REFERENCE #	CITATION	EVIDENCE TYPE	SAMPLE SIZE/ POPULATION	INTERVENTION(S)	CONTROL/ COMPARISON	OUTCOME MEASURE(S)	CONCLUSION(S)	CONSENSUS SCORE
1	Rutala WA, Weber DJ; Healthcare Infection Control Practices Advisory Committee. Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008. Washington, DC: Centers for Disease Control and Prevention; 2008. https://www.cdc.gov/infectioncontrol/pdf/guidelines/disinfection-guidelines.pdf. Updated February 2017. Accessed October 5, 2017.	Guideline	n/a	n/a	n/a	n/a	Disinfection and sterilization are essential for ensuring that medical and surgical instruments do not transmit infectious pathogens to patients. Health care policies must identify, on the basis of the items' intended use, whether cleaning, disinfection, or sterilization is indicated.	IVA
2	Spaulding EH, Lawrence CA, Block SS, Reddish GF. Chemical disinfection of medical and surgical materials. In: Lawrence CA, Block SS, Reddish GF, eds. Disinfection, Sterilization, and Preservation. Philadelphia, PA: Lea & Febiger; 1968:517-531.	Expert Opinion	n/a	n/a	n/a	n/a	There are three categories of materials: critical items, semicritical items, and noncritical items. Critical items should be sterile. Semicritical items should be sterile or high-level disinfected. Noncritical items should be clean or low-level disinfected.	VA
3	Rutala WA, Weber DJ. Reprocessing semicritical items: current issues and new technologies. Am J Infect Control. 2016;44(5):e53-e62.	Expert Opinion	n/a	n/a	n/a	n/a	Strict adherence to current guidelines for processing semicritical devices is required.	VA
4	Rutala WA, Weber DJ. Cleaning, disinfection, and sterilization in healthcare facilities. In: APIC Text of Infection Control and Epidemiology. Arlington, VA: Association for Professionals in Infection Control and Epidemiology; 2016.	Guideline	n/a	n/a	n/a	n/a	Cleaning should always precede high-level disinfection and sterilization.	IVB
5	Improperly sterilized or HLD equipment—a growing problem. Quick Safety. 2017(33):1-5. https://www.jointcommission.org/assets/1/23/qs_33a_2017.pdf. Accessed October 5,	Expert Opinion	n/a	n/a	n/a	n/a	Incorrectly sterilized and devices processed by high-level disinfection continues to be a frequently scored noncompliant standard for the Joint Commission.	VC
6	Guideline for Use of High-Level Disinfectants & Sterilants in the Gastroenterology Setting. Chicago, IL: Society of Gastroenterology Nurses and	Guideline	n/a	n/a	n/a	n/a	This guideline provides general information about the principles, product safety, and characteristics of high-level disinfectants and liquid chemical sterilants.	IVB
7	29 CFR 1910.1200: Hazard communication: toxic and hazardous substances. Occupational Safety and Health Administration. https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10099. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	Information concerning the hazards of all chemicals must be communicated to all employees.	n/a

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8	Guideline for processing flexible endoscopes. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2017:717-800.	Guideline	n/a	n/a	n/a	n/a	Guidance is provided for processing all types of flexible endoscopes, as well as for controlling and maintaining the environment to support processing activities.	IVA
9	Tosh PK, Disbot M, Duffy JM, et al. Outbreak of Pseudomonas aeruginosa surgical site infections after arthroscopic procedures: Texas, 2009. Infect Control Hosp Epidemiol. 2011;32(12):1179-1186.	Nonexperimental	388/ Environmental samples	n/a	n/a	Items or areas with cultures positive for *Pseudomonas aeruginosa.*	The infections were related to surgical instruments contaminated with *Pseudomonas aeruginosa* during processing. Retained tissue in the inflow/outflow cannulae and shaver handpieces allowed bacteria to survive the sterilization process.	IIIA
10	Rutala WA, Weber DJ. Disinfection and sterilization in health care facilities: an overview and current issues. Infect Dis Clin North Am. 2016;30(3):609-637.	Expert Opinion	n/a	n/a	n/a	n/a	When correctly performed, disinfection and sterilization can ensure the safe use of invasive and noninvasive medical devices.	VA
11	Rutala WA, Weber DJ. Gastrointestinal endoscopes: a need to shift from disinfection to sterilization? JAMA. 2014;312(14):1405-1406.	Expert Opinion	n/a	n/a	n/a	n/a	A shift to sterilization methodologies should be encouraged.	VA
12	McDonnell G, Burke P. Disinfection: is it time to reconsider Spaulding? J Hosp Infect. 2011;78(3):163-170.	Expert Opinion	n/a	n/a	n/a	n/a	In light of the current inactivation studies with viruses, bacteria, protozoa, and prions, the current definitions and expectations of high-level disinfection may not be achievable.	VA
13	Lorena NS, Pitombo MB, Cortes PB, et al. Mycobacterium massiliense BRA100 strain recovered from postsurgical infections: resistance to high concentrations of glutaraldehyde and alternative solutions for high level disinfection. Acta Cir Bras. 2010;25(5):455-459.	Nonexperimental	3/ Disinfectants	n/a	n/a	Microbial resistance.	*Mycobacterium massiliense* BRA 100 is resistant to high concentrations of glutaraldehyde.	IIIB
14	Duarte RS, Lourenco MC, Fonseca Lde S, et al. Epidemic of postsurgical infections caused by Mycobacterium massiliense. J Clin Microbiol. 2009;47(7):2149-2155.	Nonexperimental	148/ Isolates from infected patients	n/a	n/a	Species identification; Glutaraldehyde susceptibility.	Five isolates tested demonstrated consistent tolerance to glutaraldehyde.	IIIB
15	Tschudin-Sutter S, Frei R, Kampf G, et al. Emergence of glutaraldehyde-resistant Pseudomonas aeruginosa. Infect Control Hosp Epidemiol. 2011;32(12):1173-1178.	Case Report	n/a	n/a	n/a	n/a	Glutaraldehyde showed no activity against the two outbreak strains.	VA

