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FREQUENTLY ASKED QUESTIONS

Significant Organisms in Environmental Cleaning

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Introduction

Health care-associated infections (HAIs) occur within any setting where health care is being delivered and affects 4 – 10% of patients. HAIs can result in significant harm to clients/patients/residents (referred to as c/p/r throughout the remainder of this document). Routine cleaning and disinfection of all surfaces and items is critical to reduce the risk of transmission of microorganisms that cause HAIs in the health care setting.

This document includes information about significant organisms in environmental cleaning, including, where relevant: how they are spread and how this spread can be controlled, potential impacts of becoming ill with the organism, and organism-specific environmental cleaning considerations. This document will discuss the following:

MRSA – Methicillin Resistant *Staphylococcus aureus*

Q1. What is Methicillin Resistant *Staphylococcus aureus* (MRSA)?
Staphylococcus aureus (S. aureus) is a bacteria that often lives on people without making them sick, but is also able to cause serious infections. Infections can happen when the organism enters the body and causes symptoms like fever, pain, or redness/swelling. It is the most common cause of hospital-associated infections. MRSA is *S. aureus* that is resistant to certain antibiotics that may be used to treat an infection, which can lead to delays in the correct treatment.

Q2. How is MRSA spread?
MRSA is most commonly spread on the hands of health care workers (HCWs). HCWs may pick it up from contact with a c/p/r who has MRSA, or after touching contaminated surfaces, materials or equipment. MRSA can live on hands and objects in the environment. Hand hygiene and environmental cleaning are the most important measures to prevent the spread of MRSA.

Q3. How is the spread of MRSA controlled?
C/p/r who have MRSA are often placed in a private room on contact precautions. Anyone who enters the room should wear a long sleeve gown and gloves to prevent skin and clothing from picking up MRSA.

Q4. What are the possible impacts of acquiring MRSA?
MRSA can increase length of hospitalization and leads to higher rates of death than for c/p/r without MRSA.

Q5. What are the environmental cleaning considerations for MRSA?

- Rooms receive daily routine cleaning and disinfection
- Health care-grade disinfectants can kill MRSA
- All cleaning tools and equipment used to clean the room or bed space must be cleaned and disinfected before being used in another room or bed space
- Routine cleaning and disinfection should be done on discharge/transfer or removal of contact precautions for MRSA. In addition:
    - All remaining supplies, including toilet brushes/swabs, are discarded.
    - All personal use items belonging to the c/p/r in the room are discarded.
    - Privacy or shower curtains are removed and laundered.

VRE – Vancomycin Resistant Enterococci

Q1. What is Vancomycin Resistant Enterococci (VRE)?
Enterococci are common bacteria that live in the gut of most people, and may be found in/on other body sites as well. Most individuals do not show signs or symptoms of infection, but Enterococci are able to cause serious infections. Infections can happen when the organism enters the body and causes symptoms of infection such as a pain or swelling around a wound. VRE occurs when an *Enterococcus* bacteria is resistant to a specific antibiotic called vancomycin, which can lead to delays in treatment.

Q2. How is VRE spread?
C/p/r with VRE in their gut are the major source of VRE in health care. VRE is most commonly spread on the hands of health care workers, who pick it up from contact with c/p/r who have VRE, or after touching contaminated surfaces, materials or equipment, such as blood pressure cuffs, thermometers, monitoring devices, calls bells, and bed rails. VRE can survive well on hands, and can survive for weeks on other objects or surfaces. Hand hygiene and environmental cleaning are the most important measures to prevent transmission.

Q3. How is the spread of VRE controlled?
C/p/r who have VRE are often placed in a private room on contact precautions. Anyone who enters the room should wear a long sleeve gown and gloves to prevent skin and clothing from picking up VRE.

Q4. What are the possible impacts of acquiring VRE?
VRE can increase length of hospitalization and leads to higher rates of death than for c/p/r without VRE.

Q5. What are the environmental cleaning considerations for VRE?

