



# Best Practices for Environmental Cleaning for Prevention and Control of Infections in All Health Care Settings

THIS DOCUMENT IS INTENDED TO PROVIDE BEST PRACTICES ONLY.

HEALTHCARE SETTINGS AND PROGRAMS ARE ENCOURAGED TO WORK TOWARDS  
THESE BEST PRACTICES IN AN EFFORT TO IMPROVE QUALITY OF CARE

## EVIDENCE INFORMED PRACTICE TOOLS

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## TABLE of CONTENTS

DISCLAIMER .....	2
FOREWORD .....	6
ACKNOWLEDGEMENT .....	6
PREAMBLE .....	9
About This Document .....	9
EVIDENCE FOR RECOMMENDATIONS .....	10
How and When to Use This Document .....	11
Assumptions and Best Practices in Infection Prevention and Control.....	11
1. PRINCIPLES OF CLEANING AND DISINFECTING ENVIRONMENTAL SURFACES IN A HEALTHCARE ENVIRONMENT.....	13
1.1. Evidence for Cleaning and Disinfection .....	13
1.2. Health Care Design and Product Selection .....	13
RECOMMENDATIONS .....	19
1.3. Cleaning Agents, Disinfectants and Cleaning Equipment.....	20
RECOMMENDATIONS: .....	25
2. PRINCIPLES OF INFECTION PREVENTION AND CONTROL FOR ENVIRONMENTAL SERVICES STAFF.....	26
2.1. Routine Practices.....	26
RECOMMENDATION:.....	27
RECOMMENDATIONS: .....	30
2.2. ADDITIONAL PRECAUTIONS .....	30
RECOMMENDATIONS: .....	30
3. BEST PRACTICES FOR CLEANING and DISINFECTION.....	31
RECOMMENDATION:.....	31
3.1. General Principles .....	31
RECOMMENDATIONS: .....	32
RECOMMENDATION:.....	34
3.2. Frequency of Routine Cleaning/Disinfection .....	37
RECOMMENDATION:.....	39
3.3. Equipment.....	39
RECOMMENDATIONS: .....	40
4. EDUCATION .....	42
RECOMMENDATIONS: .....	43

5.	OCCUPATIONAL and ENVIRONMENTAL SAFETY and HEALTH ISSUES RELATED to ENVIRONMENTAL SERVICES .....	44
5.1.	Immunization .....	44
5.2.	Personal Protective Equipment .....	45
5.3.	Staff Exposures.....	45
5.4.	Work Restrictions.....	45
5.5.	Other Considerations .....	45
	RECOMMENDATIONS: .....	47
6.	ENVIRONMENTAL CLEANING/DISINFECTING for SPECIALIZED AREAS .....	48
6.1.	Soiled (Dirty) and Clean Utility/Supply Rooms.....	48
6.2.	Care and Storage of Supplies and Equipment for Environmental Cleaning and Disinfection .....	49
6.3.	Cleaning Food Preparation Areas.....	50
6.4.	Cleaning in Areas of Active Construction/Renovation .....	50
6.5.	Environmental Cleaning and Disinfection Following Flooding.....	53
	RECOMMENDATIONS: .....	54
7.	FACILITY LAUNDRY AND WASTE MANAGEMENT .....	55
7.1.	Management of Laundry and Bedding .....	55
	RECOMMENDATIONS: .....	58
7.2.	Waste Management .....	58
	RECOMMENDATION:.....	60
8.	NEW AND EVOLVING TECHNOLOGIES FOR ENVIRONMENTAL CLEANING .....	60
8.1.	Background.....	60
8.2.	New and Evolving Technologies .....	60
	RECOMMENDATIONS: .....	66
9.	ASSESSMENT OF CLEANLINESS AND QUALITY CONTROL .....	66
9.1.	Overview of Approaches Used to Monitor Cleaning and Cleanliness .....	66
9.2.	Assessing Cleaning and Cleanliness Using Observational Methods .....	67
9.3.	Post-Cleaning/Disinfecting Testing of Surfaces.....	70
9.4.	Monitoring Cleaning and Cleanliness in the Health Care Setting – Putting It All Together	
	75	
	RECOMMENDATIONS: .....	75
10.	HEALTH CARE CLEANING and DISINFECTION PRACTICES.....	77
10.1.	General Cleaning / Disinfecting Practices .....	77
10.2.	Cleaning / Disinfecting Methods.....	78
10.3.	Frequencies and Levels of Cleaning and Disinfection.....	88

RECOMMENDATIONS: .....	88
11.    CLEANING AND DISINFECTION WHEN ADDITIONAL PRECAUTIONS ARE IMPLEMENTED .....	89
11.1.    Cleaning Rooms/Cubicles/Bed Space on Contact Precautions .....	90
11.2.    Cleaning Rooms on Airborne Precautions.....	91
RECOMMENDATION:.....	92
12.    CLEANING SPILLS OF BLOOD AND BODY SUBSTANCES .....	92
RECOMMENDATION:.....	92
Appendix 1: Advantages and Disadvantages of Common Hospital Disinfectants and Sporicides for Environmental Cleaning.....	94
Appendix 2: Cleaning and Disinfection Decision Chart for Noncritical Equipment.....	97
Appendix 3: General Cleaning Practices for All Health Care Settings .....	98
Appendix 4: Sample Procedure for Cleaning Toys.....	99
Appendix 5: Sample Cleaning Schedule for Medical Device Reprocessing Departments and Other Sterile Storage Areas .....	99
Appendix 6: Sample Routine Environmental Cleaning in the Clinical Laboratory .....	100
Appendix 7: Sample Routine Environmental Cleaning in the Hemodialysis Unit.....	100
Appendix 8: Risk Stratification Matrix to Determine Frequency of Cleaning .....	101
Appendix 9: Sample Environmental Cleaning Checklists .....	106
Appendix 10: Safe Disposal of Sharps .....	108
REFERENCES .....	109

## FOREWORD

This document is an adaptation created by the WRHA and the WRHA Multi-disciplinary Environmental Cleaning Working Group from the Best practices for environmental cleaning for prevention and control of infections in all health care settings. 3<sup>rd</sup> ed. Toronto, ON with express written permission from the originating source PIDAC-IPC. Public Health Ontario assumes no responsibility for the content of any publication resulting from translation/changes/adaptation of PHO documents by third parties.

The Public Health Ontario is a Crown corporation dedicated to protecting and promoting the health of all Ontarians and reducing inequities in health. PIDAC-IPC is a multidisciplinary scientific committee of healthcare professionals with expertise and experience in infection prevention and control. The committee advises Public Health Ontario on the prevention and control of healthcare-associated infections (HAI), considering the entire healthcare system for protection of both patients and healthcare providers. PIDAC-IPC's work is guided by the best available evidence and updated as required. Best practice documents and tools produced by PIDAC-IPC reflect consensus positions on what the committee deems prudent practice and are made available as a resource to public health and healthcare providers.

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PIDAC's best practice document is available at:

<https://www.publichealthontario.ca/-/media/documents/bp-environmental-cleaning.pdf>

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## PREAMBLE

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Healthcare-associated infections (HAIs) are infections that occur within any setting where health care is delivered. HAIs affect 4% to 10% of patients/residents/clients (P/R/C) and result in significant harm to the persons receiving care. Maintaining a safe, clean and hygienic environment and minimizing microbial contamination of surfaces, items and equipment within the health care environment is increasingly recognized as an essential approach to reducing the risk of HAIs for all persons receiving care, visitors and staff within health care settings.

Reducing the risk of transmission of infection from the health care environment requires the cooperation of all staff in the health care setting. It also requires an appropriately staffed, trained, educated and supervised Environmental Services (EVS) program. The cornerstone of efforts to reduce the risk of transmission of microorganisms from the environment requires the appropriate cleaning and disinfection of all surfaces and items in the health care setting on a regular basis.

The best practices set out in this document provide criteria for cleanliness in health care settings that may be adopted by Environmental Services managers for their use, or for the use of contracted services. This document is intended to provide best practice for environmental cleaning for all health care settings (see below). ***While the population of the persons receiving care, acuity of illness, intensity of care, and the nature of medical and surgical procedures vary in different practice settings, the fundamental principles and requirement for routine cleaning and disinfection do not.***

### About This Document

This document deals with the cleaning and disinfection of the physical environment in health care as they relate to the prevention and control of infections. It also deals with the cleaning and disinfecting of noncritical equipment (i.e., equipment that only comes into contact with intact skin). This document does not address disinfection and/or sterilization of critical or semi-critical devices, or the use and disposal of chemicals or medications (e.g., chemotherapy).

- For information about high-level disinfection and sterilization of medical equipment, see CSA Group's [Z314-23 Canadian Medical Device Reprocessing](#)
- For information about handling and using chemotherapy chemicals and equipment, see Regional Policy 110.160.010 Safe Handling of Hazardous medications (Cytotoxic and Non-Cytotoxic) <https://home.wrha.mb.ca/prog/medquality/files/110-160-0104.pdf>
- For information about cleaning/disinfection and practices in dental settings, please refer to the [IPAC Canada](#) website for resources
- For Information about cleaning/disinfection and practices in a Clinical Office Setting, please refer to: <https://www.publichealthontario.ca/-/media/documents/b/2013/bp-clinical-office-practice.pdf?la=en>

This document is intended for those who have a role in the management of cleaning/disinfection or environmental services for the health care setting. This includes administrators, supervisors of Environmental Services departments, Infection Control Professionals (ICP's), and supervisors of construction and maintenance projects in health care facilities; public health; and those responsible for overseeing environmental services in the clinical office setting (e.g., community health centres, clinics, independent health facilities, out-of-hospital premises, and dental offices).

In preparation of their document, which is widely used at Ontario health care facilities, PIDAC's goal was to update the document based on advances in the field while maintaining a practical and evidence-based approach. Since the original publication of the PIDAC document relied upon here, the evidence linking the health care environment to the transmission of infectious pathogens continues to increase and this new data are discussed in the document (see [Chapter 1](#)). Furthermore, new research findings evaluating the impact of a variety of audit and feedback methodologies (see [Chapter 9](#)) and new disinfection strategies, including the use of no-touch disinfection methods and the use of antimicrobial surfaces are debated (see [Chapter 8](#)).

## EVIDENCE FOR RECOMMENDATIONS

FOR RECOMMENDATIONS IN THIS DOCUMENT:	
<b>shall</b>	indicates mandatory requirements based on legislated requirements or national standards (e.g., Canadian Standards Association - CSA).
<b>must</b>	indicates best practice, i.e., the minimum standard based on current recommendations in the medical literature.
<b>should</b>	indicates recommendation or that which is advised but not mandatory
<b>may</b>	indicates an advisory or optional statement

The best practices in this document reflect the best evidence and expert opinion available at the time of writing. At regular intervals, this document will be reviewed and updated to incorporate new information and evidence.

CATEGORIES FOR STRENGTH OF EACH RECOMMENDATION	
CATEGORY	DEFINITION
<b>A</b>	Best practices that must be followed in all health care settings. The benefits of these practices outweigh the risks.
<b>B</b>	Best practices that should be followed in most health care settings. The benefits of these practices likely outweigh the risks in most, but not all, settings and situations

CATEGORIES FOR QUALITY OF EVIDENCE ON WHICH RECOMMENDATION ARE MADE	
GRADE	DEFINITION
<b>I</b>	Evidence from at least one properly randomized, controlled trial
<b>II</b>	Evidence from at least one well-designed clinical trial without randomization, from cohort or case-controlled analytic studies, preferably from more than one centre, from multiple time series, or from dramatic results in uncontrolled experiments
<b>III</b>	Evidence from opinions of respected authorities on the basis of clinical experience, descriptive studies or reports of expert committees

## How and When to Use This Document

The cleaning and disinfecting practices set out in this document must be practiced in all settings where care is provided, across the continuum of health care, except for in the client's home in home health care. This includes settings where emergency (including pre-hospital) care is provided (e.g., ambulances, patient transfer vehicles), hospitals, hybrid-facilities, rehabilitation facilities, long-term care facilities, mental health facilities, outpatient clinics, community health centres, public health clinics, physician offices, dental offices, and offices of other health professionals.

## Assumptions and Best Practices in Infection Prevention and Control

The best practices in this document assume healthcare settings within Winnipeg Regional Health Authority already have basic Infection Prevention and Control (IP&C) systems and/or programs in place, or have an individual who has been delegated the responsibility for IP&C. For healthcare settings that do not have dedicated Infection Control Professionals (ICPs) it is assumed provincial IP&C resources, made available through Manitoba Health, Shared Health, and WRHA websites, are being used as appropriate. It also assumes healthcare settings are actively working to meet Accreditation Canada's Qmentum program standards for infection prevention and control specific to their setting.

In addition to the general assumptions above, these best practices are also based on the following assumptions and principles:

1. Healthcare settings have implemented programs that promote good hand hygiene practices and ensure adherence to standards for hand hygiene.
2. Collaboration between professionals involved in Public Health (PH), Occupational, Environmental, Safety and Health (OESH), and IP&C is promoted in all healthcare settings to implement and maintain appropriate infection prevention and control standards that protect workers.
3. All healthcare settings operate within legislative requirements and contractual agreements applicable to them.



## SECTION ONE:

# Best Practices for Environmental Cleaning for Infection Prevention and Control in All Health Care Settings

# 1. PRINCIPLES OF CLEANING AND DISINFECTING ENVIRONMENTAL SURFACES IN A HEALTHCARE ENVIRONMENT

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Health care settings are complex environments where the provision of care to large numbers of persons receiving care results in the contamination of surfaces and equipment with harmful microorganisms. Contaminated surfaces and equipment contribute to the transmission of microorganisms and to the burden of healthcare-associated infections (HAIs).

Routine and effective cleaning and disinfection of surfaces, items and equipment is an essential activity that protects the persons receiving care, staff and visitors from infection. Because of the increased risks and consequences of infection transmission in this setting, the approach and intensity of cleaning required differs from non-health care settings.

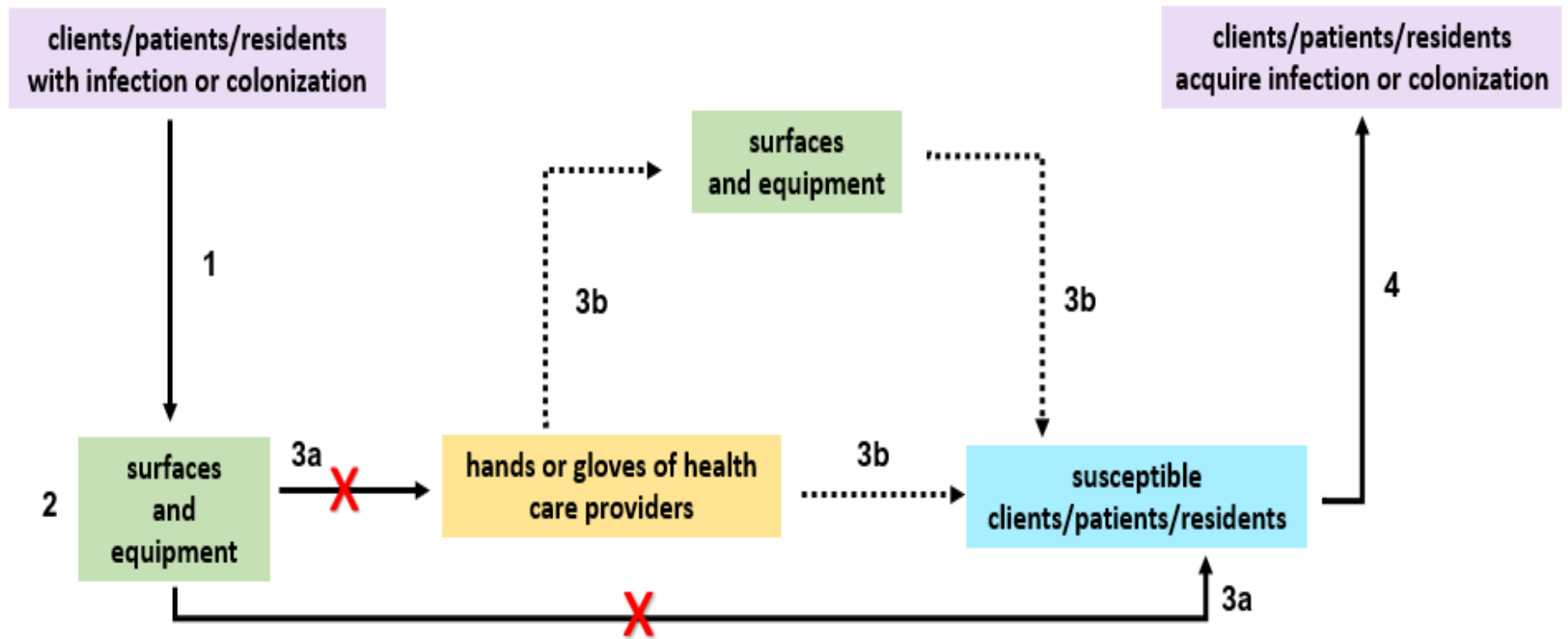
In the first section of this best practice document, evidence supporting the role of environmental cleaning and disinfection in preventing infection is presented, and principles of safe and effective environmental cleaning and disinfection in the health care setting is described.

## 1.1. Evidence for Cleaning and Disinfection

From a theoretical perspective, all the following steps are required for environmental contamination to result in infection ([Figure 1](#)). Effective environmental cleaning and disinfection, along with effective hand hygiene, will interrupt surface transmission of microorganisms for both persons receiving care and health care providers ([Figure 1](#)).

The health care environment is frequently contaminated with microorganisms, including clinically important bacteria, viruses, and fungi. Contamination of most frequently touched surfaces and items within the persons receiving care and/or health care environment has been documented. Additionally, viable microorganisms can persist on surfaces and items for prolonged periods of time (e.g., months), particularly for organisms such as *C. difficile* or methicillin-resistant *Staphylococcus aureus* (MRSA).

Contamination of health care providers' hands or gloves occurs frequently following contact with environmental surfaces in patient rooms. Health care providers who come in contact with surfaces in the room of a patient colonized with MRSA have a 42% to 52% risk of subsequent hand or glove contamination with the same organism; this risk is similar to the risk seen following direct contact with the patient.



**Figure 1: How Environmental Contamination Results in Infection**

1. The environment becomes contaminated with microorganisms.
2. The microorganisms survive for a sufficient duration to allow transmission.
3. Person(s) receiving care\*
  - a. Acquire the microorganism through their own direct contact with the environment **OR**
  - b. Health care provider hands or gloves or equipment becomes contaminated through direct contact with the environment and then transmit the microorganism to another person receiving care due to lapses in hand hygiene and/or disinfection of shared equipment.
4. Acquisition of a microorganism that results in infection.

**LEGEND**

- Transmission of infection directly via contact with the environment
- .....→ Transmission of infection indirectly via the health care providers or via surfaces contaminated by the hands of health care providers
- X Environmental cleaning interrupts contamination and transmission of microorganism

## 1.2. Health Care Design and Product Selection

It is essential all surfaces, items and equipment installed or used within a health care environment are cleanable and can be appropriately disinfected. This must be a central consideration when health care facilities are designed, redesigned, or renovated and when new equipment is obtained. Do not purchase, install, or use surfaces or equipment that is difficult or impossible to clean and disinfect in the health care setting. Consult EVS, IP&C, and OESH as key stakeholders at the planning stage of construction and renovation projects and prior to the purchase of new equipment to ensure this principle is followed.

**If it can't be appropriately cleaned/disinfected, don't buy it!**

### 1.2.1. Selection of Surfaces, Finishes, Furnishings and Equipment for Areas Where Care is Delivered

Health care settings should have policies/protocols that include criteria to be used when choosing surfaces, finishes, furnishings, and equipment for care areas. These policies/protocols should ensure all surfaces, finishes, furnishings, and equipment meet IP&C requirements for cleaning and disinfection. They should establish a decision-making process for the selection and approval of furnishings and equipment that includes IP&C, OESH, and EVS. These policies should be applied universally regardless of whether the furnishings or equipment are purchased, loaned, borrowed, or donated.

**Infection Prevention and Control, Occupational, Environmental Safety and Health, and Environmental services must be involved in decision-making regarding choices of equipment, furniture, and finishes in all health care settings.**

All health care settings must have a process in place to ensure all selected surfaces, finishes, furnishings and equipment are:

- Cleanable and can be disinfected
- Compatible with the facility approved disinfectant\*\*

**\*\*NOTE:**

Ideally, surfaces and equipment should be compatible with all or most commonly used cleaning/disinfecting agents. This minimizes the need to stock multiple products, using wrong product on wrong item, and increases flexibility in selecting surfaces and equipment. Manufacturers should list all compatible cleaning and disinfectant products. When there are doubts about product compatibility, consult the manufacturer of the item.

Additionally, all health care settings must have a process in place to ensure damaged finishes, furnishings, or equipment are:

- identified
- repaired, replaced, or removed from use

\*See [WRHA OD Cleaning and Disinfection of Non-Critical Reusable Equipment/Items for Patients in Hospital](#)

\*See CSA Group's [Z8000-18 Canadian Health Care Facilities](#).

\*See CSA Group's [Z8002-19 Operation and Maintenance of Health Care Facilities](#).

### 1.2.1.1. Surfaces in Health Care Settings

When selecting surfaces for use within health care settings, surfaces with the following characteristics are recommended, as these characteristics minimize the risk of microbial contamination:

- **Can be cleaned and disinfected**

Surfaces, finishes, furnishings and equipment shall be able to be cleaned and disinfected. For example, surfaces or equipment with crevasses that cannot be reached, or surfaces or equipment that cannot withstand cleaning and disinfection with any hospital-grade products are not appropriate for the health care setting. Furnishings, surfaces, finishes, and equipment shall be able to withstand repeated cleaning and be compatible with facility approved detergents, cleaners and disinfectants.

- **Easy to maintain and repair**

Finishes and furnishings should be durable and easy to maintain and repair. Torn fabrics must be repaired or discarded as they allow entry of microorganisms and, cannot be properly cleaned/disinfected. Scratched or chipped items allow accumulation of microorganisms and are more difficult to clean and disinfect.

- **Resistant to microbial growth**

Materials differ in their ability to prevent or promote microbial growth. Avoid materials that hold moisture as they support microbial growth. Wood is an example of an organic material that contains moisture, and is to be avoided in care areas, particularly care areas for immunocompromised patients. Metals and hard plastics are less likely to support microbial growth than most other materials. Materials with intrinsic antimicrobial properties also exist and are discussed in [8.2.1 Antimicrobial Surfaces](#).

- **Nonporous**

Microorganisms survive more easily on porous surfaces. Microorganisms have been shown to survive on porous fabrics such as cotton, cotton terry, nylon and polyester and on porous plastics such as polyurethane and polypropylene.

- **Seamless**

Seams can harbour microorganisms and are difficult to clean/disinfect.

### 1.2.1.2. Finishes in Health Care Settings (Walls, Flooring)

When selecting finishes for use in clinical areas within health care settings, surfaces with the following characteristics are recommended, as these characteristics minimize the risk of microbial contamination:

- cleanable
- easy to maintain and repair
- resistant to microbial growth
- nonporous (smooth)
- seamless



Additional finish characteristics that are important to consider, although not directly affecting infection risk, include (but are not limited to) the following:

- good sound absorption/acoustics
- non-flammable (class 1 fire rating)
- durable
- sustainable
- low levels of volatile organic compounds to reduce off-gassing
- low smoke toxicity
- initial and life cycle cost-effectiveness
- slip-resistant
- easy to install, remove and replace
- resilient and impact resistant
- non-toxic and non-allergenic

### 1.2.1.3. Cloth and Soft Furnishings in Health Care Settings

Cloth furnishings harbor higher concentrations of fungi than nonporous furnishings. Additionally, bacteria cannot be effectively removed from the surfaces of upholstered furniture.

An alternative to cloth surfaces must be used in care areas. Upholstered furniture and furnishings and other cloth items that cannot be cleaned/disinfected shall not be used in care areas, including nursing stations that support clinical activity. Upholstered furniture used in care areas shall be covered with fabrics that are fluid-resistant, nonporous, and can withstand cleaning/disinfection with facility-approved disinfectants. These recommendations do not apply to the home health care environment, or to those long-term care facilities where furnishings are supplied by the resident.

Stuffing and foam cannot be effectively disinfected if breaks in fabric or leaks of body fluids or spills have occurred. A plan and schedule for the replacement of cloth furnishings with non-cloth furnishings and items, prioritizing removal from areas where immunocompromised patients are cared for. If cloth furnishings or items are used within any health care environment, the following is required until these furnishing or items can be replaced:

- A regular cleaning/disinfection regimen is in place
- Any item visibly contaminated with blood or body fluids is immediately removed from the setting and cleaned and disinfected
- Items are assessed for damage on a regular basis, and worn, stained or torn items are replaced as soon as possible. These items are not redirected to non-clinical areas before being cleaned, disinfected and repaired.

When cloth surfaces such as curtains, pillows, mattresses or soft furnishings are used in clinical areas, cloth surfaces with the following characteristics are preferred, as these characteristics minimize the risk of microbial contamination:

- seamless (where possible) or have double-stitched seams
- easy to access (e.g., removable covers) for cleaning/disinfection
- have foam cores that are resistant to mould

- durable and able to tolerate repeated cleaning/disinfection with detergents and disinfectants, without damage
- quick drying
- easy to maintain, repair or replace
- covered with fluid-resistant fabric

Cloth privacy curtains are commonly used in health care settings, and they rapidly become contaminated with microorganisms. Use of privacy curtains with antimicrobial properties has not been proven to reduce infection risk and does not eliminate the risk of contamination with microorganisms. Although it is recognized that changing cloth privacy curtains frequently is challenging, it does not make sense to clean and disinfect all room surfaces at discharge while leaving contaminated cloth privacy curtains in place. Solutions that address the need to change cloth privacy curtains and the challenge of doing so on a routine basis include the use of alternatives to cloth privacy curtains such as wipeable privacy screens, or single-use or tear-away curtains. In some settings (e.g., where the bed cannot be seen from the hallway) privacy curtains may not be required at all and should be removed. If cloth privacy curtains (including those with antimicrobial properties) are used, health care settings must ensure the following:

- Cloth privacy curtains shall be washable at a temperature that ensures disinfection
- Cloth privacy curtains must be removed, cleaned, and disinfected immediately if they become contaminated with blood or body fluids, or are visibly soiled.
- Cloth privacy curtains used for persons requiring Additional Precautions must be removed, cleaned, and disinfected once Additional Precautions have been discontinued, following discharge or transfer, and before new admissions to the room or bed space.
- Cloth privacy curtains used for all persons receiving care should be changed following discharge or transfer of the persons receiving care and before new persons receiving care are admitted to that room or bed space.
- For persons with extended stays in a health care setting, facilities should consider changing privacy curtains regularly (e.g., monthly)

#### 1.2.1.4. Carpeting

Carpeting has been associated with an increased risk of HAI rates in immunocompromised populations. Carpeted floors become more contaminated with *C. difficile* as compared to non-carpeted floors. Carpeting shall not be used in areas that house immunocompromised patients at risk of invasive fungal infections (e.g., transplantation units, high risk oncology units). In addition, carpeting must not be used in care areas where:

- The population is at increased risk of infection following exposure to dust or particulates harbouring microorganisms (e.g., transplant units, burn units, intensive care units, operating and procedure rooms).
- Spills of water, body fluids or other liquids occur (e.g., intensive care units, laboratory areas, procedure rooms, areas around sinks, bathrooms).
- Spills of alcohol-based hand rub may occur, creating a fire hazard (e.g., corridors)
- The risk of *C. difficile* exists, e.g., in patient/resident rooms.