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16	Meyers J, Ryndock E, Conway MJ, Meyers C, Robison R. Susceptibility of high-risk human papillomavirus type 16 to clinical disinfectants. J Antimicrob Chemother. 2014;69(6):1546-1550.	Nonexperimental	11/ Disinfectants	n/a	n/a	Susceptibility of high-risk HPV16.	Commonly used disinfectants have no effect on HPV16 infectivity.	IIIB
17	Ofstead CL, Wetzler HP, Snyder AK, Horton RA. Endoscope reprocessing methods: a prospective study on the impact of human factors and automation. Gastroenterol Nurs. 2010;33(4):304-311.	Nonexperimental	5/ Endoscopy centers	n/a	n/a	Compliance with guidelines for processing.	Enhanced training and accountability, combined with increased automation, may help to ensure patient safety.	IIIA
18	Ubhayawardana DL, Kottahachchi J, Weerasekera MM, Wanigasooriya IW, Fernando SS, De Silva M. Residual bioburden in reprocessed side-view endoscopes used for endoscopic retrograde cholangiopancreatography (ERCP). Endosc Int Open. 2013;1(1):12-16.	Nonexperimental	102/ Samples from two side-view endoscopes	n/a	n/a	CFUs on device after manual processing.	There was a high culture-positive rate after reprocessing of the side-view endoscopes using the manual reprocessing procedure, despite strict adherence to the protocol for reprocessing.	IIIB
19	Best practices for the safe use of glutaraldehyde in health care. 2006. Occupational Safety and Health Administration. http://www.osha.gov/Publications/3258-08N-2006-English.html. Accessed October	Expert Opinion	n/a	n/a	n/a	n/a	The most serious health effect associated with exposure to glutaraldehyde is occupational asthma.	VA
20	Cohen NL, Patton CM. Worker safety and glutaraldehyde in the gastrointestinal lab environment. Gastroenterol Nurs. 2006;29(2):100-104.	Expert Opinion	n/a	n/a	n/a	n/a	Safe levels of glutaraldehyde vapor concentrations are a significant issue in the work environment. Uncontrolled glutaraldehyde exposure in selected work environments contributes to occupational asthma.	VB
21	ECRI. Ethylene oxide, formaldehyde, and glutaraldehyde. Operating Room Risk Management. 2012;1A.	Expert Opinion	n/a	n/a	n/a	n/a	Facilities and individuals using glutaraldehyde should follow federal regulations, and implement exposure monitoring, PPE, and protective strategies.	VB
22	Pala G, Moscato G. Allergy to ortho-phthalaldehyde in the healthcare setting: advice for clinicians. Expert Rev Clin Immunol. 2013;9(3):227-234.	Literature Review	n/a	n/a	n/a	n/a	OPA is a dermal and respiratory sensitizer.	VA
23	Nayebzadeh A. The effect of work practices on personal exposure to glutaraldehyde among health care workers. Ind Health. 2007;45(2):289-295.	Nonexperimental	42/ Personnel 53/ Personnel	n/a	n/a	Amount of glutaraldehyde vapor in air; Work practices.	Monitoring equipment and methods should be improved to better assist occupational hygienists in assessing levels of exposure of health care workers.	IIIB

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24	Weber DJ, Consoli SA, Rutala WA. Occupational health risks associated with the use of germicides in health care. Am J Infect Control. 2016;44(5):e85-e89.	Nonexperimental	128/ Health care personnel seen for injuries or illnesses related to chemical exposures between 2003 and 2012	n/a	n/a	Causative agents; Causative factors.	Engineering controls and PPE should be used to minimize personnel exposure to high-level disinfectants.	IIIB
25	Alfa MJ. Intra-cavitary ultrasound probes: cleaning and high-level disinfection are necessary for both the probe head and handle to reduce the risk of infection transmission. Infect Control Hosp Epidemiol. 2015;36(5):585-586.	Expert Opinion	n/a	n/a	n/a	n/a	Guidelines for processing vaginal ultrasound probes should ensure that the handle as well as the probe head are adequately cleaned and disinfected after each use.	VA
26	Guidelines for cleaning and preparing external- and internal-use ultrasound probes between patients, safe handling, and use of ultrasound coupling gel. The American Institute of Ultrasound in Medicine. http://www.aium.org/officialStatements/57. Approved May 2017. Accessed October 5, 2017.	Guideline	n/a	n/a	n/a	n/a	Routine high-level disinfection of internal probes between patients is mandatory, in addition to the use of a high-quality probe cover during each examination.	IVC
27	Westerway SC, Basseal JM, Brockway A, Hyett JA, Carter DA. Potential infection control risks associated with ultrasound equipment—a bacterial perspective. Ultrasound Med Biol. 2017;43(2):421-426.	Nonexperimental	171/ Cultures from ultrasound probes	n/a	n/a	Prevalence of bacterial contamination.	60% of transabdominal probes and 14% of transvaginal probes had bacterial contamination.	IIIB
28	Shokoohi H, Armstrong P, Tansek R. Emergency department ultrasound probe infection control: challenges and solutions. Open Access Emerg Med. 2015;7:1-9.	Literature Review	n/a	n/a	n/a	n/a	Repeated use of ultrasound probes in the Emergency Department poses a risk for pathogen transmission.	VB
29	Leroy S, M'Zali F, Kann M, Weber DJ, Smith DD. Impact of vaginal-rectal ultrasound examinations with covered and low-level disinfected transducers on infectious transmissions in France. Infect Control Hospital Epidemiol. 2014;35(12):1497-1504.	Nonexperimental	7/ Microbial pathogens	n/a	n/a	Probability of infection.	Despite use of sheath and low-level disinfection, transmission of infection is possible.	IIIB

