

SINGLE-USE VS. REUSABLE ENDOSCOPE REPROCESSING:

A Staff Survey on Safety and Effectiveness

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BACKGROUND

Reusable flexible endoscopes are commonly used devices for diagnostic and therapeutic healthcare procedures and require significant cleaning, disinfection, or sterilization between patient use. As organizational and society guidelines for reprocessing continue to grow more robust, with added steps or processes, so does the demand on reprocessing staff. The purpose of this survey was to evaluate the overall satisfaction with both reusable and single-use endoscopes, perceived safety of reprocessing methods, and perceived effectiveness of reprocessing.

METHODS

- From September 2022 to February 2023, surveys were administered through clinical training specialists across the United States, and targeted nurses and staff who are involved in the reprocessing of reusable endoscopes.
- Survey data was reviewed and cleaned for incomplete responses.
- Proportions were calculated using each question's applicable respondents.

RESULTS

52 respondents were included in the survey (not all questions were completed by each participant depending on their experience and role).

- **29% of all respondents indicated reprocessing training was moderate at best** and felt somewhat confident to not confident in performing reprocessing. (Figure 1)
- **42% of those who work in reprocessing as a reprocessing tech believe they were not given the appropriate amount of time** needed to thoroughly reprocess each scope (15% were unsure, only 42.3% believe they had adequate time). (Figure 2)
- **20% did not believe reusable endoscopes were adequately reprocessed** or sterilized prior to patient use. (Figure 3)
- **60% of respondents noted either their organization has not updated their reprocessing protocol** in accordance with new published guidelines, or that they are unsure if their organization will update reprocessing protocol. (Figure 4)
- 18% of respondents were unaware of risks associated with exposure to reprocessing chemicals or detergents. (Figure 5)
- **Lastly, 76% of respondents indicated they would feel safer using single-use endoscopes.** (Figure 6)

FIGURE 1

How confident do you feel with the reprocessing training you received?	
Answer Choice	No. Responses (n=17)
I work in reprocessing but received no training	(5.9%)
I would consider training minimal and I would not be confident in performing reprocessing	(5.9%)
I would consider training moderate and I felt somewhat confident in performing reprocessing	(17.7%)
I would consider training thorough and I felt confident in performing reprocessing	(70.6%)

FIGURE 2

Do you find you are given the appropriate amount of time needed to thoroughly reprocess each scope?