- Rooms receive daily routine cleaning and disinfection. In addition:
    - Twice daily cleaning of rooms may be considered
    - Rooms should be cleaned twice daily during an **outbreak** of VRE or at facilities with ongoing, uncontrolled VRE transmission
- Health care-grade disinfectants can kill VRE
- All cleaning tools and equipment used to clean the room or bed space must be cleaned and disinfected before being used in another room or bed space
- Routine cleaning and disinfection should be done on discharge/transfer or removal of contact precautions for VRE. In addition:
    - All remaining supplies, including toilet brushes/swabs, should be discarded
    - All personal use items belonging to the c/p/r in the room are discarded.
    - Privacy or shower curtains are removed and laundered.

ESBL – Extended Spectrum Beta-Lactamase

Q1. What is Extended Spectrum Beta-Lactamase (ESBL)?
ESBL are bacteria (most commonly *Escherichia coli* [*E. coli*] and *Klebsiella pneumoniae*) that have become resistant to specific types of antibiotics. ESBL are most commonly found in our gut and most individuals do not show signs or symptoms of infection, but ESBL are capable of causing serious infections. Infections can happen when the organism enters the body at specific sites and causes symptoms of disease, such as a urinary tract infection.

Q2. How is ESBL spread?
Within the health care environment, ESBL is most commonly spread via the hands of health care workers, who pick it up from contact with c/p/r with ESBL. ESBL transmission may also occur after contact with contaminated equipment or environmental surfaces. Hand hygiene and environmental cleaning are the most important measures to prevent transmission.

Q3. How is the spread of ESBL controlled?
C/p/r who have ESBL may be placed in a private room on contact precautions. Make sure you are aware if contact precautions are used for ESBL in your setting. If contact precautions are used, anyone entering the room should wear a long sleeve gown and gloves to prevent skin and clothing from picking up ESBL.

Q4. What are the possible impacts of acquiring ESBL?
ESBL can have a negative impact on c/p/r outcomes and quality of care because they are more difficult to treat.

Q5. What are the environmental cleaning considerations for ESBL?

- Rooms receive daily routine cleaning and disinfection
- Health care-grade disinfectants can kill ESBL
- All cleaning tools and equipment used to clean the room or bed space must be cleaned and disinfected before being used in another room or bed space
- Routine cleaning and disinfection should be done on discharge/transfer or discontinuation of contact precautions for ESBL. In addition:
    - All remaining supplies, including toilet brushes/swabs, should be discarded
    - All personal use items belonging to the c/p/r in the room are discarded.
    - Privacy or shower curtains are removed and laundered.

CPE – Carbapenemase-producing *Enterobacteriaceae*

Q1. What are Carbapenemase-producing *Enterobacteriaceae* (CPE)?
Enterobacteriaceae are a class of bacteria that are most commonly found in our gut, and are capable of causing serious infections. Infections can happen when the bacteria enters the body and causes symptoms of disease, such as a blood stream infection. CPE are *Enterobacteriaceae* that are difficult to treat.

Q2. How is CPE spread?
CPE may be picked up from contact with c/p/r with CPE or after touching contaminated surfaces, materials or equipment. CPE is most commonly spread via the hands of health care workers, and can survive well on surfaces and equipment. Hand hygiene and environmental cleaning are the most important measures to prevent transmission.

Q3. How is the spread of CPE controlled?
C/p/r who have CPE are often placed in a private room on contact precautions. Anyone who enters the room should wear a long sleeve gown and gloves to prevent skin and clothing from picking up CPE.

Q4. What are the possible impacts of acquiring CPE?
CPE can increase length of hospitalization and leads to higher rates of death than for c/p/r without CPE.

Q5. What are the environmental cleaning considerations for CPE?