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30	Casalegno JS, Le Bail Carval K, Eibach D, et al. High risk HPV contamination of endocavity vaginal ultrasound probes: an underestimated route of nosocomial infection? PLoS One. 2012;7(10):e48137.	Nonexperimental	217/ ultrasound probe culture samples immediately after use 200/ ultrasound probe culture samples before use	n/a	n/a	Presence of human DNA; Presence of HPV DNA.	A considerable number of ultrasound probes are contaminated with human and HPV DNA despite low-level disinfection and use of a probe cover. High-level disinfection is recommended.	IIIB
31	M'Zali F, Bounizra C, Leroy S, Mekki Y, Quentin-Noury C, Kann M. Persistence of microbial contamination on transvaginal ultrasound probes despite low-level disinfection procedure. PLoS One. 2014;9(4):e93368.	Nonexperimental	300/ Vaginal ultrasound probes	n/a	n/a	Presence of HPV DNA; Presence of *Chlamydia trachomatis* and mycoplasma DNA; Number of bacterial CFUs.	The findings of the study raise concerns about the efficacy of impregnated towels for disinfection of ultrasound probes.	IIIB
32	Ngu A, McNally G, Patel D, Gorgis V, Leroy S, Burdach J. Reducing transmission risk through high-level disinfection of transvaginal ultrasound transducer handles. Infect Control Hosp Epidemiol. 2015;36(5):581-584.	Nonexperimental	152/ Ultrasound handles	n/a	n/a	Contamination levels.	Residual bacteria persist on more than 80% of handles that are not disinfected, whereas use of an automated device reduces contamination to background levels.	IIIB
33	Combs CA, Fishman A. A proposal to reduce the risk of transmission of human papilloma virus via transvaginal ultrasound. Am J Obstet Gynecol. 2016;215(1):63-67.	Expert Opinion	n/a	n/a	n/a	n/a	Disinfection of internal-use ultrasound probes with sonicated hydrogen peroxide and covering them with sheaths during examinations will greatly reduce the potential for human papilloma virus transmission.	VA
34	Chu K, Obaid H, Babyn P, Blondeau J. Bacterial contamination of ultrasound probes at a tertiary referral university medical center. AJR Am J Roentgenol. 2014;203(5):928-932.	Organizational Experience	31/ Ultrasound probes	n/a	n/a	n/a	Ultrasound probes should be processed by high-level disinfection.	VB
35	Ryndock E, Robison R, Meyers C. Susceptibility of HPV16 and 18 to high level disinfectants indicated for semi-critical ultrasound probes. J Med Virol. 2016;88(6):1076-1080.	Nonexperimental	2/ Ultrasound probe disinfection methods	n/a	n/a	Infectivity of HPV16 and HPV18.	HPV is highly resistant to OPA. Sonicated hydrogen peroxide offers an effective disinfection solution for ultrasound probes.	IIIB

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36	ANSI/AAMI ST58:2013 Chemical Sterilization and High-Level Disinfection in Health Care Facilities. Arlington, VA: Association for the Advancement of Medical Instrumentation; 2013.	Guideline	n/a	n/a	n/a	n/a	This recommended practice provides guidelines for the selection and use of liquid chemical sterilants/high-level disinfectants, and gaseous chemical sterilizers that have been cleared for marketing by the US FDA for use in hospitals and other health care facilities.	IVC
37	Guideline for medical device and product evaluation. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2017:e135-e142.	Guideline	n/a	n/a	n/a	n/a	Patient and worker safety, quality, and cost containment are primary concerns of perioperative RNs as they participate in evaluating and selecting medical devices and products for use in practice settings.	IVB
38	FDA-cleared sterilants and high level disinfectants with general claims for processing reusable medical and dental devices—March 2015. US Food and Drug Administration. http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/ReprocessingofReusableMedicalDevices/ucm437347.htm. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	FDA-cleared sterilants and high-level disinfectants	n/a
39	Wallace CA. New developments in disinfection and sterilization. Am J Infect Control. 2016;44:e23-e27.	Expert Opinion	n/a	n/a	n/a	n/a	A review of 510(k) clearances for disinfectants during the period January 2012 to May 2015 reveals limited new developments.	VB
40	Hawley B, Casey ML, Cox-Ganser JM, Edwards N, Fedan KB, Cummings KJ. Notes from the field: Respiratory symptoms and skin irritation among hospital workers using a new disinfection product—Pennsylvania, 2015. MMWR Morb Mortal Wkly Rep. 2016;65(15):400-401.	Expert Opinion	n/a	n/a	n/a	n/a	Consideration of health and worker safety is important when choosing disinfectant products. Hospital personnel should be alert to respiratory, skin, and eye symptoms related to disinfectants.	VB
41	Abdulla FR, Adams BB. Ortho-phthalaldehyde causing facial stains after cystoscopy. Arch Dermatol. 2007;143(5):670.	Case Report	n/a	n/a	n/a	n/a	A 28-year old urology resident presented with an asymptomatic brown oval patch on her nose allegedly present for less than 3 hours. The resident recalled resting a cystoscope on the right side of her nose during several procedures that morning. Once the skin is stained, the best removal method is unknown.	VC

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42	Anderson SE, Umbright C, Sellamuthu R, et al. Irritancy and allergic responses induced by topical application of ortho-phthalaldehyde. Toxicol Sci. 2010;115(2):435-443.	Nonexperimental	2/ High-level disinfectants	n/a	n/a	Skin irritancy and allergic responses.	The dermal irritancy and allergic potential of OPA raise concerns about the proposed or intended use of OPA as a safe alternative to glutaraldehyde.	IIIA
43	Suneja T, Belsito DV. Occupational dermatoses in health care workers evaluated for suspected allergic contact dermatitis. Contact Derm. 2008;58(5):285-290.	Quasi-experimental	1434/ Patients who underwent patch testing	Patch testing for allergic contact dermatitis	Health care workers compared with non-health care workers	Common allergens among health care workers with allergic contact dermatitis and allergic contact urticaria.	Health care workers with symptoms should be evaluated using patch testing.	IIB
44	Warshaw EM, Schram SE, Maibach HI, et al. Occupation-related contact dermatitis in North American health care workers referred for patch testing: cross-sectional data, 1998 to 2004. Dermatitis. 2008;19(5):261-274.	Nonexperimental	15,896/ Patients	n/a	n/a	Prevalence of occupational allergic contact dermatitis.	One of the most common allergens among health care workers was glutaraldehyde.	IIIB
45	Fujita H, Ogawa M, Endo Y. A case of occupational bronchial asthma and contact dermatitis caused by ortho-phthalaldehyde exposure in a medical worker. J Occup Health. 2006;48(6):413-416.	Case Report	n/a	n/a	n/a	n/a	OPA can be a powerful sensitizer, suggesting that widespread use of OPA as a substitute for glutaraldehyde may result in serious health risks for health care workers.	VB
46	Arif AA, Delclos GL. Association between cleaning-related chemicals and work-related asthma and asthma symptoms among healthcare professionals. Occup Environ Med. 2012;69(1):35-40.	Nonexperimental	3650/ Health care professionals	n/a	n/a	Self-reported exposure to cleaning chemicals, disinfectants, and sterilants; Self-reported symptoms of work-related asthma.	Workplace exposures to cleaning-related chemicals were associated with the development of work-related asthma symptoms, work-exacerbated asthma, and occupational asthma among health care professionals.	IIIB
47	Robitaille C, Boulet LP. Occupational asthma after exposure to ortho-phthalaldehyde (OPA). Occup Environ Med. 2015;72(5):381.	Case Report	n/a	n/a	n/a	n/a	The possibility of occupational asthma should be considered in health care workers experiencing respiratory symptoms when exposed to OPA.	VB
48	Walters GI, Moore VC, McGrath EE, Burge PS, Henneberger PK. Agents and trends in health care workers' occupational asthma. Occup Med (Lond). 2013;63(7):513-516.	Nonexperimental	182/ Health care workers with occupational asthma	n/a	n/a	Causative agents.	Continuing efforts are necessary to reduce the incidence of occupational asthma.	IIIB

