Infection Prevention and Control

Standard precautions:

Environmental Health

Cleaning and Disinfection

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Contents

Standard precautions: Environmental Health (Cleaning and Disinfection)

Inadequate access to WASH/IPC measures at the healthcare facilities during the current COVID-19 pandemic has led the frontline healthcare workers cannot ensure quality care, and therefore frequently put themselves, their patients, and surrounding communities at risk of infection and even mortality.

The healthcare environment is the host of a diverse population of microorganisms and can be a reservoir for potential pathogens. On the same note, as health facility becomes the custodian for different types of diseases being brought by the patients. If environmental health measures are not practiced, this results in environmental contamination that can contribute to the spread of multi-drug resistant organisms and healthcare-associated infections. Collaboration between infection prevention and control (IPC) and environmental services (EVS) staff or WASH teams limits the role of the health care environment in disease transmission. As such, all responsible (cleaners) must wear the best available Personal Protective Equipment (PPEs).

Overview: In this course, you will learn the role of an IPC professional in environmental cleaning and understand how cleaning and disinfection prevent contamination of the health care environment.

Learning objectives: By the end of this course, you should be able to:

- Describe the healthcare environment and purpose of environmental health (cleaning and disinfection);
- Identify differences between routine and terminal cleaning and disinfection;
- Describe standard precautions to keep non-medical staff and environmental services workers safe;
- Explain the function of cleaning/disinfection agents;
- Describe the uses of environmental monitoring in the health care setting.
- Identify the critical areas of collaboration between IPC, environmental services and WASH teams;

IPC and environmental services

Infection prevention and control (IPC) works with environmental services (EVS) and WASH teams to define the roles for the disease transmission in the health facility settings. Collaboration is essential to make sure environmental measures/standards are ensured. As an IPC focal point, you have the key responsibility to make sure IPC measures are integrated into the daily work of responsible teams (EVS and WASH staff).

Though many facilities have dedicated cleaners, some rely on nursing staff to clean clinical areas. Some facilities directly hire cleaners, and others use an external contractor. Supervision

of cleaning varies; an EVS/WASH manager ideally covers this role, but facilities often report that the nurse in-charge, IPC focal point, or facility management oversee cleaning activities. IPC should be strictly linked to EVS/WASH activities regardless of what department oversees cleaning activities.

The IPC focal point or committee should review and approve EVS procedures. The IPC focal point helps standardize EVS procedures to ensure IPC is part of the daily work of cleaners. Examples of EVS procedures include:

- Routine cleaning of patient rooms;
- Terminal cleaning of patient rooms;
- Cleaning of common areas (waiting rooms and lobbies);
- Strict disinfection of COVID-19 isolation areas;
- Cleaning and disinfection of areas such as operating theatres;
- Standard precautions for cleaners;

The IPC focal point or committee should also review and approve EVS products, such as disinfectants. This helps ensure that the product will be used as intended and that it meets established guidance.

EVS staff should be included in IPC training—they are part of the health care team. Given the unique functions of environmental cleaning, EVS staff should also receive job-specific training.

You will learn more in this module about environmental cleaning guidance for IPC staff.