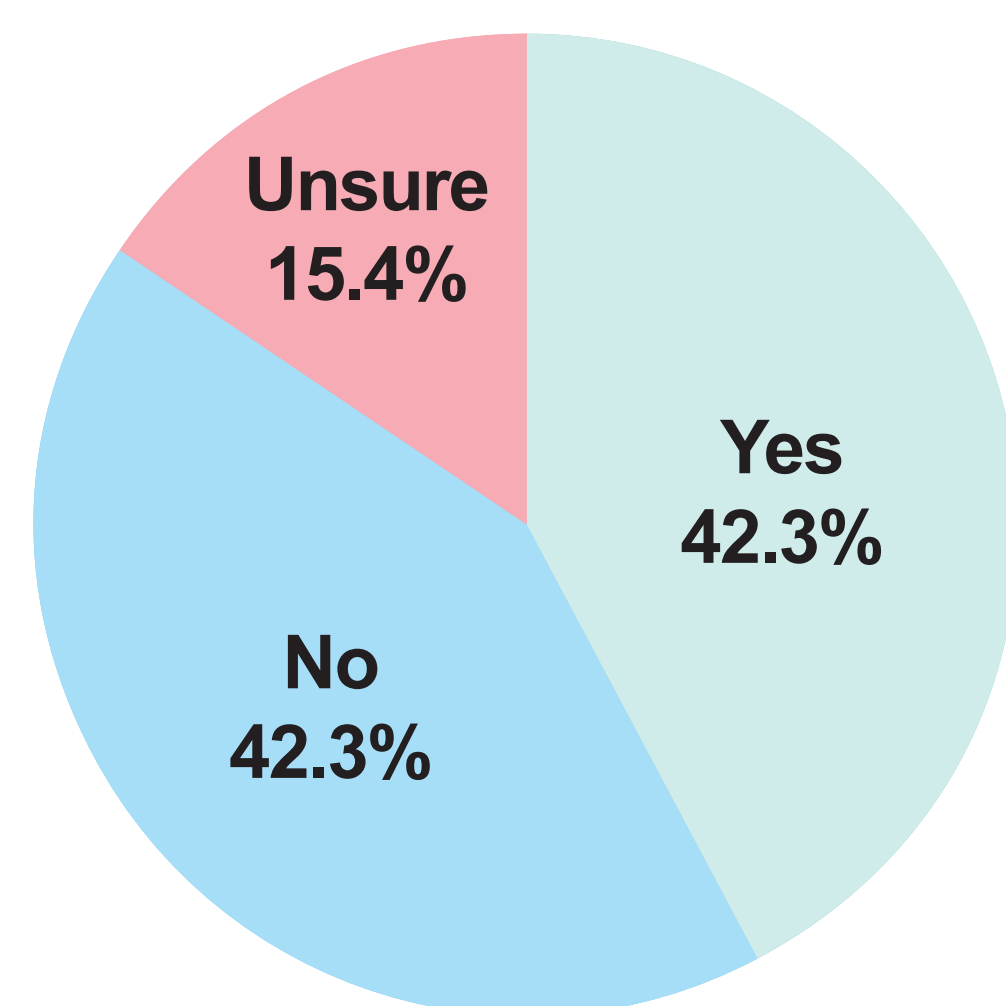


FIGURE 3

Do you believe that each scope is adequately reprocessed or sterilized prior to the next procedure?

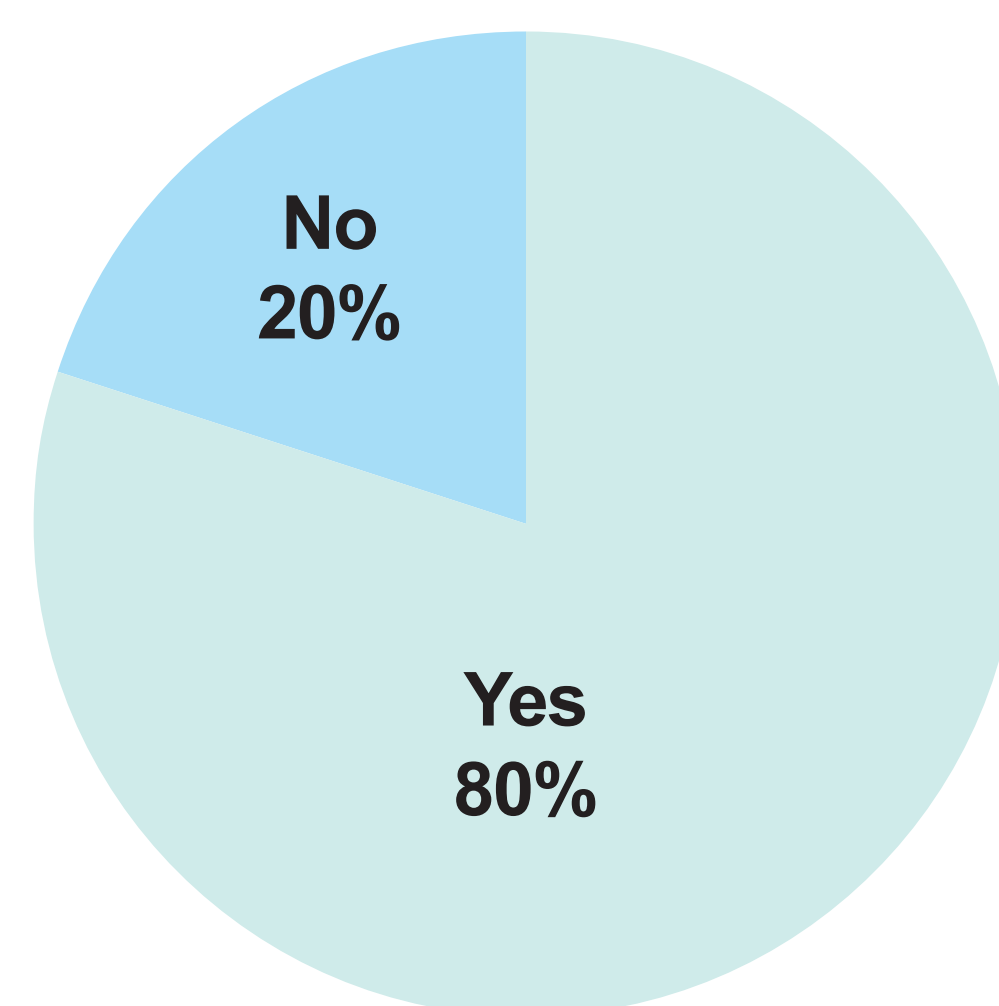


FIGURE 4

Has your organization updated reprocessing steps in accordance to the new reprocessing guidelines published by AAM (or SGNA, AORN)?

