

Office of Evidence Based Practice (EBP) – Specific Care Question: Cleaning of Non-lumened/Non-channeled endoscopes

Specific Care Question: What is the standard disinfection process, frequency, and storage for non-lumened/non-channeled endoscopes?

Question Originator:

Tom Button RN, NE-BC, CIC, FAPIC

Summary: No recommendation beyond the Spaulding Classification System (Spaulding, 1972) can be made on the disinfection process, frequency, and storage for non-lumened/non-channeled endoscopes as the literature search did not identify published standards or guidelines that specifically answered the question. Until literature is published related to cleaning guidelines of non-channeled endoscopes The Office of Evidence Based Practice would recommend developing standard work to follow manufacturer's cleaning recommendations. This recommendation is based on FDA data that endorses institutions to have the facilities, equipment, and easy access to manufacturer-specified cleaning, sterilization/disinfection agents to implement the instructions, and that the instructions are followed (FDA, 2017).

Search Strategy and Results ([see PRISMA diagram](#)): ("Echocardiography, Transesophageal"[Mesh] OR nonchanneled OR Non-channeled OR "Laryngoscopes"[mesh] OR "bronchoscopes"[mesh] OR ((Transvaginal[tw] OR Otolaryngology[tw] OR ENT[tw]) AND (endoscope[tw] OR Scope[tw])) OR "Transvaginal ultrasound") AND (reprocessing[tw] OR "Equipment Reuse"[Mesh])

("Echocardiography, Transesophageal"[Mesh] OR "Laryngoscope"[mesh] OR "bronchoscope"[mesh] OR ((Transvaginal[tw] OR Otolaryngology[tw] OR ENT[tw]) AND (endoscope[tw] OR Scope[tw])) OR "Transvaginal ultrasound") AND ("Decontamination"[MeSH Terms] OR "Disinfection"[MeSH] OR "Equipment Contamination"[MeSH] OR "Infection"[Mesh] OR "Infection Control/standards"[MeSH] OR reprocessing[tw] OR "Equipment Reuse"[Mesh]) AND (Guideline[ptyp] OR Meta-Analysis[ptyp] OR systematic[sb] OR "clinical protocol" OR "evidence-based medicine")

("Echocardiography, Transesophageal"[Mesh] OR "Laryngoscopes"[mesh] OR "bronchoscopes"[mesh] OR ((Transvaginal[tw] OR Otolaryngology[tw] OR ENT[tw]) AND (endoscope[tw] OR Scope[tw])) OR "Transvaginal ultrasound") AND (reprocessing[tw] OR "Equipment Reuse"[Mesh]) AND (Guideline[ptyp] OR Meta-Analysis[ptyp] OR systematic[sb] OR "clinical protocol" OR "evidence-based medicine")

Total number: 18; Number selected by question originator: 0

Studies not included in this review with exclusion rationale:

Author (YYYY)	Reason for exclusion
Adams, J. (2010)	Non-channeled/non-lumened endoscopes not reviewed
Beilenhoff, U. (2017)	Non-channeled/non-lumened endoscopes not reviewed
Buescher, D. (2016)	Non-channeled/non-lumened endoscopes not reviewed
Cavaliere, M. (2012)	Non-channeled/non-lumened endoscopes not reviewed
CDC (2015)	Non-channeled/non-lumened endoscopes not reviewed
Collins, W. O. (2009)	Non-channeled/non-lumened endoscopes not reviewed
Kanagala, P. (2011)	Non-channeled/non-lumened endoscopes not reviewed
Marino, M. (2012)	Non-channeled/non-lumened endoscopes not reviewed
Merz, E. (2016)	Non-channeled/non-lumened endoscopes not reviewed
Moshkanbaryans, L. (2015)	Non-channeled/non-lumened endoscopes not reviewed
Muscarella, L. (2008)	Non-channeled/non-lumened endoscopes not reviewed
Muscarella, L. F. (2007)	Non-channeled/non-lumened endoscopes not reviewed



If you have questions regarding this Specific Care Question – please contact jmichael@cmh.edu or tcbutton@cmh.edu

Office of Evidence Based Practice (EBP) – Specific Care Question: Cleaning of Non-lumened/Non-channeled endoscopes

Ofstead, C. L. (2017)
Parohl, N. (2017)
Putnam, K. (2016)
Shellnutt, C. (2016)
Son, B. K. (2017)
Sowerby, L. J. (2017)
Statham, M. M. (2010)

Non-channeled/non-lumened endoscopes not reviewed
Non-channeled/non-lumened endoscopes not reviewed
Non-channeled/non-lumened endoscopes not reviewed
Non-channeled/non-lumened endoscopes not reviewed
Non-channeled/non-lumened endoscopes not reviewed
Non-channeled/non-lumened endoscopes not reviewed
Non-channeled/non-lumened endoscopes not reviewed