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49	Bakerly ND, Moore VC, Vellore AD, Jaakkola MS, Robertson AS, Burge PS. Fifteen-year trends in occupational asthma: data from the shield surveillance scheme. Occup Med (Lond). 2008;58(3):169-174.	Nonexperimental	1461/ Cases of occupational asthma	n/a	n/a	Trends in occupational asthma.	The incidence of occupational asthma is high. Occupations related to health care was one of the most frequently reported occupations.	IIIB
50	Copeland S, Nugent K. Persistent and unusual respiratory findings after prolonged glutaraldehyde exposure. Int J Occup Environ Med. 2015;6(3):177-183.	Case Report	n/a	n/a	n/a	n/a	The distribution of inflammation and bronchial responsiveness can vary in a single patient with glutaraldehyde-induced occupational asthma.	VB
51	Donnay C, Denis MA, Magis R, et al. Under-estimation of self-reported occupational exposure by questionnaire in hospital workers. Occup Environ Med. 2011;68(8):611-617.	Nonexperimental	1571/ Adults with self-reported asthma	n/a	n/a	Consistency of self-report with expert report.	There was an underestimation of self-reported asthma compared with expert assessment.	IIIB
52	Ryu M, Kobayashi T, Kawamukai E, Quan G, Furuta T. Cytotoxicity assessment of residual high-level disinfectants. Biocontrol Sci. 2013;18(4):217-220.	Nonexperimental	3/ High-level disinfectants	n/a	n/a	Cytotoxicity of residual disinfectant.	Toxicity can result from insufficient rinsing, but also from release of absorbed disinfectant.	IIIB
53	Suzukawa M, Yamaguchi M, Komiya A, Kimura M, Nito T, Yamamoto K. Ortho-phthalaldehyde-induced anaphylaxis after laryngoscopy. J Allergy Clin Immunol. 2006;117(6):1500-1501.	Case Report	n/a	n/a	n/a	n/a	The present case demonstrates that repeated exposure to OPA can sensitize some patients. Extensive rinsing decreased the amount of residual OPA below the threshold level.	VB
54	Rideout K, Teschke K, DimichWard H, Kennedy SM. Considering risks to healthcare workers from glutaraldehyde alternatives in high-level disinfection. J Hosp Infect. 2005;59(1):4-11.	Nonexperimental	64/ Hospitals	n/a	n/a	Current practices; Product toxicities.	The potential risks of all high-level disinfectants are serious.	IIIB
55	Guideline for cleaning and care of surgical instruments. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc.; 2017:815-850.	Guideline	n/a	n/a	n/a	n/a	Guidance is provided for cleaning surgical instruments, selecting cleaning chemicals, and determining water quality.	IVA
56	American Society for Healthcare Engineering, Facility Guidelines Institute. Guidelines for Design and Construction of Hospitals and Outpatient Facilities. Chicago, IL: American Society for Healthcare Engineering; 2014.	Guideline	n/a	n/a	n/a	n/a	Guidance is provided for design and construction of hospitals and outpatient facilities, facilities where inpatient care is provided, and facilities where outpatient care is provided.	IVC

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57	Guidelines interpretations. Facility Guidelines Institute. https://www.fgiguidelines.org/guidelines/interpretations-2/. Accessed October 5, 2017.	Expert Opinion	n/a	n/a	n/a	n/a	Clarification is provided relative to the sterile processing room.	VA
58	Hota S, Hirji Z, Stockton K, et al. Outbreak of multidrug-resistant Pseudomonas aeruginosa colonization and infection secondary to imperfect intensive care unit room design. Infect Control Hosp Epidemiol. 2009;30(1):25-33.	Case Report	n/a	n/a	n/a	n/a	This report highlights the importance of biofilm and of sink and patient room design in the propagation of an outbreak and suggests strategies to reduce the risks associated with hospital sinks.	VB
59	Siegel JD, Rhinehart E, Jackson M, Chiarello L; the Healthcare Infection Control Practices Advisory Committee. 2007 Guideline for isolation precautions: preventing transmission of infectious agents in healthcare settings. Centers for Disease Control and Prevention.	Guideline	n/a	n/a	n/a	n/a	The primary objective of the guideline is to improve the safety of the nation's healthcare delivery system by reducing the rates of healthcare-associated infections.	IVA
60	HSE National Decontamination of Reusable Invasive Medical Devices Advisory Group, ed. Health Service Executive Standards and Recommended Practices for Endoscope Reprocessing Units. Version 2.2. Tipperary, Ireland: Health Service Executive; 2012.	Guideline	n/a	n/a	n/a	n/a	This document provides a guide to the practices required in the decontamination of reusable invasive medical devices in sterile processing areas based on current requirements and professional best practice.	IVB
61	Bringhurst J. Special problems associated with reprocessing instruments in outpatient care facilities. Am J Infect Control. 2016;44:e63-e67.	Expert Opinion	n/a	n/a	n/a	n/a	Problems related to disinfection of instruments are primarily caused by inadequate physical space and insufficient training and education of personnel.	VA
62	Roberts CG. The role of biofilms in reprocessing medical devices. Am J Infect Control. 2013;41(5 Suppl):S77-S80.	Expert Opinion	n/a	n/a	n/a	n/a	Reusable devices that are promptly cleaned and disinfected, rinsed, and dried pose little risk of patient infection.	VA
63	29 CFR 1910.1030: Bloodborne pathogens. US Government Publishing Office. https://www.ecfr.gov/cgi-bin/text-idx?SID=a71fad4cc5d7ca4d71154a2c80a4f88f&mc=true&node=se29.6.1910_11030&rgn=div8. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	OSHA bloodborne pathogens standard	n/a