The use of carpeting in other areas should be minimized. If carpeting is used in other care areas, it shall be cleanable with hospital cleaners and disinfectants, and shall be easily removed (e.g., carpet tiles), discarded and replaced. In addition, for facilities that continue to have carpeting in place within care areas, the following is recommended:

- Remove carpeting located in high-risk areas (see above) in a safe manner as soon as possible; persons receiving care should not be present during the removal process.
- Develop a plan to gradually remove (and not replace) carpeting located in low-risk care areas. Prioritize older carpets for removal.
- Dry wet carpets as soon as possible. The risk of mould increases if carpets remain wet for 48 hours or longer.
- Remove carpeting that remains wet after 48 hours and do not replace.
- Clean carpets on a regular basis by trained Environmental Services staff using specialized cleaning equipment and procedures, as the specific type of material used in the carpet will influence the efficacy of disinfectants.

## 1.2.2. New Equipment / Project Purchases

The administration of the health care setting is responsible for ensuring and verifying any item used in the provision of care is capable of being cleaned and disinfected according to current standards and guidelines. This includes purchased, borrowed, or donated equipment, and equipment used for research purposes if such equipment will be used within the care environment. Equipment used to clean and disinfect must also meet these standards.

### 1.2.2.1. Selection of Non-Critical Medical Equipment

Equipment and devices that either touches only intact skin (but not mucous membranes) or do not directly touch the person receiving care are classified as noncritical. For all noncritical medical equipment purchased, loaned, donated, or otherwise used within a health care setting, the following is required:

- Do not purchase medical equipment that cannot be cleaned and disinfected according to the recommended standards.
- All noncritical medical equipment that will be purchased or obtained for use within the health care setting must include written item-specific manufacturer's cleaning and disinfection instructions. If disassembly or reassembly is required, detailed instructions with pictures must be included. Staff training must be provided on these processes before the medical equipment is placed into circulation (e.g., lifts, specialized chairs and beds).
- Items provided by outside agencies and returned to the agency for cleaning and disinfection are subject to the same standards as in-house equipment.  
\*\* See CSA Group's [Z314-23 Canadian Medical Device Reprocessing](#)
- Products used for cleaning and disinfection must be approved by IP&C, OESH, and EVS.

- All cleaning equipment must be compatible with the cleaning and disinfecting agents used in the health care setting and manufacturer's recommendations for cleaning and disinfection must be followed.
- When purchasing cleaning/disinfecting agents or equipment, consideration must be given to OESH requirements, patient safety, IP&C, and environmental safety concerns.

### 1.2.2.2. Plastic Coverings

Plastic covers may be recommended to protect difficult to clean items or equipment within the health care environment from contamination. It is essential plastic covers are selected, used and maintained appropriately. Outbreaks of HAI's, such as Acinetobacter species, have been linked to improper use or maintenance of plastic covers on beds.

If plastic covers are used within a health care setting, including mattress and pillow covers, adhere to the following practices:

- Clean/disinfect plastic covers on a regular basis, between P/R/C, and when visibly soiled.
- Inspect plastic covers for damage on a regular basis. Implement a clear process to ensure reporting of, removal and replacement of damaged plastic coverings occurs.
- Repair or replace mattress and pillow covers, as well as other plastic covers, if they are torn or cracked, visibly stained, or if there is evidence of liquid penetration. Repairs should be completed appropriately and then allow effective cleaning and disinfection; the practice of placing tape over tears is not sufficient.
- Clean and disinfect plastic coverings (e.g., mattress covers, keyboard covers) with facility-approved disinfectants compatible with the covering.

### 1.2.2.3. Electronic Equipment

Electronic equipment is no different than other equipment with respect to requirements for cleaning and disinfection. Electronic equipment becomes contaminated with microorganisms and can transmit organisms between patients, depending on how and where the equipment is used, cleaned and disinfected.

There are some unique challenges with electronic equipment used within health care settings, however. Electronic equipment may be owned by the health care facility or by health care providers or staff; electronic equipment often has buttons, holes for plugs, and other complex surface elements that make cleaning difficult (or impossible); incorrect cleaning of electronic equipment may damage the equipment and/or void the warranty. Additionally, many types of electronic equipment were not designed for use in health care and there may not be appropriate manufacturer's recommendations for cleaning and disinfection (e.g., mobile phones, tablets, laptops).

When health care facilities purchase electronic equipment, as with all equipment purchases, the specific electronic items selected should be able to tolerate cleaning and disinfection, and should be compatible with the health care setting's cleaning and disinfection products. Additionally, electronic equipment should be, whenever possible, designed for use in the health care setting and should come with manufacturer's instructions on cleaning and disinfection. EVS, IP&C, and OESH should

be consulted as key stakeholders prior to the purchase of new electronic equipment that will be used in care areas.

Some health care facilities have policies allowing “bringing your own device programs” in which health care providers can access confidential persons receiving care’s information on their personal electronic devices. These facilities should ensure guidance on appropriate cleaning and disinfection practices for the devices are included within these policies and should emphasize the user’s responsibility for ensuring cleaning and disinfection is performed.

## RECOMMENDATIONS

1. Health care settings shall only purchase, install, or use surfaces, finishes, furnishings and equipment that can be effectively cleaned and disinfected. [A III]
2. Health care settings should have policies specifying the criteria to use when choosing surfaces, finishes, furnishings, and equipment for the health care setting. [B III]
3. EVS, IP&C, and OESH must be involved in the selection of surfaces, finishes, furnishings and equipment in health care settings. [A III]
4. Surfaces, finishes, furnishings, and equipment in health care setting shall be able to tolerate facility approved detergents, cleaners, and disinfectants [A III]; and must be smooth, nonporous, and seamless. [A III]
5. Surfaces that support or promote microbial growth must not be used in the health care setting. [A III]
6. Cracked or torn furnishings must be removed from care areas until repaired so they can be effectively cleaned/disinfected or replaced. [A III]
7. Cloth furnishings and upholstered furniture shall not be used in care areas housing immunocompromised patients and must not be used in other care areas. [A III]
8. Privacy curtains must be removed and replaced, or cleaned and disinfected immediately if they become contaminated with blood or body fluids or are visibly soiled. [A III]
9. Privacy curtains used for persons requiring Additional Precautions must be removed and replaced or cleaned and disinfected when Additional Precautions have been discontinued, following discharge or transfer of the individual and before a new person is admitted to that room or bed space. [A III]
10. Privacy curtains should be changed after all discharges. [B III]
11. Carpeting shall not be used in areas that house or serve immunocompromised patients and must not be used where there is a high likelihood of contamination with blood or body fluids. [A III]
12. Carpeting must not be used in any care area within health care facilities. [A III]

13. Noncritical medical equipment used in the health care setting, including purchased, borrowed or donated equipment, and equipment used for research purposes, shall be able to be cleaned and disinfected with a facility approved disinfectant. [A III]
14. Facilities must have item-specific instructions from manufacturers for cleaning and disinfecting all noncritical medical equipment, including purchased, borrowed or donated equipment and equipment used for research purposes. [A III]
15. Reusable equipment used for cleaning must itself be cleaned and disinfected with a facility approved disinfectant. [A III]
16. Plastic coverings used to cover equipment must be:
  - a. Cleaned and disinfected (or discarded) between persons receiving care (for patient care equipment) [A III]
  - b. Cleaned and disinfected on a regular basis (for nonpatient care equipment within the care environment) [A III]
  - c. Replaced if damaged. [A III]
17. Electronic equipment that cannot be cleaned and disinfected must not be purchased, installed, or used in health care settings. [A III]

### 1.3. Cleaning Agents, Disinfectants and Cleaning Equipment

**Cleaning** The physical removal of foreign material, e.g., dust, soil and organic material such as blood, secretions, excretions and microorganisms. Cleaning physically removes rather than kills microorganisms. Cleaning reduces or eliminates the reservoirs of potential pathogenic organisms. It is accomplished with water, detergents and mechanical action.

**Disinfection** The inactivation of disease producing organisms. Disinfection does not destroy high levels of bacterial spores. Disinfectants are used on inanimate objects. Disinfection usually involves chemicals, heat or ultraviolet light. Levels of chemical disinfection vary with the type of product used.

**The key to cleaning is the use of friction to remove microorganisms and debris**

#### 1.3.1. Detergents and Cleaning Agents

Detergents remove organic material and suspend grease or oil. Equipment and surfaces in the health care setting must be cleaned with approved cleaners and hospital disinfectants.

A variety of products can be used to achieve effective cleaning. The process and products used for cleaning and disinfection of surfaces and medical equipment must be compatible with the surfaces/equipment. It is important to follow the manufacturer's instructions when using cleaning agents. Cleaning products used in the health care setting:

- Must be approved by IP&C, OESH, and EVS.
- Must have a drug identification number (DIN) from Health Canada if it contains a disinfectant.
- Must be used according to the manufacturers' instructions for use (e.g., for dilution, temperature, water hardness, contact time, etc.).
- Must be used according to the product's safety data sheet.

### 1.3.2. Disinfectants

Disinfectants for use on noncritical medical devices and hard nonporous environmental surfaces and inanimate objects in hospitals are regulated by Health Canada and are commonly referred to as hard surface disinfectants. A hospital disinfectant is a kind of hard surface disinfectant that carries efficacy claims against the bacteria *Pseudomonas aeruginosa* and *Staphylococcus aureus*. In addition, hard surface disinfectants may carry label claims as bactericides, fungicides, virucides, mycobactericides, or sporicides.

Disinfectants are only to be used to disinfect and must not be used as general cleaning agents, unless combined with a cleaning agent as a one-step cleaner/disinfectant. **Skin antiseptics must never be used as environmental disinfectants (e.g., alcohol-based-hand rub, chlorhexidine gluconate).**

#### 1.3.2.1. Choosing a Disinfectant

Ideally, facilities should select a single hospital disinfectant that meets all or most of the facilities cleaning and disinfection requirements. Although the complexity of the health care environment may require the use of more than one disinfectant product, every effort should be made to limit the total number of different products in use. This will simplify the cleaning process, minimize the training requirements for EVS workers, and reduce the potential for errors.

The disinfectant must have a DIN from Health Canada (sodium hypochlorite and alcohol-based disinfectants are exceptions and may be used within the health care setting in the appropriate concentration).

Manufacturers should assist facilities by listing all hospital disinfectants that are compatible with their items or equipment. Facilities should not purchase items and equipment that cannot be disinfected with the hospital disinfectants selected. In exceptional cases where essential equipment is required and where the manufacturer's instructions do not list the facilities' hospital disinfectant as an acceptable product, facilities should conduct their own risk assessment that considers:

- The risk of equipment damage or malfunction from disinfection
- The cost of replacing damaged equipment and the warranties

Using multiple disinfectants in a facility increases the risk of error and inadequate disinfection. Therefore, facilities may choose to use a disinfectant that is not listed by the manufacturer, or to purchase alternative items or equipment that is compatible with the facilities' hospital disinfectant. Facilities should work with their suppliers to ensure the latter is aware of the facility's approved hospital disinfectants and disinfection process.

The following factors influence the choice of disinfectant:



<b>1. The efficacy and spectrum of activity of the disinfectant</b>	<ul style="list-style-type: none"> <li>• is it effective in inactivating all the microorganisms most likely to cause healthcare-associated infections within the setting where it will be used?</li> </ul>
<b>2. Ease of use</b>	<ul style="list-style-type: none"> <li>• The disinfectant should have a sufficiently short contact time and should keep surfaces wet long enough to ensure the contact time is met (at the usual ambient temperature of the healthcare setting.</li> <li>• The disinfectant should be simple to prepare and use at the required concentration.</li> <li>• The ability of the disinfectant to act as a cleaner and disinfectant (e.g., one-step cleaner disinfectant.)</li> </ul>
<b>3. Compatible with the items and surfaces requiring disinfection</b>	
<b>4. Safe for use for both staff and patients:</b>	<ul style="list-style-type: none"> <li>• Hospital disinfectants including quaternary ammonium compounds, phenolics, improved hydrogen peroxide, or sodium hypochlorite have been reported to cause respiratory and skin irritation and allergic reactions and are one of the leading allergens affecting health care providers. Furthermore, staff will be more likely to use products that are nontoxic, non-irritating and have an acceptable odour.</li> <li>• Flammability and safe storage should be considered.</li> </ul>
<b>5. Cost and the impact on the environment should also be considered.</b>	<ul style="list-style-type: none"> <li>• Consider products that are biodegradable and safe for the environment.</li> <li>• Many disinfectants (e.g., quaternary ammonium compounds) may be hazardous both during manufacture and when they are discharged into the waste stream, as they are not readily biodegradable</li> </ul>

- \*See:**
- [https://professionals.wrha.mb.ca/old/extranet/ipc/files/manuals/acutecare/Facility\\_Approved\\_Disinfectants.pdf](https://professionals.wrha.mb.ca/old/extranet/ipc/files/manuals/acutecare/Facility_Approved_Disinfectants.pdf) for a list of a facility approved disinfectants for disinfection of environmental surfaces.
  - [Appendix 1](#) for the advantages and disadvantages of some common hospital disinfecting agents

### 1.3.2.2. Using Disinfectants

#### When Using a Disinfectant:

- It is most important that an item or surface be free from visible soil and other items that might interfere with the action of the disinfectant, such as adhesive products, before a disinfectant is applied, or the disinfectant will not work. Most disinfectants lose their effectiveness rapidly in the presence of organic matter.
- A hospital disinfectant is appropriate for noncritical equipment (i.e., equipment that only touches intact skin). Examples include intravenous (IV) pumps and poles, hydraulic lifts, blood pressure cuffs, apnea monitors and sensor pads, electrocardiogram machine/cables and crutches.
  - Refer to [Appendix 2](#) for a list of items that require cleaning followed by disinfection (or application of a cleaner/disinfectant).



- It is important the disinfectant be used according to the manufacturer's instructions for dilution and wet contact time. Where dispensing systems are used, health care facilities should regularly verify the systems are functioning properly (e.g., use of manufacturers' test strips, calibration of dispensers).
  - Refer to [Appendix 1](#) for disinfectants commonly used in health care settings with their recommended concentrations and wet contact times.
- Minimize the contamination levels of the disinfectant solution and equipment used for cleaning/disinfection. This can be achieved by ensuring proper dilution of the disinfectant, frequently changing the disinfectant solution and wiping cloths, not dipping a soiled cloth into the disinfectant solution (i.e., no "double-dipping") and regular cleaning and disinfection of cleaning equipment. (See [Figure 2](#))
- Personal protective equipment must be worn appropriate to the product(s) used, as outlined by the manufacturer.
- There should be systems in place to ensure the efficacy of the disinfectant over time (e.g., frequent testing of product, review of expiry date).



### 1.3.2.3. Disinfectant Wipes

Adequate disinfection of equipment requires sufficient quantity of an effective hospital disinfectant be applied to all surfaces for the appropriate wet contact time. This may be achieved using either a cloth and sufficient quantities of a disinfectant, or large wipes saturated with an appropriate disinfectant product. Both approaches have advantages and disadvantages, and neither approach is effective unless performed correctly. There is limited data comparing these two methods. Concerns with ready-to-use wipes include a lack of data on efficacy, the limited wet contact times, and the potential for wipes to dry out prior to use if incorrectly stored or rapidly during use. Facilities may select either a cloth with disinfectant or wipes for use by EVS to clean and disinfect surfaces and equipment.

Mobile equipment that moves from person to person (e.g., stethoscopes, vital signs monitors) must be cleaned and disinfected by staff between persons receiving care. For this, smaller pre-prepared disinfectant wipes (i.e., NOT small antiseptic wipes used for skin preparation) may be used by health

care providers for cleaning and disinfection. These wipes should be stored near the point-of-care in a sealed container and should not be used if dry.

### **When Selecting and Using Disinfectant Wipes:**

- IP&C, OESH, and EVS should be involved in the selection of ready-to-use wipes.
- The wipes selected must be approved by Health Canada and have a DIN number.
- The detergent and disinfectant properties of the wipes, efficacy data, and the manufacturer's instructions for use should be reviewed.
- The active ingredient must be an appropriate hospital disinfectant.
- Wipes must be kept wet (by keeping the lid closed) and discarded if they become dry.
- Follow manufacturers' recommendation for storing wipes and reprocessing containers.
- Containers that are not properly cleaned and disinfected may become a reservoir for microorganisms such as *Pseudomonas aeruginosa*, *Serratia marcescens*, *Achromobacter* species which may develop tolerance to the disinfectant being used.
- Follow the manufacturers' instructions for use when using wipes and ensure the correct wet contact time required to achieve adequate disinfection is used.
- Care must be taken to avoid introducing contamination to the container when preparing the disinfectant solution.
- Wipes must have a safety data sheet and be used according to the safety data sheet (e.g., wear gloves when handling, if recommended).
- Disinfectant wipes should only be used for:
  - Items in the care environment that will not tolerate soaking.
  - Small, mobile items that must be disinfected between persons receiving care at the point-of-care (e.g., stethoscopes, vital sign monitors).

### **1.3.3. Microfibre and Ultra-Microfibre Products**

Microfibre products are woven with very fine split fibres of hydrophilic polyamide and hydrophobic polyester in various combinations that differ across manufacturers. These products can hold more water than conventional cleaning cloths (up to 6 times their weight). Ultramicrofibre products comprise even thinner fibres, and are designed to be used with low volumes of water without detergent or disinfectant. As a result, microfibre and ultramicrofibre products are supposed to retain the particles picked up firmly during the cleaning/disinfecting process. The fine size and split shape of the fibres also allow the cleaning/disinfecting products to pick up dirt and bacteria from very small or invisible irregularities of surface that conventional cloths or mops cannot reach.

The use of microfibre and ultramicrofibre products can reduce the amount of water and cleaning/disinfecting chemicals used and disposed in cleaning/disinfecting environmental surfaces and in reprocessing these products, resulting in lower cost and reduced exposure to disinfectant chemicals, and less time spent in preparing and replenishing the cleaning/disinfecting solution. Due to their lighter weight, these products are more ergonomic to handle with a lower risk for musculoskeletal injuries.

Microfibre and ultramicrofibre products come in different densities, fibre combinations, and weaving patterns, giving rise to different texture, absorbency, durability, and performance. Although microfibre and ultramicrofibre products have been reported to clean and remove bacteria (including *C. difficile* spores)

better than other common cleaning tools (e.g., cotton cloths, J-cloths, paper towel) when used wet on surfaces without disinfectants, their performance varies with the brands, the presence of soil, the number of times they have been washed, the kind of microorganisms on the surface, and the surface type; and they do not always decontaminate environmental surfaces better than cloths of other materials. In addition, their potential in spreading microorganisms from surface to surface during the process varies. EVS workers should, therefore, be using a new cloth or mop head when moving from one patient environment to another patient environment, and when crossing between patient and health care environments. Depending on the level of soiling, it may be necessary to change cloths between different areas within a patient environment. In addition, although microfibre and ultramicrofibre cleaning products claim to deliver superior cleaning with water only, the use of disinfectants can be helpful to destroy any bacteria spread by these products during cleaning/disinfection. However, many microfibre and ultramicrofibre cleaning products bind with quaternary ammonium compounds and lower the concentration of the disinfectant delivered to a surface. EVS workers must follow manufacturers' instructions in selecting compatible cleaning and disinfecting agents. Although the cleaning efficacy of microfibre cleaning products used dry does not surpass that of other commonly used materials, dusting with microfibre products may be better due to its electrostatic properties.

The fibres in most of these products can also be destroyed by chlorine-based disinfectants (e.g., bleach). Health care settings that use these cleaning products should consult with the manufacturers' instructions on using and regenerating these products which may be contaminated by *C. difficile* spores during the cleaning/disinfecting process. Cleaning and disinfection protocols must be established to reprocess these products, as their ability to absorb water and hold on to microorganisms may also provide a niche for microbial growth. Additionally, fabric softeners or cleaning together with organic fibres (e.g., cotton) that produce lint will clog the fibres and reduce efficacy. Microfibre cloths are also damaged by high temperature. Health care settings should ensure training is provided to those who use and reprocess these products. Manufacturers' recommendations on the laundry conditions (e.g., optimal temperature, launder detergents) must be followed.

## RECOMMENDATIONS:

18. **Cleaning and disinfecting products:**
  - a. **Must be approved by EVS, IP&C and OESH. [A III]**
  - b. **Disinfectants must have a DIN from Health Canada. [A III]**
  - c. **Should be compatible with surfaces, finishes, furnishings, items and equipment to be cleaned and disinfected. [B III]**
  - d. **Must be used according to the manufacturer's recommendations. [A III]**
  
19. **Disinfectants chosen for use in health care:**
  - a. **Must be active against the microorganisms encountered in the health care setting. [A III]**
  - b. **Should require little or no mixing or diluting, i.e., be dispensed through an appropriate effective proportioner. [B III]**
  - c. **Should be active at room temperature with a short contact time. [B III]**
  - d. **Should have low irritancy and allergenic characteristics. [B III]**
  - e. **Should be safe for the environment. [B III]**
  
20. **Health care facilities should select a limited number of hospital disinfectants to minimize training requirements and the risk of error. [B III]**

21. Hospital disinfectants used on noncritical equipment and surfaces:
  - a. Must only be applied after visible soil and other impediments to disinfection have been removed. [A III]
  - b. Must follow the manufacturer’s instructions for dilution and contact time. [A III]
22. Cloths must not be repeatedly immersed into disinfectant (i.e., no “double-dipping” of cloths.) [A III]
23. Where personal protective equipment is recommended for use to prevent exposure to a specific disinfectant, such personal protective equipment shall be worn.

## 2. PRINCIPLES OF INFECTION PREVENTION AND CONTROL FOR ENVIRONMENTAL SERVICES STAFF

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EVS workers work in a health care environment where there are transmission risks of infectious diseases through exposure to persons receiving care, contaminated items and surfaces, and via exposure to blood and body fluids. These risks can be minimized by the correct and consistent use of appropriate infection prevention and control practices, most importantly the use of Routine Practices at all times when in a care environment. Health care facilities must ensure all EVS workers receive education and training with respect to infection prevention and control best practices, including the correct use of personal protective equipment.

### 2.1. Routine Practices

EVS workers may be exposed to blood or body fluids and microorganisms that contaminate the health care environment. The principle of Routine Practices is that all persons receiving care may carry harmful microorganisms regardless of their isolation status or diagnosis. Routine Practices are essential practices that must be followed by all staff and are intended to prevent the transmission of organisms and to protect both staff and those receiving care.

EVS workers must adhere to Routine Practices when working in a care environment. Routine Practices include:

- Hand hygiene
- Use of personal protective equipment when indicated
- Safe management of sharps
- Cleaning and disinfection of equipment that moves from the person receiving care to another person receiving care
- Environmental cleaning

**\*\*See WRHA’s Routine Practices Protocol:** [ROUTINE PRACTICES \(wrha.mb.ca\)](https://www.wrha.mb.ca/routine-practices) for more information regarding Routine Practices.

#### 2.1.1. Hand Hygiene

Hand hygiene is the most effective measure to prevent the spread of health care-associated infections. Hand hygiene must be practiced according to WRHA’s four moments:

- Before initial patient/resident/client (P/R/C) or environment contact (e.g., before coming into the P/R/C room or bed space).
- Before aseptic/clean procedure (e.g., IV insertion, feeding)
- After body fluid exposure risk (e.g., after cleaning bathroom, handling soiled linen, equipment or waste).
- After P/R/C contact or P/R/C environment contact (e.g., after cleaning the persons receiving care's room; after cleaning equipment such as stretchers; after changing mop heads).

It is necessary to **clean hands after removing gloves** as gloves do not provide complete protection against hand contamination. The use of gloves does not replace the need for hand hygiene.

Alcohol-based hand rubs are recommended when hands are not visibly soiled as they rapidly kill microorganisms, and because it takes less time to perform hand hygiene with alcohol-based hand rubs than with soap and water. Alcohol-based hand rubs are also easier on the hands and cause less skin breakdown than soap and water. Alcohol-based hand rubs are the preferred method for hand hygiene after activities that do not result in visible soiling of the hands, such as dusting, mopping and vacuuming. When hands are visibly soiled, hand hygiene with soap and water is required.

EVS workers must perform hand hygiene before entering and on leaving the persons receiving care's environment

Dedicated hand washing sinks are required for hand washing with soap and water, to avoid splash back of microorganisms from contaminated sinks onto clean hands during rinsing. Hand washing sinks shall not be used for other purposes, such as disposal of fluids or cleaning of equipment.

**The use of gloves does NOT replace the need for hand hygiene.**

For more information regarding hand hygiene:

**\*\*See [WRHA's hand hygiene resources](https://professionals.wrha.mb.ca/old/extranet/ipc/hand-hygiene.php): https://professionals.wrha.mb.ca/old/extranet/ipc/hand-hygiene.php**

## **RECOMMENDATION:**

- 24. EVS workers must follow best practices for hand hygiene.**

## 2.1.2. Personal Protective Equipment

Personal protective equipment (PPE) for health care workers and other staff provides a physical barrier between the user and an infectious agent or infected source (this includes persons that are colonized or that have an infection). PPE protects the user from being exposed to blood and body fluids and other microorganisms (e.g., sprays of blood, body fluids, respiratory tract or other secretions or excretions). EVS staff should wear personal protective equipment:

- for protection from microorganisms
- for protection from chemicals used in cleaning/disinfection
- for prevention of transmission of microorganisms from one person environment to another

Health care settings must ensure:

- Personal protective equipment is sufficient and accessible for all EVS staff for Routine Practices, Additional Precautions and for personal protection from chemicals used in cleaning/disinfection.
- Provide WHMIS training regarding hazard awareness, appropriate handling and control of biohazardous material
- Individualized training is provided in the correct use, application and removal of personal protective equipment.
- EVS staff who are required to wear N95 respirators are fit-tested in accordance with the WRHA's respiratory protection program that is compliant with Safe Work Manitoba and Canadian Standards Association requirements.

Personal protective equipment is used as part of Routine Practices to prevent contact with blood, body fluids, secretions, excretions, non-intact skin and mucous membranes. Personal protective equipment must be used in the following circumstances:

- Gloves must be worn when there is a risk of hand contact with blood, body fluids, secretions or excretions or items contaminated with these.
- Gowns must be worn if contamination of uniform or clothing is anticipated (e.g., cleaning bed of incontinent persons receiving care).
- Mask and eye protection or face shield must be worn where appropriate to protect the mucous membranes of the eyes, nose and mouth during activities involving close contact (i.e., within two metres) with individuals likely to generate splashes or sprays of secretions (e.g., coughing, sneezing).

### 2.1.2.1. Glove Use in the Environmental Services Program

Unnecessary or prolonged wearing of gloves is not recommended. Prolonged exposure to gloves increases the risk of irritant contact dermatitis from sweat and moisture within the glove and the risk of tears.

