THE FOLLOWING IS THE FULL VERSION OF THE ORNAC STANDARDS RELATED TO ENVIRONMENTAL CLEANING (REPRINTED WITH PERMISSION OF ORNAC).

OPERATING ROOM NURSES ASSOCIATION OF CANADA (ORNAC) (OCTOBER 2015) *STANDARDS FOR PERIOPERATIVE REGISTERED NURSING PRACTICE (12TH EDITION).*

SECTION 2 (PAGES 164 - 170) STANDARDS 2.34 - 2.39.

ENVIRONMENTAL CLEANING/SANITATION

2.34 GENERAL PRACTICES

	PRACTICE	RATIONALE
2.34.1	All surgical procedures shall be considered potentially infectious and environmental cleaning protocols shall be documented and implemented for all procedures with additional precautions required for specific patient conditions as outlined in Routine Practices.	A clean operating room environment ensures minimal microbial growth, which is essential to the reduction of infections and well-being of patients and personnel. Cleaning schedules and procedures should be available to cleaning personnel (Allen, 2014: Phillips, 2013).
	All surgical patients shall be provided with a clean, safe environment, which is free from dust, debris and bioburden (Allen, 2014; AORN, 2013; Phillips, 2013). The perioperative nursing team, share the responsibility and accountability for ensuring a clean environment for each patient (Phillips, 2013).	The surgical suite can become heavily contaminated with microbes, becoming a risk for patients, unless it is properly cleaned and disinfected.
2.34.2	Procedures shall be available for the containment and control of antibiotic- resistant organisms (AROs) and emerging diseases according to the health care facility's infection control protocol (Rothrock, 2015).	Additional precautions may be required in addition to Routine Practices for such contaminants as antibiotic-resistant organisms (AROs), drug resistant gram-negative organisms, tuberculosis and Creutzfeldt-Jakob disease (see specific sections). Multiple studies confirm microorganisms are able to survive after inoculation onto inanimate objects can be cultured from the environment in health care settings; and can be transferred to hands (Goodman& Spry, 2014; PIDAC, 2012).
2.34.3	The operating room's environment shall be designed so that it can be easily cleaned:	
	- floors should be smooth, seamless, slip- proof when wet (Phillips, 2013; Rothrock, 2015);	
	- hard, non-porous, fire-resistant, waterproof, stain-proof, seamless and non-reflective finishes should be on all walls and ceiling surfaces (Goodman & Spry, 2014; Phillips, 2013; Rothrock, 2015).	Debris could become lodged in cracks and uneven surfaces making cleaning difficult. Flooring that is slip-proof can prevent falls in areas prone to spills.
	- wall finishes should be free of fissures, open joints, or crevices;	Spaces or crevices may retain or permit passage of soil particles.

2.34 GENERAL PRACTICES (CONT.)

	PRACTICE	RATIONALE
	- room furnishings and equipment shall be easily washable/wipeable;	Wooden cabinets should be avoided as the surfaces are easily damaged and are difficult to clean (Rothrock, 2015).
	- shelving and cabinets should be of a material and design that is easily cleaned; - minimal supplies and equipment should be stored inside the operating room (Phillips, 2013);	Supplies and equipment stored in the operating room make it difficult to maintain a clean environment.
	- open shelving shall not be used in the patient operating room; and - all cupboards should have doors preferably with glass, and the ability to slide open (Phillips, 2013).	Sterile supplies become laden with dust, microbes over time.
2.34.4	Between - case, terminal, daily, weekly, monthly cleaning schedules shall be documented and available to all involved team members (Allen, 2014). Environmental sanitation practices shall be performed by trained personnel and according to health care facility protocol (AORN, 2013).	Documentation of cleaning provides a means of tracking for quality assurance purposes and accreditation standards.
2.34.5	Cleaning solutions, equipment, and supplies utilized for sanitation shall be approved by the health care facility's Infection Prevention and Control and Occupational Health department(s) (Rothrock, 2015).	Ensures that appropriate solutions, equipment and supplies are utilized to reduce microbial contamination of the environment.
2.34.6	Only essential equipment shall be maintained within the operating room (Phillips, 2013).	Removing unnecessary equipment from the room, results in less required cleaning and decreases potential places that can harbor dust or organisms.
2.34.7	Sterile items should be stored in closed cupboards. If stored on open shelves the highest shelf should be at least 45 centimeters (18 inches) from the ceiling and the lowest shelf should be 20 – 25 centimeters (8 -10 inches) from the floor (Rothrock, 2015).	Sterile goods should be protected from high traffic and potential sources for contamination.
2.34.8	OR doors shall remain closed at all times, including during cleaning (Rothrock, 2015).	Positive pressure is easily lost with open doors, which allow air currents from corridors, and surrounding rooms that may be laden with microorganisms and dust entering the clean/sterile areas. Prevents the transmission of microorganisms.
2.34.9	Perioperative personnel responsible for cleaning and disinfection of the operating room shall don the appropriate personal protective equipment (PPE) prior to the commencement of cleaning. (AORN, 2013; Phillips, 2013).	

