accessible internal channels with a borescope or other appropriate inspection method	0%
Clean, disinfect, and rinse sinks between uses	0%
High-level disinfection in Automated Endoscope Reprocessor (AER)	100%
Forced air dry the endoscope and its components after completion of the cleaning and disinfection process for a minimum of 10 minutes	0%**
Protect and identify the endoscope as clean during transport to the point of use	0%

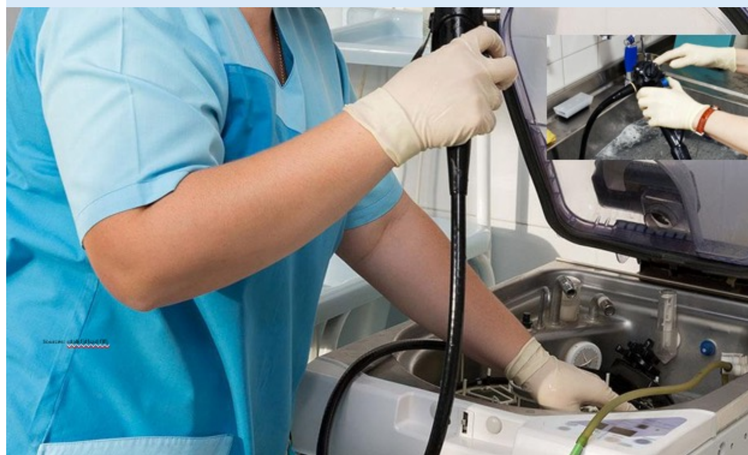
* Scope was placed in cleaning solution but never fully submerged
** Never forced air dried

DISCUSSION

- The average time required to prepare, reprocesses, transport, and store a reusable gastroscope of 43'46" is substantially lower than the 76 minutes it can take other facilities as shown in literature.[3]
- This case study highlights the growing issue of balancing patient access, efficiency, and safety in healthcare.
- If left unchecked, these omissions in reprocessing steps could results in endoscope related cross-contamination, patient infections, or even death.
- Given the recent rise in endoscope related MAUDE reports, it has become more important than ever to limit patient risk in during EGDs and other endoscopic procedures.[4]

CONCLUSION

The endoscopy industry is currently at a crossroads between efficiency and safety. While having a high procedure volume may allow for more patients to be seen, certain safety and cleaning steps may be compromised and in turn put individuals at risk. As the endoscopy world evolves, facilities will need to weigh their options to ensure not only that patients' needs are met, but they are doing so in a safe manner by either restructuring their endoscope scope processes or shifting to new technologies such as single-use endoscopes.



Sources:
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