- Rooms receive daily routine cleaning and disinfection
    - Pay particular attention to sink cleaning and disinfection as CPE can form biofilms in sink drains that are challenging to remove
- Facilities may consider:
    - Routine enhanced cleaning of sinks and showers e.g., twice weekly or on discharge/transfer
    - Testing sink drains for CPE at the time of c/p/r discharge/transfer
        - If sinks remain colonized despite repeated attempts at cleaning, replacement of sinks and/or plumbing may be required
- Health care-grade disinfectants are sufficient to kill CPE
- All cleaning tools and equipment used to clean the room or bed space must be cleaned and disinfected before being used in another room or bed space
- On discharge/transfer, routine cleaning and disinfection is required. In addition:
    - All remaining supplies, including toilet brushes/swabs, should be discarded
    - All personal use items belonging to the c/p/r in the room are discarded.
    - Privacy or shower curtains are removed and laundered.

Candida *auris*

Q1. What is Candida *auris* (*C. auris*)?
C. auris is a fungus that can cause serious infections, especially in critically ill patients. *C. auris* is often resistant to antifungals, which are used to treat these infections. Cases of *C. auris* have been reported in Ontario and are likely to increase over time.

Q2. How is *C. auris* spread?
C. auris can last on surfaces and equipment for a long time, even with routine cleaning and disinfection. This is believed to play a role in transmission within health care settings.

> ***Careful attention to environmental cleaning is important to prevent transmission of C. auris within a health care setting.***

Q3. How is the spread of *C. auris* controlled?
C/p/r with *C. auris* are often placed in a private room on contact precautions Anyone who enters the room should wear a long sleeve gown and gloves to prevent skin and clothing from picking up *C. auris*.

Q4. What are the possible impacts of acquiring *C. auris*?
C. auris can increase length of hospitalization and leads to higher rates of death than for c/p/r without *C. auris*.

Q5. What are the environmental cleaning considerations for *C. auris*?

- Sodium hypochlorite (bleach) and improved hydrogen peroxide can kill *C. auris*
    - Quaternary ammonium compounds should not be used for disinfection of the environment or equipment potentially exposed to *C. auris*
- Rooms and equipment should be cleaned and disinfected daily (at a minimum) and upon discharge/transfer or removal of contact precautions.
    - Consider twice-daily cleaning and disinfection for *C. auris*

Clostridioides difficile

Q1. What is *Clostridioides difficile* (C. *difficile*)?
C. difficile is a spore-forming bacteria that can produce toxins that cause diarrhea. The spores made by *C. difficile* can live in the environment for months and cannot be killed by many cleaning agents.

Sporicidal agents that can kill *C. difficile* spores include sodium hypochlorite (bleach), improved hydrogen peroxide and peracetic acid (used at the correct concentrations with required contact time).

Q2. How is C. *difficile* spread?
C. difficile may be picked up from contact with c/p/r with *C. difficile* or after touching contaminated surfaces, materials or equipment. *C. difficile* may spread on the hands of health care workers, and can survive well on surfaces and equipment. Hand hygiene and environmental cleaning are the most important measures to prevent transmission.

Q3. How is the spread of *C. difficile* controlled?
C/p/r with *C. difficile* infection (CDI) are often placed in a private room on contact precautions. Anyone who enters the room should wear a long sleeve gown and gloves to prevent skin and clothing from picking up *C. difficile*.

Q4. What are the possible impacts of acquiring C. *difficile*?
C. *difficile* can increase length of hospitalization and leads to higher rates of death than for c/p/r without C. *difficile*.

Q5. What are the environmental cleaning considerations for C. *difficile*?