EBP team member responsible for reviewing, synthesizing, and developing this document:

Jarrold Dusing, MS, RD, LD, CNSC

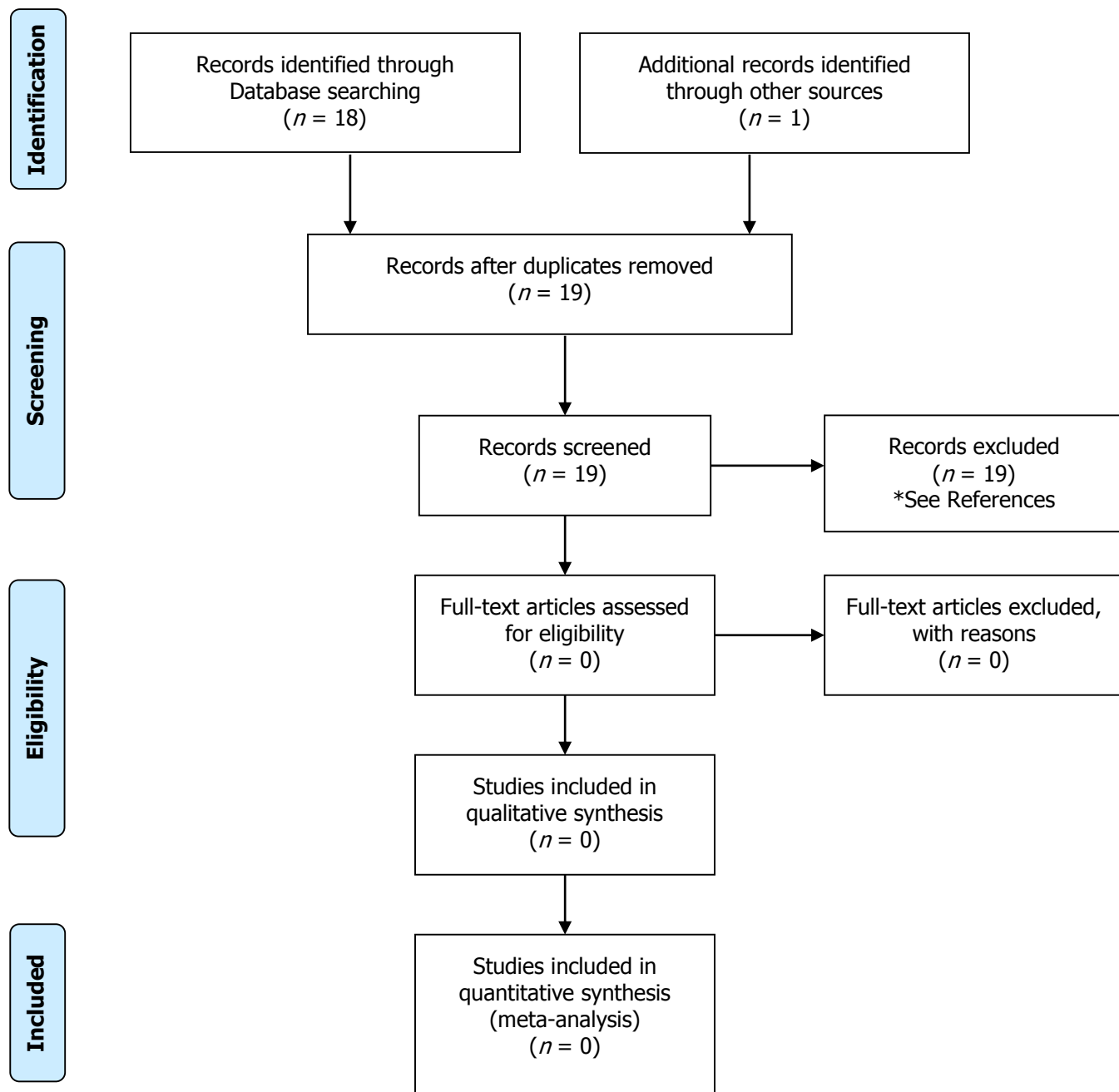
Date Developed/Updated: December 2017



If you have questions regarding this Specific Care Question – please contact jmichael@cmh.edu or tcbutton@cmh.edu

Office of Evidence Based Practice (EBP) – Specific Care Question: Cleaning of Non-lumened/Non-channelled endoscopes

Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)^b



^bMoher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement*. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097
For more information, visit www.prisma-statement.org.