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64	Merritt K, Hitchins VM, Brown SA. Safety and cleaning of medical materials and devices. J Biomed Mater Res. 2000;53(2):131-136.	Quasi-experimental	15/ Cleaning agents	Exposure of five different microorganisms and microorganisms from teeth scrapings, protein, and mammalian cells to cleaning agents	Tap water	Ease of removal of microorganisms, protein and cells.	Medical devices contaminated with microorganisms, protein, or mammalian cells should not be allowed to dry before cleaning.	IIB
65	Rutala WA, Weber DJ. Disinfection, sterilization, and antisepsis: an overview. Am J Infect Control. 2016;44:e1-e6.	Expert Opinion	n/a	n/a	n/a	n/a	Failure to correctly disinfect or sterilize equipment may lead to transmission of pathogens via contaminated medical and surgical devices.	VA
66	Gray RA, Williams PL, Dubbins PA, Jenks PJ. Decontamination of transvaginal ultrasound probes: review of national practice and need for national guidelines. Clin Radiol. 2012;67(11):1069-1077.	Nonexperimental	68/ Hospitals	n/a	n/a	Processing practices for transvaginal ultrasound probes.	There is an incomplete understanding of the level of infection risk posed by transvaginal ultrasound probes and in some cases, this has resulted in inadequate processing practices.	IIIB
67	Sanz GE, Theoret J, Liao MM, Erickson C, Kendall JL. Bacterial contamination and cleanliness of emergency department ultrasound probes. CJEM. 2011;13(6):384-389.	Nonexperimental	110/ Samples from 11 ultrasound probes	n/a	n/a	CFUs on ultrasound probes.	Probes in the medicine, trauma, and pediatrics areas were found to be clean 65%, 33%, and 70% of the time, respectively. The variability in probe cleanliness based on location was found to be statistically significant.	IIIB
68	Alfa MJ. Current issues result in a paradigm shift in reprocessing medical and surgical instruments. Am J Infect Control. 2016;44:e41-e45.	Expert Opinion	n/a	n/a	n/a	n/a	For medical devices that only receive high-level disinfection, it is critical that the levels of organic and microbial residuals are reduced as much as possible because there is a lower margin of safety with high-level disinfection compared to sterilization.	VA
69	Kampf G, Bloss R, Martiny H. Surface fixation of dried blood by glutaraldehyde and peracetic acid. J Hosp Infect. 2004;57(2):139-143.	Nonexperimental	4/ Disinfectants	n/a	n/a	Fixation of dried blood after disinfectant exposure.	There is a potential for blood fixation by both glutaraldehyde and peracetic acid, which supports the need for effective cleaning before disinfection.	IIIB
70	Alfa MJ, Olson N, DeGagne P, Jackson M. A survey of reprocessing methods, residual viable bioburden, and soil levels in patient-ready endoscopic retrograde choliangiopancreatography duodenoscopes used in Canadian centers. Infect Control Hosp Epidemiol. 2002;23(4):198-206.	Nonexperimental	7/ Hospitals in Canada	n/a	n/a	CFUs in duodenoscope channels.	Cleaning was generally well done. Areas for improvement included ensuring the availability of written processing protocols, immersion of scopes during manual cleaning, use of adequate fluid for rinsing, adequate drying of scopes prior to storage, and the separation of valves from scopes during storage.	IIIA

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71	Alfa MJ. Monitoring and improving the effectiveness of cleaning medical and surgical devices. Am J Infect Control. 2013;41(5 Suppl):S56-S59.	Expert Opinion	n/a	n/a	n/a	n/a	Monitoring of manual cleaning is necessary to ensure that inadequately cleaned medical devices are recleaned before disinfection or sterilization.	VA
72	Yasuhara H, Fukatsu K, Komatsu T, Obayashi T, Saito Y, Uetera Y. Prevention of medical accidents caused by defective surgical instruments. Surgery. 2012;151(2):153-161.	Nonexperimental	1775/ Defective instruments	n/a	n/a	Cause of damage/defect; Patient injury caused by use of damaged/defective instruments.	The appropriate use and adequate inspection of particular types of instruments are key for reducing the risk of adverse events caused by defective surgical instruments.	IIIA
73	Parada SA, Grassbaugh JA, Devine JG, Arrington ED. Instrumentation-specific infection after anterior cruciate ligament reconstruction. Sports Health. 2009;1(6):481-485.	Nonexperimental	5/ Cases of postoperative infection	n/a	n/a	Violations of sterile technique.	There was gross biomaterial remaining inside the instrumentation that prevented effective sterilization and led to patient infection.	IIIB
74	Federal insecticide, fungicide, and rodenticide act [as amended through P.L. 112–177, effective Sept. 28, 2012]. US	Regulatory	n/a	n/a	n/a	n/a	n/a	n/a
75	Summary of the federal insecticide, fungicide, and rodenticide act. US Environmental Protection Agency.https://www.epa.gov/laws-regulations/summary-federal-insecticide-fungicide-and-rodenticide-act. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	n/a	n/a
76	State Operations Manual Appendix A—Survey Protocol, Regulations and Interpretive Guidelines for Hospitals. Rev 151; 2015 Centers for Medicare & Medicaid Services. https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_a_hospitals.pdf. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	n/a	n/a

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77	State Operations Manual Appendix L—Guidance for Surveyors: Ambulatory Surgical Centers. Rev. 137; 2015. Centers for Medicare & Medicaid Services. https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_l_ambulatory.pdf. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	n/a	n/a
78	42 CFR 482. Conditions of participation for hospitals. 2011. Government Publishing Office. https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-part482. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	n/a	n/a
79	42 CFR 416. Ambulatory surgical services. 2011. Government Publishing Office. https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol3/CFR-2011-title42-vol3-part416. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	n/a	n/a
80	IC.02.02.01: The hospital reduces the risk of infections associated with medical equipment, devices, and supplies. In: Hospital Accreditation Standards. Oakbrook Terrace, IL: Joint Commission Resources; 2017.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
81	SS.1: Organization. In: NIAHO Interpretive Guidelines and Surveyor Guidance. Version 11. Milford, OH: DNV-GL Healthcare; 2014:80-82.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
82	IC.02.02.01: The organization reduces the risk of infections associated with medical equipment, devices, and supplies. In: Standards for Ambulatory Care. Oakbrook Terrace, IL: Joint Commission Resources; 2017.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a