The health care environment

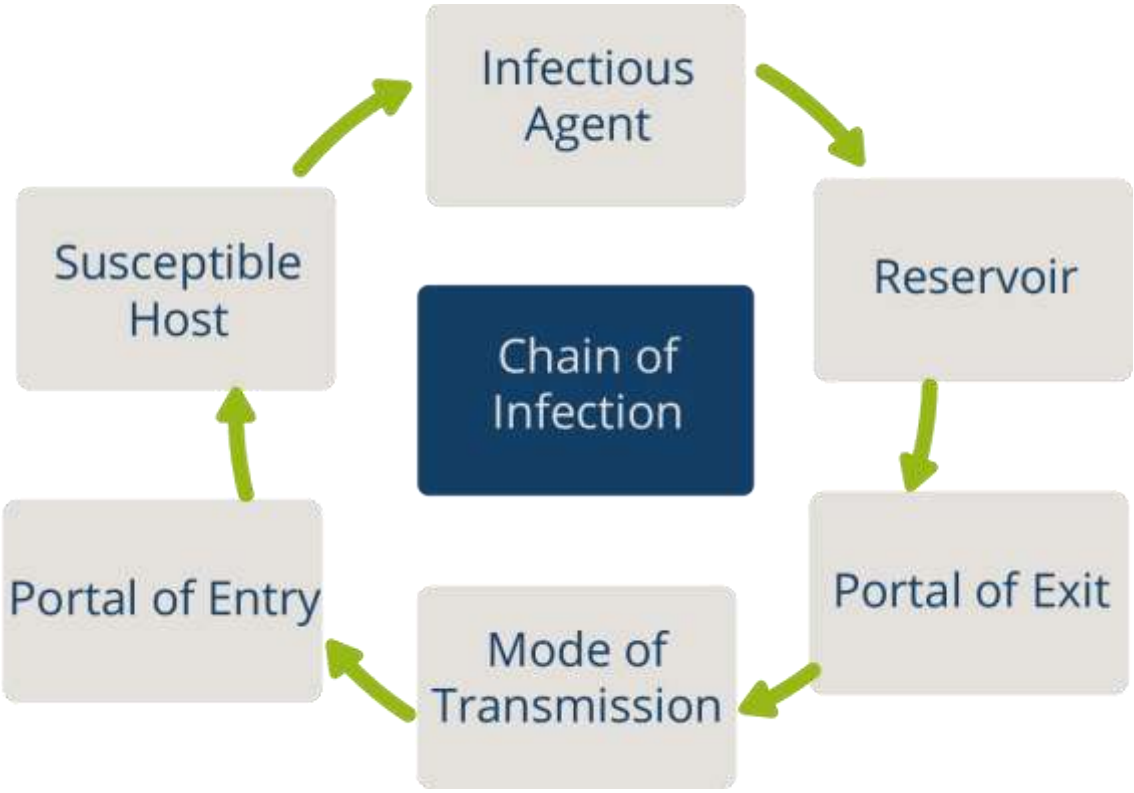
To keep patients and colleagues safe, IPC professionals must understand the potential role of the healthcare environment in disease transmission. The health care environment includes environmental surfaces—like patient beds and bathrooms—and medical equipment, like blood pressure equipment and IV pumps.

In the health care environment, there are a diverse number of microorganisms. They are present in our bodies and our environment. The presence of a microorganism in the body and on health care environmental surfaces does not mean it will cause an infection. Most of these microorganisms are harmless, but some cause disease in susceptible hosts.[1]

[1] *Susceptible hosts: When patients receive medical treatment in health care facilities, the following factors can increase their susceptibility to infection: (1) Patients who have underlying medical conditions such as diabetes, cancer, and organ transplantation are at increased risk for infection. These illnesses often decrease the immune system's ability to fight infection. (2) Certain medications used to treat medical conditions, such as antibiotics, steroids, and some chemotherapy medications, increase the risk of some types of infections.*

Microorganism survival and persistence in the environment depends on various factors, including the type of surface, presence of organic matter, bioburden[2], temperature, and humidity. Because several common healthcare-associated pathogens are known to persist on environmental surfaces for weeks and months, it is likely—but not guaranteed—that surfaces play a role in disease transmission.

The chain of infection pictured below illustrates that for any infection to spread, all steps in the chain must occur. The key to stopping the spread of infection is to break at least one link in the chain. Within the chain, the health care environment can act as a reservoir for pathogens.



It is essential to understand that environmental cleaning reduces the number of microorganisms on environmental surfaces and medical equipment surfaces. Mitigating the role of the environment in the transmission of infectious agents requires collaboration between environmental services and IPC.