2.35 PRELIMINARY CLEANING

	PRACTICE	RATIONALE
2.35.1	All horizontal surfaces within the operating room shall be damp-dusted prior to the first case of the day and before any supplies are brought into the room. Damp dusting is done with a clean, lint-free cloth moistened with a hospital approved low-level disinfectant. Start dusting at higher surfaces and work down to lower levels. (AORN, 2013; Goodman & Spry, 2014; Phillips, 2013: Rothrock, 2015).	Proper cleaning of the operating room reduces the amount of exogenous microorganisms, dust, debris and bioburden in surgical environments. It also helps to reduce airborne contaminants that may travel on dust and lint and settle on surfaces.
	- Dust with a solution approved by the health care facility's Infection Prevention & Control (IPC) and validated by the manufacturer for the intended purpose (Phillips, 2013; Rothrock, 2015).	Ensures the product being used meets the required standards.
	- Perioperative electronic equipment shall be cleaned as per manufacturer's instructions (Goodman & Spry, 2014).	Inappropriate use of liquids on electronic medical equipment may result in fires and other damage, equipment malfunctions and health care provider burns (PIDAC, 2012).
	- The team shall be vigilant in checking the reflective surface of the surgical lights for blood splatters. The reflective portion of the surgical lights shall be wiped between cases and as needed. (Phillips, 2013).	
2.35.2	Equipment from other areas such as X- ray machines, compressed gas tanks, etc., shall be damp-dusted before being brought into the operating room and prior to leaving (Goodman & Spry, 2014).	Damp dusting reduces viable microbial contamination from air and other sources.

2.36 INTRAOPERATIVE CLEANING

	PRACTICE	RATIONALE
2.36.1	During the procedure, all contaminated items and spills shall be confined and contained and/or promptly cleaned up using a health care facility approved disinfectant (AORN, 2013).	Prompt cleaning prevents spreading of microorganisms.
2.36.2	Equipment leaving the operating room shall first be wiped down with a hospital approved disinfectant in accordance to the manufacturers recommendations prior to being stored (AORN, 2013).	Prevent cross contamination.

2.37 END OF PROCEDURE CLEANING (BETWEEN CASES)

	PRACTICE	RATIONALE
2.37.1	Any surface and equipment that comes in direct or in direct contact with the patient or body fluids are considered contaminated and shall be cleaned with a hospital-grade disinfectant approved by the health care facility's Infection Prevention and Control & Occupational Health and Safety. Clean up for surfaces and equipment shall proceed from the least contaminated to the most contaminated area (AORN, 2013).	
2.37.2	Regulated Medical Waste (RMW) shall be handled as little as possible and disposed of according to municipal/provincial/federal legislation and/or health care facility policies and procedures.	Prevents leakage and cross-contamination
2.37.3	After removal of trash, linen and instruments, the floor area to within a 1 to 1.5m (3 to 4 ft.) perimeter around the operative area should be cleaned if visibly soiled. The area cleaned shall be extended as required to encompass visibly soiled areas (Phillips, 2013).	The extent of cleaning is case-specific depending on the amount of contamination. A minor cleaning with a wet mop immediately around the OR table (without moving the OR table) is adequate after a minor case with no spillage.
2.37.4	Mop heads shall be changed after each use. If a bucket of hospital grade disinfectant solution is prepared for multiple uses, used mops shall not be reintroduced into the bucket (AORN, 2013; AORN, 2014; Phillips, 2013).	Prevents cross contamination.