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83	Infection prevention and control and safety. In: Accreditation Handbook for Ambulatory Health Care. Skokie, IL: Accreditation Association for Ambulatory Health Care, Inc.; 2016:54-57.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
84	Operating room policy, environment, and procedures. In: Regular Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. Version 14.5. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities, Inc; 2017:24-36.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
85	High-level disinfection and sterilization: know your process. Jt Comm Perspect. 2014;34(2):9.	Expert Opinion	n/a	n/a	n/a	n/a	Surveyors noted five areas needing improvement related to disinfection: following evidence-based guidelines, providing education and competency verification, monitoring quality, having qualified supervisory personnel, and maintaining accurate documentation.	VB
86	Howie R, Alfa MJ, Coombs K. Survival of enveloped and non-enveloped viruses on surfaces compared with other micro-organisms and impact of suboptimal disinfectant exposure. J Hosp Infect. 2008;69(4):368-376.	Nonexperimental	8/ Microorganisms 2/ Disinfectants	n/a	n/a	Survival of microorganisms; Killing efficacy of disinfectants.	Effective cleaning and disinfection is essential for preventing pathogen transmission.	IIIB
87	Maillard JY. Innate resistance to sporicides and potential failure to decontaminate. J Hosp Infect. 2011;77(3):204-209.	Expert Opinion	n/a	n/a	n/a	n/a	The efficacy of high-level disinfection in the health care environment is questionable. The lack of evidence of spore survival may be the result of lack of study, rather than the absence of spores.	VB
88	Rutala WA, Gergen MF, Weber DJ. Disinfection of a probe used in ultrasound-guided prostate biopsy. Infect Control Hosp Epidemiol. 2007;28(8):916-919.	Nonexperimental	5/ Prostate biopsy probes	n/a	n/a	Level of microbial contamination.	Disinfection can only be achieved if the needle guide is removed from the prostate biopsy probe.	IIIB
89	Kac G, Podglajen I, Si-Mohamed A, Rodi A, Grataloup C, Meyer G. Evaluation of ultraviolet C for disinfection of endocavitary ultrasound transducers persistently contaminated despite probe covers. Infect Control Hosp Epidemiol. 2010;31(2):165-170.	Nonexperimental	440/ Patients undergoing vaginal or rectal ultrasound examinations	n/a	n/a	Number of CFUs; Number of targeted viruses.	A disinfection procedure consisting of cleaning with a disinfected-impregnated towel followed by disinfection with ultraviolet C light may be effective for disinfection of endocavitary ultrasound probes.	IIIB

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90	Bloc S, Mercadal L, Garnier T, et al. Evaluation of a new disinfection method for ultrasound probes used for regional anesthesia: ultraviolet C light. J Ultrasound Med. 2011;30(6):785-788.	Nonexperimental	15/ Ultrasound probes	n/a	n/a	Number of CFUs.	Ultraviolet C light may be effective for disinfection of probes used for ultrasound-guided regional anesthesia.	IIIC
91	Vickery K, Gorgis VZ, Burdach J, Patel D. Evaluation of an automated high-level disinfection technology for ultrasound transducers. J Infect Public Health. 2014;7(2):153-160.	Nonexperimental	21/ Species of bacteria, fungi, and viruses	n/a	n/a	35% hydrogen peroxide disinfection efficacy.	The device satisfied criteria for high-level disinfection and sporicidal disinfection efficacy under all standards tested.	IIIB
92	Rutala WA, Gergen MF, Sickbert-Bennett E. Effectiveness of a hydrogen peroxide mist (trophon) system in inactivating healthcare pathogens on surface and endocavitary probes. Infect Control Hosp Epidemiol. 2016;37(5):613-614.	Nonexperimental	5/ Ultrasound probes	n/a	n/a	Inactivation of test organisms.	The nebulized hydrogen peroxide system is an effective method of high-level disinfection.	IIIB
93	Johnson S, Proctor M, Bluth E, et al. Evaluation of a hydrogen peroxide-based system for high-level disinfection of vaginal ultrasound probes. J Ultrasound Med. 2013;32(10):1799-1804.	Nonexperimental	13/ Sonographers	n/a	n/a	Efficacy of hydrogen peroxide-based system; Time to use; Costs of use.	The hydrogen peroxide-based system was efficient, easy and safe to use. The system saved approximately 7.5 hours per week and allowed 1.5 more ultrasound examinations to be performed per week.	IIIB
94	Rutala WA, Gergen MF, Bringhurst J, Weber DJ. Effective high-level disinfection of cystoscopes: is perfusion of channels required? Infect Control Hosp Epidemiol. 2016;37(2):228-231.	Quasi-experimental	Not stated/ Cystoscope	Microbiological surveillance	Cystoscope immersed and lumen flushed and filled with high-level disinfectant compared with immersion only.	CFUs in lumen of cystoscope.	Disinfection does not occur unless the channel of the cystoscope has been actively perfused with the disinfectant. Failing to perfuse the channel leads to minimal reduction in bacterial contamination.	IIB
95	Unal M, Yucel I, Akar Y, Oner A, Altin M. Outbreak of toxic anterior segment syndrome associated with glutaraldehyde after cataract surgery. J Cataract Refract Surg. 2006;32(10):1696-1701.	Case Report	n/a	n/a	n/a	n/a	Glutaraldehyde is highly toxic to the corneal endothelium.	VA
96	Karpelowsky JS, Maske CP, Sinclair-Smith C, Rode H. Glutaraldehyde-induced bowel injury after laparoscopy. J Pediatr Surg. 2006;41(6):e23-e25.	Case Report	n/a	n/a	n/a	n/a	The injury was likely caused by the inadvertent deposition of a few milliliters of glutaraldehyde solution left behind in insufflation tubing and introduced into the patient's body during insufflation.	VB