Environmental surfaces and medical equipment

Environmental cleaning involves two main types of surfaces:

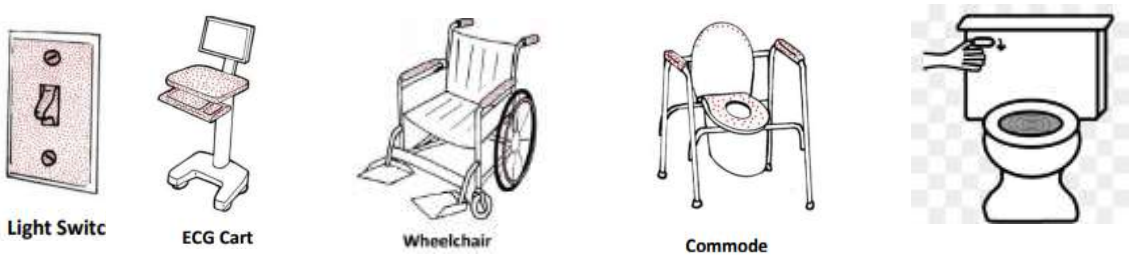
- **Environmental surfaces:** Frequently touched items like doorknobs, bed rails, tabletops, floors, and walls

(3) Medical devices and procedures such as urinary catheters, tubes, and surgery, increase risk of infection by providing additional ways that microorganisms can enter the body.

[2] *Bio burden: Number of microorganisms present in the environment.*

- **Medical equipment:** Items involved in patient care, like reusable medical equipment, monitors, IV pumps, and blood pressure machines.

Patients and healthcare personnel touch surfaces more than others, engaging in a higher risk of transmission. These are called **"high-touch,"** or **frequently touched**, surfaces. Frequently touched surfaces include walls, floors, doorknobs, light switches, bed rails, ends of beds, patient charts, monitor buttons, IV pumps, and poles, faucet handles and toilet seats, and push-buttons. The images below are examples of these surfaces—the red dots indicate the areas often touched by health care workers (HCW) or patient hands.



Question: Some surfaces are considered **frequently contaminated,** given their function. Think of sinks, toilets/latrines fixtures, faucet handles, and bathroom countertops.

General functions of environmental services

What is cleaning and disinfection?

Cleaning is the physical removal of material, including dust, soil, and organic material such as blood, secretions, excretions, and microorganisms. It physically removes debris from surfaces rather than kills the microorganisms with water, detergents, and mechanical action. Cleaning is always essential before disinfection or sterilization. A surface that has not been cleaned effectively cannot be adequately disinfected or sterilized. Organic material left on a surface or medical device can protect microorganisms or neutralize the action of disinfectants.

Disinfection is the inactivation or killing of most microorganisms on surfaces and items. The process usually involves the use of chemicals (0.2% chlorine solution), heat, or ultraviolet light.

When do you clean?

At a minimum, all patient care areas should be cleaned once a day and, more often, when contamination is visible. Some national standards guide how often to clean the health care environment. Routine cleaning occurs when a patient occupies a bed or room, and terminal cleaning occurs when a patient has been discharged or transferred out of the bed or room. An example of procedures for routine and terminal cleaning will be presented later in this module.

Note that some patient care areas might require specialized cleaning procedures. Intensive care units, labor wards, and operating theatres are examples of areas where infection risk could be higher because of patients who are extremely susceptible or vulnerable to infection. The frequency of cleaning should consider high-risk wards in the facility. The following table reflects the sample

Item	Frequency
Surfaces in Triage and Waiting Areas	At least twice daily After a suspected cholera patient is screened
Surfaces in consultation areas	At least twice daily When visibly soiled
Linens and mattresses	After every patient When visibly soiled
Sanitation Facilities	At least twice daily When visibly soiled
Isolation facilities	At least once daily After a patient is discharged or transferred, or a body is moved or the morgue

What about patients on Transmission-based Precautions?

Transmission-based precautions are used in addition to standard precautions for patients with known or suspected infections. Bed spaces or rooms of patients on transmission-based precautions might require extra cleaning practices. Your facility should develop a protocol for environmental cleaning of areas with patients on transmission-based precautions.

Whenever possible, these patients should have designated patient care equipment used only for that patient. Always thoroughly clean and disinfect shared patient care equipment before use on a different patient. When cleaning patient care equipment, please follow the manufacturer's instructions to prevent damage of equipment, as different disinfectants are needed to clean equipment.