2.37 END OF PROCEDURE CLEANING (BETWEEN CASES) (CONT.)

	PRACTICE	RATIONALE
2.37.5	Suction containers/liners should be disposable and wherever possible solidifiers should be used. Containers shall be disposed of as per health care facility waste management policies (AORN, 2013; Phillips, 2013).	Use of solidifiers will prevent splashing and aerosolization of blood, body fluids and microorganisms.
2.37.6	Reusable suction containers should not be used (AORN, 2013).	Risk of splashing and aerosolization when emptying them are a high risk to personnel.
2.37.7	Reusable fluid disposal machines should be used in compliance with the facility and provincial waste disposal policy and protocol (AORN, 2013).	Fluid waste management systems connect to the facility's electrical and plumbing systems for disposal of contaminated fluids.
2.37.8	Suction tubing shall be disposable.	The lumen of suction tubing cannot be cleaned effectively.

2.38 TERMINAL CLEANING

	PRACTICE	RATIONALE
2.38.1	After the day's schedule each operating room, scrub area, corridor, furnishings, and equipment shall be terminally cleaned. This includes: - lights and ceiling-mounted tracks; - door handles and push plates; - light switches and controls; - telephones and computer keyboards; - spot-checking walls for cleanliness;	To reduce the number of infectious agents/microorganisms present.
	- the exterior surfaces of all machines and equipment (allow adequate drying time – as per manufacturer's instructions – before storage); - all furniture, including wheels/casters; - all horizontal surfaces; - scrub sinks and surrounding walls; - floors should be mopped with a sufficient amount of disinfectant/ detergent to ensure that the floor remains wet for the period of contact time described in the manufacturer's instructions for use. Each floor shall be thoroughly cleaned using fresh solution and a fresh mop/mop head; and - floors should be power scrubbed at regular intervals according to established protocols.	Moisture encourages microbial growth.
2.38.2	Refillable liquid soap dispensers should not be used (AORN, 2013).	Refillable dispensers may become contaminated and act as a reservoir for microbial growth (AORN, 2013; Health Canada, 2004).

2.39 WEEKLY AND/OR MONTHLY CLEANING

PRACTICE		RATIONALE
2.39.1	Cleaning protocols and schedules for all areas of the surgical suite shall be documented and assigned to specific personnel (AORN, 2013). Factors to consider when determining cleaning frequency include but are not limited to; room and suite design; traffic and ventilation.	Effective sanitation techniques reduce the possibility of cross-contamination of patients and decrease risks to personnel. Promotes effective collaborative practice. A means to confirm that cleaning has been done is essential for infection control audit purposes (e.g., signed checklists).
2.39.2	Items/areas scheduled to be cleaned should include, but are not limited to: - walls; - floors; - air-conditioning and ventilation grills/vents; - light fixtures, sprinkler heads and other fixtures; - ducts and filters; - sterilizers; - cabinets, closets, shelves; - warming cupboards; - operating room walls and ceilings; - recessed ceiling tracks; - store rooms; - offices and lounges; - pre-op holding area; - refrigerators, ice machines; and - washrooms and locker rooms.	Effective sanitation techniques reduce the possibility of cross-contamination of patients and decrease risks to personnel.

REFERENCES

Allen, G. (2014). Implementing AORN Recommended Practices for Environmental Cleaning. *AORN Journal, 99(5)*, 570-582.

Association of periOperative Registered Nurses (AORN) (Producer). (2013). *Environmental sanitation, terminal cleaning and disinfection (#1960)*. [Video Webcast]. Woodbury, CT: Cine-Med.

Association of periOperative Registered Nurses (AORN). (2014). *Perioperative standards and recommended practices for inpatient and ambulatory settings*. Denver, CO: Author.

Goodman, T. & Spry, C. (2014). *Essentials of Perioperative Nursing*. (5th ed.) Burlington, MA: Jones and Bartlett Learning.

Health Canada. (2004). *Drugs and Health Products*. Retrieved from www.hc-sc.gc.ca.

Phillips, N.M. (2013). *Berry and & Kohn's operating room technique* (12th ed.). St. Louis, MO: Elsevier Mosby.

Provincial Infectious Diseases Advisory Committee (PIDAC). (2012). *Best practices for environmental cleaning for prevention and control of infections in all health care settings* (2nd ed.). Public Health Ontario.

Rothrock, J.C. (2015). *Alexander's care of the patient in surgery* (15th ed.). St. Louis, MO: Elsevier Mosby.