Office of Evidence Based Practice (EBP) – Specific Care Question: Cleaning of Non-lumened/Non-channeled endoscopes

Reference

- Adams, J., & Baker, K. (2010). Recommended cleaning and processing of flexible otolaryngology endoscopes. *ORL-head and neck nursing: official journal of the Society of Otorhinolaryngology and Head-Neck Nurses*, 28(2), 8-12.
- Beilenhoff, U., Biering, H., Blum, R., Brljak, J., Cimbro, M., Dumonceau, J.-M., . . . Pietsch, M. (2017). ESGE-ESGENA technical specification for process validation and routine testing of endoscope reprocessing in washer-disinfectors according to EN ISO 15883, parts 1, 4, and ISO/TS 15883-5. *Endoscopy*.
- Buescher, D., Möllers, M., Falkenberg, M., Amler, S., Kipp, F., Burdach, J., . . . Schmitz, R. (2016). Disinfection of transvaginal ultrasound probes in a clinical setting: comparative performance of automated and manual reprocessing methods. *Ultrasound in Obstetrics & Gynecology*, 47(5), 646-651.
- Cavaliere, M., & Iemma, M. (2012). Guidelines for reprocessing nonlumened heat-sensitive ear/nose/throat endoscopes. *The Laryngoscope*, 122(8), 1708-1718.
- Centers for Disease Control and Prevention (2015). *Essential Elements of a Reprocessing Program for Flexible Endoscopes – Recommendations of the HICPAC*. Retrieved <https://www.cdc.gov/hicpac/recommendations/flexible-endoscope-reprocessing.html>
- Collins, W. O. (2009). A review of reprocessing techniques of flexible nasopharyngoscopes. *Otolaryngology—Head and Neck Surgery*, 141(3), 307-310.
- U.S. Food and Drug Administration (2017). *Information for Health Care Facilities: Reprocessing of Reusable Medical Devices*. Retrieved <https://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/ReprocessingofReusableMedicalDevices/ucm454641.htm>
- Kanagala, P., Bradley, C., Hoffman, P., & Steeds, R. (2011). Guidelines for transoesophageal echocardiographic probe cleaning and disinfection from the British Society of Echocardiography. *European Journal of Echocardiography*, 12(10), i17-i23.
- Marino, M., Grieco, G., Moscato, U., Bruno, S., Orecchio, F., Ficarra, M. G., . . . Laurenti, P. (2012). Is reprocessing after disuse a safety procedure for bronchoscopy?: a cross-sectional study in a teaching hospital in Rome. *Gastroenterology Nursing*, 35(5), 324-330.
- Merz, E. (2016). Is Transducer Hygiene sufficient when Vaginal Probes are used in the Clinical Routine? *Ultraschall in der Medizin-European Journal of Ultrasound*, 37(02), 137-139.
- Moshkanbaryans, L., Meyers, C., Ngu, A., & Burdach, J. (2015). The importance of infection prevention and control in medical ultrasound. *Australasian journal of ultrasound in medicine*, 18(3), 96-99.
- Muscarella, L. (2008). Reassessment of the risk of healthcare-acquired infection during rigid laryngoscopy. *Journal of Hospital Infection*, 68(2), 101-107.
- Muscarella, L. F. (2007). Prevention of disease transmission during flexible laryngoscopy. *American Journal of Infection Control*, 35(8), 536-544.
- Ofstead, C. L., Heymann, O. L., Quick, M. R., Johnson, E. A., Eiland, J. E., & Wetzler, H. P. (2017). The effectiveness of sterilization for flexible ureteroscopes: A real-world study. *American Journal of Infection Control*.
- Parohl, N., Stiefenhöfer, D., Heiligttag, S., Reuter, H., Dopadlik, D., Mosel, F., . . . Jochum, C. (2017). Monitoring of endoscope reprocessing with an adenosine triphosphate (ATP) bioluminescence method. *GMS hygiene and infection control*, 12.
- Putnam, K. (2016). Guideline for processing flexible endoscopes. *AORN journal*, 103(1), P10.
- Shellnutt, C. (2016). Advances in Endoscope Reprocessing Technology and Its Impact on Pathogen Transmission. *Gastroenterology Nursing*, 39(6), 457-465.
- Son, B. K., Kim, B.-W., Kim, W. H., Myung, D.-S., Cho, Y.-S., & Jang, B. I. (2017). Korean Society of Gastrointestinal Endoscopy Guidelines for Endoscope Reprocessing. *Clinical endoscopy*, 50(2), 143.
- Sowerby, L. J., & Rudmik, L. (2017). The cost of being clean: A cost analysis of nasopharyngoscope reprocessing techniques. *The Laryngoscope*.
- Spaulding, E. H. (1972). *Chemical disinfection and antisepsis in the hospital*: American Sterilizer Company, Research and Educational Divisions.
- Statham, M. M., & Willging, J. P. (2010). Automated high-level disinfection of nonchanneled flexible endoscopes: Duty cycles and endoscope repair. *The Laryngoscope*, 120(10), 1946-1949.



Children's Mercy

If you have questions regarding this Specific Care Question – please contact jmichael@cmh.edu or tcbutton@cmh.edu