In some health care facilities, this is the responsibility of nursing staff, but all right cleaning strategies have clear roles and responsibilities for cleaning patient equipment. Please follow local protocol and policy.

Routine cleaning

An example of routine cleaning of a patient bed space in an open ward includes:

Assess:

- Follow instructions on transmission-based precautions signage.
- Visually inspect the area to determine what needs to be replaced, such as supplies and worn-out or broken items.

Assemble supplies:

- Make sure clean clothes are available.
- Dilute cleaning (detergent) and disinfection solutions correctly.
- Restock missing or low-stock supplies.

Hand Hygiene: Perform hand hygiene and put on gloves.

Patient Area:

- Cleanroom or bed space, working from clean to dirtier areas and from high to low.
- Check ceilings and walls and all areas for any visible soiling, and clean if required. If privacy curtain, check for visible soiling and replace if required.
- Clean all furnishings in the area, including chairs, tables, and desks. **Concentrate on frequently touched surfaces.**
- Clean any light switches.
- Clean medical equipment in the area (IV pole and pump, monitors).
- Clean bed rails and any bed controls.

- Mop floor with detergent only; use of disinfectants is not recommended.

Cleaning Latrines and Showers

- Wash with soap and water, clean the floor the latrines with the brush;
- Rinse floor of latrines with 0.05% chlorine solution;

Cleaning the high-risk sanitation facilities

- With soap and water, clean the floor of the latrines with the brush.
- Rinse the floor of the latrines with raw water to remove the soap.
- Allow the walls and the floors to air dry for at least 30 minutes.
- Disinfect the walls and the floor of the latrines and showers with 0.2% chlorine solution, and allow a contact time of 3 to 5 minutes.
- Rinse the walls of the latrine with raw water and remove water using the squeegee or floor wiper.
- Dry any remaining small pools of water on the floor with absorbent pads or a mop (never wring out by hand; instead, use the mop head ringer).
- Allow the walls and the floors to air-dry.
- Ensure there is soap at the freshwater bucket by the latrine.

Hand Hygiene: Remove gloves and perform hand hygiene with soap and water.

Disposal:

- Put used cloths in the container to be laundered.
- Segregate and place waste in appropriate containers (general waste, infectious waste).

Hand Hygiene: Remove gloves and perform hand hygiene with soap and water.

Terminal cleaning

If a patient room or bed becomes vacant, terminal cleaning is indicated. This is also called discharge cleaning in some countries. Terminal cleaning is meant to remove microorganisms that could contaminate the next patient occupying that space. It uses the same best practices as routine cleaning but is more detailed.

Assess:

- Follow transmission-based precautions signage.
- Visually inspect the area to determine what needs to be replaced, such as supplies and worn-out or broken items.

Assemble supplies:

- Ensure that clean clothes are available.
- Dilute cleaning (detergent) and disinfection solutions correctly.

Hand Hygiene: Perform hand hygiene and put on gloves.

Patient Area:

- Remove dirty linen as per local policy: If any sheets on the bed, roll sheets gently and carefully and put in the soiled linen bag.
- Cleanroom or bed space, working from clean to dirty and high to low.
- Check ceilings and walls for any visible soiling, and clean if required.
- Clean any light switches.
- If privacy curtain, check for visible soiling and replace if required.
- Clean all furnishings in the area, including chairs, tables, and desks. **Concentrate on frequently touched surfaces.**
- Clean medical equipment in the area (IV pole and pump, monitors, etc.)
- Clean the bed: Clean top and sides of the mattress, turn over and clean underside as well as the headboard, footboard, bed rails, and bed controls; **pay attention to frequently touched surfaces.**

Patient Bathroom: Clean commode or other private bathroom space. ***Follow the guidance provided in the above section.***

Floors: Mop floor (with detergent only; disinfectants are not recommended).

Disposal:

- Put soiled linen in designated area for laundering.
- Put used clothes in containers to be laundered.
- Place waste in appropriate waste containers (general waste, infectious waste) as per local policy.

Hand Hygiene: Remove gloves and perform hand hygiene with soap and water.