- Routine cleaning for CDI includes:
    - Twice daily cleaning and disinfection of the c/p/r **room** using a health care-grade disinfectant or a sporicidal agent
    - Twice daily cleaning and disinfection of the c/p/r **bathroom** using a sporicidal agent
- Discharge/transfer/discontinuation of contact precautions cleaning for CDI includes:
    - Perform a clean of the room and bathroom with a sporicidal agent
    - Ensure all remaining supplies, including toilet brushes/swabs, are discarded
    - Clean and disinfect commodes and bedpans before use with another c/p/r
    - Remove and launder any privacy or shower curtains if present
- A sporicidal agent should also be used for:
    - Discharge/transfer cleaning of the room and bathroom of a multi-bed room when CDI is suspected/confirmed
    - Commodes, whenever the room/bathroom is cleaned
    - Routine cleaning of all equipment and high-touch surfaces when there are multiple cases of CDI on a unit

    - Routine cleaning of bathrooms in ambulatory areas where patients with CDI are often seen (e.g., emergency department)

- All cleaning tools and equipment used to clean the room or bed space must be cleaned and disinfected before being used in another room or bed space

Norovirus (viral gastroenteritis)

Q1. What is Norovirus?
Norovirus, often incorrectly referred to as 'stomach flu', is a virus that causes acute gastroenteritis. This includes symptoms such as nausea, vomiting, diarrhea, and abdominal pain. Norovirus is highly contagious.

Q2. How is Norovirus spread?
Norovirus can live on surfaces in the environment for up to 12 days. Contaminated surfaces and equipment play a significant role in the spread of Norovirus. Immediate cleaning is required when there are spills or heavy/gross contamination of room surfaces by body fluids such as vomit or diarrhea.

Q3. How is the spread of Norovirus controlled?
C/p/r infected with norovirus are often placed in a private room on contact precautions, Anyone who enters the room should wear a long sleeve gown and gloves to prevent skin and clothing from picking up norovirus. If the c/p/r is actively vomiting, perform a risk assessment before you enter the room, to determine whether you may be at risk of being splashed or sprayed with body fluids.

Q4. What are the environmental cleaning considerations for Norovirus?

- Disinfectants used for c/p/r with norovirus, or during norovirus outbreaks, should have a virucidal claim
    - Most quaternary ammonium compounds do not have significant activity against norovirus and should not be used
- Vacuum cleaning carpets and buffing floors are not recommended during an outbreak, because they have the potential to re-circulate norovirus.
- Health care settings may also consider increasing the frequency of cleaning and disinfecting the bathrooms and toilets on affected units

TB – *Mycobacterium tuberculosis*

Q1. What is *Mycobacterium tuberculosis* (TB)?
Tuberculosis (TB) is a respiratory disease caused by the bacteria *Mycobacterium tuberculosis*. Exposure to TB can result in latent infection, which means you do not experience symptoms and cannot spread TB to others. TB can become active, which means you develop symptoms such as coughing. When you have active symptoms you are able to spread it to another person. TB is preventable and can be treated with antibiotics.

Q2. How is TB spread?
Mycobacterium tuberculosis is spread via airborne transmission, meaning it can be spread through the air when a person with active disease in their lungs or airways, coughs, sneezes, or speaks.

Q3. How is the spread of TB controlled?
C/p/r who have an active TB infection will be placed in a private room, preferably with negative pressure, on airborne precautions. You should wear a seal-checked and fit-tested N95 respirator to ensure you do not inhale any small particles in the air that may contain TB. The door to the c/p/r room must remain closed before, during, and after cleaning.

Q4. What are the environmental cleaning considerations for TB?

- Rooms receive daily routine cleaning and disinfection
- All cleaning tools and equipment used to clean the room or bed space must be cleaned and disinfected before being used in another room or bed space
- Routine cleaning and disinfection should be done on discharge/transfer or removal of airborne precautions for TB.

Sources

- Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee. Annex A – Screening, testing and surveillance for antibiotic-resistant organisms (AROs) [Internet]. 3rd revision. Annexed to: Routine practices and additional precautions in all health care settings. Toronto, ON: Queen's Printer for Ontario; 2013 [revised 2011 Nov; cited 2024 Sep 27]. Available from: https://www.publichealthontario.ca/-/media/documents/a/2013/aros-screening-testing-surveillance.pdf

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Appendix A: Summary of cleaning considerations by organism

This table may be used by Environmental Services Leaders (or others responsible for environmental cleaning) to determine cleaning frequency and other special considerations and types of cleaning for General Daily Cleaning and Discharges/Transfers, as well as other select organisms. This table represents Best Practice Guidelines, and is the minimum that must be performed.