Gloves must be removed immediately after the activity for which they were used and if disposable, discarded. Continuing to wear the same pair of gloves while moving from one patient environment to another, or between the person and the health care environment, facilitates the spread of microorganisms. EVS workers must not walk from patient/resident/client environment to

patient/resident/client environment and between patient/resident/client and health care environments wearing the same pair of gloves. Disposable gloves should never be washed and reused.

Gloves are **never** a substitute for hand hygiene but should be used, when indicated, as an additional measure to reduce the risk of hand contamination with microorganisms and chemicals. Hand hygiene must be performed immediately before putting on gloves and immediately after gloves are removed.

It is important to assess and select the most appropriate glove to be worn for the activity about to be performed. Selection of gloves should be based on a risk analysis of the type of setting, the task to be performed, likelihood of exposure to body substances, length of use and amount of stress on the glove. The glove requirements identified in the safety data sheet must be followed when using a chemical agent. In general:

- Disposable gloves may be used for routine daily cleaning and disinfecting procedures in persons receiving care areas and public washrooms.
- Durable, polymer gloves compatible with the safety data sheet for the product(s) used are recommended for wet work of long duration when durability is required, for discharge/transfer cleaning and for contact with certain chemical powders and solutions.
- Household utility gloves are only acceptable for cleaning in non-care areas, with the exception of public washrooms.
- Puncture-resistant gloves are recommended if the task has a high risk for percutaneous injury (e.g., sorting linen, handling waste).

**\*\* See** WRHA's Routine Practices document for more information about the use of gloves: [ROUTINE PRACTICES \(wrha.mb.ca\)](#)

**Gloves MUST be removed, and hand hygiene performed upon leaving each patient/resident/client's room or bed space**

### 2.1.2.2. Personal Protective Equipment in the Environmental Services Program

Personal protective equipment requirements identified on safety data sheets shall be followed when using chemical agents (e.g., wearing eye protection when mixing chemical agents or when there is a risk of splashing, wearing protective clothing or apron when the chemical may cause skin burns or irritation). Additionally, personal protective equipment is required when cleaning/disinfecting environments where Additional Precautions are in place. For staff working in laundry facilities, barrier gowns or fluid-resistant aprons and sleeves shall be worn with a face shield when there may be a risk of splashing.

**\*\*See:** WRHA's Routine Practice document for more information about the use of gowns, masks and eye protection. [ROUTINE PRACTICES \(wrha.mb.ca\)](#)



### 2.1.2.3. Removal of Personal Protective Equipment

Personal protective equipment, when worn, must be removed in a manner that will not contaminate the wearer; and must be removed and discarded immediately after the task has been completed. Hand hygiene must be performed during and after removal of personal protective equipment.

**\*\*See:** WRHA's Routine Practice document for more information about correct removal of personal protective equipment. [ROUTINE PRACTICES \(wrha.mb.ca\)](https://professionals.wrha.mb.ca/old/extranet/ipc/files/manuals/acutecare/Routine_Practices_Entire.pdf)

## RECOMMENDATIONS:

25. **Gloves must be removed and hand hygiene performed before moving on from one patient/resident/client environment to another, or between the patient/resident/client and the health care environment. [A III]**
26. **Gloves must not be worn when walking from room to room, from bed space to bed space, or in other areas of the health care facility. [A III]**

## 2.2. ADDITIONAL PRECAUTIONS

Additional Precautions are infection prevention and control interventions used when Routine Practices are not sufficient to prevent transmission of suspected or identified infectious agents. Additional Precautions may also be used when medical procedures increase the risk of transmitting microorganisms (e.g., aerosol generating medical procedures [AGMPs]). Additional Precautions are based on the infectious agent's mode of transmission: Airborne, Droplet, and Contact. As some microorganisms can be transmitted by more than one route, Additional Precautions may need to be combined (e.g., Airborne/Contact, Droplet/Contact).

Persons receiving care on Additional Precautions may be cohorted or placed in single rooms with appropriate signage affixed to the entrance to the room that indicates the personal protective equipment required when carrying out activities inside the room. All staff must comply with these precautions when entering the room.

**\*\*See** WRHA's Additional Precautions document for more information about Additional Precautions and the use of personal protective equipment.

[https://professionals.wrha.mb.ca/old/extranet/ipc/files/manuals/acutecare/Additional\\_Precautions\\_Entire.pdf](https://professionals.wrha.mb.ca/old/extranet/ipc/files/manuals/acutecare/Additional_Precautions_Entire.pdf)

## RECOMMENDATIONS:

27. **EVS staff must adhere to Routine Practices and Additional Precautions. [A III]**
28. **Personal protective equipment:**
  - i. **Shall be sufficient and accessible for all EVS staff.**
  - ii. **Shall be worn as required by Routine Practices, Additional Precautions, and by safety data sheets when handling chemicals**
  - iii. **Must be removed immediately after the task for which it is worn. [A III]**



### 3. BEST PRACTICES FOR CLEANING and DISINFECTION

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Appropriate environmental cleaning and disinfecting practices are essential for reducing the risk of infectious disease transmission and minimizing the risk of injury to those receiving or providing care. These will contribute to a culture of safety by providing an atmosphere of cleanliness and order. A clean environment is also a basic expectation of care for patients/residents/clients, their families, and staff, and is essential to providing a patient/resident/client- and family-focused care environment and a positive work environment.

Cleaning/disinfection in the health care setting should be performed on a routine basis to provide for a safe and sanitary environment. Processes should be in place to ensure regular and effective cleaning and disinfection is occurring consistently (see [9. Assessment of Cleanliness and Quality Control](#)).

#### RECOMMENDATION:

29. **Perform cleaning and disinfection of the environment in the health care setting on a routine and consistent basis to provide for a safe and sanitary environment. [A III]**

#### 3.1. General Principles

To ensure regular, effective cleaning/disinfection is implemented and performed consistently and correctly:

- Health care facilities must ensure an appropriately organized and resourced EVS department is in place.
- Health care facilities must have up-to-date policies and procedures for environmental cleaning/disinfection that are:
  - Designed to minimize the spread of infection within the health care setting.
  - Attainable and understandable to frontline EVS staff
  - Reviewed regularly and updated as advances and developments in environmental cleaning/disinfection techniques and technology occur.
- The primary focus of the EVS department must be the safety of the people receiving care, staff, and visitors.

#### 3.1.1. Organization and Required Resources for Effective Environmental Cleaning and Disinfection

EVS programs should be organized and resourced appropriately for the type of health care setting. The health care setting must ensure EVS programs have the human resources, education and equipment required to perform effective cleaning and disinfection.

All health care settings must have an EVS program with:

- A single individual assigned overall responsibility for the care of the physical facility.
- A sufficient number of trained and knowledgeable supervisors in cleaning/disinfecting standards and practices to support all frontline EVS workers
- A primary focus on cleaning care areas, rather than administrative or public areas.
- Written policies and procedures for cleaning and disinfection of care areas and equipment that include:
  - Defined lines of accountability
  - Defined responsibility for specific areas and items.
  - Procedures for routine (e.g., daily) and discharge/transfer cleaning and disinfection.
  - Procedures for cleaning and disinfection in construction/renovation areas.
  - Procedures for specific environmentally-hardy microorganisms such as *C. auris*.
  - Procedures for outbreak management.
  - Cleaning and disinfection standards and frequency.
- Initial and continuing education for all EVS workers
- Monitoring of environmental cleanliness with:
  - Results reported back to employees.
  - Aggregate results reviewed by EVS leadership and if appropriate, infection prevention and control and/or quality and safety committees.
- Ongoing review of all policies and cleaning/disinfecting procedures.

All health care settings must devote sufficient resources to an EVS program to ensure:

- EVS workers can adhere to the health care settings policy on cleaning and disinfection frequency.
- There are sufficient staffing and resources to allow thorough and timely cleaning and disinfection.
- There are sufficient staffing and resources to allow for provision of additional environmental cleaning/disinfecting capacity during outbreaks that does not compromise routine cleaning/disinfecting of any clinical area(s).

These recommendations and cleaning/disinfecting practices apply to all health care settings regardless of whether cleaning/disinfection is conducted by in-house staff or contracted out. They are designed to be used as a standard against which in-house services can be benchmarked, as the basis for specifications if cleaning/disinfecting services are contracted out, and as the framework for auditing of cleaning/disinfecting services by cleaning supervisors and managers.

## RECOMMENDATIONS:

30. **Sufficient resources must be devoted to EVS programs to ensure effective cleaning/disinfection at all times, including surge capacity for high-demand periods, e.g., outbreaks; high occupancy; or high turnover. [A III]**
31. **Health care settings should design their EVS programs organizational structure to ensure accountability at all levels and should have:**
  - a. **A single individual with assigned responsibility for the cleaning/disinfection of the physical facility. [B III]**

- b. **Supervisors with responsibility for ensuring adherence to OESH and IP&C policies and protocols, including the correct use of personal protective equipment, maintaining a safe work environment, and ensuring adherence to cleaning/disinfecting schedules and protocols. [B III]**
32. **Audit and feedback results must be presented to the EVS program leadership of the health care facility and if appropriate, infection control and/or quality and safety committee (or equivalent). [A III]**
  33. **Health care facilities must have written procedures for cleaning and disinfection of care areas and equipment that include:**
    - **defined responsibility for specific items and areas**
    - **routine and discharge transfer cleaning**
    - **cleaning/disinfection in construction/renovation areas**
    - **cleaning and disinfecting areas under Additional Precautions**
    - **outbreak management and**
    - **cleaning/disinfecting standards and frequency [A III]**
  34. **Health care facilities must review policies and procedures for environmental cleaning and disinfection on a regular basis. [A III]**
  35. **Health care facilities must provide initial and continuing education for EVS workers. [A III]**

### **3.1.1.1. Contracted Services**

Some health care facilities are using contracted out environmental services. If these services are contracted out, it is essential to ensure IP&C and OESH-related priorities are clearly outlined in the contract. Contract staff must work collaboratively with clinical staff, IP&C, and OESH to ensure the safety of those receiving care, staff and visitors; contractual barriers that prevent this from happening should be removed.

If environmental services are contracted out, the following should be included in the legal agreement with the service provider/contracting agency:

- The service provider's responsibility for employee health and mandatory training should be specified.
- The occupational health and safety policies of the service provider must be consistent with the occupational health and safety policies of the health care facility as it relates to infection prevention and control, immunization (including annual influenza immunization), access to staff health policies and measures related to Additional Precautions, response to and sharing of information related to work place exposure incidents, and outbreak investigation and management
- It should be recognized that ever-changing activity levels and cleaning/disinfecting protocols will potentially impact the cost of service. Contracts should support (without penalty or financial barrier) a proactive and cooperative environment to consistently implement appropriate cleaning/disinfecting measures.

- There should be clear expectations regarding cleaning/disinfecting frequency, adherence to cleaning/disinfecting standards, and the need for routine audit, feedback, and ongoing education to ensure consistent and effective cleaning/disinfection occurs.

## RECOMMENDATION:

36. **If environmental services are contracted out, the occupational health and safety policies of the contracting services must be consistent with the facility's occupational health and safety policies. [A III]**

### 3.1.2. Health Care Cleaning/Disinfecting Practices

#### 3.1.2.1. Approach to Cleaning/Disinfection for Clinical and Non-Clinical Areas within the Health Care Setting

In health care facilities, the approach to cleaning and disinfection will vary depending upon the area to be cleaned/disinfected. For nonclinical areas such as lobbies and administrative offices, a “hotel clean” is required. Clinical areas require a more thorough form of cleaning/disinfection. All clinical areas require a “health care clean” in addition to a “hotel clean”, which is also still required. Clinical areas include but are not limited to areas where people receive care but also include waiting areas, areas for storage of medical equipment and supplies, medication preparation areas, and other areas involved in the provision of health care. A risk assessment should be performed by EVS staff and IP&C at all facilities to designate those areas requiring a “health care clean”. This risk assessment could be integrated with an assessment of the required frequency of cleaning/disinfection, as discussed in [Section 3.2.4](#) below and as illustrated in [Appendix 8](#).

#### Components of Hotel Clean

- Floors and baseboards are free of stains, visible dust, spills and streaks.
- Walls, ceilings and doors are free of visible dust, gross soil, streaks, spider webs and handprints.
- All horizontal surfaces are free of visible dust or streaks (includes furniture, window ledges, overhead lights, phones, picture frames, carpets etc.)
- Bathroom fixtures including toilets, sinks, tubs and showers are free of streaks, soil, stains and soap scum.
- Mirrors and windows are free of dust and streaks.
- Dispensers are free of dust, soiling and residue and replaced/replenished when empty.
- Appliances are free of dust, soiling and stains.
- Waste is disposed of appropriately.
- Items that are broken, torn, cracked or malfunctioning are replaced.

**Hotel clean** is an approach to cleaning that requires removal of dirt and dust, waste disposal, and the cleaning of windows and surfaces. Hotel clean should result in a visually clean environment. The **hotel component** of a health care facility includes all areas not involved in the patient/resident/client's care. This includes public areas such as lobbies; offices; chapel/sanctuary; corridors; elevators and

stairwells; and service areas. Areas designated as part of the hotel component are cleaned with a hotel clean regimen.

## Components of Health Care Clean



**Health Care Clean** is an approach to cleaning/disinfection that aims to reduce or eliminate microbial contamination within the environment. A health care clean should result in the elimination of, or a significant reduction in, microbial contamination of all surfaces and items within the environment, in addition to providing a visually clean environment. This requires, in addition to the performance of a hotel clean, an increased frequency and thoroughness of cleaning, as well as the use of disinfectants. The **health care component** of a health care facility includes all areas involved in the patient/resident/client's care including all patient/resident units and including nursing stations; procedure rooms; clinic and examination rooms; diagnostic and treatment areas; and washrooms.\* Areas designated as part of the health care component are cleaned/disinfected with a health care clean.

\***Note:** Washrooms are considered part of the health care component even if located outside of care areas.

\*\* See [Components of Hotel Clean](#) and [Components of Health Care Clean](#) for the components of a hotel and health care clean.

The health care component of the health care setting should be the priority for environmental cleaning and disinfection. Areas that require a health care clean should have different cleaning/disinfection protocols and additional human resources that are sufficient to allow the more intensive and frequent cleaning/disinfecting (and monitoring of cleaning/disinfecting) required for these areas.

**Additional cleaning/disinfecting practices** are practices that go beyond those routinely required as part of a health care clean. Additional cleaning/disinfecting practices may be required for those who are known or suspected to be colonized or infected with a specific organism (or with a specific clinical syndrome).

Additional cleaning/disinfecting practices are often directed towards patients/residents/clients or those infected with organisms that can persist for a prolonged time within the care environment and may be relatively resistant to standard disinfectants. Additional practices may differ between specific organisms. Refer to [11.1 Cleaning Rooms/Cubicles/Bed Space on Contact Precautions](#) for special cleaning/disinfection for specific microorganisms. Health care settings should ensure the cleaning/disinfection requirements for those requiring additional cleaning/disinfecting practices are clearly communicated to EVS.

Additional cleaning/disinfecting practices may also be required for microorganisms that pose an extreme risk to those receiving care, staff and visitors, such as Ebola Virus Disease. Protocols for cleaning and disinfecting areas potentially contaminated with Ebola Virus Disease are described in the WRHA document <https://professionals.wrha.mb.ca/old/extranet/evd/files/WRHAOD-IPCManagementofEVDinDesignatedIn-PatientAreas190311.pdf> and are beyond the scope of this guidance document.

In addition to the above, enhanced cleaning and disinfection is often required during outbreaks of organisms when environmental contamination and subsequent transmission is known to be related to the type of organism suspected of causing the outbreak (e.g., norovirus, multidrug resistant *C. auris*). Although causality has not been definitively established, numerous reports describe enhanced environmental cleaning/disinfection as a critical component of outbreak control measures for a variety of microorganisms. Policies and procedures regarding staffing in an EVS program should allow for surge capacity (i.e., additional staff, supervision, supplies, equipment) during outbreaks as determined by the lead site response team. The lead site response team should include, among other departments, representation from environmental services who will lead the coordination of the EVS department's activities. Additional cleaning/disinfection in an outbreak generally depends on the microorganism causing the outbreak. Refer to [11.1 Cleaning Rooms/Cubicles/Bed Space on Contact Precautions](#) for special cleaning/disinfection for specific microorganisms.

### 3.1.2.2. CLEANING AND DISINFECTION POLICIES AND PROCEDURES

All health care settings should have clearly defined cleaning/disinfection policies and procedures that are reviewed and updated on a regular basis. Policies and procedures should ensure:

- Cleaning/disinfection is a continuous event in the health care setting.
- Cleaning/disinfecting procedures incorporate the principles of IP&C (see Section Two).
- Cleaning/disinfecting standards, frequency and accountability for, are clearly defined (i.e., who cleans/disinfects, what they clean/disinfect and when they clean/disinfect it).
- Cleaning/disinfecting schedules, procedures, checklists and other tools ensure no area or item is missed from routine cleaning/disinfection.
- Statutory requirements are met in relation to:
  - The safe disposal of clinic waste
  - The safe handling of linen
  - Food hygiene
  - Pest control

## 3.2. Frequency of Routine Cleaning/Disinfection

People receiving care contaminate their immediate environment with microorganisms through direct contact, and through the shedding of skin squames. Contamination of the environment is increased with coughing, sneezing or diarrhea; large or draining wounds; extensive dermatitis; or other severe skin conditions. While this contamination is concentrated in the vicinity of those receiving care and the areas they use (e.g., bed and bathroom for hospitalized patients), further spread of microorganisms occurs when the hands or gloves of staff become contaminated, either via direct contact with those receiving care or through contact with the contaminated environment. Staff can then transfer these microorganisms to other items and surfaces within the care environment, and if appropriate hand hygiene is not performed, may carry these microorganisms to other people, to other care environments, or to other areas of the health care environment (e.g., nursing station) (see [Figure 1](#)).

Given the potential for surfaces and items to become contaminated with microorganisms, all areas, surfaces, and items within care areas of the health care setting require cleaning and disinfection on a routine basis.

### 3.2.1. High and Low Touch Surfaces

Although any surface may become contaminated, the risk and extent of contamination is greater for surfaces and items that are handled frequently by the hands or gloves of staff or those receiving care as compared to surfaces that are less frequently handled or touched. Thus, surfaces within the health care setting and in particular within the patient/resident/client environment can be classified as high- and low-touch surfaces, as follows:

**High-touch surfaces** are those that have frequent contact with hands. Examples include (but are not limited to) doorknobs, elevator buttons, telephones, call bells, bedrails, light switches, toilet flushes, monitoring equipment, IV infusion pump, end-of-bed table and the edges of the privacy curtains. The specific surfaces that should be considered high-touch will vary between health care settings.

**Low-touch surfaces** are those that have minimal contact with hands. Examples include (but are not limited to) floors, walls, ceilings, mirrors and window sills.

[Figure 3a](#) and [Figure 3b](#) illustrate examples of items and sites that are high-touch and which may exhibit environmental contamination in health care settings.

High-touch surfaces in care areas require more frequent cleaning and disinfection than minimal contact surfaces. Cleaning and disinfection should be performed at least daily and more frequently if the risk of environmental contamination is higher (e.g., intensive care units). Low-touch surfaces require cleaning and disinfection on a regular basis, when soiling or spills occur, and when there are discharges from the health care setting. For many low-touch surfaces, cleaning/disinfection may occur less frequently than once per day (e.g., every other day, weekly) as long as such surfaces are cleaned/disinfected sooner if visibly soiled (e.g., patient/resident/client's mattress does not require daily cleaning/disinfection but shall be cleaned between patients/residents/clients and when soiled).



### 3.2.2. VULNERABILITY OF THE CARE POPULATION

Different populations have differing susceptibility to infection. In some populations, such as bone marrow transplant or burn patients, susceptibility to infection is very high and lower levels of environmental contamination are more likely to result in clinically significant infection than in other, lower risk populations. Areas where vulnerable persons at risk for acquiring illness due to environmental microorganisms are cared for should receive more frequent environmental cleaning and disinfection. In general, such areas include units housing highly immunocompromised persons, and areas where people frequently undergo invasive procedures, or both. Examples of such areas include:

- Transplantation units
- Neonatal intensive care units
- Burn units
- Chemotherapy units
- Dialysis units (both Hemodialysis and Peritoneal dialysis)
- Procedure and Operating rooms

Other care areas and populations are considered “less susceptible”. Routine regular cleaning and disinfection is still essential for these areas and populations but at a lower frequency than what is required for high-risk populations.

### 3.2.3. Probability of Contamination of Items and Surfaces in the Health Care Environment

The probability a surface, piece of equipment, or care area will be contaminated is also related to the types of activities occurring within the care area. Areas can be divided into those that are (likely to be) heavily, moderately or lightly contaminated, as follows:

Heavy-Contamination Area	Moderate-Contamination Area	Light-Contamination Area
<p>Areas should be considered heavily contaminated if surfaces or equipment are regularly exposed to significant amounts of blood or other body fluids (e.g., birthing suite, autopsy suite, cardiac catheterization laboratory, burn unit, hemodialysis unit, emergency department, bathrooms of patients/residents/clients with diarrhea or incontinence).</p>	<p>Areas should be considered moderately contaminated if surfaces or equipment are regularly contaminated with blood or body fluids (e.g., patient/resident/client’s rooms, bathrooms of continent patients/residents/clients) and the blood or body fluids are contained or rapidly removed (e.g., wet sheets). All patient/resident/client rooms and all bathrooms should be considered at least moderately contaminated.</p>	<p>Areas can be considered lightly contaminated if surfaces are not exposed to blood or body fluids or items that have come in contact with blood or body fluids (e.g., lounges, libraries, offices).</p>

**\*\*Note:** Regardless of the anticipated level of contamination for a given area or the frequency of routine cleaning and disinfection, if blood or body fluid spills or contamination occurs (e.g., vomitus in elevator, blood spill),



the area must be cleaned and disinfected immediately (See [12. Cleaning Spills of Blood and Body Substances](#)).

### 3.2.4. Determining Required Frequency of Cleaning and Disinfection

Surfaces and items at higher risk of transmitting microorganisms within the care setting should be cleaned and disinfected more frequently. When determining the appropriate frequency of cleaning and disinfection, the following principles apply:

- High-touch surfaces and items require more frequent cleaning and disinfection than low-touch surfaces and items.
- Surfaces and items in proximity to vulnerable populations require more frequent cleaning and disinfection than surfaces and items in proximity to less vulnerable populations.
- Heavily contaminated surfaces, items and equipment require more frequent cleaning and disinfection than moderately contaminated surfaces, items and equipment, which in turn require more frequent cleaning and disinfection than lightly contaminated surfaces, items and equipment

Using these criteria, each area or department in a health care setting can be evaluated and assigned a risk score for cleaning/disinfection purposes, as illustrated in [Appendix 8](#). The score obtained will relate to a specific level of routine cleaning/disinfection frequency. As the activity or vulnerability of those receiving care in an area changes, the risk score will change as well, impacting on the cleaning/disinfecting frequency.

## RECOMMENDATION:

37. **Cleaning/disinfecting schedules must be developed based on an assessment of the risk of contaminated surfaces resulting in infection in those receiving care and staff [A II]**

### 3.3. Equipment

Noncritical medical equipment within the patient/resident/client environment used on multiple patients/residents/clients (e.g., imaging equipment, electronic monitoring equipment, commode chairs) requires cleaning and disinfection after each use. Selection of new equipment must include considerations related to effective cleaning and disinfection (**See [1.2.1 Selection of Surfaces, Finishes, Furnishings and Equipment for Areas Where the Persons Receiving Care's Care is Delivered](#)**). A system should be in place to clearly identify equipment which has been cleaned and disinfected.

**The health care setting should have written policies and procedures for the appropriate cleaning and disinfecting of equipment that clearly define the frequency and level of cleaning and disinfection and assign responsibility for cleaning and disinfection**

## RECOMMENDATIONS:

38. Noncritical medical equipment requires cleaning and disinfection after each use. [A II]
39. Each health care setting should have written policies and procedures for the appropriate cleaning of noncritical medical equipment that clearly defines the frequency and level of cleaning and disinfection, and which assigns responsibility for the cleaning and disinfection. [A III]

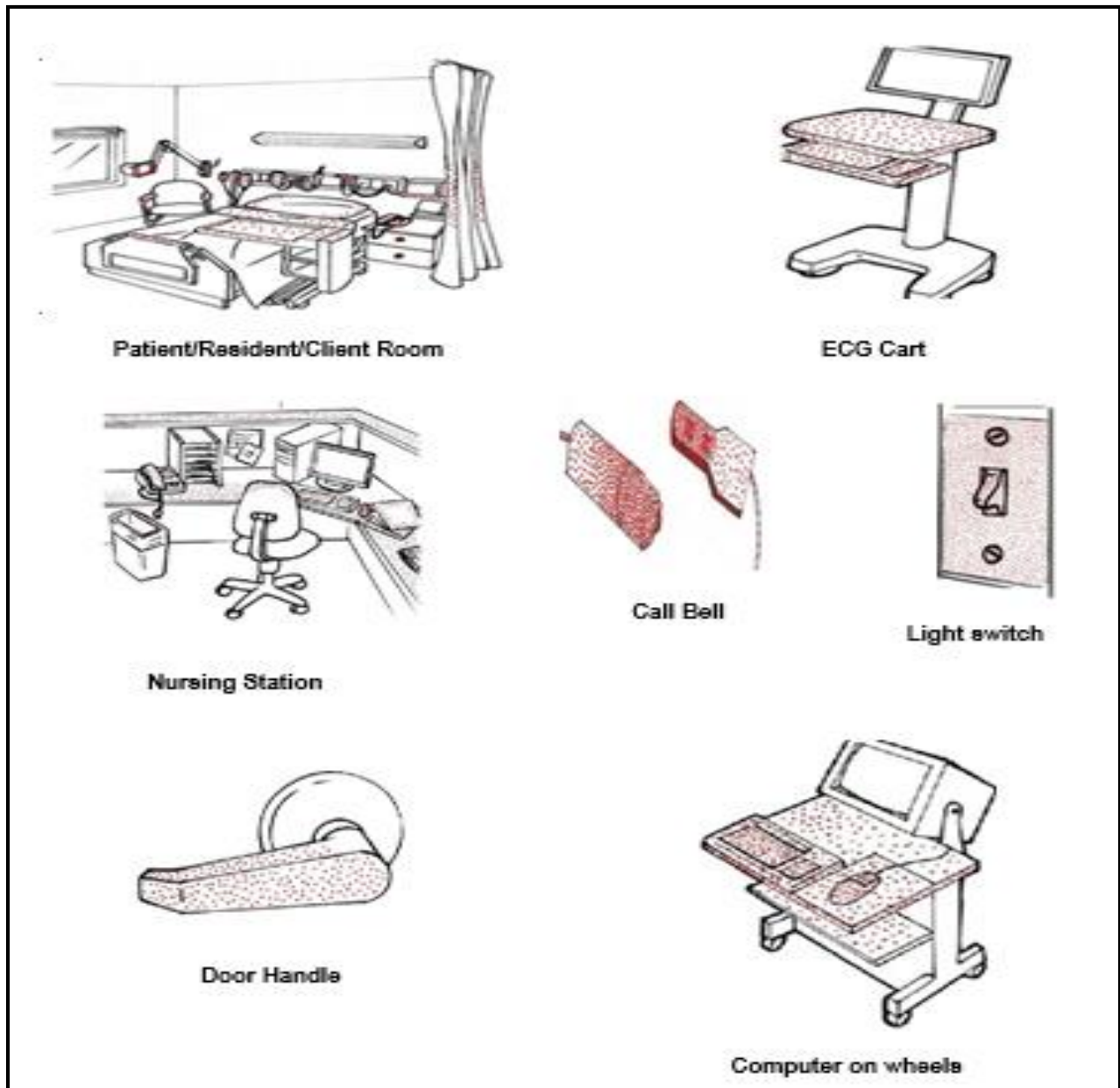


Figure 3a: Examples of High-Touch Items and Surfaces in the Health Care Environment  
\*\* (Note: Dots indicate areas of highest contamination and touch)



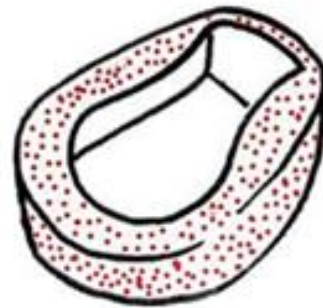
Patient Bathroom



Hallway of patient/resident floor



Commode



Bedpan



Transport items



Wheelchair

Figure 3b: Examples of High-Touch Items and Surfaces in the Health Care Environment  
\*\* (Note: Dots indicate areas of highest contamination and touch)

## 4. EDUCATION

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All aspects of environmental cleaning and disinfection must be supervised and performed by knowledgeable, trained staff. Regular education and support must be provided by health care organizations and contract agencies to help staff consistently implement safe and effective cleaning and disinfection, IP&C and OESH practices. Education on the topics of IP&C and of OESH should be provided at the initiation of employment as part of the orientation process and as ongoing continuing education. Ergonomic considerations and safe management of chemical agents should be emphasized.

