

Cleaning and Disinfection of the Environment and Devices for Primary Care Practices

This document is intended to assist Primary Care Practices with cleaning and disinfection of the physical environment and of patient care equipment/devices. It has been adapted From: Provincial Infectious Diseases Advisory Committee- Infection Prevention and Control for Clinical Office Practice (April 2015).

Cleaning the Physical Environment

Maintaining a clean and safe health care environment is an essential component of Infection Prevention and Control and is integral to the safety of patients and staff. The key to effective cleaning and disinfection of environmental surfaces is the use of friction (“elbow grease”) to remove microorganisms and debris. Surfaces must be cleaned and free of visible soil before being disinfected.

Clinical office settings may be categorized into three components:

- Public component- public areas that are not involved in patient care. Includes: waiting rooms, offices, and corridors. These areas can be cleaned with a detergent.
- Clinical component- areas involved in patient care. Includes: examination rooms, procedure rooms, bathrooms and treatment areas. These areas are first cleaned with a detergent and then disinfected with a hospital grade disinfectant.
- Surgical component- areas involved in surgery or invasive procedures. These areas must be cleaned and disinfected according to the standards set by the [Operating Room Nurses Association of Canada](#) (ORNAC).

Examination rooms should be kept free of clutter to facilitate cleaning. Surfaces that are visibly soiled with blood or body fluids need to be cleaned and disinfected immediately e.g. examination tables, floors and toilets.

Cleaning and disinfecting agents may be combined into a single product. Hospital-grade disinfectants include:

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- Chlorine 5.25% Sodium hypochlorite at 50,000 parts per million (i.e. 1:50 dilution of household bleach)
- Quaternary Ammonium compounds (QUATs)
- Hydrogen Peroxide Enhanced Action Formulation

Hospital-grade cleaning and disinfection products must:

- have a drug identification number (DIN) from Health Canada
- be used according to the manufacturer's recommendations for dilution, temperature and contact time
- be used according to the product's Material Safety Data Sheet (MSDS)

Frequency of Cleaning in the Physical Environment:

Clean between patients	Clean at the end of the day and when visibly soiled	Clean according to fixed schedule and when visibly soiled
Beds/examination table Transport equipment i.e. wheelchairs Scales	Bathrooms Vacuuming Carpets Chairs, couches Doorknobs Floors Light switches Mirrors Overbed lamps and lights Tables Telephones	Appliances (refrigerators, microwaves, coffee makers) Baseboards Steam cleaning of carpets Ceilings and air vents Furnishings in office spaces (desks, bookcases, cabinets) Ice machines Lockers Privacy curtains Televisions

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	Wall mounted items (soap dispensers, paper towel holders, glove box holder)	Walls Windows, window sills and window coverings
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Cleaning and Disinfection/Sterilization of Medical Equipment/Devices

Medical equipment and devices used in the provision of care to patients must be capable of being cleaned, disinfected and/or sterilized between uses. The minimum level of reprocessing is based on Spaulding's classification of Medical Equipment:

Class	Use	Minimum level of Reprocessing	Examples
Critical	Enters sterile body site including the vascular system	Cleaning followed by sterilization	Surgical instruments Biopsy instruments Podiatry equipment
Semi-critical	Comes in contact with non-intact skin or mucous membranes but does not penetrate them	Cleaning followed by high level disinfection Sterilization is preferred	Vagina speculum Anaesthesia equipment Tonometer
Non-Critical	Touches only intact skin and not mucous membranes or does not directly touch the patient	Cleaning followed by low-level disinfection	ECG machines Oximeters Blood Pressure Cuff Stethoscopes

Single-use Medical Devices are not to be reprocessed.

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The manufacturer's information for decontamination and reprocessing must be followed. These written procedures for cleaning and disinfection/sterilization of equipment and devices should be kept near the reprocessing area for reference. Procedures must be reviewed and revised regularly.

The reprocessing method and products to be used will depend on the intended use of the equipment/device and the potential risk of infection. The process and products used for cleaning, disinfection and or sterilization must be compatible with the equipment/devices. The Manufacturer should be able to provide you with a list of compatible products and methods.

Equipment reprocessing is to occur in an area segregated from patients and clean areas. There must be a clearly designated individual who is responsible for reprocessing. Transport of used medical equipment from the procedure area to the reprocessing area must be done in a way to prevent contamination of the environment for example in a covered container. The transport containers must be cleaned after each use.

Recommendations for **cleaning** medical equipment/devices include:

- Follow the instrument manufacturer's guidelines for cleaning.
- Staff who handle and clean contaminated equipment/devices must wear facial protection, gloves and a gown.
- Check the product expiry date before use.
- Clean the instrument as soon as possible after use so that organic material (blood, pus, mucous, feces, etc.) does not dry on it. If there will be a delay in reprocessing, soak the instrument in an approved instrument soaking solution.
- Clean instrument with an instrument detergent/enzymatic diluted according to manufacturer's directions, or alternatively in an ultrasonic washer. Pay special attention to rough or porous surfaces, hinges, coils, valves, clamps or crevices that may harbor microorganisms.
- Clean instruments that have lumens with a brush, according to the manufacturer's instructions. The brush must also be cleaned and disinfected.
- Ensure adequate exposure (contact) time between equipment/device and the product.
- Rinse the instrument with water after cleaning to remove residue that might interfere with the disinfectant/sterilant.
- Dry the instrument according to manufacturer's instructions. Drying prevents dilution of the chemical disinfectants.
- Visually inspect the instrument after cleaning and prior to disinfection/sterilization to ensure cleanliness and integrity of the instrument.