Please note that Disposable Supplies include items where the product or dispensers cannot be wiped down (e.g., toilet paper, extra paper towels, disposable gloves, tissues)

* Action required

** Facilities may consider twice daily routine cleaning of rooms during VRE outbreaks, or at facilities with ongoing, uncontrolled VRE transmission

*** Facilities may consider increasing the frequency of cleaning and disinfecting the bathrooms and toilets on affected units. Additionally, the disinfectant used for norovirus/viral gastroenteritis must have a virucidal claim

**** Facilities may consider twice-daily cleaning and disinfection for *C. auris*

***** On resolution of symptoms, or discharge/transfer (whichever is earliest), clean room and disinfect using a sporicidal agent for the required contact time

Considerations for cleaning	Action	MRSA	Confirmed or suspected *C. difficile*	VRE	CPE	ESBL	Norovirus /Viral Gastro enteritis	TB	*C. auris*
Room Supplies	**Removal and/or Reprocessing of Items**: Personal items and medical supplies to be processed are removed	*	*	*	*	*	*	*	*
	Inspect for Integrity: Mattress, pillows, chairs etc to ensure no tears, cracks or staining	*	*	*	*	*	*	*	*
	Remove Curtains Before Cleaning	*	*	*	*	*	*	*	*

Considerations for cleaning	Action	MRSA	Confirmed or suspected *C. difficile*	VRE	CPE	ESBL	Norovirus /Viral Gastro enteritis	TB	*C. auris*
	Remove and Discard Disposable Supplies in Washroom – Single Room	*	*	*	*	*	*	*	*
	Remove and Discard Disposable Supplies in Washroom – Multi-Bed Room		*	*	*	*	*	*	*
Required Daily Cleaning	**Single Daily Routine Cleaning**: Of patient/client/resident room using approved hospital-grade disinfectant	*		* **	*	*	* ***	*	* ****
	Twice Daily Routine Cleaning: • Of patient/client/resident room using a sporicidal agent • Of patient/client/resident bathroom using a sporicidal agent		*						
Required Discharge/Transfer Cleaning	**Discharge/Transfer Cleaning**: On patient/client/resident discharge/transfer, clean room and disinfect using the required contact time.	*	* *****	*	*	*	*	*	*
Washrooms	**Special Considerations** • Use a fresh bucket and mop head (dust mop and wet mop) for each room, and only for that room • After cleaning, apply a disinfectant to all surfaces in the room, ensuring sufficient contact time • For *C. diff* use a sporicidal agent		*	*					
Sinks and Shower Drains	**Special Considerations:** Facilities may want to consider enhanced sink and shower cleaning on a regular				*				

Considerations for cleaning	Action	MRSA	Confirmed or suspected *C. difficile*	VRE	CPE	ESBL	Norovirus /Viral Gastro enteritis	TB	*C. auris*
	basis, (e.g., twice weekly), and at the time of discharge/transfer cleaning								
Additional Instructions	Staff must wear necessary PPE and when additional precautions are indicated. Refer to signage on door, or ask others if unsure.	*	*	*	*	*	*	*	*
	N95 Respirators: • Fit-tested and seal-checked • Doors to remain closed before, during, and after cleaning • Doors to corridor of room must be kept closed for fallow time							*	

Summary of Revisions

Revision Date	Description of Changes	Page Number
October 2024	Changed “References” to “Sources” and re-ordered alphabetically	11
Oct 2024	Corrected the organism in Question 4 from CPE to *C. auris*.	6
Oct 2024	Language changed from ‘appropriate’ to ‘required’.	7
Oct 2024	Language changed from ‘appropriate’ to ‘required’.	12
Oct 2024	Language changed from ‘appropriate’ to ‘the required’.	13
Oct 2024	Language changed from ‘appropriate’ to ‘necessary’.	14

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