EVS programs must provide training that includes:

- ✓ a standardized curriculum
- ✓ a mechanism for assessing proficiency
- ✓ documentation of training and proficiency verification
- ✓ orientation and continuing education when new cleaning/disinfecting products or equipment are introduced

Education provided by environmental services programs should include:

- ✓ handling of mops, cloths, cleaning equipment
- ✓ cleaning and disinfection of blood and body fluids
- ✓ handling and application of cleaning agents and disinfectants
- ✓ waste handling (general, biomedical, sharps)
- ✓ techniques for cleaning and/or disinfection of surfaces and items in the health care environment
- ✓ techniques for cleaning and disinfection of rooms under Additional Precautions
- ✓ proper use and care of personal protective equipment
- ✓ WHMIS training relating to the use of chemical cleaning agents and disinfectants

IP&C and occupational health education provided to EVS staff should be given in collaboration with the IP&C department and the OESH department, and must include:

- ✓ The correct and consistent use of Routine Practices as a fundamental aspect of infection prevention and control in health care settings.
- ✓ Hand hygiene, including the use of alcohol-based hand rubs and hand washing.
- ✓ Respiratory etiquette.
- ✓ Signage used to designate Additional Precautions in the health care setting.
- ✓ The appropriate use of personal protective equipment including selection, safe application, removal and disposal.
- ✓ Prevention of blood and body fluid exposure, including sharps safety.

Management and supervisory staff should receive training and education that outlines the expectation of environmental services role in:

1. chain of transmission
2. pest control
3. outbreak response

It is recommended that managers and supervisors in EVS departments attend, as a minimum, a recognized course directly related to environmental cleaning and disinfection in health care and obtain certification within a recognized association:

**\*\*See:** [Clean Learning](#) for national certification courses

## RECOMMENDATIONS:

40. All aspects of environmental cleaning must be performed by knowledgeable, trained staff. [A III]
41. Environmental Services training programs:
  - a. Must use a standardized curriculum. [A III]
  - b. Should have a mechanism for assessing proficiency. [B III]
  - c. Must document training and proficiency. [A III]
42. IP&C and occupational health education provided to environmental service workers must be developed in collaboration with IP&C and OESH. [A III]
43. The education provided to Environmental Services staff:
  - a. Shall include:
    - The correct and consistent use of Routine Practices.
    - Hand hygiene and basic personal hygiene.
    - Signage used to designate Additional Precautions in the health care setting. .
    - The appropriate use of personal protective equipment for infection and prevention and for the safe handling of chemical agents.
    - Prevention of blood and body fluid exposure, including sharps safety
  - b. Should include ergonomic cleaning principles. [B III],
44. Environmental Services managers and supervisors should receive training. [AIII]

## 5. OCCUPATIONAL and ENVIRONMENTAL SAFETY and HEALTH ISSUES RELATED to ENVIRONMENTAL SERVICES

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EVS workers are exposed to occupational risks including exposure to infectious microorganisms from patients/residents/clients and the health care environment, exposure to the chemical agents used for cleaning/disinfection, and ergonomic stressors related to the mechanics of cleaning/disinfection that may involve repeated pushing, pulling, lifting or twisting. Health care facilities shall ensure these risks are minimized to protect their EVS staff and allow them to perform their work in an optimal and safe environment.

To minimize the risk of infection in both EVS workers and those receiving care, EVS staff shall be:

- Provided with IP&C education and training.
- Trained in the use of, and have access to, appropriate personal protective equipment.
- Included in staff immunization programs.
- Educated on how to reduce exposure to blood and body fluids and on what to do if exposure to blood or body fluids occurs.

In addition, EVS staff should be aware of:

- Work restrictions including the need to avoid working when ill with a known or suspected communicable infection.
- The risks associated with the chemical products and equipment used, and the appropriate strategies that must be used to mitigate against these risks (e.g., appropriate use of personal protective equipment when handling chemicals, ergonomic considerations in the selection and use of equipment, etc.)
- Applications of cleaning chemicals by aerosol or trigger spray may cause eye injuries or induce or compound respiratory problems or illness and should not be used
- The need to report illnesses and injuries to OESH.

Non-infectious occupational risks shall also be minimized and EVS staff shall have access to and training in the use of the personal protective equipment required when preparing, handling or using chemical cleaning agents. Strategies should also be in place to reduce the risk of injury due to ergonomic or other workplace hazards.

### 5.1. Immunization

Appropriate immunization protects staff and those receiving care. EVS staff shall be included in facility policies of staff immunization, and must be offered appropriate immunizations based on the [Regional policy: Immunization and Tuberculin testing](#)

Currently, immunizations appropriate for EVS staff and other staff working in health care settings include:

- annual influenza vaccine
- measles, mumps, rubella (MMR) vaccine
- varicella vaccine
- up-to-date tetanus vaccine

- hepatitis B vaccine (due to risk of sharps injury)
- acellular pertussis vaccine.
- Tuberculin Skin Testing

Contracts with supplying agencies should include the above immunizations for contracted staff.

## 5.2. Personal Protective Equipment

**\*\*See [2.1.2 Personal Protective Equipment](#)** for more information.

## 5.3. Staff Exposures

There shall be written policies and procedures for the evaluation of staff (employees or contract workers), who may be exposed to blood or body fluids and other infectious hazards. Examples of these policies and procedures include:

- A sharps injury prevention program.
- A timely post-exposure follow-up and prophylaxis program.
- A respiratory protection program if staff will be entering airborne infection isolation rooms and a mechanism for following up with personnel who have been exposed to tuberculosis.
- A policy to ensure reporting of exposures and occupationally acquired infections to both IP&C and OESH.

## 5.4. Work Restrictions

All health care settings must establish a clear expectation that staff members do not come into work when acutely ill with a probable infection (e.g., fever, diarrhea, vomiting, rash, conjunctivitis, severe cough) and support this expectation with appropriate attendance management policies. Staff members carrying on activities in a health care setting who develop a communicable disease may be subject to work restrictions.

## 5.5. Other Considerations

### 5.5.1. Chemical Safety

EVS staff have potential exposures to chemicals and, in some circumstances, may develop symptoms related to these exposures. Exposures occur most commonly via inhalation (respiratory) or direct skin contact. Chemicals can function as irritants [e.g., products containing sodium hypochlorite (bleach), ammonia (can be found in glass cleaners), hydrogen peroxide, quaternary ammonium compounds, ethanolamine (can be found in floor care products, glass and bathroom cleaners), glycol ethers (can be found in general purpose cleaners and floor care product), phenols] or sensitizers [(e.g., quaternary ammonium compounds, ethanolamine (can be found in floor care products, glass and bathroom cleaners))] and can result in respiratory symptoms or dermatitis.

Cleaning/disinfecting agents acting as irritants may exacerbate symptoms of underlying asthma. Over time, without adequate controls, a sensitizer may cause asthma or chronic bronchitis. Respiratory



symptoms increase in direct proportion to increased exposure time and higher concentrations of certain chemicals, such as bleach and ammonia. Certain tasks, such as cleaning of toilet bowls, mirrors, sinks, and counter, as well as floor finishing tasks, regularly expose individuals to high concentrations of volatile organic compounds.

Irritants in health care settings associated with skin symptoms (irritant contact dermatitis) include water, soaps and detergents, most frequently in those who have underlying atopic dermatitis (allergy, eczema). Symptoms (dryness, cracking, eczema) are usually worsened during winter months. A smaller number of people will develop allergic contact dermatitis where a particular allergen can cause an inflammatory response, usually hours to days later, which clinically may appear similar to irritant contact dermatitis.

It is important that any health care provider who has a significant allergic, asthmatic, or dermatitis history, or who develops symptoms that may be related to work exposures, be assessed by OESH.

Exposure to workplace chemicals may be reduced through the use of engineering controls (e.g., good ventilation, improved design of containers and delivery systems), administrative controls (e.g., development and maintenance of policies for the safe use of disinfectants, education and training), and the use of personal protective equipment (e.g., proper glove choice when handling chemicals, use of facial protection to prevent inhalation of vapours and splashes of chemicals to the eyes). Caution should be taken when cleaning and disinfection is performed in small and/or poorly ventilated spaces to reduce the risk of irritation to exposed skin and respiratory tract, and to ensure exposure limits are not exceeded. Facilities should periodically conduct an occupational hazards assessment with respect to cleaning and disinfection of surfaces and equipment. The assessment should evaluate risks, and ensure the safest cleaning/disinfecting agents, equipment and processes are selected; that appropriate training and access to personal protective equipment are in place; and that staff are aware of protocols to be followed in the event of accidents, exposures or injuries. The use of automated dispensing systems or ready-to-use products is preferred over manual dilution and mixing, as automated systems reduce direct personal contact with concentrated products and reduce inhalation of volatile organic compounds from concentrated products. Automated systems also ensure correct dilution ratios are obtained and eliminate the need for decanting.

Applications of cleaning/disinfecting chemicals by aerosol or trigger sprays may cause eye injuries or induce or compound respiratory problems or illness and must not be used.

**Do NOT apply cleaning/disinfecting chemicals by aerosol or trigger sprays.**

Chemicals must be stored and handled appropriately. Health care settings shall have in place written policies and procedures in accordance with the [Workplace Hazardous Materials Information System \(WHMIS-2015\)](#). All EVS staff shall receive WHMIS training and know the location of the safety data sheet for each of the cleaning and disinfecting agents they use. Safety data sheet documentation shall be available as required by [Workplace Hazardous Materials Information System Regulation, Manitoba Regulation 52/88](#). Where appropriate, eyewash stations shall be available, accessible and staff trained in its use.



## 5.5.2. Ergonomic Considerations

EVS staff are at risk of injury due to ergonomic hazards. Repetitive movements, awkward work postures, heavy lifting, and application of high forces (e.g., when scrubbing) can lead to injury and are exacerbated by poorly designed or inappropriately sized cleaning/disinfecting equipment, lack of training in appropriate techniques, prolonged tasks and/or insufficient rest periods. Selection of cleaning/disinfecting equipment must follow ergonomic principles. Products that are lighter in weight, easily emptied and having proper handle length help reduce the risk of injury. Additionally, a variety of handle lengths should be available to ensure differently sized staff have access to appropriate ergonomically designed equipment. For more information about ergonomic design related to environmental cleaning, visit [Safe work Manitoba](#)

### RECOMMENDATIONS:

45. Environmental services staff must be offered appropriate immunizations. [A II]
46. There shall be policies and procedures in place that include a sharps injury prevention program, post-exposure prophylaxis and follow-up, and a respiratory protection program for staff who may be required to enter an airborne infection isolation room accommodating a patient with tuberculosis.
47. There must be appropriate attendance management policies in place that establish a clear expectation that staff members do not come into work when acutely ill with a probable infection or symptoms of an infection. [A III]
48. There must be procedures for the evaluation of staff members who experience sensitivity or irritancy to chemicals. [A III]
49. Aerosol or trigger sprays for cleaning chemicals/disinfectants must not be used. [A II]
50. Selection of environmental cleaning/disinfecting equipment must follow ergonomic principles. [A II]

## 6. ENVIRONMENTAL CLEANING/DISINFECTING for SPECIALIZED AREAS

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In this section, guidance is provided regarding cleaning and disinfection, and upkeep of specific facility areas including clean and soiled utility rooms, the upkeep of environmental cleaning/disinfecting equipment and supply rooms (i.e., EVS closets). Cleaning/disinfection in construction and renovation areas and in response to floods is also addressed.

### 6.1. Soiled (Dirty) and Clean Utility/Supply Rooms

It is an essential environmental cleaning principle that clean and soiled (i.e., dirty, used) supplies and equipment should be clearly separated. Each care area should be equipped with a room dedicated as a soiled utility room that may be used to clean soiled patient/resident/client equipment that is not sent for reprocessing (e.g., IV poles, commode chairs). A separate room shall be dedicated to the storage of clean supplies and equipment.

A soiled utility room is used for temporary storage of supplies and equipment that will be removed for cleaning/disinfection, reprocessing, or destruction; for the disposal of small amounts of liquid human waste; and for rinsing and gross cleaning of medical instruments. Soiled utility rooms should:

- Be physically separate from other areas, including clean supply/storage areas.
- Have a hands-free door, as long as this is not a risk to the persons receiving care.
- Have a work counter and flushing-rim clinical sink (i.e., hopper) with a hot and cold mixing faucet. Sprayers attached to the hopper shall NOT be used.
- Have a dedicated hand washing sink with both hot and cold running water.
- Have a separate utility sink (required) if the soiled utility room will be used for rinsing or removal of gross soiling of medical instruments or equipment
- Have adequate space to permit the use of equipment required for the disposal of waste.
- Have personal protective equipment available to protect staff during cleaning and disinfecting procedures.
- Be adequately sized within the unit and located near the point-of-care.

If a soiled utility room is used only for temporary holding of soiled materials, the work counter and clinical sink is not required; however, facilities for cleaning bedpans must be provided elsewhere. Do not use soiled utility rooms/workrooms to store unused equipment.

A clean utility/supply room for storing sterile supplies and equipment should:

- Be separate from and have no direct connection with soiled workrooms or soiled holding areas.
- Be able to keep supplies free from dust and moisture and stored off the floor.
- Be adjacent to usage areas and easily available to staff.
- Be equipped with a work counter and dedicated hand washing sink if used for preparing care items.

## 6.2. Care and Storage of Supplies and Equipment for Environmental Cleaning and Disinfection

### 6.2.1. Cleaning Equipment

Cleaning equipment itself requires careful and regular cleaning and disinfection to avoid inadvertent cross-transmission of microorganisms during subsequent use

- Tools and equipment used for cleaning and disinfection must be cleaned and dried between uses (e.g., mops, buckets, rags).
- Cleaning tools and equipment used in a room or bed space on Additional Precautions must be cleaned and disinfected after use before being used in another room or bed space.
- Mop heads should be laundered daily. All washed mop heads must be dried thoroughly before storage.
- Cleaning equipment shall be well maintained, clean and in good repair.

### 6.2.2. Storage of Cleaning Supplies

All chemical cleaning agents and disinfectants should be appropriately labelled and stored in a manner that eliminates exposure, inhalation, skin contact or personal injury. Chemicals shall be clearly labelled in accordance with [Workplace Hazardous Materials Information System Regulation, Manitoba Regulation 52/88](#), and a safety data sheet or electric copy, shall be readily available for each item in case of accidents.

Do not carry equipment used to clean toilets (e.g., toilet brushes, toilet swabs) from room-to- room. The toilet brush may remain in the patient/resident/client's bathroom for the duration of the stay; if not, consideration should be given to using disposable toilet swabs. Toilet cleaning and disinfecting equipment should be discarded on discharge or sooner if required. In multi-bed rooms, a system should be developed for replacement of toilet brushes on a regular basis or as required. When choosing a tool for cleaning toilets, consideration should be given to equipment that will minimize splashing.

#### 6.2.2.1. Environmental Services Closet(s)

It is essential that equipment and supplies for environmental cleaning and disinfection be appropriately and safely used, transported, maintained, and cleaned/disinfected. To facilitate this, facilities shall have a sufficient number of rooms that are dedicated to the storage of equipment and supplies required for daily cleaning/disinfection (environmental services closets) and are located conveniently throughout the facility. These rooms are used for the storage, preparation and disposal of cleaning/disinfecting supplies and equipment, and are distinct from the clean utility/supply rooms described in [6.1 Soiled \(Dirty\) and Clean Utility/Supply Rooms](#). Facilities may also have centralized environmental services rooms for storing bulky cleaning equipment and large volume of supplies for distribution to local areas. At a minimum, there shall be at least one environmental services closet in all major care areas. In addition, environmental services closets:

- Must be dedicated for use as a cleaning supply room where cleaning solution is prepared, and dirty cleaning solution is disposed; and must not be used for other purposes.

- Shall be maintained in accordance with good hygiene practices.
- Shall have a dedicated hand washing sink with hot and cold running water.
- Shall have access to an eyewash station.
- Shall have appropriate personal protective equipment available, including safety eyewear.
- Shall have a hot and cold water supply and a floor sink.
- Shall be well ventilated and illuminated.
- Shall be designed to be at negative pressure in relation to surrounding areas.
- Shall be easily accessible in relation to the area it serves.
- Shall be secure with access restricted to clinical and support staff.
- Shall be appropriately sized to the amount of materials, equipment, machinery and chemicals stored in the room/closet and allow for proper ergonomic movement within the room/closet.
- Shall not contain personal belonging, food or beverages.
- Shall have chemical storage that ensures chemicals are not damaged and may be safely accessed.
- Should be free from clutter to facilitate cleaning.
- Should be ergonomically designed so, whenever possible, buckets can be emptied without lifting them.

#### **6.2.2.2. Cleaning Carts**

- Should have separation between clean and soiled items.
- Should never contain personal clothing or grooming supplies, food or beverages.
- Should be thoroughly cleaned/disinfected at the beginning of each shift.
- Shall be equipped with a locked compartment for storage of hazardous substances and each cart shall be locked at all times when not attended, and stored, when not in use, within a locked environmental services closet.

### **6.3. Cleaning Food Preparation Areas**

This document does not address environmental cleaning required for facility kitchens, cafeterias, commercial food premises or any area where food is prepared or stored (e.g., unit kitchens).

### **6.4. Cleaning in Areas of Active Construction/Renovation**

Construction and renovation activities generate dust and contaminants that may pose a risk to those receiving care, staff or visitors in all health care settings. IP&C must assess construction and maintenance projects during planning, work, and after completion to verify IP&C recommendations are followed throughout the process. Where required, work must be performed under appropriately controlled conditions. IP&C and OESH have the authority to halt projects if there is a safety risk.

Cleaning and disinfection are of particular importance both during construction/renovation and after completion of the project. What is considered to be 'clean' may be interpreted differently by contractors and hospital/ health care staff:

- “Construction clean” An ongoing program of cleaning activities performed during construction to maintain site cleanliness during the project (i.e., through a daily cleanup); prevent dust and debris from being trapped in fixtures, the ceiling, and other closed off spaces; and maintain conditions that will facilitate the effective final cleaning of the site prior to hand-over.
- “Hotel clean” ([Components of Hotel Clean in Areas of Active Construction](#)) and “health care clean” ([Components of Health Care Clean in Areas of Active Construction](#)) begin where the construction site ends, i.e., outside the hoarding, and are generally done by the staff of the health care setting (see [3.1.2 Health Care Cleaning Practices](#) for more information about hotel clean and health care clean).

It is important there is consistent and effective communication and collaboration between the contractor, EVS staff, IP&C, and OESH. The level of cleaning/disinfection expected during construction and at commissioning must be stated in the contract and the responsibility for cleaning/disinfecting both the job site and adjacent areas shall be clearly defined. Where there is transport of construction materials (both clean and used materials) through the health care setting, a clear plan for traffic flow that bypasses care areas as much as possible shall be established and adhered to.

Responsibility for construction clean and hotel/health care clean must be clearly defined within the health care setting:

### **Components of Construction/Renovation Clean**

#### **Performed by Construction Workers Inside the construction zone/hoarding:**

- Floors are swept to remove debris.
- Walk-off mats are vacuumed.
- “Sticky” mats are replaced regularly and as required.
- Construction debris (e.g., Large pieces of drywall, wiring) are removed.
- Work surfaces may be wiped clean.

## Components of Hotel Clean in Areas of Active Construction

### Performed by Construction Workers Outside the construction zone/hoarding:

- Floors and baseboards are free of stains, visible dusts, spills and streaks.
- Walls, ceilings and doors are free of visible dust, gross soil, streaks, spider webs and handprints.
- All horizontal surfaces are free of visible dust or streaks (includes furniture, window ledges, overhead lights, phones, picture frames, carpets, etc.)
- Bathroom fixtures including toilets, sinks, tubs and showers are free of streaks, soil, stains and soap scum.
- Mirrors and windows are free of dust and streaks.
- Dispensers are free of dust, soiling and residue and replaced when empty.
- Appliances are free of dust, soiling and stains.
- Waste is disposed of appropriately.
- Identification of items that are broken, torn, cracked or malfunctioning for replacement.

## Components of Health Care Clean in areas of Active Construction

### Performed by facility EVS staff and/or professional staff in patient care areas outside construction zone/hoarding:

HOTEL CLEAN

+

High-touch surfaces in persons receiving care's care areas are disinfected after cleaning with hospital disinfectant

Non-critical medical equipment is cleaned and disinfected between persons receiving care

+

**CLEANING PRACTICES ARE PERIODICALLY MONITORED AND AUDITED**

For more information, refer to the following guidelines regarding infection prevention and control related to facility design in health care facilities:

**Facility Guidelines Institute:** [Guidelines for Design and Construction of Hospitals and Outpatient Facilities \(2022\)](#).

**CSA Group:** [CAN/CSA-Z317.13-22 Infection Control During Construction, Renovation and Maintenance of Health Care Facilities](#).

[WRHA's OD Infection Prevention and Control for Construction, Renovation and Maintenance](#)

## 6.5. Environmental Cleaning and Disinfection Following Flooding

In the event of a flood or other significant water leakage within a health care facility, regardless of the presumed source of the water, the area must be immediately assessed by IP&C to determine the risk of contamination. Until confirmed as a clean water source, all staff should assume the water is contaminated. Immediate contamination may occur if the source of water harbours pathogenic bacteria (e.g., sewer or toilet overflow). Regardless of the water source, the area will need to be cordoned off until cleaning and disinfection are completed.

Persistent moisture following floods can lead to mould growth on plaster, drywall, carpeting and furnishings. Drywall that remains wet after 48 hours shall be removed and replaced. Wet carpets, if present, must be dried completely within 48 hours as the risk of mould growth increases substantially after that point. If moisture persists beyond 48 hours, carpeting in a care area must be removed and should not be replaced with carpeting (see [1.2.1.4 Carpeting](#)).

If the flooding involves a food preparation area, all food products that have come into contact with water must be discarded and the public health inspector notified. Manitoba Health must be notified and an “Adverse Storage Condition form” must be filled out and submitted if vaccine refrigerators are involved in a flood or if flooding leads to a prolonged power outage that compromises food or vaccine refrigeration. Food service areas cannot re-open until the flood is controlled, the area has been cleaned, disinfected, and approval for food preparation has been obtained from public health inspectors.

See [Table 3](#) for designation of types of flood or leaked water and recommended action for infection prevention and control purposes.

**Table 3: Types of Flood Water and Recommended Action for Infection Prevention and Control**

CATEGORY	EXAMPLES	ACTION
I. <b>Clean water</b>	Broken pipes, tub overflows, sink overflows, many appliance malfunctions, falling rainwater, broken toilet tanks.	Allow materials to dry completely before use. Remove all porous materials (e.g., drywall, cloth furnishings, carpets) that have been wet for more than 48 hours.
II. <b>Gray water</b> <i>Some degree of contamination present</i>	Overflow from a dishwasher, washing machine or a clean toilet bowl.	Allow materials to dry completely before use. Remove all porous materials (e.g., drywall, cloth furnishings, carpets) that have been wet for more than 48 hours.
III. <b>Black water</b> <i>Heavily and grossly unsanitary</i>	Water containing raw sewage. Includes overflow from a toilet bowl containing feces, broken sewer line, backed up sewage, all forms of ground surface water rising from rivers or streams.	Remove and discard wet carpet, drywall, furniture and other porous materials.

## RECOMMENDATIONS:

51. Soiled utility rooms/workrooms:
- a. Shall be physically separate from other areas including clean supply/storage areas. [A III]
  - b. Should have a hands free door where this does not pose a risk to persons receiving care [B III]
  - c. Shall contain a work counter and flushing rim clinical sink [A III]
  - d. Shall not use sprayers attached to the hopper [A III]
  - e. Shall contain a dedicated hand washing sink with hot and cold running water
  - f. Must contain a utility sink if rinsing or gross cleaning of medical instruments or equipment is performed within the room [A III]
  - g. Shall have adequate space to permit the use of equipment required for the disposal of waste. [A III]
  - h. Shall contain personal protective equipment for staff protection during cleaning and disinfection procedures [A III]
  - i. Shall be adequately sized within the unit and located near the point of care. [A III]
52. Clean supply rooms/areas shall:
- a. Be separate from and have no direct connection with soiled areas [AIII]
  - b. Protect supplies from dust and moisture and ensure storage off the floor [AIII]
  - c. Be adjacent to usage areas and easily available to staff [AIII]
58. Environmental Services closets:
- a. shall be provided in all major care areas with a minimum of one closet per 650 square metres. [A III]
  - b. Shall be dedicated for storage of cleaning supplies and preparation and disposal of cleaning solution and shall not be used for other purposes [A III]
  - c. Shall be maintained in accordance with good hygiene practices
  - d. Shall have a dedicated hand washing sink with hot and cold running water [A III]
  - e. Shall have access to an eyewash station
  - f. Shall have appropriate personal protective equipment available, including safety eyewear
  - g. Shall have hot and cold-water supply and a floor sink. [A III]
  - h. Shall be ventilated and illuminated. [A III]
  - i. Shall be designed to be at negative pressure in relation to surrounding areas. [A III]
  - j. Shall be easily accessible in relation to the area it serves. [A III]
  - k. Shall be secure with access restricted to clinical and support staff. [A III]
  - l. Shall be appropriately sized to the amount of materials, equipment, machinery and chemicals stored in the room/closet and allow for proper ergonomic movement within the room/closet. [A III]
  - m. Shall not contain personal belonging, food or beverages
  - n. Shall have chemical storage that ensures chemicals are not damaged and may be safely accessed



- o. Shall be ergonomically designed so that, whenever possible, buckets can be emptied without lifting them. [A III]
- 59. Cleaning agents and disinfectants shall have an appropriate WHIMIS label that alerts staff of the hazards and precautions.
- 60. Cleaning agents and disinfectants shall be stored in a safe manner in storage rooms or closets. [A III]
- 61. Cleaning carts must have a clear separation between clean and soiled items. [A III]
- 62. Cleaning carts must never contain personal belonging, food or beverages. [A III]
- 63. Health care settings must have a plan in place to deal with the containment and transport of construction materials, as well as clearly defined roles and expectations of housekeeping staff and construction staff related to cleaning of the construction site and areas adjacent to the site. [A III]
- 64. All health care settings must have a plan in place to deal with floods and water leaks. [A III]

## 7. FACILITY LAUNDRY AND WASTE MANAGEMENT

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### 7.1. Management of Laundry and Bedding

Although rare, serious outbreaks have been associated with the transmission of microorganisms associated with inappropriate management of hospital linens. Environmental microorganisms are the most frequently implicated, including *Bacillus cereus* and environmental fungi (e.g., *Aspergillus*, *Zygomycetes*) and fungal outbreaks have resulted in severe infection and death in immune-compromised patients. An outbreak of *C. difficile* was also linked to inappropriate cleaning of mop heads. Such outbreaks have been caused by errors in the washing process, contamination during post-cleaning transportation, and inappropriate storage conditions.