Blood and body fluids

Now that you have seen how cleaning protocols apply to routine and terminal cleaning, let's focus on how to clean blood and body fluid spills. Areas contaminated with these spills need to be cleaned and disinfected to prevent patient or health care personnel contact with infectious materials.

Manage small spills by cleaning and then disinfecting. Larger spills require more rigorous steps because of the volume of the spill and a higher risk of transmission. Any staff managing spills of blood or body fluids should protect themselves by wearing appropriate PPE.

See below to read more about the steps for cleaning small and large spills.

Small spills (splashes and drips)

Preparation: wear non-sterile gloves.

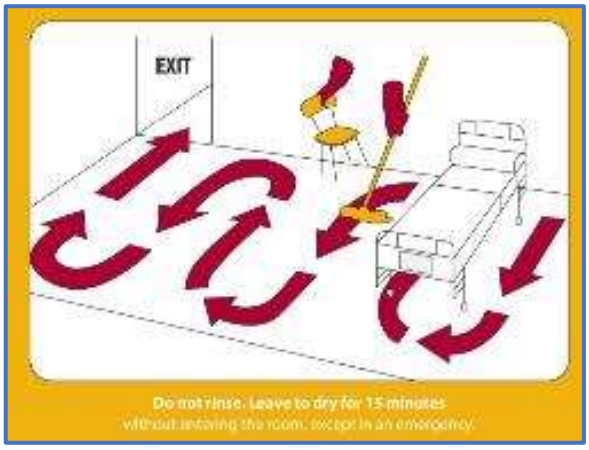
- Wipe area immediately with a paper towel or absorbent cloth (discard towels as infectious waste).
- Disinfect the area with 10,000 ppm of hypochlorite (bleach) solution.
- Dry surface with disposable paper towels.
- Discard gloves and paper towels as infectious waste.
- Perform hand hygiene, preferably with soap and water, given exposure to body fluid risk.

Large Spills

Preparation: wear non-sterile gloves; utility gloves may be preferred. If contamination of the front of the body is likely, wear a single-use plastic apron. Note: use of gown, face shield, mask, and goggles are not necessary

- If a spill occurs in the traffic path, block off the area, so others do not step through it.
- Cover area of the spill with disposable towels or cloth soaked in 10,000 ppm of hypochlorite solution and leave it for 3-5 minutes. Don't pour the solution directly onto the spill—it may cause splashing and widen the area of contamination.
- Pick up soiled paper towels/cloths and discard them into an infectious waste bag.
- Clean the area with a detergent solution.
- Wipe the surface area with fresh 1,000 ppm of hypochlorite solution to disinfect.
- Rinse with water, as hypochlorite solution can be corrosive.
- Dry surface with disposable paper towels.
- Remove gloves and plastic apron and discard as infectious waste (following local policy).
- Perform hand hygiene, preferably with soap and water, given the body fluid exposure risk.

Cleaning Isolation Areas



- Use a mop or disposable towel soaked with soapy water to remove debris from the floors, tables, and walls. Ensure that all visible debris is removed.
- Use a mop or disposable towel soaked with a 0.2% chlorine solution to disinfect surfaces (floors, walls, beds, and tables). Make sure to cover completely cover all surfaces.
- Dispose of the used towels into the infectious waste bin.
- Allow 3 to 5 minutes for the chlorine to act.
- With a mop or disposable towel, rinse the cleaned, disinfected surface with raw water to remove the chlorine residue and allow the surface to air dry.

- Do not use mops for spills of body fluids until visible debris has been removed, and the surface has been disinfected after the removal of contaminants.
- Cleaning solutions should not be directly poured on spilled body fluids, as this could create splashes or spread the spill. Instead, soak a disposable towel with a chlorine solution and use the moist towel to clean and disinfect the surface.
- Where disposable towels are not available, reusable towels can be used for cleaning a spill of body fluid but should be disposed of in the infectious waste bin.
- Dirty towels should never be dipped into a bucket of chlorine, as this may deposit organic materials and other debris in the chlorine solution and make it less effective.
- **Dry sweeping and dry mopping, as well as dry dusting, are not allowed** within the isolation area, as they can spread debris and germs through the air. Always moisten towels and mops before use.
- Once the consultation and isolation areas have been cleaned and disinfected, trollies and waste collection buckets are taken to the Waste Area to be cleaned and disinfected.