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97	Nazik H, Bodur S, Api M, Aytan H, Narin R. Glutaraldehyde-induced bowel injury during gynecologic laparoscopy. J Minim Invasive Gynecol. 2012;19(6):756-757.	Case Report	n/a	n/a	n/a	n/a	Even very small amounts of residual glutaraldehyde on laparoscopic instruments can cause chemical burns.	VB
98	AAMI TIR 34: 2014. Water for the Reprocessing of Medical Devices. Arlington, VA: Association for the Advancement of Medical Instrumentation; 2014.	Guideline	n/a	n/a	n/a	n/a	This technical information report covers the selection and maintenance of effective water quality suitable for reprocessing medical devices.	IVC
99	Gillespie JL, Arnold KE, Noble-Wang J, et al. Outbreak of Pseudomonas aeruginosa infections after transrectal ultrasound-guided prostate biopsy. Urology. 2007;69(5):912-914.	Case Report	n/a	n/a	n/a	n/a	Needle guide reprocessing procedures were inadequate. Potential causes of patient infection included lack of adequate manual cleaning, failure to sterilize the needle guide, and use of utility water for rinsing.	VB
100	Wendelboe AM, Baumbach J, Blossom DB, Frank P, Srinivasan A, Sewell CM. Outbreak of cystoscopy related infections with Pseudomonas aeruginosa: New Mexico, 2007. J Urol. 2008;180(2):588-592.	Nonexperimental	23/ Patients with blood or urine cultures positive for *Pseudomonas aeruginosa*	n/a	n/a	Risk factors for becoming a case.	One cause of the outbreak was rinsing the devices with unsterile water.	IIIB
101	Guideline for sterile technique. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2017:75-104.	Guideline	n/a	n/a	n/a	n/a	Implementing sterile technique when preparing, performing, or assisting with surgical and other invasive procedures is the cornerstone of maintaining sterility and preventing microbial contamination.	IVA
102	Stigt JA, Wolfhagen MJ, Smulders P, Lammers V. The identification of Stenotrophomonas maltophilia contamination in ultrasound endoscopes and reproduction of decontamination failure by deliberate soiling tests. Respiration. 2015;89(6):565-571.	Case Report	n/a	n/a	n/a	n/a	Disinfection with peracetic acid failed to decontaminate the small channels of the ultrasound probes. Prolonged storage in humid conditions enhanced the outgrowth of microorganisms.	VB
103	Guideline for a safe environment of care, part 1. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2017:243-268.	Guideline	n/a	n/a	n/a	n/a	Guidance is provided on musculoskeletal injury, fire safety, electrical equipment, clinical and alert alarms, blanket- and solution-warming cabinets, medical gas cylinders, waste anesthesia gases, latex, chemicals including methyl methacrylate bone cement, and hazardous waste.	IVA

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104	29 CFR 1910.151: Medical services and first aid. Occupational Safety and Health Administration https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9806. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	First aid	n/a
105	ANSI/ISEA Z358.1-2014 American National Standard for Emergency Eyewash and Shower Equipment. Arlington, VA: International Safety Equipment Association; 2014.	Guideline	n/a	n/a	n/a	n/a	This standard establishes minimum performance and use requirements for eyewash and shower equipment for the emergency treatment of the eyes or body of a person who has been exposed to hazardous materials.	IVC
106	Occupational safety and health act of 1970 (PL 91-596). Occupational Safety and Health Administration. https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=OSHACT&p_id=2743. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	Public health act of 1970.	n/a
107	Overview of health care HVAC systems. In: HVAC Design Manual for Hospitals and Clinics. Atlanta, GA: American Society of Heating, Refrigerating and Air-Conditioning Engineers; 2013:1-18.	Guideline	n/a	n/a	n/a	n/a	Guidance is provided for engineers involved in the design, installation, and commissioning of heating, ventilation, and air conditioning systems.	IVC
108	Industrial Ventilation: A Manual of Recommended Practice for Design. Cincinnati, OH: American Conference of Governmental Industrial Hygienists; 2016.	Guideline	n/a	n/a	n/a	n/a	This manual is used by engineers and industrial hygienists to design and evaluate industrial ventilation systems.	IVC
109	Guideline for a safe environment of care, part 2. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2017:269-294.	Guideline	n/a	n/a	n/a	n/a	The physical design and environment of the perioperative suite should support safe patient care, workplace safety, and security.	IVA
110	National Institute for Occupational Safety and Health, ed. Evaluation of Ortho-phthalaldehyde in Eight Healthcare Facilities. HHE report no. 2006-0238-3239. Cincinnati, OH: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health; 2015.	Nonexperimental	8/ Health care facilities	n/a	n/a	Work history and practices; symptoms; Allergic reactions; Antibodies; Skin condition; Presence of glutaraldehyde in air.	Reported work-related symptoms were rare. Skin sensitization was not confirmed. Facilities should follow recommended ventilation standards and guidelines where OPA is used and should also provide education on and enforce use of PPE.	IIIA

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111	TLV / BEI introduction. American Conference of Governmental Industrial Hygienists. http://www.acgih.org/tlv-bei-guidelines/tlv-bei-introduction. Accessed October 5, 2017.	Guideline	n/a	n/a	n/a	n/a	Defines occupational exposure limits for chemicals, including high-level disinfectants.	IVB
112	OSHA occupational chemical database. Occupational Safety and Health Administration. https://www.osha.gov/chemicaldata/. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	Chemical database.	n/a
113	29 CFR 1910.134: Personal protective equipment: respiratory protection. Occupational Safety and Health Administration. https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&	Regulatory	n/a	n/a	n/a	n/a	n/a	n/a
114	29 CFR 1910.133: Personal protective equipment: eye and face protection. US Government Publishing Office. http://www.ecfr.gov/cgi-bin/text-idx?SID=138cf8e943da8b05e30a2d25732e5a51&mc=true&node=se29.5.1910_1133&rgn=div8. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	n/a	n/a
115	29 CFR 1910.132: Personal protective equipment: general requirements. Occupational Safety and Health Administration. https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9777. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	PPE requirements.	n/a
116	29 CFR 1910.138: Personal protective equipment: hand protection. Occupational Safety and Health Administration. https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9788. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	Hand protection.	n/a

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117	Guideline for prevention of transmissible infections. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2017:507-542.	Guideline	n/a	n/a	n/a	n/a	Guidance is provided for perioperative RNs in implementing standard precautions and transmission-based precautions (ie, contact, droplet, airborne) to prevent infection in the perioperative practice setting. Additional guidance is provided for bloodborne pathogens and PPE.	IVA
118	Guideline for surgical attire. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2017:105-128.	Guideline	n/a	n/a	n/a	n/a	Guidance is provided for surgical attire including scrub attire, shoes, jewelry, head coverings, and masks worn in the semirestricted and restricted areas of the perioperative practice setting.	IVA
119	Resource conservation and recovery act (RCRA) laws and regulations. US Environmental Protection Agency. https://www.epa.gov/rcra. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	n/a	n/a
120	42 USC 6901: Congressional findings. US Government Publishing Office. https://www.gpo.gov/fdsys/pkg/USCODE-2011-title42/html/USCODE-2011-title42-chap82.htm. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	n/a	n/a
121	42 USC 6926: Authorized state hazardous waste programs. US Government Publishing Office. https://www.gpo.gov/fdsys/granule/USCODE-2010-title42/USCODE-2010-title42-chap82-subchapIII-sec6926. Accessed October 5, 2017.	Regulatory	n/a	n/a	n/a	n/a	n/a	n/a
122	Introduction to hospital waste management. In: Healthcare Risk Control. Vol 3. Plymouth Meeting, PA: ECRI, Inc; 2011:1-13.	Expert Opinion	n/a	n/a	n/a	n/a	Identify and follow all local, state, and federal regulations related to waste management.	VB
123	Management of hazardous chemicals and waste. In: Healthcare Risk Control. Vol 3. Plymouth Meeting, PA: ECRI, Inc; 2017:1-15.	Expert Opinion	n/a	n/a	n/a	n/a	The use, storage, and disposal of hazardous chemicals is highly regulated by federal, state, and local governments.	VB
124	Guideline for patient information management. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2017:591-616.	Guideline	n/a	n/a	n/a	n/a	Highly reliable data collection is necessary to demonstrate the health care organization's progress toward quality care outcomes.	IVA