In addition to outbreaks affecting patients/residents/clients, exposure of staff to harmful microorganisms can occur if soiled laundry items are not handled appropriately. In most staff exposures, failure to use appropriate personal protective equipment and/or inappropriate sorting of laundry resulting in aerosolization contributed to the transmission of microorganisms.

Policies and procedures should address the collection, transport, handling, washing and drying of soiled laundry, including protection of staff. Published laundry regulations must be followed if the facility does its own laundry.

**\*\*See** CSA Group's [Z314.10.2-15 Laundering, Maintenance, and Preparation of Multiple-Use Gowns, Drapes, and Wrappers for Health Care Settings and Laundries.](#)

### 7.1.1. Laundry Area

Laundry facilities (including health care settings that do their own laundry) must have policies that will ensure:

- The laundry area is in a dedicated space.
- Staff members do not consume food or beverages in laundry areas.
- Floors and walls are made of durable materials that can withstand the rigors of the laundry area (i.e., water/steam resistant).
- The soiled laundry area shall be separate from other areas and be at negative pressure relative to surrounding areas.
- Hand hygiene facilities shall be located in all laundry work areas.
- Laundry equipment is used and maintained according to manufacturers' instructions
- There is an established procedure to determine when laundry should be sorted in the laundry facility (i.e., before or after washing).

### 7.1.2. Soiled Laundry

Handle all laundry soiled with blood, body fluids, secretions or excretions using the same precautions, regardless of source or health care setting:

- Remove gross soil (e.g., feces) with a gloved hand and dispose into toilet or hopper. Excrement shall not be removed by spraying with water.
- Bag or otherwise contain soiled laundry at the point-of-care.
- Do not sort or pre-rinse soiled laundry in care areas.
- Bag personal laundry/items separately at the point of collection, or have it laundered by family members.
- Handle soiled laundry with minimum agitation to avoid contamination of the air, surfaces and persons (e.g., roll up).
- Contain wet laundry before placing it in a laundry bag (e.g., wrap in a dry sheet or towel).
- Water-soluble bags and double-bagging are not necessary and are not recommended
- Laundry carts or hampers used to collect or transport soiled laundry need not be covered unless otherwise required by regulation
- Containers (including carts, bags, and plastic bins) for collecting, storing, or transporting soiled laundry shall be waterproof, leak-proof, non-porous, and in good repair, and shall be decontaminated after use. In addition, carts shall be cleaned and disinfected before being used to transport clean or sterile laundry.
- Laundry bags shall be tied securely and not be over-filled. Reusable laundry bags shall be laundered before re-use.
- Laundry chutes should not be used. If their use is unavoidable, ensure they are properly designed, maintained, cleaned, disinfected, and used in a manner that minimizes dispersion of aerosols from contaminated laundry:
  - Ensure laundry bags are securely bagged and tightly closed before placing the filled bag into the chute
  - Do not place loose items in the chute
  - Maintain laundry chutes under negative pressure and discharge into the soiled laundry collection area
  - Laundry chutes should be cleaned on a regular basis

- Routine Practices for handling and laundering are sufficient, regardless of the source of the laundry. Special handling of laundry for persons receiving care on Additional Precautions is not routinely required.
- Change personal protective equipment when it becomes wet or soiled; remove personal protective equipment upon leaving the soiled sorting area.
- Do not hold laundry bags close to the body to avoid potential risk of injuries due to sharps.

### 7.1.3. Washing and Drying Laundry

Items used for environmental cleaning (e.g., cloths and mop heads) must be laundered in separate cycles. Cloth linen bags should be washed after each use and can be washed in the same cycle as the linen contained in them. Laundered items should be taken out of the washer as soon as feasible to reduce the risk of contaminating the washer and formation of biofilm. There should be posted instructions on washing and drying laundry.

The effectiveness of the laundering process in rendering the laundered items hygienically clean depends on the following factors and their interactions:

- Time and temperature
- Mechanical action
- Chemicals used
- Water quality, including pH level, hardness
- Rinsing requirements
- Volume of the load
- Nature and extent of soiling in the items to be laundered
- Model of washers and dryers

Health care facilities shall take into consideration the recommendations of the manufacturers of the washer and dryer, materials to be laundered, and the detergent used when setting their laundry formula. Using a disinfectant (such as bleach) may not offer additional advantage when soiling is at low levels. However, a disinfectant can be used to enhance the overall disinfection of the laundry process when there is heavy soiling of the items to be laundered, or when resettling of microorganisms in the wash or rinse water onto the laundered items is a concern.

**\*\* Note:** Hygienically clean is defined by the American National standards Institute (ANSI)/Association for the Advancement of Medical Instrumentation (AAMI) as being “free of pathogens in sufficient numbers to cause human illness”.

### 7.1.4. Clean Laundry

Clean laundry should be sorted, packaged, transported, and stored in a manner preventing inadvertent handling, contamination by dust or debris, and contact with soiled linens or other soiled or contaminated items during sorting, packaging, transport and storage.

Each floor should have a designated area (e.g., dedicated closet, clean supply room) for sorting and storing clean laundry. If a closed cart system is used, storage of clean linen carts in an alcove is permitted if it is out of the path of normal traffic and under staff control.

### 7.1.5. Laundry Staff Protection

#### Protection of staff in laundry areas includes:

- Training for all health care providers and laundry staff in the procedures for handling of soiled laundry that includes IP&C and WHMIS training.
- Dedicated hand washing sink and alcohol-based hand rub that is readily available in laundry areas.
- Provision of appropriate personal protective equipment, e.g., gloves, gowns or aprons, face protection, to provide protection from potential cross-infection and sharps injury when handling soiled laundry.
- Disposable gloves are recommended, and these should be sufficiently long to cover the forearm and be tear-resistant. If reusable personal protective equipment is used, it shall be cleaned daily at a minimum and designated to the individual.
- Replacement of personal protective equipment when the integrity is compromised
- Disposal of sharps at point-of-use to ensure there are no residual sharps in laundry. Any sharps found in laundry shall be reported to management and documented using the WRHA Regional injury/near miss form to prevent future incidents from happening.
- Immunization of laundry staff against hepatitis B and tetanus due to the high risk of sharps injury.
- Hand hygiene whenever gloves are changed or removed.

### RECOMMENDATIONS:

65. The laundry facility must follow published laundry regulations. [A III]
66. There must be policies and procedures to ensure clean laundry is transported and stored in a manner that will ensure that cleanliness is maintained. [A III]
67. There shall be clear separation between clean and dirty laundry through all steps of the laundering process, including transportation and storage. [A III]
68. There should be appropriate designated areas for storing clean laundry. [B III]
69. Health care facilities should use the same laundering practices for all patients/residents/clients, including those requiring Additional Precautions. [B III]

## 7.2. Waste Management

Waste handling is the shared responsibility of the source department, Environmental Services, Facility Management, Pharmacy, & Materiel Management. All waste shall be handled in a manner to ensure that it is segregated at the point of generation, contained in packaging that holds the contents to the point of disposal, and disposed of in a manner that is both practical and efficient, yet minimizes any hazard. It is important to

minimize the handling of waste so fewer people will be exposed to it. Appropriate personal protective equipment shall be used when handling and disposing of waste products in keeping with Routine Practices. Staff are to minimize the amount of biomedical waste generated, ensuring all waste streams are properly identified and segregated, including:

- Biomedical- Non-Anatomic, Non- Cytotoxic
- Biomedical waste (including human and animal anatomic waste)
- Pharmaceutical waste
- Confidential waste
- Sharps waste
- CJD waste
- Chemical waste
- Cytotoxic waste
- Ebola Virus Disease (EVD) waste

\*\*See WRHA [OD Waste Management](#)

### 7.2.1. Handling of Sharps

Sharps are any item which has sharp point(s) or cutting edge(s) capable to cause injury that can penetrate, puncture, pierce or cut the skin when handled. Examples include needles including Safety Engineered needles (SEN), sutures, lancets, and blades.

In Manitoba, all health care settings are required to use safety-engineered needles, so far as Reasonably Practicable, according to the Regional Policy.

\*\*See: [Sharps, Safe Handling/ Disposal - including Safety-Engineered Needle Exemption \(SEN\) \(wrha.mb.ca\)](#)

### 7.2.2. Protection of Staff Handling Waste

A dedicated hand washing sink must be available to waste handlers. It is strongly recommended non-immunized waste handlers be offered immunization against hepatitis B and tetanus.

Health care facilities shall provide, and waste handlers shall wear, personal protective equipment appropriate for the risk of the tasks when handling waste. EVS staff who clean reusable waste containers, carts, final storage areas, or biomedical waste treatment equipment also shall wear personal protective equipment appropriate for the tasks. Depending on the task and type of waste, examples of protective equipment may include:

- Gloves to protect from exposure (e.g., nitrile for exposure to blood, body fluids, chemicals; and puncture-resistant gloves for exposure to sharps)
- Coveralls or aprons.
- Facial protection, e.g., face shield.
- Protective footwear to protect against sharps.

## RECOMMENDATION:

70. Waste handlers shall wear personal protective equipment appropriate to their risk.

## 8. NEW AND EVOLVING TECHNOLOGIES FOR ENVIRONMENTAL CLEANING

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### 8.1. Background

The technology used to perform environmental cleaning continues to evolve. In this section, the use of antimicrobial surfaces within the health care setting and the use of “no-touch” disinfection systems are discussed.

### 8.2. New and Evolving Technologies

#### 8.2.1. Antimicrobial Surfaces

Contamination of environmental surfaces with infectious microorganisms is common in health care settings. Microorganisms have also been shown to persist on surfaces even after routine cleaning and to re-accumulate rapidly following cleaning. Replacing materials traditionally used in the health care setting (e.g., plastic, stainless steel) with materials with antimicrobial properties or treating surfaces with coatings that have persistent antimicrobial activity has been proposed as a potential solution to this problem. Candidate antimicrobial surfaces and coatings supported by data from nonclinical settings include coppersilver, stainless steel coated with titanium dioxide, glass coated with xerogel, and surfaces sprayed with surfacine or organosilane.

With the exception of copper, there is very limited evidence that any of these approaches persistently reduce microbial contamination in clinical settings and no evidence that they reduce the incidence of health care-associated infection. There is now evidence from multiple studies demonstrating that copper surfaces used in acute and long-term care settings reduce overall bacterial burden (e.g., total colony forming units per item or area). In a systematic review conducted by Public Health Ontario, these studies demonstrated a modest but consistent ( $\sim 1 \log_{10}$ ) reduction in bacterial load on copper surfaces as compared to standard surfaces. Additionally, one study using copper oxide impregnated linens demonstrated a 24% reduction in health care-associated infection in a chronic care ward, and another study demonstrated a 44% reduction in health care-associated infection in the acute care setting among patients admitted to a room containing six copper items as compared to patients admitted to a room with noncopper items. Although these studies show promise, both were at high risk of bias.

There is, therefore, insufficient evidence to recommend for or against the use of copper surfaces or copper impregnated linens in the health care setting, and facilities should, with involvement of IP&C, weigh the cost, functionality, the limitation of copper (See [Table 6](#)) against its known antimicrobial properties, and low-quality evidence suggesting it may impact infection rates when considering the use of copper surfaces or linens.

**\*\*See** CSA Group's [EXP06-2015 Evaluating Emerging Materials and Technologies for Infection Prevention and Control for more information on assessing antimicrobial surfaces.](#)

**There is insufficient evidence to recommend for or against the installation of copper surfaces**

## 8.2.2. No-Touch Disinfection Systems

Environmental surfaces in the health care setting are frequently contaminated with clinically relevant pathogens and these pathogens often persist despite routine cleaning and disinfection. No-touch disinfection systems are systems that use chemical disinfectants or physical agents to disinfect surfaces and do not require the active agent be directly applied to and removed from the surface manually.

The most studied no-touch disinfection systems include the use of hydrogen peroxide mist or vapour or the use of ultraviolet light to disinfect surfaces. A variety of other no-touch technologies have also been described (e.g., high-intensity, narrow-spectrum light, quaternary ammonium fogging, alcohol-mist, ozone gas, superoxide water, and steam vapour). In all cases, these technologies were designed as a supplement to, and not as a replacement for, routine cleaning and disinfection by EVS staff. These technologies, and the evidence for their use, are considered individually below.

### 8.2.2.1. Disinfection Using Hydrogen Peroxide Vapour or Mist

Systems that produce hydrogen peroxide for surface disinfection include: (a) hydrogen peroxide vapour at 30% to 35% generated by heat, and (b) aerosolized hydrogen peroxide at 5% to 6% generated by pressure or ultrasonic nebulization. Hydrogen peroxide systems are effective against a wide range of microorganisms, including bacteria, viruses and spores, particularly those of *C. difficile*.

Hydrogen peroxide decomposes to water and oxygen. The vapour or mist is typically delivered by a computer-controlled distribution system that ensures even distribution throughout the room while monitoring gas concentration, temperature and relative humidity. Once decontamination is complete, an aeration unit in the room converts the hydrogen peroxide into water and oxygen. The complete decontamination process takes an average of three to five hours.

Hydrogen peroxide vapour systems have several limitations, including health and safety risk to patients and staff present when the system is operating, erosion of some plastic and polymer surfaces after repeated exposure, and reduced efficacy where organic materials are not removed prior to using the system. In addition, different materials (e.g., linen, soft furnishings) may also affect the efficacy of these systems. To achieve optimal disinfection effect, these systems also need to be positioned properly, and the heating, ventilation and air conditioning system must be shut off during while these systems are operating. The time required to complete a cycle of disinfection using some hydrogen peroxide vapour systems may take more than four times longer than the time required for manual environmental cleaning. (See [Table 5](#) for a summary of the advantages and disadvantages of hydrogen peroxide vapour systems.)

There is evidence from multiple studies that hydrogen peroxide vapour reduces the level of bacterial contamination on surfaces following routine cleaning and disinfection. It is difficult to estimate the



magnitude of this effect, as sampling methodology and microbiological outcomes measured varied widely between studies. However, the majority of studies demonstrate that routine cleaning and disinfection, followed by hydrogen peroxide vapour disinfection, reduces levels of bacterial contamination when compared to routine cleaning and disinfection alone. Additionally, there are a number of studies evaluating the impact of hydrogen peroxide vapour on health care-associated infections and/or antibiotic-resistant organism transmission, most commonly in the context of outbreak management. In the five studies evaluating hydrogen peroxide vapour in the outbreak setting, three used hydrogen peroxide vapour as a one-time treatment of an entire ward, two additional studies did the same thing but then continued using hydrogen peroxide vapour for discharge cleaning of rooms occupied by patients with antibiotic-resistant organisms on an ongoing basis. All studies showed a reduction in their specific antibiotic-resistant organism; however, interpretation of these studies is difficult as the reduced antibiotic-resistant organism infection rate could be attributed to regression to the mean (i.e., rates were unusually high before the use of hydrogen peroxide vapour systems started, so it was likely that rates would have fallen even without using hydrogen peroxide vapour), or to the use of co-interventions in most of these studies. Four studies evaluated hydrogen peroxide vapour in the non-outbreak setting using before-after study designs. In these studies, hydrogen peroxide vapour was used for discharge cleaning for patients with one or more antibiotic-resistant organisms (or *C. difficile*). All studies demonstrated a reduction in antibiotic-resistant organism transmission rate either overall (3 studies) or in patients admitted to a room previously occupied by a patient colonized with the antibiotic-resistant organism of interest.

In one study comparing the microbicidal efficacy of hydrogen peroxide vapour with ultraviolet light disinfection, hydrogen peroxide vapour was found to be significantly more effective in reducing bacterial contamination on surfaces in patient rooms and was significantly more effective against spores. A study showed isolation rooms contaminated with MRSA were decontaminated more effectively with hydrogen peroxide vapour than with routine cleaning measures. The vapour was particularly effective for decontaminating complex furniture and equipment that was difficult to clean manually.

Similar to the studies of antimicrobial surfaces, studies of hydrogen peroxide vapour disinfection show the potential for this technology to prevent antibiotic-resistant organism transmission, but all were at high risk of bias.

There is, therefore, not sufficient evidence to recommend for or against the routine use of hydrogen peroxide vapour in the health care setting as a supplement to routine cleaning. Facilities should weight the cost and limitations of hydrogen peroxide vapour (see [Table 5](#)) against its established ability to reduce bacterial contamination on surfaces as well as some low quality evidence that it may be effective in terminating outbreaks, limiting antibiotic-resistant organism transmission, and preventing *C. difficile* infection. Hydrogen peroxide vapour may be most useful for facilities with a high incidence of and/or frequent outbreaks secondary to antibiotic-resistant organisms or *C. difficile*. However, such facilities should ensure they have sufficient, trained EVS staff, have assessed the feasibility of using this technology in their practice setting, and have implemented appropriate IP&C measures before deploying these technologies.

### **8.2.2.2. Disinfection Using Ultraviolet Light**

Ultraviolet light at wavelengths of 200 to 320 nm can kill microorganisms by destroying bonds in genetic materials. The wavelength of ultraviolet-C light lies between 200 to 270 nm, and has been



used in the health care setting to destroy airborne organisms or inactivate microorganisms on surfaces. Bacteria and viruses are more easily killed by ultraviolet light than are bacterial spores.

The germicidal effectiveness of ultraviolet light is influenced by:

- Amount and type of organic matter present
- Wavelength of ultraviolet light
- Air mixing and air velocity
- Temperature and relative humidity
- Exposure time
- Type of microorganisms present
- Ultraviolet light intensity, which is affected by distance, angle of incidence and cleanliness of lamp tubes

If ultraviolet light is used in a health care setting, warning signs should be posted in the affected area to alert staff, persons receiving care, and visitors of the hazard. A schedule for replacing ultraviolet lamps should be developed according to the manufacturer's recommendations. Ultraviolet light intensity should be regularly monitored. (See [Table 5](#) for a summary of the advantages and disadvantages of ultraviolet light disinfection systems.)

Pre-cleaning of visibly soiled surfaces is necessary before ultraviolet light disinfection, as ultraviolet light is absorbed by organic materials and its ability to penetrate is low.

There is evidence from multiple studies that ultraviolet light disinfection reduces the level of bacterial contamination on surfaces following routine cleaning and disinfection. As with the studies of hydrogen peroxide vapour, it is difficult to estimate the magnitude of this effect due to variations in how the intervention was implemented (type of ultraviolet device, number of devices, amount of ultraviolet light, room size and shape), sampling methodology and microbiological outcomes. However, the majority of studies demonstrate that routine cleaning and disinfection, followed by ultraviolet disinfection, reduces levels of bacterial contamination when compared to routine cleaning and disinfection alone.

There are also seven studies that evaluated the impact of ultraviolet light on antibiotic-resistant organisms or health care-associated infection outcomes. All are uncontrolled before-after studies. A strength of these studies is that they were not conducted during outbreaks. Six of the seven studies reported a reduction in antibiotic-resistant organism or health care-associated infection incidence, ranging from 20% to 57%. These studies show the potential for this technology to prevent antibiotic-resistant organism transmission under non-outbreak conditions, but all were at high risk of bias related to their study design.

There is, therefore, not sufficient evidence to recommend for or against the use of ultraviolet light disinfection in health care setting as a supplement to routine cleaning. Facilities should weight the cost and limitations of ultraviolet light disinfection systems (see [Table 6](#)) against its established ability to reduce bacterial contamination on surfaces and some evidence that it may be effective in limiting antibiotic-resistant organism transmission or preventing health care-associated infections. Ultraviolet light may be most useful for facilities with moderate to high incidence of antibiotic-resistant organisms or *C. difficile* infection that already have an appropriately resourced EVS program.

**\*\*See** CSA Group's [EXP06-2016 Evaluating Emerging Materials and Technologies for Infection Prevention and Control](#) for more information on assessing no touch disinfection systems.

**There is insufficient evidence to recommend for or against the use of hydrogen peroxide vapour or ultraviolet disinfection technologies for room or ward disinfection following manual cleaning and disinfection**

**Table 5: Advantages and Disadvantages of Hydrogen Peroxide Vapour and Ultraviolet Disinfection Systems Compared to Manual Cleaning and Disinfection Alone**

TECHNOLOGY	ADVANTAGES	DISADVANTAGES
<p><b>Hydrogen peroxide vapour</b></p>	<ul style="list-style-type: none"> <li>• Reduces bacterial burden when added to manual cleaning</li> <li>• Broad spectrum microbicidal activity and sporicidal</li> <li>• Environmentally safe residues</li> <li>• Simultaneous disinfection of room surfaces, furniture and complex equipment</li> <li>• Uniform distribution in the room via an automated dispersal system</li> <li>• No need to move furniture and equipment away from the walls</li> <li>• May be used to decontaminate entire units or wards during outbreaks</li> </ul>	<ul style="list-style-type: none"> <li>• Adds to the time required for room cleaning</li> <li>• Discharge/transfer cleaning only, as patients and staff must be removed from the room before decontamination</li> <li>• Efficacy affected by surface nature, hydrogen peroxide concentration, presence of organic soiling</li> <li>• Pre-cleaning required to remove dust and stains</li> <li>• Sealing of air ducts from the room and gaps under doors required prior to decontamination</li> <li>• Optimal methodology (including exposure time) is still under investigation</li> <li>• Expensive</li> <li>• Potential damage of some plastic and polymer surfaces</li> <li>• Staff must not enter during the disinfection cycle</li> <li>• Trained system operators required</li> <li>• Transport of system to rooms where disinfection occurs requires time and labour</li> </ul>

TECHNOLOGY	ADVANTAGES	DISADVANTAGES
Ultraviolet light	<ul style="list-style-type: none"> <li>• Reduces bacterial burden when added to manual cleaning</li> <li>• Broad spectrum microbicidal activity</li> <li>• Sporicidal at higher dose and/or longer cycle time</li> <li>• Relatively short cycle time (15 to 50 minutes)</li> <li>• No residue after use</li> <li>• Prior to use sealing of heating, ventilation and air conditioning system not required</li> <li>• Simultaneous disinfection of room surfaces, furniture and equipment</li> <li>• Low operating costs</li> </ul>	<ul style="list-style-type: none"> <li>• Adds to the time required for room cleaning</li> <li>• Discharge/transfer cleaning only, as patients and staff must be removed from the room before decontamination</li> <li>• Destructive effect over time on plastics and vinyls and fading of paints and fabrics</li> <li>• Low penetrating effect</li> <li>• Efficacy affected by wavelength, dose, cycle-time, airflow, distance from target, organic soiling</li> <li>• Pre-cleaning required to remove dust and stains</li> <li>• Equipment and furniture must be moved into line of vision for disinfection to occur</li> <li>• Expensive for initial outlay of equipment</li> <li>• Staff must not enter during the disinfection cycle</li> <li>• Trained system operators required</li> <li>• Transport of system to rooms where disinfection occurs requires time and labour</li> </ul>

### 8.2.2.3. Other Methods of No-Touch Disinfection

A number of other no-touch disinfection technologies are in development or have been evaluated in the past. Examples include fogging with formaldehyde, ethylene oxide, superoxidized water, ozone, or quaternary ammonium compounds; use of alcohol mist; steam disinfection; and high-intensity narrow spectrum light. There are few studies evaluating these technologies but no studies use antibiotic-resistant organisms or health care-associated infections as outcomes. For some of these technologies, there are significant concerns about toxicity and safety (e.g., ozone, fogging with formaldehyde<sup>3</sup> or ethylene oxide<sup>3</sup>).

While interest remains in developing new technologies for disinfection within the health care environment, the use of any of these technologies for environmental disinfection is not recommended until evidence confirming their effectiveness and safety in clinical environments is available.

**Table 6: Advantages and Disadvantages of Copper Surfaces, Ultraviolet Light, and Hydrogen Peroxide Vapour in Addition to Manual Cleaning and Disinfection**

METHOD	CAN BE USED FOR ROUTINE DAILY CLEANING/DISINFECTION	CAN BE USED AT DISCHARGE OR TRANSFER	REMOVES DIRT AND DEBRIS	TURN AROUND TIME	SUSCEPTIBLE TO MISSING SURFACES	ACHIEVES HOTEL CLEAN IN ADDITION TO DISINFECTION
Manual Cleaning	YES	YES	YES	VARIABLE	YES, due to time constraint, unclear responsibility, cluttering room layout	YES
Copper surfaces	N/A	N/A	NO	N/A	Only a limited number of surfaces can be targeted	NO
Ultraviolet light	NO	PARTIAL	NO	Adds additional time to manual cleaning	Objects not in line of sight may be missed	NO
Hydrogen peroxide vapour	NO	PARTIAL	NO	Adds additional time to manual cleaning	Uniform distribution by an automated dispersal system	NO

\*\* Depends on the frequency of discharges/transfers and number of available machines (and staff).

**The use of no touch disinfection systems does not replace the need for routine manual cleaning of environmental surfaces.**

## RECOMMENDATIONS:

71. Regional IP&C, EVS program, and OESH must be consulted before making any changes to cleaning and disinfection procedures and technologies in the health care setting. [A III]

## 9. ASSESSMENT OF CLEANLINESS AND QUALITY CONTROL

### 9.1. Overview of Approaches Used to Monitor Cleaning and Cleanliness

The responsibility for ensuring cleaning and disinfection of the environment in a health care facility is performed according to best practices and facility policy belongs to all staff involved in the EVS program, from the front-line environmental service workers, to supervisors, managers and directors. Facility administration is also responsible for ensuring a safe and sanitary health care environment is maintained.

To ensure this goal is met, a quality control program that includes regular assessments of cleaning and cleanliness is required. In addition, health care facilities should develop and maintain appropriate EVS policies and procedures, as well as hire and maintain sufficient numbers of trained and educated EVS staff.