Operating theatre

Proper cleaning and disinfection of an operating theatre contribute to safe surgery. Operating theatre (OT) staff, environmental services, and infection prevention and control must collaborate to ensure a clean surgical environment. This team makes sure that there are facility protocols in place for cleaning the operating theatre.

An operating theatre is cleaned at three distinct times:

- **Before the first case of the day:** Before surgical supplies are brought into the operating theatre for the first surgery of the day, a few duties are recommended. Any overhead lights, the operating table, and any other flat surfaces are damp dusted. Any countertops should also be damp dusted. Surgical equipment trays for the first case should not be opened until after this clean is completed.
- **Between cases:** After a surgical procedure, surgical equipment, the floor immediately surrounding the surgical bed, and any furniture are considered contaminated. Clean and disinfect them along with any other objects identified by the facility. Remove soiled linen, trash, and infectious waste.
- **After the last case of the day:** Perform a terminal cleaning of the operating theatre. This is a detailed process that follows specific facility protocols. A terminal clean of an operating theatre includes removing infectious waste and soiled linen, cleaning from top to bottom of all surfaces including overhead lights, cleaning the operating table including the mattress, and mopping the floor.

Contamination during cleaning

Cleaning should generate minimal dust or aerosols, so damp dusting and wet mopping is recommended over dry dusting and mopping.

Bucket solutions become contaminated almost immediately during cleaning. Continued use of the solution transfers more microorganisms to each surface that is cleaned. Some bacteria grow in both detergents and disinfectant solutions. Therefore, it is essential to make fresh detergent and disinfectant solution regularly and change it whenever visibly dirty, maintaining the appropriate concentration of the solution. Discard any remaining solution after use.

Another source of contamination is the cleaning cloth or mop head, especially if left soaking in dirty cleaning solutions. It is vital to disinfect cloths and mop heads, either with high heat in a washing machine or manually. A simplified approach is to replace soiled cloths and mop heads with clean items each time a bucket of detergent is emptied and replaced with fresh, clean detergent.

Mop buckets must be rinsed, dried, and stored upside-down to drain.

Protecting EVS staff

Environmental services staff should adhere to standard precautions when cleaning and follow any transmission-based precautions in place. This includes:

