ORGANIZATIONAL ASSESSMENT OF DUODENOSCOPES IN US HOSPITALS

Caroline Oldin[1,2], Fie Hollænder[1], Nikolaj Larsen[3], Sven Adamsen[2,4]

1 Copenhagen Business School, Copenhagen, Denmark
2 Ambu A/S
3 Aalborg University, Frederiksberg, Denmark
4 Copenhagen University Hospital Bispebjerg, Copenhagen, Denmark

Topic: Health Service Delivery & Process of Care, Medical Technologies

OBJECTIVES

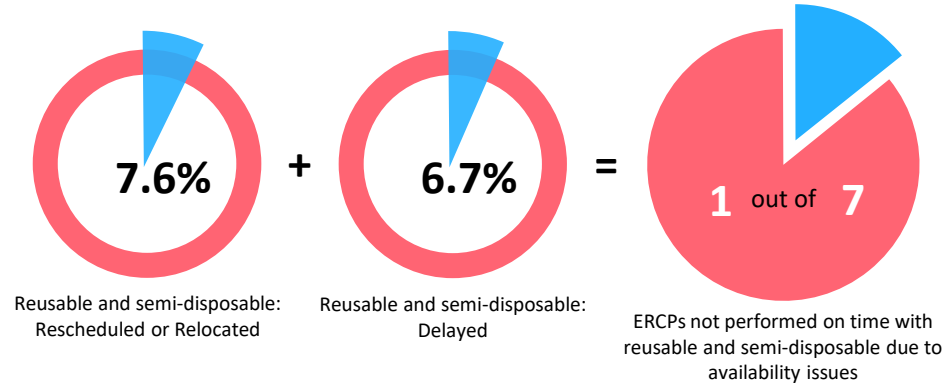
The US Food and Drug Administration has recommended the use of duodenoscope designs with single-use components to improve patient safety. This may affect the organizational workflow in the relevant healthcare facility. This research aims to explore whether the prevalence of procedural delays due to equipment availability is likely to be affected by the change from reusable to single-use or semi-disposable duodenoscopes. The research further aims to explore whether the respective breakage rates are perceived as different, as well as how this affects the procedure being undertaken.

METHODS

A questionnaire focusing on procedural delays due to equipment availability and duodenoscope breakage rates was distributed by M3 to 670 US gastroenterologists in February 2021 using QuestionPro. Equipment availability was assumed equivalent between reusable and semi-disposable duodenoscopes. For single-use, availability issues were assumed to be zero. The breakage rate questions distinguished between reusable, semi-disposable, and single-use duodenoscopes. T-tests comparing the parameter means to a mean of zero were performed for each type of duodenoscope. All analyses were conducted in STATA.

RESULTS

271 US ERCP physicians completed the questionnaire. They indicated that for reusable and semi-disposable duodenoscopes, 3.42% of procedures were relocated, 4.20% were rescheduled, and 6.72% were delayed ($p<0.001$). Breakage was perceived to occur in 32.04%, 39.32%, and 24.52% of the time when using reusable, semi-disposable, and single-use duodenoscopes respectively ($p<0.001$). Breakage was perceived to be higher for semi-disposable than for reusable ($p<0.1$) and single-use ($p<0.01$). The rate for reusable was perceived to be higher than for single-use ($p<0.05$).



CONCLUSIONS

ERCP procedures to be performed with a single-use duodenoscope will likely observe fewer delays and cancellations and lower breakage rates than those to be performed with semi-disposable or reusable duodenoscopes. Further research is needed to confirm the extent of the issues and the effects of implementing single-use and semi-disposable duodenoscopes.

Ambu