Measures of cleaning and cleanliness can facilitate the following:

- training EVS staff (see [4. Education](#))
- standardizing cleaning procedures
- ensuring cleaning is performed consistently
- assessing the adequacy of resource dedicated for EVS programs
- improving the efficacy of cleaning

There are currently a wide variety of approaches that can be used to monitor cleanliness in the health care environment. Each approach addresses different aspects of cleaning and each has strengths and weaknesses. To obtain the maximum benefit from any of the approaches described in this chapter, tools used to monitor cleanliness must be standardized, applied on a regular basis, and implemented cooperatively as a partnership between the EVS program and IP&C. Results should be used for education and training and to provide both positive and constructive feedback to front-line EVS staff. Additionally, aggregate results should be presented regularly to EVS program leadership, infection prevention and control, and the facilities administrative leadership. An overview of approaches to monitoring cleaning and cleanliness is provided in [Table 7](#) and [Table 8](#).

In general, facilities should incorporate several of these methods as they have different advantages and disadvantages.

## 9.2. Assessing Cleaning and Cleanliness Using Observational Methods

**Table 7: Observational methods Used to Monitor Cleaning and Cleanliness in Health Care Facilities**

METHOD	DESCRIPTION	ADVANTAGES	DISADVANTAGES
<b>Visual assessment</b>	Trained observer (e.g., environmental service supervisor) assesses cleanliness of an area following cleaning	<ul style="list-style-type: none"> <li>• Easy to implement</li> <li>• Useful to assess whether a "hotel clean" has been obtained</li> <li>• Allows feedback to individual environmental service staff</li> </ul>	<ul style="list-style-type: none"> <li>• Results do not correlate with levels of microbial contamination</li> <li>• Does not assure that a "health care clean" has been achieved</li> <li>• Results may vary across different observers</li> </ul>
<b>Performance observation</b>	Environmental service supervisor observes environmental service workers perform cleaning	<ul style="list-style-type: none"> <li>• Easy to implement</li> <li>• Useful to assess that facility procedures for cleaning are performed correctly</li> <li>• Allows feedback to environmental service staff</li> </ul>	<ul style="list-style-type: none"> <li>• Time consuming</li> <li>• Labor intensive</li> <li>• Performance while observed may not be the same as performance when not observed</li> </ul>
<b>Satisfaction surveys</b>	Persons receiving care complete surveys and provide feedback on the facilities' cleanliness	<ul style="list-style-type: none"> <li>• Useful to ensure needs of the persons receiving care are met</li> </ul>	<ul style="list-style-type: none"> <li>• Results may not correlate with levels of microbial contamination</li> </ul>

### 9.2.1. Visual Assessment of Cleanliness

In the past, visual assessment has been the primary approach to measure cleanliness and it remains an important approach to ensure an adequate “hotel clean” is achieved. Ensuring the physical environment is uncluttered and appears clean is valued by those receiving care as well as staff, and is an important goal. However, although visibly clean surfaces are free of obvious visual soil they may remain contaminated with microorganisms, organic materials or chemical residues.

When conducting visual assessments, a standardized approach and checklist (See [Figure 4](#)) is important to ensure consistency. Results can be reported as the proportion of items or surfaces inspected that were “clean”, out of the total number of items/surfaces assessed. If the same group of items or surfaces are tested repeatedly, the results of visual assessments can be used as a quality indicator for environmental cleaning, as long as the limitations of this approach are understood

Figure 4: Sample Checklist

PATIENT ROOM	LOCATION	NAME	DATE	COMPLETE/ INCOMPLETE/ N/A	WEIGHT
Floors	Scuff Free	Pronounced scuffs removed			2
	Spot Free	Wet mopped			5
	Baseboards	Dust and damp wiped			2
	Corners	No sand, gravel, etc. in corner			2
Walls / Ceilings	Wall/Ceiling	Obvious spill, splatter is removed			2
	Door (including stainless steel)	Fingerprints, and obvious spills & splatter is removed			3
	Door Frame/Hinges	Dust free			2
	Picture & other wall mounted items	Dust free, fingerprints and spills or splatter are removed			2
Bathroom	Toilets	Bowl clean with swab & cleaner, seat, lid wiped down & dried, base wiped, seat hinges and all pipes cleaned			5
	Sink	All surfaces, taps, pipes, underneath wiped down			5
	Tub	All surfaces, taps, shower head & hose, curtain rod, walls, soap dish wiped down			5
	Dispensers – towel, toilet paper, soap, etc.	Filled, wiped down-inside and out			3
	Grab bars	Wiped down			5
	Towel rack	Wiped down			2
	Mirror & shelf	Wiped down and polished			2
	Shower curtain removed	No longer on rod if patient discharged			1
Vent	Dust free			2	

PATIENT ROOM	LOCATION	NAME	DATE	COMPLETE/ INCOMPLETE/ N/A	WEIGHT
Furnishings	Chairs	Arms wiped down, seat and back wiped/spot cleaned			3
	Dresser	Surfaces and handles wiped down			3
	Over bed table	Surface, table opener and height adjuster wiped down			3
	Bed-side rails & footboard	Wiped down			3
	Waste container	Changed and wiped down			2
	Cubicle curtain	Change if visibly soiled			2
	Cubicle curtain tracks	Dust free			1
	Telephone	Wiped down			3
	Cupboards	Exterior wiped down			3
	Light cord/call bell	Wiped down			3
	Bumpers on walls	Wiped down			2
Induction unit	Surface wiped down			3	
Windows	Glass	Wiped – spot free			2
	Ledges	Wiped down			2
	Blinds	Dust free			2
	Blind tracks	Dust free			2
External Health Care Sink	Dispensers	Filled, wiped down-inside and out			3
	Towel dispenser battery	Operating (not red light)			3
	Sink	All surfaces, taps wiped down			5
<b>TOTAL</b>					<b>100</b>

NON-PATIENT ROOM	LOCATION	NAME	DATE	COMPLETE/ INCOMPLETE / N/A	WEIGHT
Floors	Scuff free	Pronounced scuffs removed			2
	Spot free	Wet mopped			5
	Baseboards	Dust and damp wipe			2
	corners	No sand, gravel, etc. in corner			2
Walls & Ceilings	Wall / ceiling	Obvious spill, splatter is removed			2
	Door (including stainless steel)	Fingerprints, and obvious spills & splatter is removed			3
	Door frame / hinges	Dust free			2
	Picture & other wall mounted items	Dust free, fingerprints and spills or splatter are removed			2
Furnishings	Chairs	Arms wiped down, seat and back wiped/spot cleaned			3
	Handrails	Obvious spill, splatter is removed			3
	Waste container	Changed and wiped down			2
	Desks	Dust free			3
	Cupboards	Obvious spill, splatter removed			3
	Fridges	Obvious spill, splatter is removed, monthly cleaning performed			3
Fixtures	Hand sanitizer	Dispenser wiped down, operational and stocked			3
	Dispensers	Filled, wiped down – inside and out			3
	Towel dispenser battery	Operating (no red light)			3
	Sink	All surfaces, taps wiped down			
<b>TOTAL</b>					<b>46</b>

## 9.2.2. Performance Observation

Performance observation involves trained observers, often EVS staff supervisors, watching EVS staff perform routine cleaning/disinfection tasks. Performance observation is important to ensure EVS staff are appropriately educated and trained, and are able to follow the correct procedures. It promotes staff engagement and is an opportunity for direct feedback from supervisors and for front-line staff to ask questions or clarify procedures and protocols.

Disadvantages of performance observation are that it is labour intensive, it may be difficult to standardize or measure, and the observed EVS staff may perform differently when observed than they do during routine unobserved cleaning.

Performance observation is an important tool for quality assurance in EVS programs. To maximize the benefit of performance observation, the observer should be trained, observation should be conducted on a regular basis to ensure consistency of performance over time, and feedback or required re-training should be provided to the observed EVS staff in a constructive and timely manner.

## 9.3. Post-Cleaning/Disinfecting Testing of Surfaces

Currently there are several approaches that can be used to assess the efficacy of cleaning and disinfection through testing of surfaces after cleaning and disinfection is completed. Different approaches assess different aspects including thoroughness (i.e., environmental marking), removal of organic materials (i.e., adenosine triphosphate bioluminescence) or removal of microorganisms (i.e., environmental culturing). An overview of these approaches is provided in Table 8.

### 9.3.1. Environmental Marking

Environmental marking measures the thoroughness of cleaning by using a tracing agent (e.g., fluorescent material, chemical tracer) to mark items and environmental surfaces prior to cleaning. Following cleaning, a trained observer can assess the marked surfaces using a detecting agent (e.g., ultraviolet light, enzymatic detector) that allows visualization of the tracing agent to determine whether they were cleaned.

When environmental marking programs are initially implemented, it is immediately recognized that many high-touch surfaces within the patient/resident/client environment are missed during cleaning. Identification of surfaces omitted during cleaning provides an important learning and feedback opportunity. Importantly, feedback of the results of environmental marking audit to EVS staff, supervisors and managers typically leads to rapid improvement and may reduce infection rates. Additionally, in many cases specific reasons that surfaces were missed can be identified through discussion with EVS programs—for example in some cases EVS staff were not aware they were responsible for cleaning a specific surface or item, were not aware a specific surface or item required cleaning, or were afraid of damaging the surface or item. Clarification of the requirements for missed items therefore can lead to prompt improvements that would not occur without environmental marking.

If environmental marking is performed, it should be done in a standardized manner. The specific surfaces or items to be marked should be determined, assessments should be made on a regular basis by a trained observer, EVS staff should be unaware which rooms or areas are being marked, and regular positive and constructive feedback should be provided.



Development of a quality indicator can be done as follows:

- Identify 15 specific surfaces or items to be marked each time cleaning is assessed.
- After cleaning is completed, determine the number of surfaces where the marker was removed (“cleaned”) and the number of surfaces where the marker is still present (“missed”). See [Figure 5](#)

**Table 8: Assessment of Cleaning Through Testing of Surfaces Following Cleaning**

METHOD	DESCRIPTION	ADVANTAGES	DISADVANTAGES
<b>Environmental marking</b>	After cleaning, a trained observer can check to determine if the tracing agent was removed from the surfaces during cleaning. Failure to remove the tracing agent from a smooth surface suggests that the surface was not cleaned.	<ul style="list-style-type: none"> <li>• Allows direct assessment of cleaning thoroughness (i.e., proportion of surfaces actually cleaned)</li> <li>• Allows assessment of which high and low touch surfaces are cleaned consistently and which are omitted</li> <li>• Associated with rapid improvement when constructive feedback is provided</li> <li>• Easy to implement</li> <li>• Results easily understood</li> </ul>	<ul style="list-style-type: none"> <li>• Does not directly measure microbial contamination</li> <li>• Does not measure quality or intensity of cleaning (i.e., a single wipe will remove marker)</li> <li>• Does not assess adequacy of cleaning of unmarked surfaces</li> <li>• Surface texture may affect removal of the tracing agent</li> </ul>
<b>Adenosine triphosphate (ATP) bioluminescence</b>	ATP is a substance found in all living cells. Surfaces can be tested after cleaning to determine the quantitative level of ATP present.	<ul style="list-style-type: none"> <li>• Allows assessment of residual organic material present after cleaning</li> <li>• Provides quantitative result</li> <li>• Easy to implement</li> <li>• Provides quick and direct feedback</li> </ul>	<ul style="list-style-type: none"> <li>• Not a direct measure of microbial contamination</li> <li>• Some cleaning products and materials may interfere with the test (e.g., microfiber, bleach, hydrogen peroxide, quaternary ammonium compounds, etc.)</li> <li>• Results not comparable across systems due to lack of standardization</li> </ul>
<b>Environmental culture</b>	Cultures can be taken from surfaces after cleaning to determine if bacteria are present	<ul style="list-style-type: none"> <li>• Provides the only direct measure of contamination of viable microorganisms (level of bacterial contamination, type of bacteria present)</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive</li> <li>• Slow turnaround time</li> <li>• Not standardized</li> <li>• Does not assess bacterial contamination beyond the small areas tested</li> </ul>

Figure 5: Sample Audit Results

Item	Audit Dates												# of "clean" audit	# of audits conducted	Overall cleanliness for the item
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Bedrail	clean	clean	missed	clean	clean	clean	clean	clean	clean	clean			9	10	90%
Bedside table	missed	clean	clean	clean	missed	clean	missed	clean	clean	clean			7	10	70%
Call bell	clean	missed	clean	missed	clean	missed	clean	missed	clean	missed			5	10	50%
Chair arm	clean	clean	clean	clean	clean	clean	clean	clean	clean	clean			10	10	100%
Curtain edge	missed	missed	clean	missed	missed	clean	clean	missed	missed	clean			4	10	40%
Door knob	clean	clean	clean	missed	clean	clean	missed	clean	clean	clean			8	10	80%
Drip stand	missed	missed	clean	clean	missed	missed	clean	clean	clean	missed			5	10	50%
ECG machine	missed	clean	clean	clean	clean	clean	missed	clean	clean	clean			8	10	80%
Keyboard	missed	clean	clean	clean	missed	clean	clean	clean	clean	missed			7	10	70%
Light switch	missed	clean	missed	clean	clean	missed	missed	clean	missed	missed			4	10	40%
Sink	missed	missed	missed	clean	missed	missed	missed	missed	clean	missed			2	10	20%
Tab	missed	clean	missed	clean	clean	missed	clean	clean	clean	missed			6	10	60%
Telephone	clean	clean	clean	clean	missed	clean	clean	clean	clean	clean			9	10	90%
Toilet handle	missed	missed	clean	missed	clean	missed	clean	clean	clean	clean			5	10	50%
Toilet seat	missed	clean	missed	clean	missed	missed	clean	missed	missed	clean			4	10	40%
No. of "clean" items	5	10	10	11	8	8	10	11	11	9			93	150	62%
No of "missed"	10	5	5	4	7	7	5	4	4	6			57		
Monthly cleaning rate	33%	67%	67%	73%	53%	53%	67%	73%	73%	60%					

Calculate the overall proportion of surfaces cleaned as a percentage (see Example 1):

$$= \frac{\text{number of surfaces cleaned}}{\text{Total number of surfaces tested}} \times 100\%$$

$$= \frac{\text{number of "cleaned" surfaces}}{\text{number of "clean" surfaces + number of "missed" surfaces}} \times 100\%$$

### Example 1: Calculating Monthly Cleaning Rates

Using the data for the month of January in [Figure 5](#)

Number of "clean" surfaces = 5  
 Number of "missed" surfaces = 10

$$\text{Cleaning rate for the month of January} = \frac{5}{5 + 10} \times 100\% = 33\%$$

In addition to using the results of repeated environmental marking as an overall quality indicator for environmental cleaning, further information can be gained for education and feedback by looking at the percentage of time a specific surface is cleaned or missed, which can be calculated as follows (see also [Example 2](#)):

$$\frac{\text{number of audits with "clean" result for the item}}{\text{total number of audits conducted for the item}} \times 100\%$$

Environmental marking audits should generally be introduced collaboratively with EVS programs and used for training, education and for the provision of both positive and constructive feedback. If used in a negative or punitive manner, or implemented secretly, this could lead to misleading results as there are several ways that EVS staff could manipulate the results—for example the marking is not completely invisible and/or ultraviolet lights are easy to obtain and EVS staff could achieve high scores not by improving the thoroughness of routine cleaning, but by deliberate cleaning of the marked surfaces only. At the same time as it is important to make EVS programs aware of the audit program in advance, it is also important EVS staff are not aware of when individual rooms will be marked to minimize the risk that they focus inappropriately on removal of the marks only in these circumstances. Finally, although it is not possible to mark all relevant surfaces, it may be useful to add or remove specific marked targets over time to ensure staff are truly cleaning all room surfaces every time.

### **Example 2: Calculating Overall Cleaning Rates for Specific Items or Surfaces**

Using the data in [Figure 5](#)

The overall cleaning rate for toilet seat in the last 10 months is calculated as follow.

Number of audits with “clean” results = 4  
Number of audits conducted = 10

$$\text{Overall cleaning rate} = \frac{4}{10} \times 100\% = 33\%$$

The overall cleaning rate for bedrail in the last 10 months is calculated as follow:

Number of audits with “clean result = 9  
Number of audits conducted = 10

$$\text{Overall cleaning rate} = \frac{9}{10} \times 100\% = 90\%$$

### **9.3.2. Adenosine Triphosphate Bioluminescence**

Adenosine triphosphate (ATP) is a substance present in all living cells and some organic materials, including food and body fluids. The presence of ATP on a surface indicates organic material remains on the surface—thus while the absence of ATP suggests there is little microbial contamination of a surface, the presence of ATP could represent either microbial (viable and dead) contamination or other organic

material. ATP bioluminescence is a system for swabbing surfaces to measure the level of ATP present, which is a surrogate for microbial contamination. ATP testing can, therefore, provide rapid feedback on the level of organic contamination of surfaces as a measure of cleaning thoroughness and intensity. Similar to environmental marking, ATP bioluminescence can be used systematically and regularly for training and education, to provide immediate feedback to EVS staff, or as a quality indicator for cleaning. Also, similar to environmental marking, an audit and feedback program based on ATP bioluminescence should be developed in a collaborative manner with EVS program.

There are limitations to ATP bioluminescence, however. Some products and surfaces can interfere with the test results by quenching the ATP readings (anionic detergents, ethanol, isopropanol, phenol, sodium phenate, triclosan, citric acid, hydrogen peroxide, quaternary ammonium compounds, bleach, stainless steel, roughness of surface texture); or enhancing the ATP readings (microfibre, laundry additives, some plasticscationic and non-ionic detergents, bleach, quaternary ammonium compounds, citric acid, hydrogen peroxide). In some studies, ATP levels do not correlate closely to measures of microbial contamination and there are few studies demonstrating a reduction in infection rates with implementation of ATP bioluminescence monitoring. Furthermore, appropriate benchmarks for “safe” post-cleaning ATP levels from different surfaces or environments are not fully established although some have recommended or proposed benchmarks ranging from 100 to 500 relative light units, depending on the clinical setting. In addition, performance of different ATP bioluminescence systems varies in their reliability and accuracy. When selecting a system for auditing environmental cleanliness, health care facilities should consider the following aspects:

<b>Sensitivity</b>	the system is able to detect the smallest amount of contamination
<b>Linearity</b>	the amount of contamination is proportional to the level of relative light unites reported by the system.
<b>Repeatability</b>	the system gives the same result when the same surface is tested multiple times by the same person.
<b>Accuracy</b>	the system is able to detect all available ATP on a surface.
<b>Precision</b>	the results are consistent as close to the true value as possible
<b>Shelf life</b>	the test kit is stable at room temperature for a practical period of time.

### 9.3.3. Environmental Culture

Environmental cultures of environmental surfaces in health care facilities may be performed by swabbing or using contact agar plates. Culturing is the only direct measurement of levels of microbial contamination after cleaning/disinfection. Culturing by swabbing is commonly used to indicate the presence of specific bacteria on a surface. On the other hand, contact agar plates are often used to quantify the level of bacterial contamination on an area of a large, flat surface. However, such cultures are costly, the turnaround time for results is slow, and they may not be a cost-effective form of monitoring. Additionally, there is no accepted standard of how such cultures should be performed or interpreted. Some methods attempt to quantitate total bacterial burden in terms of colony-forming units per area while others use qualitative or quantitative methods to identify the presence of, or levels of, a specific pathogen [e.g., methicillin-resistant *Staphylococcus aureus*, *C. difficile*, carbapenemase-producing *Enterobacteriaceae*, *Acinetobacter* species].

In general, environmental cultures should not be used as a routinely performed quality assessment method for environmental cleaning due to their cost and delay in obtaining results, although they may be important for establishing the relationship between other interventions (e.g., ATP bioluminescence, environmental marking) and environmental culture results in the research setting. However, environmental cultures may be useful for investigating transmission events or outbreaks.

#### 9.4. **Monitoring Cleaning and Cleanliness in the Health Care Setting – Putting It All Together**

There are an increasing number of tools that can be used to assess cleaning and cleanliness in the health care setting, as discussed above. These approaches will only be useful when adopted in a standardized manner and with the cooperation of the EVS program and EVS staff.

As different tools measure different aspects of environmental cleaning, it is appropriate and recommended to use several of these tools. Health care facilities should use most or all of the observational tools (i.e., visual assessment of cleanliness, performance observation and feedback, satisfaction surveys) combined with at least one measure of surface cleaning (e.g., environmental marking or ATP bioluminescence) on a routine basis. Although this approach may not be feasible in outpatient settings and office practices, the same quality control principles apply. For clinical office settings that are part of a larger health care organization, observational methods to assess cleaning and cleanliness should be strongly considered for use, and the periodic use of a measure of surfaces cleaning may also be beneficial, particularly in areas that are higher risk due to the population seen or because of the types of interventions and procedures performed. Free-standing clinical office practices should use observational methods to assess the efficacy of cleaning (see [9.2 Assessing Cleaning and Cleanliness using Observational Methods](#)).

#### **RECOMMENDATIONS:**

76. **There must be a process in place to measure the quality of cleaning in the health care setting. [A III]**
77. **Health care facilities should use at least one measure that directly assesses cleaning (i.e., environmental marking, ATP bioluminescence), in addition to observational assessments (e.g., performance observation, visual assessment). [B III]**
78. **Results of cleaning audits should be used for the purposes of training and to provide positive and constructive feedback to frontline EVS staff. [B III]**
79. **Aggregate results must be presented to relevant stakeholders, e.g., EVS program leadership, IP&C, and administration. [A III]**



# SECTION TWO:

## Cleaning and Disinfection Practices for All Health Care Settings

## 10. HEALTH CARE CLEANING and DISINFECTION PRACTICES

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This section provides detailed practical guidance on cleaning and disinfection in the health care setting. This section focuses on the cleaning of patient/resident/client rooms (including rooms used for those in isolation), health care surfaces, and non-critical equipment. Subsequent sections address cleaning and disinfection of rooms used for patients on Additional Precautions ([Cleaning and Disinfection When Additional Precautions are In Place](#)), and cleaning of blood or chemical spills ([12. Cleaning Spills of Blood and Body Substances](#)).

The goal of cleaning is to provide a safe, functional and aesthetic environment for those receiving care. The key objectives of cleaning efforts are to keep surfaces visibly clean and uncluttered, to prevent infection transmission by removing or inactivating microorganisms from surfaces and items within the care environment, and to clean up spills promptly.

Cleaning/disinfecting procedures must be applied regularly, consistently and correctly to prevent the accumulation of soil, dust and debris that can harbour and support the growth of microorganisms and to avoid transmitting microorganisms from one item or surface to another. Effective strategies must, therefore, incorporate IP&C principles into the development and determination of methodology and frequency.

### 10.1. General Cleaning / Disinfecting Practices

As described in [3.1.2.1 Approach to Cleaning/Disinfection for Clinical and Non-clinical Areas Within the Health Care Setting](#), health care settings are comprised of non-care areas requiring a hotel clean and care areas where a health care clean is required. This section focuses on the appropriate approach to health care cleaning for patient/resident/client rooms and other care areas.

It is a fundamental principle that microorganisms can only be successfully removed and/or inactivated if dirt and debris are completely removed. To achieve the removal of dirt and debris, the application of friction (i.e., elbow grease) is critical. Surfaces must be cleaned of visible soil before being disinfected, as organic material may inactivate a disinfectant. General practices to be followed in all health care settings for all cleaning/disinfection are listed in [Appendix 1](#). More specific sample protocols for cleaning and disinfection for different environments or indications are provided in [Section Three](#).

## 10.2. Cleaning / Disinfecting Methods

### 10.2.1. Patient/Resident/Client Environment Cleaning/Disinfection

#### 10.2.1.1. Daily Routine Cleaning/Disinfection of Patient/Resident/Client Rooms or Bed Spaces

The health care clean of those receiving care's rooms should follow a standard, methodical format that includes each of the following elements:

<b>Preparation</b>	Gather all supplies and equipment required before starting.
<b>Routine Practices and Additional Precautions</b>	<ul style="list-style-type: none"><li>• Perform hand hygiene before entering the room or bed space (for multi-bedrooms).*</li><li>• Put on additional personal protective equipment if required to avoid exposure to blood or body fluids or if indicated by Additional Precautions signage.</li><li>• Remove gloves and other personal protective equipment and then perform hand hygiene upon room exit.*</li></ul>
<b>Cleaning and Disinfection</b>	As much as is possible, work from clean to dirty (to avoid moving dirt and microorganisms from dirty areas to cleaner areas) and from high to low (to avoid having dirt or microorganisms drip down and re-contaminate areas already cleaned).
<b>Waste Disposal</b>	Collect and remove waste from the room
<b>Resupply Room</b>	Replace required clean supplies; avoid overstocking

**\*NOTE:** Hand hygiene is required every time the room or bed space is re-entered and every time upon leaving the room or bed space. If gloves or other personal protective equipment are worn, they must also be removed every time you leave the room or bed space, and new personal protective equipment must be put on when re-entering the room or bed space.

Please see [Support Services - Shared Health Policies \(sharedhealthmb.ca\)](http://sharedhealthmb.ca) (Environmental Services Folder) for approved procedures.

#### 10.2.1.2. Discharge/Transfer Room Cleaning/Disinfection

When a patient/resident/client is discharged/deceased or transferred, the room or bed space must be cleaned and disinfected thoroughly before the next person is admitted to the space. Cleaning and disinfection upon discharge includes several steps not required during routine daily cleaning/disinfection (see [10.2.1.1 Daily Routine Cleaning of Person Receiving Care's Room or Bed Space](#)) and requires the close cooperation of clinical staff and EVS staff.

In general, clinical staff are responsible for:

- Removing or discarding medical supplies
- Removing or discarding medical equipment, including oxygen therapy equipment



- Emptying items containing blood or body fluids and removing items or equipment potentially contaminated with blood or body fluids (e.g., discarding IV bags and tubing and urinary catheter collection bag, emptying bedpans/commodore/urinals/washbasins, emptying suction bottles)
- Disposal of personal articles left by the persons receiving care including toiletries (e.g., soap, creams, razors, toothbrushes, comb, books, magazines, toys). These items can transmit microorganisms to others and must be taken with the person on discharge/transfer or be discarded.

Once these tasks are completed, cleaners can then conduct a discharge/transfer clean of the room as outlined in the EVS SOP's found at: [Support Services - Shared Health Policies \(sharedhealthmb.ca\)](https://www.sharedhealthmb.ca)

### 10.2.1.3. Scheduled Room Cleaning of the Persons Receiving Care

In addition to the daily and discharge/transfer cleanings of the room/space, there are other cleaning/disinfecting tasks that should be scheduled to occur on a regular basis within the room/space, including:

- High dusting (see below) in room
- Clean baseboard and corners
- Removal and laundering privacy curtains
- Clean window curtains/covering
- Dust window blinds

All of these activities should be scheduled on a regular basis. In all cases, cleaning and disinfection should be performed immediately if contamination or gross soil is identified and sufficiently frequently to maintain a clean, dirt, and dust free environment. The appropriate frequency for changing privacy curtains (or other solutions that minimize the need for laundering privacy curtains) is discussed in [1.2.1.3 Cloth and Soft Furnishings in Health Care Settings](#). For the other tasks listed, facilities should determine the minimum frequency required to maintain a clean, dirt and dust free environment. As a minimum, high dusting and baseboard cleaning should occur weekly; window blinds should be dusted monthly; and window curtains and coverings should be cleaned at least annually. These are minimum frequencies and more frequent cleaning may be required to maintain appropriate levels of cleanliness.