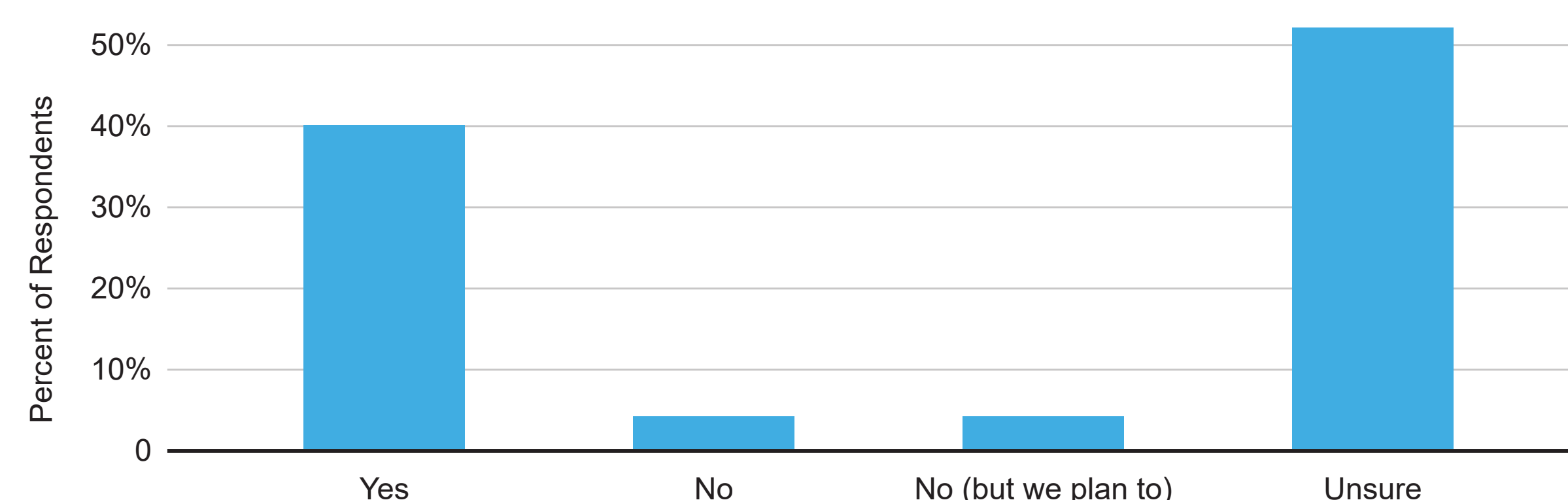


FIGURE 5

Are you aware of the risks associated with exposure to chemicals and contaminants used in reusable scope reprocessing/disinfection?