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Sterilization is the elimination of all disease-producing microorganisms including spores. Sterilization is used on all critical medical equipment/devices and whenever possible semi-critical devices. Equipment/devices that are to be sterilized require wrapping. Materials used for wrapping shall be prepared in a manner that will allow adequate air removal, steam penetration and evacuation to all surfaces. Plastic/peel pouches are easy to use, often with self-sealing closures and chemical indicator strips and come in a variety of sizes that can accept single or small groups of instruments. The date should be marked on the product wrapping.

The preferred method for decontamination of heat-resistant devices is steam sterilization. Pre-vacuum table top sterilizers are acceptable for clinic settings providing they have regular preventative maintenance and cleaning performed to assure the effectiveness of the sterilizer. **Unacceptable** methods of disinfection/sterilization include: dishwasher, boiling, ultraviolet irradiation, glass bead sterilizers, chemiclave sterilizers and microwave ovens.

The sterilization process shall be monitored to ensure the integrity of the process. A log book must be kept for each sterilizer load. Performance monitoring includes physical, biological and chemical indicators. A procedure shall be established for the recall of improperly reprocessed medical equipment/devices.

Steam sterilized packs must be subject to a drying cycle prior to handling and storage. Wrapped packs must be carefully stored in a clean, dry, dust free areas (i.e. closed shelves) not at floor level away from debris drains, moisture, sinks and vermin to prevent contamination and maintain sterility until the time of use.

High Level Disinfection can be used for reprocessing semi-critical items that cannot withstand sterilization. Disinfection does not destroy spores (i.e. *Clostridium difficile*) or prions. High level disinfectants such as: 2 per cent glutaraldehyde, 0.2 per cent peracetic acid, and 0.55 per cent ortho-phthalaldehyde (OPA) **must not** be used in clinical offices due to the Occupational Health and Safety concerns with inappropriate ventilation systems to protect against the toxic vapours.

A 7 per cent hydrogen peroxide enhanced formulation may be used as it does not produce these vapours. This type of solution is often used for disinfecting foot care equipment.

Low-level disinfection is utilized for non-critical equipment/devices that do not touch mucous membranes and only touch intact skin (e.g. stethoscopes, blood pressure cuffs, baby scales). Disinfectant wipes may be used for cleaning small non-critical items between patients (i.e. blood pressure cuff). Examples of Low-level disinfectants include:

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- Hydrogen Peroxide Enhanced Action Formulation (0.5%)
- Chlorines
- Quaternary Ammonium Compounds (QUATs) - **not to be used to disinfect instruments**. May be used for equipment such as blood pressure cuffs, stethoscopes, surfaces, etc.

If you have questions or concerns regarding the cleaning, disinfection and sterilization of medical equipment and devices please contact your local NSHA [Infection Prevention and Control Department](#) or Medical Device Reprocessing Department for assistance.

References:

Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee. Infection Prevention and Control for Clinical Office Practice. 1st Revision. Toronto, ON: Queen's Printer for Ontario; April 2015.

Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee. Best practices for environmental cleaning for prevention and control of infections in all health care settings. 3rd ed. Toronto, ON: Queen's Printer for Ontario; 2018.

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Appendix A: Recommended Minimum Cleaning and Disinfection Level and Frequency for common Medical Equipment

Item	Level of Cleaning and Disinfection	Frequency
Blood Pressure cuff	Cleaning and Low- level Disinfection	Between patients
Vaginal Speculum	Disposable preferred Cleaning and High-level Disinfection	Disposable or Between patients
Nasal Speculum	Disposable preferred Cleaning and High-level Disinfection	Disposable or Between patients
Suture Removal (Tweezers, Forceps, Scissors)	Disposable preferred Cleaning and Sterilization	Disposable or Between patients
Doppler	Cleaning and Low-level Disinfection	Between patients
Tympanic Thermometer	Cleaning and Low-level Disinfection	Between patients
Curette	Cleaning and Sterilization	Between patients
Kidney Basin	Cleaning and Low-level Disinfection	Between patients

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<p>Ear Irrigation</p> <p>Bowl, 20cc syringe, collection device</p>	<p>Bowl- Cleaning and Low-level Disinfection</p> <p>Syringe-Disposable preferred. If reusable must be Cleaned and High-level disinfected.</p>	<p>Between patients</p>
<p>Forceps</p>	<p>Cleaning and Sterilization</p>	<p>Between patients</p>
<p>Baby scales</p>	<p>Cleaning and Low-level Disinfection</p>	<p>Between patients</p>
<p>IUD tray and IUD Dilator</p>	<p>Cleaning and Sterilization</p>	<p>Between patients</p>
<p>Hygienic Foot Care Equipment (e.g. filing of corns or callouses, trimming of nails, etc.)</p> <p>Metal files, corn and callus rasps, and nail clippers/cutters)</p>	<p>Cleaning and High-level disinfection</p>	<p>Between patients</p>
<p>Complex Foot Care Equipment (e.g. introduction of surgical intervention including the epidermal, dermal, deep fascial, osseous structures and other anatomical structures)</p> <p>Scissors, probes, and curettes.</p>	<p>Cleaning and Sterilization</p>	<p>Between patients</p>
<p>Blade Handle</p>	<p>Cleaning and Low-level Disinfection</p>	<p>Between patients</p>

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Ophthalmoscope	Cleaning and Low-level Disinfection	Between patients
Otoscope	Handle- Cleaning and Low-level Disinfection Ear Speculum- Disposable or Cleaning and High-level Disinfection OAE Screening tips- Disposable or High-level Disinfection	Between patients
Monofilament (Intact Skin only)	Disposable or Cleaning and Low-level Disinfection	Between patients
Exam Table	Cleaning and Low-level Disinfection	Between patients
Staple Remover	Disposable preferred	Between patients
Hemostats	On intact skin- Cleaning and Low-level Disinfection Un-intact skin- Cleaning and Sterilization	Between patients