High dusting involves dusting all horizontal surfaces and fixtures above shoulder height, including vents. When performing high dusting:

- Dust when the person receiving care is out of the room to minimize exposure to spores.
- Minimize dissemination of dust by using HEPA-filtered vacuums and/or damp mop/dusters.
- Proceed in an organized direction, to avoid missing any areas (e.g., clockwise).
- Note and report stained or misplaced ceiling tiles, fixtures or walls, so they can be replaced or repaired.

### 10.2.2. Bathroom Cleaning

Bathrooms within the patient/resident/client room should be cleaned and disinfected last, after completing room cleaning and disinfection, following the principle of movement from clean to dirty. Shower walls should be thoroughly scrubbed at least weekly. Shower curtains should be changed at least monthly and as required.

Bathrooms for individuals in a private room should be cleaned and disinfected daily, at the time of routine daily room cleaning/disinfection. For shared bathrooms in semi-private or unit rooms, daily cleaning and disinfection of the bathroom is a minimum, and consideration should be given to twice daily cleaning/disinfection, particularly for unit rooms housing more than two patients/residents/clients. Additional, immediate cleaning/disinfection is required when there are spills or gross contamination of room surfaces identified.

Please see [Support Services - Shared Health Policies \(sharedhealthmb.ca\)](https://www.sharedhealthmb.ca) for approved procedures.

Emergency room/urgent care centre bathrooms are located in high traffic areas and are used frequently by ill persons who may contaminate the environment with microorganisms including enteric viruses such as norovirus, and *C. difficile*. Emergency room/urgent care centre bathrooms:

- Should be cleaned and disinfected every four hours. For bathrooms with infrequent usage, cleaning and disinfection may take place less frequently.
- Must be frequently inspected, and re-cleaned/disinfected whenever necessary (e.g., during high usage times, or when visibly soiled).
- Must be cleaned/disinfected more frequently based on identified need.
- May need disinfection with a sporicidal agent in Outbreak situations in discussion with IP&C

Bathrooms may be located outside of care areas (e.g., public washroom). However, because bathrooms are at high risk of microbial contamination, they still require a health care clean.

### **Bathrooms require a health care clean regimen**

## **10.2.3. Floor Cleaning**

Floors in health care settings may be comprised of a number of materials, depending on the location of the flooring and the population in the vicinity. It is important to review the manufacturer's recommendations for cleaning a particular type of flooring before developing protocols.

**\*\*See [1.2.1 Selection of Surfaces, Finishes, Furnishings and Equipment for Areas Where Persons Receiving Care's Care is Delivered](#)** for information about floor finishes and carpeting in health care.

### **10.2.3.1. Floor Care**

Floor cleaning consists of dry dust mopping to remove dust and debris, followed by wet mopping with a detergent to clean. Floors are low-touch surfaces that rarely come in contact with the hands of those receiving care or health care providers. Under normal circumstances, the use of a disinfectant is not required.

Dry mopping is done to collect dust and debris from the floor to prepare it for wet mopping. Dry mopping may be done with microfiber mops or pads to reduce dispersal of dust and debris. A fresh mop pad should be used for each room. Wet mopping can be done using a bucket and loop mop, or with a microfibre mop.

**\*\*For sample procedures for mopping, see:** [Support Services - Shared Health Policies \(sharedhealthmb.ca\)](http://sharedhealthmb.ca)

### 10.2.3.2. Carpet Care

Do not use carpeting within care areas of health care facilities. For facilities that have not yet removed all carpeting from care areas, there should be a plan for permanent removal of carpeting. In the meantime, a rigorous program of carpet care is required that includes:

- daily vacuuming with a HEPA-filtered vacuum cleaner
- scheduled extraction/shampooing
- rapid response for dealing with spills of blood, body fluids or other liquid

**\*\*See:** [1.2.1.4 Carpeting](#) for general information about carpeting in health care settings.

## 10.2.4. Equipment and Specialized Item Cleaning/Disinfection

### 10.2.4.1. Noncritical Medical Equipment

Noncritical medical equipment in health care settings should be cleaned and disinfected with a detergent or a low-level one-step cleaner/disinfectant, depending on the type of equipment. The manufacturer's recommended contact time for the product being used must be closely followed.

**\*\*See:** [WRHA OD Cleaning and Disinfection of Non-Critical Reusable Equipment/Items for Patients in Hospital](#) .

### 10.2.4.2. Electronic Equipment

Electronic equipment in the health care setting includes infusion pumps, ventilators, patient-controlled analgesia pumps, telemetry receivers and transmitters, infusion fluid warmers, infant sensors, monitoring equipment, and keyboards. Increasingly, electronic equipment used in health care settings also includes mobile phones, tablets, laptops and a variety of items that may be purchased by the facility or may be owned by staff. Inappropriate use of liquids on electronic medical equipment may result in fires and other damage, equipment malfunctions and health care provider burns. Equipment malfunctions could result in life-threatening events to patients such as over-infusion of medications and loss of life-supporting interventions.

When selecting electronic equipment, it is important it be compatible with the cleaning and disinfecting agents used in the health care setting and that manufacturer's recommendations for cleaning and disinfection are followed (See [1.2.2.3 Electronic Equipment](#) for details).

### To avoid hazards:

- Obtain the manufacturer's labelling which may include instructions for cleaning and disinfection; information may be available on the manufacturer's website.
- Review labelling for any cautions, precautions, or warnings about wetting, immersing, or soaking the equipment.
- Review the manufacturer's cleaning and maintenance instructions and ensure all staff who will be cleaning/disinfecting the item are trained.
- Protect equipment from contamination whenever possible:
  - Position equipment to avoid contact with anticipated spatter.
  - Avoid laying contaminated items on unprotected equipment surfaces.
  - Use barriers on equipment surfaces that you expect to touch with contaminated hands or when contact with spatter cannot be avoided (e.g., keyboard skins).

If equipment is contaminated with blood or other potentially infectious material, follow the equipment manufacturer's directions for cleaning to remove as much soil as possible; it may be necessary to remove the equipment from service for thorough cleaning and disinfection.

Electronic equipment that cannot be adequately cleaned, disinfected or covered should not enter the immediate care environment. Plastic coverings may be an effective means to protect keyboards and other devices from contamination, but must be cleaned/disinfected and maintained appropriately ([see 1.2.2.2 Plastic Coverings](#)). In addition, no-touch disinfection systems may offer a means for disinfecting electronic devices but efficacy of this approach has not yet been widely validated.

Electronic equipment should be cleaned on a regular basis, depending upon its use and the risk for patient-to-patient transmission of microorganisms, as follows:

- Electronic equipment that goes from persons receiving care to persons receiving care within the care environment must be cleaned and disinfected between patients/residents/clients (e.g., tablet used by ICU patients for communication).
- Electronic equipment used within the care environment by staff (e.g., workstation on wheels) should be cleaned and disinfected by the user before entry into the care environment and after removal from the care environment.
- Electronic equipment that is handled by staff in the care areas outside of the care environment (e.g., keyboard at the nursing station) should be cleaned and disinfected on a routine basis (e.g., daily, twice daily).
- Electronic equipment used within the care environment that is difficult to clean and disinfect should be covered with a clean plastic covering before entry into the care environment and the cover should be cleaned and disinfected, or discarded, upon removal from the care environment.

**If you cannot clean or cover an electronic item, do NOT bring it into the care environment**

These recommendations apply not only to products purchased by the health care facility (e.g., ICU monitors, workstations on wheels), but to electronic equipment owned by health care providers (e.g.,

mobile phones, laptop computers) if these devices will be handled by persons receiving care or used by the health care provider when in the immediate care environment.

### 10.2.4.3. Ice Machines

Bacteria have been isolated from ice, ice-storage chests and ice-making machines. Microorganisms in ice can contaminate clinical specimens and medical solutions that require ice for transport or holding. Ice may become contaminated if the water source for the ice is contaminated and from contaminated hands touching the ice.

To minimize contamination, ice machines that dispense ice directly into a container are recommended. Ice machines requiring scoops are not recommended and should be replaced.

If older machines have not yet been replaced:

- Provide a scoop for dispensing the ice.
- Do not store the ice scoop loose in the ice machine.
- Provide a holder for the ice scoop.
- Ice scoop should be cleaned and disinfected at least once a day and more often if necessary.

Ice machines and ice chests should be cleaned and disinfected at least quarterly, including cleaning, de-scaling and disinfection. Clean and disinfect ice machines following the manufacturer's instructions.

### 10.2.4.4. Playrooms/Toys

Toys can be a reservoir for microorganisms that can be present in saliva, respiratory secretions, feces or other body substances. Outbreaks associated with toys have been described. Transmission of influenza and other respiratory pathogens may occur in pediatric waiting rooms and contamination of toys with insufficient cleaning and disinfection may contribute to this problem.

Playrooms or play areas used by more than one child should have an area for segregation of used toys (e.g., a bin into which children/parents/staff can place used toys). Clean toys should be stored in a manner that prevents contamination (e.g., dust and water splatter) and should be clearly marked as clean. Toy storage boxes/cupboards should be emptied and cleaned at least weekly and when visibly soiled.

#### **Toys must:**

- be smooth, nonporous and able to withstand rigorous mechanical cleaning
- not retain water (e.g., bath toys)
- have parts that can be cleaned
- not be cleaned with phenolics

Clean and disinfect all toys between users. Rinsing after disinfection may be required for some disinfectants. If a toy cannot be cleaned (e.g., plush toys), dedicate it to an individual person and send

home or discard when the individual is discharged. Toys, books, magazines and puzzles should be dedicated to those on Additional Precautions and discarded afterwards or sent home with the individual if the article cannot be cleaned and disinfected. Responsibility for cleaning and disinfecting toys should be assigned and written procedures regarding frequency and methods of cleaning/disinfection are required. Toys should be removed from general waiting rooms if an adequate process cannot be established to ensure their daily inspection, cleaning and disinfection. Staff assigned to clean/disinfect toys must be trained in effective procedures.

**The procedure for cleaning and disinfecting toys must include:**

- Inspection for damage, cracked or broken parts
- Cleaning according to the manufacturer's instructions or local practices (e.g., in hot, soapy water)
- **Options for disinfection:**
  - A commercial dishwasher/cart washer cycle (must reach 82°C).
  - Approved, hospital disinfectant, following the manufacturer's recommendations regarding dilution and contact times
  - 70% alcohol solution for 10 minutes
  - 500 ppm sodium hypochlorite (1:100 dilution of 5.25% sodium hypochlorite)
- Thorough rinsing following disinfection
- Air-drying prior to storage

During outbreaks it may be prudent to remove, and not replace, the toys until the outbreak is over.

**\*\*See [Appendix 4](#) for more information.**

#### **10.2.4.5. Adult Activity Rooms**

**When activity rooms are used by adults:**

- Encourage hand hygiene before and after activity.
- Clean and disinfect items on a scheduled basis.
- Regularly assess items that cannot be easily cleaned and disinfected and discard if soiled.

#### **10.2.4.6. Cloth Furnishings**

Cloth furnishings are discouraged in care areas. Refer to the manufacturer's recommendations for cleaning upholstered furnishings. There should be a plan in place to replace cloth furnishings with furnishings that can be cleaned/disinfected and tolerate disinfectants. Replace cloth furnishings that are torn or damaged. If cloth furnishings are present, these should be vacuumed regularly and steam cleaned as necessary when stained or visibly soiled.

#### 10.2.4.7. Hydrotherapy Equipment

Whirlpools, spas, bathtubs and physiotherapy pools have been associated with the acquisition of infection. Skin and wound infections may result from direct contact of intact skin or wounds to contaminated water. Inhalation of microorganisms in aerosolized water has resulted in respiratory infections (e.g., whirlpools).

Cleaning of hydrotherapy equipment must at a minimum follow the manufacturer's instructions with regard to frequency and must use an intermediate level disinfectant. Clean and disinfect all jetted tubs and associated plumbing after each use and on a scheduled basis; strictly adhere to the schedule regardless of whether tub liners are used. When replacing or purchasing hydrotherapy equipment, health care facilities should consider designs with improved cleanability and that are meant for use in the health care setting.

**\*\* See** IP&C Communication form [Cleaning and Disinfecting of Jetted Tubs](#) for more information.

#### 10.2.4.8. Transport Equipment

Shared equipment used to transport people with limited mobility (e.g., stretchers, wheelchairs, walkers) should be cleaned and disinfected with a hospital disinfectant immediately after use, before use of another person, and when visibly soiled, paying particular attention to high-touch areas (e.g., rails, push handles, chair arms). Transport equipment such as wheelchairs that may have padded areas should be carefully inspected for damage prior to cleaning/disinfection. Remove and replace damaged parts that cannot be adequately cleaned and disinfected.

In addition, clean and disinfect all transport equipment according to a written schedule. Responsibility must be clearly designated (e.g., transport staff, EVS staff). Store clean transport equipment in an appropriate clean area and/or cover to prevent recontamination between uses.

Equipment used to transport a single person within a facility (e.g., personal walkers, wheelchairs) must be immediately cleaned when soiled or visibly contaminated with blood or body fluids, as well as routinely following a written schedule.

Ambulances (vehicles that transport people on stretchers) should be cleaned, disinfected, and restocked after each transport; a thorough cleaning/disinfection should also be completed when required for heavy contamination and on a regular, scheduled basis.

#### 10.2.4.9. Hand Washing Sinks

If used improperly or not regularly cleaned and disinfected, hand hygiene sinks can become contaminated. Contaminated hand hygiene sinks, and other sinks within the health care environment, have been associated with outbreaks, including outbreaks of antibiotic resistant organisms. Outbreaks have occurred and been reported due to poor sink design, use of a hand hygiene sink for purposes other than hand hygiene, or suboptimal sink cleaning practices.

If sinks drains become contaminated, decontamination of the sink can be difficult, likely due to the presence of biofilm. Some facilities have reported success in terminating their outbreaks by

disinfecting the sinks with acetic acid chlorine-based disinfectants heat, or some self-decontaminating drain systems. In many cases, facilities have reported their outbreaks were not controlled until the implicated sinks (and parts) were replaced.

Given these concerns, it is important that hand hygiene sinks and other sinks located within the health care environment, are cleaned and disinfected regularly. When cleaning/disinfecting sinks, it is important to move from the least contaminated to the most contaminated area with taps cleaned/disinfected prior to the rest of the sink. The water outlet should not be touched during cleaning/disinfection. After cleaning/disinfecting a sink, the cloths used should not be used on another sink. Consideration may also be given to using three different cloths to clean/disinfect the tap, the sink, and the area around the tap and sink.

It is also critically important that hand hygiene sinks not be used for disposing body fluids and other waste (e.g., IV solutions). Prolonged contamination of sink drains with microorganisms can result from this practice.

## 10.2.5. Surgical Sterile Settings

### 10.2.5.1. Operating Rooms

Environmental cleaning in surgical settings minimizes patients' and health care providers' exposure to microorganisms. The Operating Room Nurses Association of Canada (ORNAC) has published standards for environmental cleaning in surgical settings that include:

- The ultimate responsibility for ensuring a clean surgical environment rests with the perioperative Registered Nurse.
- It must be performed by trained staff according to the protocol of the health care setting.
- A regular cleaning/disinfecting schedule must be established, posted and documented.

Responsibility for cleaning/disinfecting anesthetic machines and carts should be clearly defined. Additional cleaning/disinfection should be performed on a scheduled basis.

**\*\*See [The ORNAC Standards, Guidelines, and Position Statements for Perioperative Registered Nurses, 15th edition](#)** for more information on environmental cleaning/sanitation in operating room suites.

### 10.2.5.2. Medical Device Reprocessing Departments

Sterile processing areas in Medical Device Reprocessing departments and other areas that store sterile supplies require a health care clean, and a schedule requiring counters, shelves and floors are cleaned and disinfected at least daily (see [Appendix 5](#)).

**\*\*See CSA Group's standard [Z314-23 Canadian Medical Device Reprocessing](#)**

## 10.2.6. Hemodialysis Centres

A hemodialysis station is comprised of individual care areas like bed spaces, the bed or dialysis chair,



table and dialysis machine with its components. Any item taken into a hemodialysis station could become contaminated with blood and other body fluids and serve as a vehicle of transmission to others either directly or by contamination via the hands of staff. Outbreaks and transmission of bloodborne pathogens including hepatitis C and hepatitis B secondary to re-use of items and medical equipment that moved from one dialysis station to another have been documented. Treat each hemodialysis station as an individual entity; hand hygiene must be performed on entry to the station and at exit from the station, before doing other tasks in the unit.

**Each hemodialysis station should be treated as an individual entity and hand hygiene must be performed on entry to the station and at exit from the station, before doing other tasks in the unit**

Dispose of disposable items taken to a patient's hemodialysis station, including those placed on top of dialysis machines. Clean and disinfect reusable items before being returned to a common clean area or use for other patients. Do not take items that cannot be adequately cleaned and disinfected into a hemodialysis station. Unused medications or supplies taken to the patient's station should not be returned to a common clean area or used on other patients.

The external surfaces of the hemodialysis machine and its components are the most likely sources for contamination with bloodborne viruses and pathogenic bacteria. This includes not only frequently touched surfaces such as the control panel, but also attached waste containers, blood tubing and items placed on top of machines (e.g., patient chart). Contamination can occur even where blood or soiling is not visible. To thoroughly clean and disinfect environmental surfaces at a hemodialysis station and to reduce the risk of cross-contamination, cleaning/disinfection should occur when the station is not occupied by a patient, and dialysis centres should allow sufficient time between patient shifts to allow thorough cleaning and disinfection. Facilities may also consider regularly setting aside a period of time for a more thorough cleaning and disinfection of environmental surfaces when there are no patients in the unit (e.g., weekly if the dialysis unit is closed 1 day per week). This approach does not replace the need for sufficient time between all dialysis shifts for thorough cleaning and disinfecting between patients.

**Do NOT take items that cannot be adequately cleaned and disinfected into a hemodialysis station**

Blood contaminated waste generated by the hemodialysis facility may need to be handled as biomedical waste (see [7. Laundry and Waste Management](#)) All disposable items should be placed in bags thick enough to prevent leakage.

**\*\*See [Appendix 7](#) for more information.**

### **10.2.7. Nurseries and Neonatal Intensive Care Unit**

Routine daily cleaning and disinfection in nurseries and neonatal intensive care units should be performed following the same procedures as for adult rooms. The isolette/incubator/bassinets and equipment in the immediate vicinity associated with the infant are considered to be the patient's environment. Products

used for cleaning and disinfecting in nurseries and neonatal intensive care units must not be toxic to infants (e.g., phenolics must not be used).

Milk preparation areas may become contaminated and must be cleaned and disinfected by EVS staff daily and cleaned and disinfected between mothers. Refrigerators and freezers should have a regular cleaning/disinfection schedule and not be used for preparing or storing other items such as food, specimens or medications.

### 10.3. Frequencies and Levels of Cleaning and Disinfection

The frequency and the level of cleaning and disinfection are dependent upon the risk classification of the area. See [3.2 Frequency of Routine Cleaning/Disinfection](#) for information about risk stratification.

**\*\*See [Appendix 8](#) for more information.**

#### RECOMMENDATIONS:

80. At minimum, emergency room/urgent care patients' and public bathrooms:
  - a. Should be cleaned every four hours [B III]
  - b. Must be cleaned/disinfected more frequently based on need. [A III]
81. Electronic equipment used in care areas must be cleaned and disinfected with the same frequency as non-electronic equipment [A III]
82. Areas that have toys must have policies and procedures for cleaning the toys. [A II]
83. All equipment must be cleaned and disinfected between patients/residents/clients, including transport equipment. [A II]
84. Health care settings must have policies and procedures for cleaning and disinfecting specialized areas, such as hemodialysis units, operating room suites, and laboratories. [A III]

## 11. CLEANING AND DISINFECTION WHEN ADDITIONAL PRECAUTIONS ARE IMPLEMENTED

For individuals cared for on Additional Precautions, EVS staff must be aware of the correct protocols for personal protective equipment use to minimize their risk of acquiring and/or transmitting infection:

For Rooms or Bed Spaces on Contact Precautions	For Rooms or Bed Spaces on Droplet Precautions	For Rooms on Airborne Precautions
Wear gloves; wear gown if clothing or forearms will contact patient or their environment.	Wear procedure mask and eye protection. Droplet Precautions are often combined with Contact Precautions, in which case gloves are required and gowns are required if clothing or forearm will have contact with patient or their environment in addition to facial protection.	Put on fit tested and seal-checked N95 respirator* if indicated and follow any other Additional Precautions (e.g., Contact/Droplet) indicated. The door must be kept closed to maintain negative pressure even if the persons receiving care is not in the room.

\*\* Only immune staff may enter a room where Airborne Precautions are in place for measles or varicella (chickenpox); an N95 respirator is not required.

\*\*See [Additional Precautions: IP&C Highlights](#) for more information

\*\*See [WRHA Additional Precautions](#) document for more information

For most indications for Additional Precautions, routine cleaning and disinfecting practices as described in [10. Health Care Cleaning and Disinfection Practices](#) and routine discharge cleaning and disinfecting practices as described in [10.2.1.2 Discharge/Transfer Persons Receiving Care's Room Cleaning](#) are adequate for the cleaning of rooms, and no special handling or precautions are required for linen. Please see [Support Services - Shared Health Policies \(sharedhealthmb.ca\)](#) for approved procedures. Additional cleaning/disinfection practices may be required for situations when continued transmission of specific infectious agents is occurring, e.g., *C. difficile*, norovirus, and carbapenemase-producing *Enterobacteriaceae* (CPE). (See [11.1 Cleaning Rooms/Cubicles/Bed Space on Contact Precautions](#).) At facilities that do not routinely change privacy curtains for all discharges and transfers, privacy curtains must be changed when cleaning/disinfecting rooms of anyone on Additional Precautions.

Before entering a room of a person on Additional Precautions, the required cleaning equipment and supplies should be gathered prior to putting on personal protective equipment. Do not bring cleaning carts into the room. After performing hand hygiene and putting on the required personal protective equipment, the room can be entered. Personal protective equipment should be removed, discarded in the designated receptacles, and hand hygiene at all appropriate times. Personal protective equipment should never be worn outside the room or bed space. All cleaning tools and equipment (e.g., cloths, mop heads/pads) used to clean/disinfect a room or bed space on Contact Precautions, Droplet Precautions or Airborne Precautions (or any combination of) must be cleaned and disinfected after use, before being used in another room or bed space to avoid cross-contamination.

Because supplies stored within the room under Additional Precautions may need to be discarded when the person receiving care is discharged or transferred, these rooms should be stocked with the minimum required supplies. There should not be more than one day's supplies available within the room.

When cleaning and disinfecting rooms on Additional Precautions cleaning and disinfection of the portable isolation carts and/or built-in holders used to store the personal protective equipment is necessary

Cleaning/disinfecting Additional Precautions rooms requires extra time due to the requirements for personal protective equipment and/or additional cleaning/disinfecting procedures that are required in some instances. Sufficient time must be allocated for cleaning and disinfection of the rooms for persons receiving care on Additional Precautions.

**Additional time must be allowed for cleaning rooms of persons receiving care on Additional Precautions**

### 11.1. Cleaning Rooms/Cubicles/Bed Space on Contact Precautions

There must be a process to ensure there has been adequate cleaning and disinfection of rooms or bed space and shared equipment following discharge or transfer. This may be accomplished through the use of a task checklist to ensure all areas and surfaces are cleaned and disinfected, and that post-cleaning inspection of the room or bed space has taken place (Please see [Support Services - Shared Health Policies \(sharedhealthmb.ca\)](http://sharedhealthmb.ca) for approved procedures.)

For rooms or bed spaces housing individuals with vomiting or diarrhea, vomit and feces must be cleaned promptly, including items in the immediate vicinity.

#### 11.1.1. METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS

MRSA is not as persistent on dry surfaces as *C. difficile*. No special approach is required to clean and disinfect rooms that house individuals colonized or infected with MRSA beyond what is recommended for the rooms of all patients on Contact Precautions.

#### 11.1.2. CLOSTRIDIODES DIFFICILE

Specialized cleaning and disinfection practices may be required for *C. difficile*. *C. difficile* is a spore-forming bacterium. The vegetative (non-spore) form of the bacteria is readily killed with hospital disinfectants, but the spores are resistant to many disinfectants, and can persist in the environment for months. The spores can be spread by contact and transform back to an infectious vegetative form once ingested.

\*\* See WRHA [Enteritis Protocol](#) for more information.

### 11.1.3. NOROVIRUS

Noroviruses are highly contagious non-enveloped viruses that cause acute gastroenteritis in humans. Environmental contamination plays a significant role in disease transmission. Norovirus can persist on surfaces for at least 12 days and is resistant to some disinfectants. Disinfectants used for patients with norovirus, or during norovirus outbreaks, should have an appropriate virucidal claim. Most quaternary ammonium compounds do not have significant activity against norovirus. In some jurisdictions, sodium hypochlorite at 1000 to 5000 ppm is recommended, although other broad-spectrum virucides also have activity against norovirus. Norovirus is inactivated by heat at 70°C. Vacuum cleaning carpets and buffing floors during an outbreak have the potential to re-circulate norovirus and are not recommended. Carpet and soft furnishings (if present) should be removed and not replaced. If this is not feasible, they should be steam cleaned following regular cleaning/disinfection, provided they are heat tolerant and at least 60°C is achieved by the unit. See also [1.2.1.3 Cloth and Soft Furnishings in Health Care Settings](#) and [1.2.1.4 Carpeting](#)). Health care settings may also consider increasing the frequency of cleaning and disinfecting the bathrooms and toilets on affected units.

\*\* See WRHA [Enteritis Protocol](#) for more information.

### 11.1.4. CARBAPENEMASE-PRODUCING ENTEROBACTERIACEAE

Carbapenemase-Producing Enterobacteriaceae (CPE) are primarily transmitted by direct and indirect contact in health care settings. Despite the fact the health care environment can often be contaminated by these bacteria from colonized or infected individuals, careful application of routine cleaning/disinfecting practices should be sufficient to remove this pathogen.

Although CPE can be effectively removed from most surfaces and equipment in CPE rooms using routine environmental cleaning/disinfecting practices, sinks and shower drains may act as a reservoir for CPE and persistent colonization of sinks can result in CPE transmission to subsequent room occupants. Sinks (including the drainpipes) have been documented as source of several CPE outbreaks. As these bacteria form biofilms in moist environments such as the sink drainage system, their eradication has been challenging and may require replacement of the implicated sinks and/or the horizontal drainage system. See also [10.2.4.9 Hand Washing Sinks](#).

Facilities may want to consider enhanced sink and shower cleaning/disinfection on a regular basis, (e.g., at least twice weekly), and at the time of discharge/transfer cleaning/disinfection for CPE rooms and may consider testing sink drains for CPE at the time of patient discharge/transfer. If sinks remain colonized despite repeated attempts at cleaning/disinfection, replacement of sinks and/or the related horizontal drainage system may be required.

## 11.2. Cleaning Rooms on Airborne Precautions

Routine discharge/transfer cleaning practices may be used for rooms on Airborne Precautions. The following additional measures must be taken:

- After the transfer or discharge, the door must be kept closed and the Airborne Precautions sign must remain on the door until sufficient time has elapsed to allow removal of airborne microorganisms (dependent on the air changes per hour). For more information, see WRHA's

[https://professionals.wrha.mb.ca/old/extranet/ipc/files/manuals/acutecare/Routine\\_Practices.pdf](https://professionals.wrha.mb.ca/old/extranet/ipc/files/manuals/acutecare/Routine_Practices.pdf)

- It is preferable to wait for sufficient air changes to clear the air before cleaning/disinfecting the room.
- If the room urgently needs cleaning/disinfecting before the air has been sufficiently cleared of tubercle bacilli, an N95 respirator must be worn.
- Remove N95 respirator only after leaving room and door has been closed.