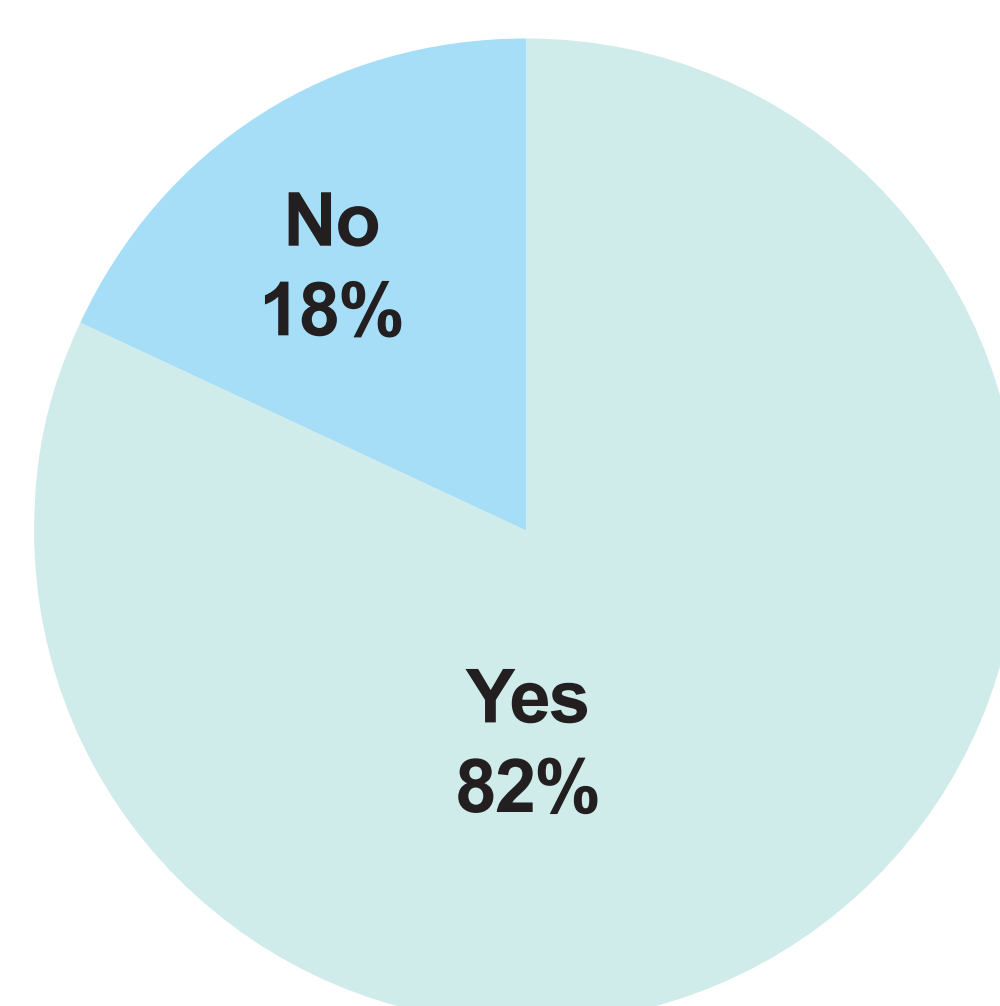
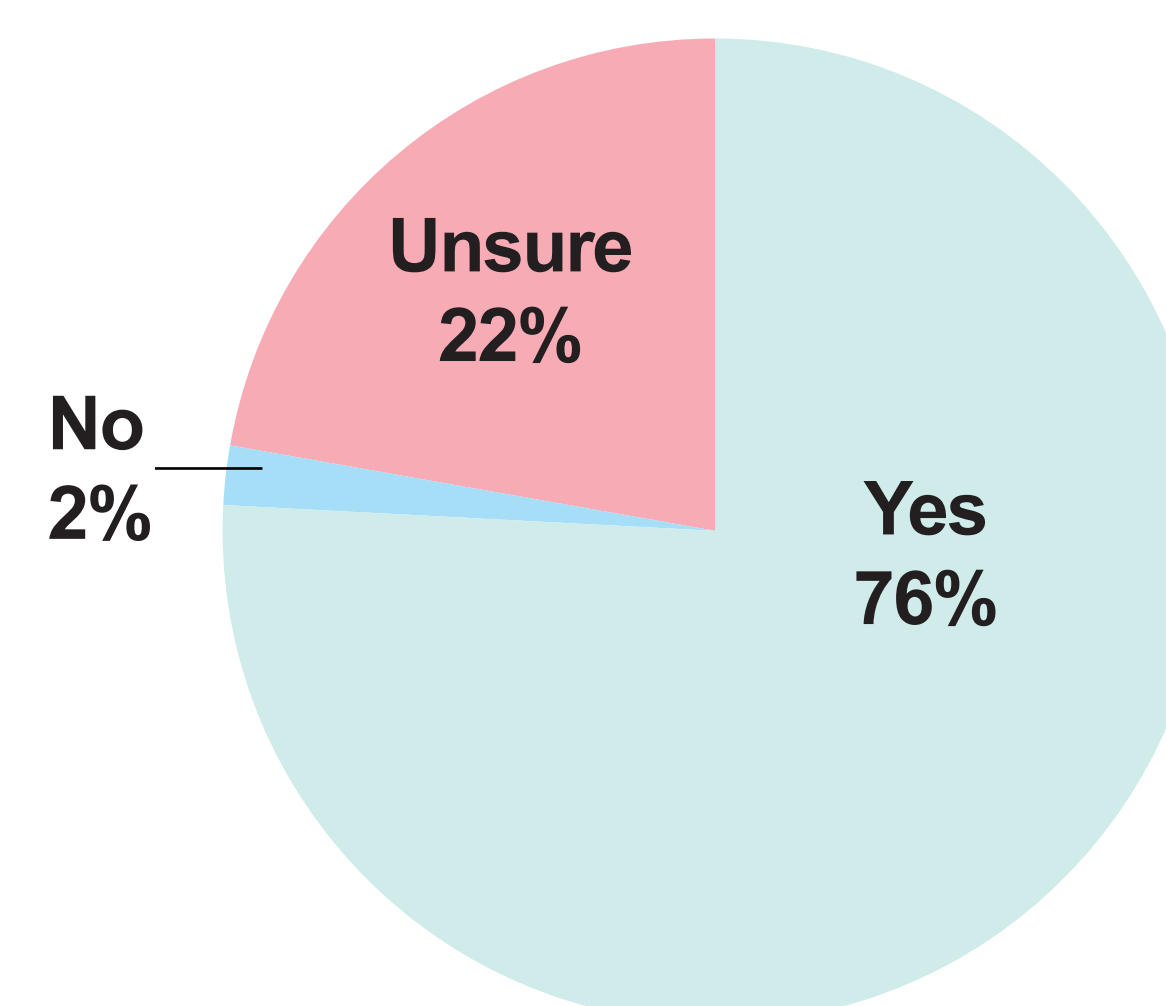