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125	RC.01.01.01: The hospital maintains complete and accurate medical records for each individual patient. In: Hospital Accreditation Standards. Oakbrook Terrace, IL: Joint Commission Resources; 2017.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
126	MS.16: Medical record maintenance. In: NIAHO Interpretive Guidelines and Surveyor Guidance. Version 11. Milford, OH: DNV-GL Healthcare; 2014:37.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
127	RC.01.01.01: The organization maintains complete and accurate clinical records. In: Standards for Ambulatory Care. Oakbrook Terrace, IL: Joint Commission Resources; 2017.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
128	Clinical records and health information. In: Accreditation Handbook for Ambulatory Health Care. Skokie, IL: Accreditation Association for Ambulatory Health Care, Inc; 2016:51-53.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
129	. Medical records: operating room records. In: Regular Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. Version 14.5. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities; 2017:60-63.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
130	Medical records: procedure room records. In: Procedural Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. Version 3. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities, Inc; 2011:64-66.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
131	HR.01.05.03: Staff participate in ongoing education and training. In: Comprehensive Accreditation Manual: CAMH for Hospitals. Oakbrook Terrace, IL: Joint Commission Resources; 2017.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
132	MS.10: Continuing education. In: NIAHO Interpretive Guidelines and Surveyor Guidance. Version 11. Milford, OH: DNV-GL Healthcare; 2014:30.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a

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133	HR.01.05.03: Staff participate in ongoing education and training. In: Comprehensive Accreditation Manual: CAMAC for Ambulatory Care. Oakbrook Terrace, IL: Joint Commission Resources; 2017.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
134	Governance. In: Accreditation Handbook for Ambulatory Health Care. Skokie, IL: Accreditation Association for Ambulatory Health Care, Inc; 2016:33-40.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
135	Personnel: personnel records; individual personnel files. In: Regular Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities, Inc; 2017:74-75.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
136	Henn SA, Boiano JM, Steege AL. Precautionary practices of healthcare workers who disinfect medical and dental devices using high-level disinfectants. Infect Control Hosp Epidemiol. 2015;36(2):180-185.	Nonexperimental	4657/ Members of professional practice organizations	n/a	n/a	Information on current usage; Information on precautionary practices; Information on barriers to use of personal protective equipment.	Precautionary practices are not always followed, which underscores the importance of ongoing education and competency verification.	IIIB
137	Taneja N, Gill SS, Biswal M, et al. Working awareness of healthcare workers regarding sterilisation, disinfection, and transmission of bloodborne infections and device-related infections at a tertiary care referral centre in north India. J Hosp Infect. 2010;75(3):244-245.	Nonexperimental	57/ Health care workers	n/a	n/a	Knowledge related to disinfection and sterilization practices.	Knowledge related to disinfection and sterilization practices vary widely and are deficient overall.	IIIC
138	Bailey C, Kay R, Starling P, et al. A health system approach to improving high level disinfection practices. Am J Infect Control. 2015;43:S14.	Organizational Experience	n/a	n/a	n/a	n/a	Reducing the number of facilities performing HLD processing and providing education resulted in a consistent approach that improved processing practices.	VC

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139	Rettig SL, Hoegg CL, Teszner E, Smathers SA, Satchell L, Sammons J. Ensuring competency of high-level disinfection (HLD) practices in non-central processing department (CPD) locations. Am J Infect Control. 2015;43:S22.	Organizational Experience	15/ Locations where sterile processing was performed	n/a	n/a	n/a	Competency can be achieved with regular training that includes return demonstration.	VB
140	LD.04.01.07: The hospital has policies and procedures that guide and support patient care, treatment and services. In: Hospital Accreditation Standards. Oakbrook Terrace, IL: Joint Commission Resources; 2017.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
141	LD.04.01.07: The organization has policies and procedures that guide and support patient care, treatment, or services. In: Standards for Ambulatory Care. Oakbrook Terrace, IL: Joint Commission Resources; 2017.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
142	Personnel: personnel records. In: Procedural Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. Version 3. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities, Inc; 2011:77-79.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
143	Steege AL, Boiano JM, Sweeney MH. NIOSH health and safety practices survey of healthcare workers: training and awareness of employer safety procedures. Am J Ind Med. 2014;57(6):640-652.	Nonexperimental	12,028/ Professional, technical, and support workers in contact with targeted chemicals	n/a	n/a	Exposure to chemical agents; Prevalence of hazard training.	Training and having procedures in place to minimize exposure to chemicals will help to improve employer and worker safety awareness.	IIIA
144	PI.03.01.01: The hospital improves performance on an ongoing basis. In: Hospital Accreditation Standards. Oakbrook Terrace, IL: Joint Commission Resources; 2017.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
145	QM.1: Quality management system. In: NIAHO Interpretive Guidelines and Surveyor Guidance. Version 11. Milford, OH: DNV-GL Healthcare; 2014:10-17.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
146	PI.03.01.01: The organization improves performance. In: Standards for Ambulatory Care. Oakbrook Terrace, IL: Joint Commission Resources; 2017.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a

REFERENCE #	CITATION	EVIDENCE TYPE	SAMPLE SIZE/ POPULATION	INTERVENTION(S)	CONTROL/ COMPARISON	OUTCOME MEASURE(S)	CONCLUSION(S)	CONSENSUS SCORE
147	Quality management and improvement. In: Accreditation Handbook for Ambulatory Health Care. Skokie, IL: Accreditation Association for Ambulatory Health Care, Inc; 2016:46-50.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a
148	Quality assessment/quality improvement: quality improvement. In: Regular Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. Version 14.5. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities, Inc; 2017:64.	Accreditation	n/a	n/a	n/a	n/a	n/a	n/a