## RECOMMENDATION:

- 85. Health care facilities must have policies and procedures for the routine and discharge/transfer cleaning/disinfection of rooms on Contact Precautions, Droplet Precautions or Airborne Preaution (or any combination of these). [A III]**

## 12. CLEANING SPILLS OF BLOOD AND BODY SUBSTANCES

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Spills of blood and other body substances, such as urine, feces and emesis, must be contained, cleaned, and the area disinfected immediately. A mycobactericidal disinfectant or a hypochlorite solution (diluted to 500-5000 ppm, equivalent to a 1:10-1:100 dilution of 5.25% sodium hypochlorite) should be used for blood spills.

The health care setting shall have written policies and procedures for dealing with blood and body fluid spills that include:

- Clearly defined assignment of responsibility for cleaning/disinfecting the spill in each area of the health care setting during all hours when a spill might occur.
- Provision for timely response.
- A method for the containment and isolation of the spill.
- Training of staff who will clean/disinfect the spill.
- Access to personal protective equipment, equipment, supplies, waste and linen disposal for staff who will clean/disinfect the spill.
- Proper disposal of waste.
- Procedure to be followed if there is a staff exposure to blood or body fluid material.
- Documentation of the spill incident.

Please see [Support Services - Shared Health Policies \(sharedhealthmb.ca\)](https://www.sharedhealthmb.ca) for approved procedures

## RECOMMENDATION:

- 86. Health care settings shall have written policies and procedures dealing with spills of blood and other body fluids. [A III]**



## SECTION THREE

## APPENDICES

## Appendix 1: Advantages and Disadvantages of Common Hospital Disinfectants and Sporicides for Environmental Cleaning

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### Alcohol (60%-80%)

The advantages of alcohols include its broad spectrum of activity (bactericidal, fungicidal, virucidal, and mycobactericidal), and being nontoxic, low cost, rapid action, nonstaining, leaving no residue, noncorrosive, and being effective on clean equipment or devices that can be immersed.

**The disadvantages of alcohol include the following:**

- evaporation may diminish concentration, not suitable for use on large surface
- flammable—store in a cool, well-ventilated area; refer to Manitoba Fire Code restrictions for storage of large volume of alcohol
- coagulates protein; a poor cleaner
- may dissolve shellac lens mountings
- hardens and swells plastic tubing
- harmful to silicone; causes brittleness
- may harden rubber or cause deterioration of glues
- inactivated by organic material
- contraindicated in the operation room
- slow acting against non-enveloped viruses

### Sodium hypochlorite (bleach)

The advantages of sodium hypochlorite include its broad-spectrum of activity (bactericidal, fungicidal, virucidal, mycobactericidal), sporicidal at higher concentrations (e.g., 5000 ppm for 10 minutes), reduction of biofilm at high concentrations, low cost, rapid action, readily available in nonhospital settings, nonflammable, and unaffected by water hardness.

**The disadvantages of sodium hypochlorite include the following:**

- Corrosive to metals at high concentration (e.g., > 500 ppm).
- Inactivated by organic materials; blood must be removed prior to disinfection of blood spills.
- Irritate skin and mucous membranes. Use in well-ventilated area required due to possible burns to oropharyngeal, esophageal, and gastric tissues.
- Storage in closed containers away from ultraviolet light and heat to prevent deterioration.
- Immediate use after dilution preferred.
- Discolouration of clothing and carpets.
- Salt residue left behind.
- Release of toxic chlorine when mixed with acids or ammonia.



### **Accelerated Hydrogen Peroxide 0.5% (7% solution diluted 1:16)**

The advantages of this disinfecting agent include its broad spectrum of activity (fungicidal, virucidal and mycobactericidal), and being nontoxic, safe for the environment, rapid action, nonstaining and nonflammable, active in the presence of organic materials, noncorrosive, and having excellent cleaning ability due to detergent properties. However, it is contraindicated for use on copper, brass, and other nonferrous metals.

### **Accelerated Hydrogen Peroxide 4%-5%**

The advantages of this disinfecting agent include being sporicidal, nontoxic, safe for the environment, and available in a gel format to ensure vertical surface adhesion during required contact time. However, its disadvantages include the following:

- expensive
- contraindicated for use on copper, brass, and other nonferrous metals, rubber, plastics
- do not use on monitors

### **Hydrogen Peroxide 3% (Non-antiseptic Formulations)**

The advantages of this disinfecting agent include its being nontoxic and safe for the environment. However, it requires a prolonged contact time and is contraindicated for use on copper, zinc, brass, aluminum. In addition, it requires storage in a cool place protected from light. Hydrogen peroxide has also been reported to quench the results of ATP bioluminescence.

### **Iodophors (Non-antiseptic Formulations)**

Iodophors have a broad spectrum of microbicidal activity but are not fungicidal or sporicidal. They are nonflammable and rapid in action and nontoxic. However, their disadvantages include:

- corrosive to metal unless combined with inhibitors
- inactivated by organic materials
- slow in action against fungi
- degrading silicone catheters
- may stain fabrics and synthetic materials

## Phenolics

Phenolics have a broad spectrum of activity but are not sporicidal. They are non-staining and nonflammable, and they are commercially available with added detergents to provide one-step cleaning and disinfecting. However, their disadvantages include the following:

- NOT for use in nurseries or equipment contacting infants (e.g., baby scales) due to an association with neonatal jaundice or hyperbilirubinemia
- not recommended for use on food contact surfaces
- leave a residual film on environmental surfaces
- possible absorption through skin
- absorption by porous materials
- possible depigmentation of skin
- irritating tissue
- leaving some synthetic flooring sticky after repeated use
- damaging rubber and react with some plastics and aluminum

## Quaternary Ammonium Compounds

Quaternary ammonium compounds are noncorrosive compatible with various surface materials and have persistent microbicidal effect on surfaces. They have good cleaning ability and usually have detergent properties. They may also be used on food contact surfaces. However, their disadvantages include the following:

- do not use to disinfect instruments
- limited use as disinfectant because of narrow microbicidal spectrum (limited activity against non-enveloped viruses, not mycobactericidal or sporicidal)
- diluted solutions may support the growth of microorganisms
- activity reduced by various materials (e.g., cotton, water hardness, microfibre)
- have been reported to cause or worsen respiratory and skin irritation and allergic reactions

## Appendix 2: Cleaning and Disinfection Decision Chart for Noncritical Equipment

The following table relates to noncritical patient care equipment only, i.e., equipment that comes into contact with intact skin. For semi-critical and critical equipment that require high-level disinfection or sterilization, see CDC's <https://www.cdc.gov/infectioncontrol/guidelines/disinfection/index.html>

**Table 9: Decision Chart for Cleaning and Disinfection of Noncritical Equipment**

Level of Cleaning and Disinfection	Classification of Equipment and Devices	Effective Products**
<p style="text-align: center;"><b>Cleaning</b></p> <p>Physical removal of soil, dust or foreign material. Chemical, thermal or mechanical aids may be used. Cleaning usually involves soap and water, detergents or enzymatic cleaners. Thorough cleaning is required before disinfection or sterilization may take place.</p>	<p style="text-align: center;">All reusable equipment and devices</p>	<p>Concentration and contact time are dependent on manufacturer's instructions</p> <ul style="list-style-type: none"> <li>• Quaternary ammonium compounds</li> <li>• Enzymatic cleaners</li> <li>• Soap and water</li> <li>• Detergents</li> <li>• 0.5% improved hydrogen peroxide</li> </ul>
<p style="text-align: center;"><b>Low-Level Disinfection</b></p> <p>Level of disinfection required when processing noncritical equipment/devices or some environmental surfaces. Low-level disinfectants kill most vegetative bacteria and some fungi as well as enveloped (lipid) viruses. Low-level disinfectants do not kill mycobacteria or bacterial spores</p>	<p style="text-align: center;">Noncritical equipment and devices</p>	<p>Concentration and contact time are dependent on manufacturer's instructions</p> <ul style="list-style-type: none"> <li>• 3% hydrogen peroxide</li> <li>• 60% to 80% alcohol</li> <li>• Sodium hypochlorite (bleach) at 1000ppm</li> <li>• 0.5% improved hydrogen peroxide</li> <li>• Quaternary ammonium compounds</li> <li>• Iodophors</li> <li>• Phenolics (should not be used in nurseries or equipment that comes into contact with infants such as scales)</li> </ul>

## Appendix 3: General Cleaning Practices for All Health Care Settings

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### Before cleaning:

- Gather materials required for cleaning before entering the room.
- Follow the manufacturer's instructions for proper dilution and contact time for cleaning and disinfecting solutions.
- Check for Additional Precautions signs. Follow precautions as indicated.
- Clean hands and put on appropriate personal protective equipment on entering the room.
- Remove clutter before cleaning.

### During cleaning:

- Progress from the least soiled areas to the most soiled areas.
- Progress from high surfaces to low surfaces.
- Remove gross soil prior to cleaning and disinfection.
- Dry mop prior to wet/ damp mop.
- Minimize turbulence to prevent the dispersion of dust that may contain microorganisms (e.g., never shake mops).
- Do not double-dip cloths.
- Change cloths/ mop heads frequently.
- Change cleaning solutions as per manufacturer's instructions. Change more frequently in heavily contaminated areas, when visibly soiled and immediately after cleaning blood and body fluid spills.
- Containers for liquid soap, cleaners/disinfectants are disposable. The practice of topping up is not acceptable since it can result in contamination of the container and solution.
- Be alert for needles and other sharp objects. Pick up sharps using a mechanical device and place into sharps container. Report incident to supervisor.
- Collect waste, handling plastic bags from the top (do not compress bags with hands).
- Clean hands on leaving the room.

### After cleaning:

- Do not overstock rooms.
- Tools used for cleaning and disinfecting must be cleaned and dried between uses.
- Launder mop heads daily. All washed mop heads must be dried thoroughly before re-use.
- Clean housekeeping cart and carts used to transport waste daily.

## Appendix 4: Sample Procedure for Cleaning Toys

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<b>For high-touch surfaces (e.g., electronic games, keyboards, joysticks; playhouses/climbers/rocking horses; or tables/chairs/doorknobs in playrooms):</b>	Clean and disinfect at least daily using a hospital disinfectant.
<b>For shared books, magazines, puzzles, cards and comics:</b>	Discard when visibly soiled Discard after use in rooms where the person receiving care is on Additional Precautions
<b>For toy storage bins/boxes/cupboards/shelves:</b>	Ensure a regular, scheduled clean in performed
<b>For toys that may be "mouthed" (e.g., infant and toddler toys):</b>	Clean, disinfect and rinse thoroughly after each use.

## Appendix 5: Sample Cleaning Schedule for Medical Device Reprocessing Departments and Other Sterile Storage Areas

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### **Sterile Processing Areas:**

- Clean all counters and floors daily.
- Clean shelves daily in sterilization areas, preparation and packing areas and decontamination areas.
- Clean shelves every three months in sterile storage areas.
- Clean case carts after every use.
- Clean walls every six months.
- Clean light fixtures, sprinkler heads and other fixtures every six months.

### **User Units/Clinics, Endoscopy Suites and Other Sterile Storage Areas:**

- Clean counters and floors daily.
- Clean shelves monthly.
- Clean walls every six months.
- Clean light fixtures, sprinkle heads and other fixtures every six months.

## Appendix 6: Sample Routine Environmental Cleaning in the Clinical Laboratory (Levels One and Two)

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### Laboratory Staff

- Minimize storage of materials that are not pertinent to the work and cannot be easily decontaminated (e.g., journals, books, correspondence).
- Laboratory clothing must not be stored in contact with street clothing.
- Contaminated clothing must be decontaminated before laundering.
- Clean and decontaminate work surfaces with a hospital disinfectant at end of the day and after any spill of potentially biohazardous material.
- Replace or repair work surfaces that have become permeable (i.e., cracked, chipped, loose) to biohazardous material.

### Environmental Service Workers

- Remove waste, including biomedical waste and filled sharps containers.
- Replace soap, paper towels, alcohol-based hand rub as required.
- Clean hand washing sinks.
- Mop floors.
- Clean eyewash stations, lights, tops of shelves, desks, file cabinets, chairs, baseboards, radiators, telephones weekly.

## Appendix 7: Sample Routine Environmental Cleaning in the Hemodialysis Unit

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### Nursing Staff

- Take only what is required for a patient's treatment into the hemodialysis station; minimize materials that cannot be easily decontaminated (e.g., patient chart).
- Dedicate equipment to individual patients whenever possible.
- Clean and disinfect equipment before returning it to a common clean area or for use on another patient (e.g., scissors, stethoscopes, blood pressure cuffs, electronic thermometers).
- Dispose of unused medications or supplies (e.g., syringes, alcohol swabs, tape) after each treatment.

### Environmental Service Workers - after each hemodialysis treatment or procedure

- Allow sufficient time between patients for adequate cleaning.
- Remove waste, including biomedical waste and sharps containers that are full
- Replace soap, paper towels, alcohol-based hand rub as required.
- Clean surfaces at the dialysis station, including the bed or chair, countertops, tables and external surfaces of the dialysis machine (including waste containers) with a hospital disinfectant, allowing sufficient contact time with the disinfectant.
- Clean spills of blood

## Environmental Service Workers - at end of day

- Clean remainder of the hemodialysis facility using a health care clean regimen (see [Components of Health Care Clean](#)).
- Clean hand washing sinks.
- Mop floors.

## Scheduled Cleaning

- Weekly clean eyewash stations, lights, tops of shelves, desks, file cabinets, chairs, baseboards, radiators, telephones weekly.
- Weekly deep cleaning of equipment and furnishings

## Appendix 8: Risk Stratification Matrix to Determine Frequency of Cleaning

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For each area or department of persons receiving care:

### Step 1: Categorize the factors that will impact on environmental cleaning:

#### Probability of Contamination with Pathogens

##### Heavy Contamination (score = 3)

An area is designated as being heavily contaminated if surfaces and/or equipment are routinely exposed to copious amounts of fresh blood or other body fluids (e.g., birthing suite, autopsy suite, cardiac catheterization laboratory, hemodialysis station, Emergency room, bathroom of persons receiving care - if visibly soiled).

##### Moderate Contamination (score = 2)

An area is designated as being moderately contaminated if surfaces and/or equipment does not routinely (but may) become contaminated with blood or other body fluids and the contaminated substances are contained or removed (e.g., wet sheets). All rooms and bathrooms of persons receiving care should be considered to be, at a minimum, moderately contaminated.

##### Light Contamination (score = 1)

An area is designated as being lightly contaminated if surfaces are not exposed to blood, other body fluids or items that have come into contact with blood or body fluids (e.g., lounges, libraries, offices).

#### Vulnerability of Population to Environmental Infection

##### More Susceptible (score = 1)

Susceptible persons receiving care are those who are most susceptible to infection due to their medical condition or lack of immunity. These include those who are immunocompromised (oncology,

transplant and chemotherapy units), neonates (level 2 and 3 nurseries) and those who have severe burns (i.e., requiring care in a burn unit).

**Less Susceptible (score = 0)**

For the purpose of risk stratification for cleaning, all other individuals and areas are classified as less susceptible.

**Potential for Exposure**

**High-touch surfaces (score = 3)**

High-touch surfaces are those that have frequent contact with hands. Examples include doorknobs, telephone, call bells, bedrails, light switches, wall areas around the toilet and edges of privacy curtains.

**Low-touch surfaces (score = 1)**

Low-touch surfaces are those that have minimal contact with hands. Examples include walls, ceilings, mirrors and window sills.

**Step 2: Determine the Total Risk Stratification Score:**

For each functional area or department, the frequency of cleaning is based on the factors listed above. A score is given if the factors are present, and the frequency of cleaning is based on the total score as derived in the following matrix:

**Table 11: Risk Stratification Scores for High Touch Surfaces (score for potential for exposure = 3)**

Probability of contamination with pathogens	More susceptible population (score = 1)	Less susceptible population (score = 0)
Heavy (score = 3)	7 (3+3+1)	6 (3+3+0)
Moderate (score = 2)	6 (3+2+1)	5 (3+2+0)
Light (score = 1)	5 (3+1+1)	4 (3+1+0)

**Step 3: Determine the cleaning frequency based on the risk stratification matrix:**

Cleaning frequencies for each functional area or department are derived from the total score that results from the risk stratification matrix above:



**Table 13: Cleaning Frequencies Based on Total Risk Score**

Total Risk Score	Risk Type	Minimum Cleaning Frequency
7	High Risk	Clean after each case/event/procedure and at least twice per day Clean additionally as required
4-6	Moderate Risk	Clean at least once daily Clean additionally as required (e.g., gross soiling)
2-3	Low Risk	Clean according to a fixed schedule Clean additionally as required (e.g., gross soiling)

**Table 14: Examples Using the Risk Stratification Matrix to Determine the Cleaning Frequency of Specific Areas**

Location	Probability of Contamination: Light = 1 Moderate = 2 Heavy = 3	Potential for Exposure: High-touch = 3 Low-touch = 1	Population: Less susceptible = 0 More susceptible = 1	Total Score	Interpretation
Admission/ discharge units	1	1	0	2	Clean according to a fixed schedule Clean additionally as required
Autopsy/morgue	3	3	0	6	Clean at least once daily Clean additionally as required
Burn unit	2	3	1	6	Clean at least once daily Clean additionally as required
Cardiac catherterization and angiodynography area	3	3	1	7	Clean after each case/event/procedure and at least twice per day Clean additionally as required
Chemotherapy unit	2	3	1	6	Clean at least once daily Clean additionally as required
Clean linen handling and storage area	1	1	0	2	Clean according to a fixed schedule Clean additionally as required
Cystoscopy	3	3	0	6	Clean at least once daily Clean additionally as required
Cystoscopy	3	3	1	7	Clean after each case/event/procedure and at least twice per day Clean additionally as required
Dental procedure room	3	3	0	6	Clean at least once daily Clean additionally as required
Dental procedure room	3	3	1	7	Clean after each case/event/procedure and at least twice per day Clean additionally as required

Location	Probability of Contamination: Light = 1 Moderate = 2 Heavy = 3	Potential for Exposure: High-touch = 3 Low-touch = 1	Population: Less susceptible = 0 More susceptible = 1	Total Score	Interpretation
Diagnostic imaging	1	1	0 or 1	2 or 3	Clean according to a fixed schedule Clean additionally as required
Dining room/cafeteria and food preparation areas	1	3	0	4	Clean at least once daily Clean additionally as required
Echocardiography	1	1	0 or 1	2 or 3	Clean according to a fixed schedule Clean additionally as required
Emergency room: patient cubicle	3	3	0	6	Clean at least once daily Clean additionally as required
Emergency room: patient cubicle	3	3	1	7	Clean after each case/event/procedure and at least twice per day Clean additionally as required
Emergency Room: trauma room	3	3	1	7	Clean after each case/event/procedure and at least twice per day Clean additionally as required
Emergency Room: other emergency areas	1	3	0	4	<b>Clean at least once daily Clean additionally as required</b>
Equipment reprocessing area (CPS/SPD)	3	3	0	6	Clean at least once daily Clean additionally as required
Hemodialysis: dialysis station	3	3	1	7	Clean after each case/event/procedure and at least twice per day Clean additionally as required
Hemodialysis: other dialysis areas	2	3	0	5	Clean at least once daily Clean additionally as required
Intensive Care Unit	3	3	1	7	Clean after each case/event/procedure and at least twice per day Clean additionally as required
Labour and birthing rooms	3	3	1	7	Clean after each case/event/procedure and at least twice per day Clean additionally as required
Laboratory	3	3	0	6	Clean at least once daily Clean additionally as required
Laundry: soiled linen	3	3	0	6	Clean at least once daily Clean additionally as required
Nuclear Medicine	1	1	0 or 1	2 or 3	Clean according to fixed schedule Clean additionally as required
Nursery (well baby)	1	1	0	2	Clean according to fixed schedule Clean additionally as required
Occupational Therapy	1	3	0	4	Clean at least once daily Clean additionally as required
Offices	1	1	0	2	Clean according to fixed schedule Clean additionally as required
On Call Rooms	1	1	0	2	Clean according to fixed schedule Clean additionally as required

Location	Probability of Contamination: Light = 1 Moderate = 2 Heavy = 3	Potential for Exposure: High-touch = 3 Low-touch = 1	Population: Less susceptible = 0 More susceptible = 1	Total Score	Interpretation
Operating Room	3	3	1	7	Clean after each case/event/procedure and at least twice per day Clean additionally as required
Pacemaker Insertion Room	3	3	0	6	Clean after each case/event/procedure and at least twice per day Clean additionally as required
Persons Receiving Care's Room	2	3	0 or 1	5 or 6	Clean at least once daily Clean additionally as required
Pharmacy: admixture room	1	3	1	5	Clean at least once daily Clean additionally as required
Pharmacy: general purpose area	1	3	0	4	Clean at least once daily Clean additionally as required
Physical plant workshops	1	3	0	4	Clean at least once daily Clean additionally as required
Physiotherapy	1	3	0	4	Clean at least once daily Clean additionally as required
Procedure Room	3	3	1	7	Clean after each case/event/procedure and at least twice per day Clean additionally as required
Public Areas: corridors, elevators, stairwells, lobbies, libraries, meeting rooms, locker rooms	1	1	0	2	Clean according to a fixed schedule Clean additionally as required
Resident Activity Room (long term care facility)	2	3	0 or 1	5 or 6	Clean at least once daily Clean additionally as required
Respiratory therapy	3	3	0	6	Clean at least once daily Clean additionally as required
Respiratory therapy	3	3	1	7	Clean after each case/event/procedure and at least twice per day Clean additionally as required
Sterile Supply Area	1	1	0	2	Clean according to a fixed schedule Clean additionally as required
Transplant Unit	2	3	1	6	Clean at least once daily Clean additionally as required

## Appendix 9: Sample Environmental Cleaning Checklists

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The use of checklists by staff when cleaning areas that require Hospital Clean will ensure that all steps have been followed and allow for self-assessment and improvement. All of the steps involved in the cleaning process should be included in the checklist.

**Cleaning checklist #1** is a sample checklist for routine daily cleaning for a person receiving care's room. The items in this list are compatible with the procedure listed in [Appendix 4](#).

**Cleaning checklist #2** is a sample checklist for discharge/transfer cleaning for a person receiving care's room contaminated with *C. difficile*. The items in this list are compatible with the procedures listed in [Appendix 4](#) and [Appendix 6](#).

### Checklist # 1 – Daily Routine Cleaning of a Persons Receiving Care's Room

- Check for Additional Precautions signs and follow the precautions indicated.
- Walk through room to determine what needs to be replaced.
- Ensure an adequate supply of clean cloths is available.
- Prepare fresh disinfectant solution according to manufacturer's instructions.
- Clean hands using alcohol-based hand rub and put on gloves.
- Clean doors, door handles, push plate and high-touch areas of frame.
- Check walls for visible soiling and clean if required.
- Clean light switches and thermostats.
- Clean wall mounted items such as alcohol-based hand rub dispenser, glove box holder.
- Check and remove fingerprints and soil from interior glass partitions, glass door panels, mirrors and windows with glass cleaner.
- Check privacy curtains for visible soiling and replace if required.
- Clean all furnishings and horizontal surfaces in the room including:
  - Chairs
  - Window sill
  - Television cords
  - Computer pads
  - Telephone
  - Night table and other tables or desks
- Wipe equipment on walls such as top of suction bottle, intercom and blood pressure manometer as well as IV pole.
- Clean bedrails, bed controls and call bell, including cords
- Clean bathroom/shower (see [Appendix 5](#)).
- Clean floors (see [Appendix 9](#), [Appendix 10](#), [Appendix 11](#) for floor cleaning procedure).
- Place soiled cloths in designated container for laundering.
- Check sharps container and change when full (do not dust the top of a sharps container).
- Remove soiled linen if bag is full.
- Place obvious waste in receptacles.
- Remove waste.
- Remove gloves and clean hands.
- Replenish supplies as required (e.g., toilet paper, paper towel, soap, alcohol-based hand rub, gloves).
- Replace privacy curtains.
- Clean hands with alcohol-based hand rub on leaving the room

## Checklist #2: Discharge/Transfer Cleaning of Contact Precautions Room for *C. difficile*

- Use a fresh bucket, cloth(s), mop head. Use each cloth one time only.
- **DO NOT RE-USE CLOTHS**
- Prepare fresh disinfectant according to manufacturer's instructions. For *C. difficile*, use a sporicidal agent.
- Clean hands using alcohol-based hand rub and put on gloves.
- Remove all dirty/used items (e.g., suction container, disposable items).
- Remove curtains (privacy, window, shower).
- Remove dirty linen (sheets, towels); roll sheets carefully to prevent aerosols.
- Discard soap, toilet paper, paper towels, glove box.
- Discard gloves, clean hands and apply clean gloves.
- Clean and disinfect all surfaces and allow for the appropriate contact time with the disinfectant:
  - Doors, door handles, push plate and touched areas of frame
  - Walls, if visibly soiled; remove tape from walls
  - Light switches and thermostats
  - Wall mounted items
- Alcohol based hand rub dispenser
- Soap dispenser
- Glove box holder
- Top of suction bottle
- Sharps container (sides and bottom)
- Blood pressure manometer (including cuff)
  - Low-level interior glass partitions, glass door panels, mirrors and windows
  - Chairs
  - Tables (bedside table, over bed table, desks)
  - Window sill
  - Television, including cords and remote control
  - Telephone
  - Computer keyboards
  - Light cord
  - Toys, electronic games (pediatrics)
  - Wheelchair, walker
  - Monitors
  - IV pole and pump
  - Inside and outside persons receiving care's cupboard or locker and inside drawers
  - commode
- **Clean Bed**
  - Check for cracks or holes in mattress and have mattress replaced as required
  - Clean the following, allowing for the appropriate contact time with the disinfectant:
    - Tops and sides of mattress, turn over and clean underside
    - Exposed bed springs and frame, including casters
    - Headboard and footboard
    - Bed rails, including underside of rail
    - Call bell and cord
    - Bed controls
  - Allow mattress to dry

- **Clean bathroom/shower** (see: bathroom cleaning procedure)
  - Discard toilet brush
- **Clean floor**
- **Disposal**
  - Remove and replace sharps container, if full
  - Remove soiled linen bag
  - Remove waste
- **Remove gloves and clean hands**
  - Remake bed
  - Replace Curtains
  - Replenish supplies (soap, toilet paper, paper towels, glove box, toilet brush)
- **Return cleaned equipment** (e.g., IV poles and pumps, walkers, commodes) to clean storage room

## Appendix 10: Safe Disposal of Sharps

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To remove a needle and syringe that has been disposed incorrectly:

- Put on a pair of gloves.
- Ideally, take a sharps container to the needle and syringe.
- **NEVER** re-cap a needle and syringe even if a cap is available.
- Use tongs, or puncture-resistant gloves, to pick up the needle and syringe.
- Carefully place the needle and syringe in the sharps container.
- Report the incident to your supervisor or manager.

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