FIGURE 6

Would or do you feel safer using single-use scopes given the above ('Above' referencing the question from Figure 5)?



DISCUSSION

With increasing shortages in nurses and technicians in the United States,¹ the expectations as well as pressure on staff across hospital settings to keep up with growing demands continues to increase. Concurrently, outbreaks due to endoscopy-related procedures and antibiotic-resistant organisms/'super bugs',² as well as increased Manufacturer and User Facility Device Experience (MAUDE) database adverse events related to reprocessing of endoscopes, continue to rise. Because of this, guidelines for reprocessing have been updated and increase steps and tools, expanding the time, supplies and potentially staff needed to adequately follow guidelines to decrease the likelihood of adverse events.³ In addition to the above, studies have also shown hazards related to chemicals and disinfectants used in reprocessing — potentially exposing hospital workers.^{4,5} Single-use endoscopes provide a solution to the above issues and may also assist with staff satisfaction and retention given that over 75% of respondents noted they would or do feel safer using single-use, supplementing the concern associated with reusable scopes for patients, to the health-related concerns and potential satisfaction of hospital staff/employees.

CONCLUSION

- Reprocessing reusable endoscopes continues to grow more laborious as updated guidelines add new processes to ensure appropriate disinfection prior to next patient use
- To date, not all respondents involved in reprocessing feel they receive adequate training or have the adequate time to fully reprocess endoscopes
- Respondents indicated there was uncertainty whether these new guidelines would be adopted and some felt that reusable endoscopes weren't adequately cleaned following current protocols
- Most respondents noted they would feel safer if their facility switched to single-use endoscopes
- Adoption of single-use endoscopes may reduce the workflow burden on reprocessing staff and increase confidence in workplace safety

SOURCES

1. Gamble M. The cost of nurse turnover in 24 numbers. Becker's Hospital Review, April 11, 2023. Accessed September 28, 2023. <https://www.beckershospitalreview.com/workforce/the-cost-of-nurse-turnover-in-24-numbers-2023.html>.
2. McCafferty CE, Aghajani MJ, Abi-Hanna D, Gosbell IB, Jensen SO. An update on gastrointestinal endoscopy-associated infections and their contributing factors. Ann Clin Microbiol Antimicrob. 2018;17(1):36. Published 2018 Oct 10. doi:10.1186/s12941-018-0289-2
3. AAMI. ANSI/AAMI ST91:2021: Flexible and semi-rigid endoscope processing in health care facilities [Internet]. 2022. Available from: <https://www.aami.org/st91>
4. Dumas O, Gaskins AJ, Boggs KM, et al. Occupational use of high-level disinfectants and asthma incidence in early-to mid-career female nurses: a prospective cohort study. Occup Environ Med. 2021; 78(4): 244-247. doi:10.1136/oemed-2020-106793
5. Gutterman E, Jorgensen L, Mitchell A, Fua S. Adverse staff health outcomes associated with endoscope reprocessing. Biomedical Instrumentation & Technology. 2013;47(2):172-179. doi:10.2345/0899-8205-47.2.172