

REUSABLE FLEXIBLE BRONCHOSCOPE SETUP AND REPROCESSING: A MULTICENTER PROSPECTIVE STUDY

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Shaheen Islam MD, MPH¹; Christina Cool MPH²; David Hoffman MSPH, MBA²
¹Medical College of Georgia at Augusta University, Augusta, GA, USA, ²Ambu USA, Columbia, MD, USA

BACKGROUND

As healthcare facilities attempt to keep up with increasing demands, identifying resource constraints and process bottlenecks has become more important than ever. Despite reusable flexible bronchoscopes having been in use for over 50 years, limited research currently exists on the time required to properly set up, remove, and reprocess them. In recent years, additional reprocessing steps have been recommended given the number of microbial outbreaks and concerns for safety, potentially delaying the scope’s return into circulation. The purpose of this study was to measure the active time required to properly set up and reprocess reusable flexible bronchoscopes.

METHODS

Fourteen bronchoscopic procedures utilizing 21 reusable flexible bronchoscopes were followed from setup through reprocessing at three university hospitals in the United States.

Time increments were captured by a dedicated monitor for the following stages of reusable flexible bronchoscope use:

- Preparation
 - Precleaning
 - Transport to Reprocessing
 - Leak Testing
 - Manual Cleaning
- Microbial Testing
 - Transport to High-Level Disinfection in an Automated Endoscope Reprocessor (AER)
 - AER Runtime
 - Wipedown
 - Delays, When Applicable

Actual hangtime in a drying cabinet was not captured.

RESULTS

The average active time to set up and reprocess RFBs, not including procedure time, time in a drying cabinet, or delays was found to be 48:56. The active time required for each step of preparation and reprocessing can be found in Table 1.

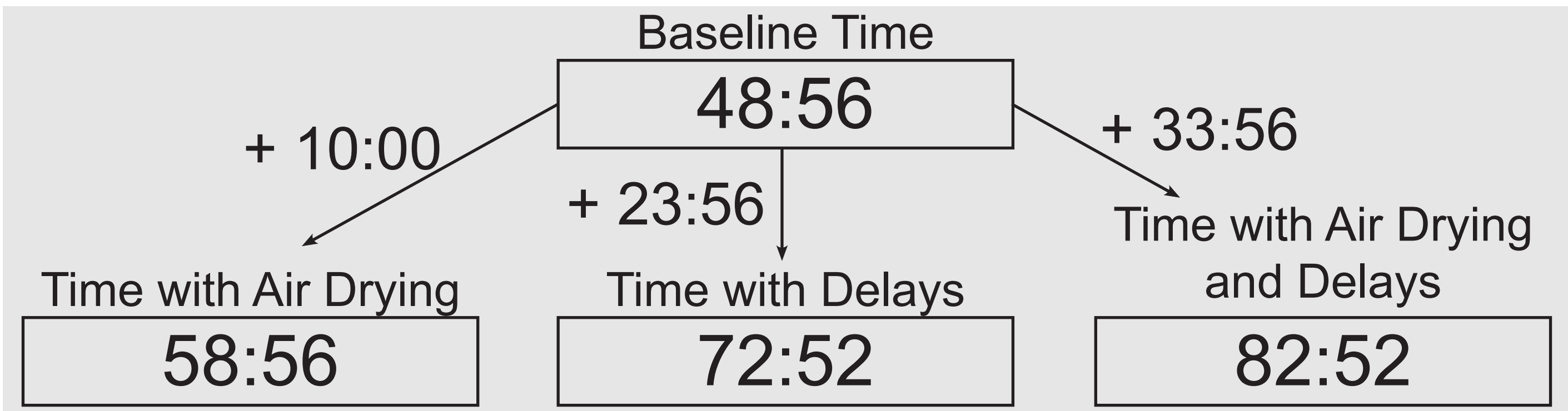
Table 1. Required Time for Reusable Flexible Bronchoscope Preparation and Reprocessing

Step	Average Time (mm:ss)	SD (mm:ss)	N
Preparation	02:07	00:58	20
Precleaning	02:31	01:08	19
Transport to Reprocessing	01:18	00:53	17
Leak Testing	03:12	01:13	16
Manual Cleaning	10:57	04:44	16
Microbial Test	01:27	00:40	7
Transport to HLD	01:48	01:48	13
AER Runtime	27:28	05:36	20
Removal from AER	01:05	00:51	7
Wipedown	01:19	00:39	10
Delays, When Applicable	23:56	17:31	11



DISCUSSION

The average time to set up and reprocess a reusable flexible bronchoscope, not including procedure time, time in a drying cabinet, or delays was 48:56. When included, the set up and reprocessing cycle can increase to:



The results are consistent with the reported average time of 76 minutes to reprocess an endoscope from literature.¹ The average time to set up and reprocess a reusable bronchoscope was found to be longer than the average procedure time (48:56 vs. 45:58), increasing the chances of process bottlenecking. The time required to reprocess bronchoscopes may continue to increase given new recommendations from organizations such as AAMI and AORN.² To help reduce potential delays, facilities should consider the following:

- Increasing the number of reusable bronchoscopes
- Spreading cases out throughout the day
- Increasing working hours and/or number of procedure days
- Adopting single-use bronchoscopes given that they are not subject to the same availability limitations as reusables

CONCLUSION

The average time to set up and reprocess a reusable flexible bronchoscope, not including procedure time, time in a drying cabinet, or delays was 48:56. Given increasing resource constraints and process bottlenecks, solutions such as spreading case out and single-use bronchoscopes should be considered to prevent procedural delays.

1. Ofstead CL, Quick MR, Eiland JE, et al. Healthcare Sterile Processing Association; 2017. A glimpse at the true cost of reprocessing endoscopes [Internet]. Available from: <https://www.bostonscientific.com/content/dam/bostonscientific/uro-wh/portfolio-group/LithoVue/pdfs/Sterilization-Resource-Handout.pdf>.
2. Hoffman D, Cool C. Costs involved in compliance with new endoscope reprocessing guidelines. Clinical Endoscopy. 2024;57(4):534-541. doi:10.5946/ce.2023.164