- Hand hygiene
- Use of personal protective equipment (PPE) when indicated

Hand hygiene

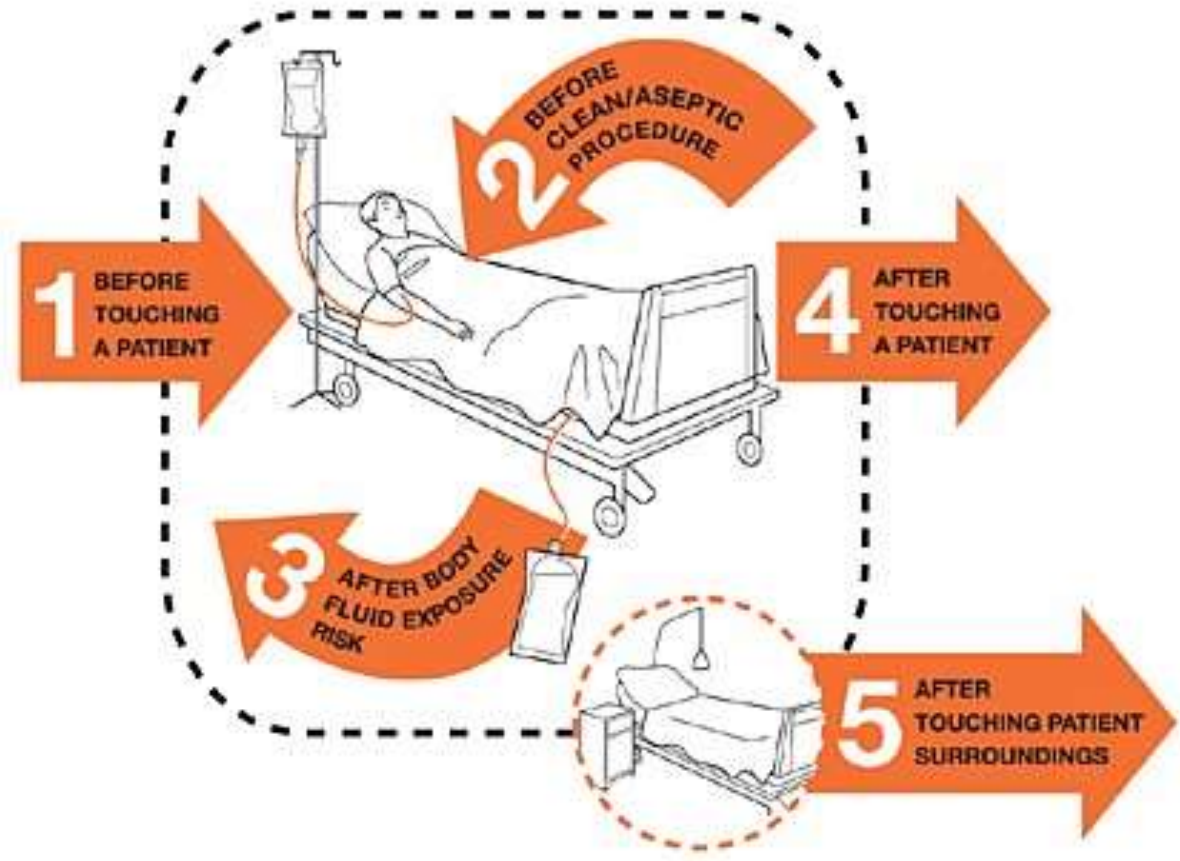
Hand hygiene is essential during environmental cleaning activities. Below is a summary of WHO 5 moments for hand hygiene. For more information, please consider enrolling in our hand hygiene course.

Moment 1. Before touching a patient - Clean your hands before touching a patient when approaching him/her to protect the patient against harmful germs carried on your hands.

Moment 2. Before a clean/aseptic procedure - Clean your hands immediately before accessing a critical site with infectious risk for the patient to protect the patient against harmful germs, including the patient's own, entering his/her body.

Moment 3. After body fluid exposure risk - Clean your hands immediately after an exposure risk to body fluids (and after glove removal). This will protect both you and the health care environment from pathogens in blood and body fluids.

Moment 4. After touching a patient - Clean your hands after touching a patient and his/her immediate surroundings, and when leaving the patient's side, to protect yourself and the health care environment from harmful microorganisms.



Moment 5. After touching the patient's surroundings - Clean your hands after touching any object or furniture in the patient's immediate surroundings when leaving – even if the patient has not been touched – to prevent the spread of harmful microorganisms from inside the patient zone to the rest of the health care environment.

Personal protective equipment (PPE)

It is essential to know what PPE is indicated when performing environmental cleaning activities.

Gloves

Wear gloves when handling hazardous materials such as cleaning solutions, disinfectants, or cleaning surfaces that are visibly soiled with blood or body fluids (such as large spills of blood).

Gowns

Wear a gown (or apron) if contamination of clothing or skin is anticipated (such as cleaning bed of incontinent patient).

Face masks

Wear a face mask and goggles (or face shield) when there is a risk of splashes or sprays of chemicals or blood or other body fluids.

For patients on transmission-based precautions, PPE is required for environmental cleaning. For example, if Fatima, a cleaner, is about to clean the space of a patient on contact precautions, wear a gown and glove are indicated for all persons entering the patient area, then Fatima should put on gown and gloves before cleaning that patient's area.

Chemicals

Cleaning Solutions

Cleaning solutions contain detergents that remove dirt and debris (organic material) from surfaces. Detergents do not kill pathogens, but rather assist in removing them from surfaces. It is vital to protect cleaning solutions from contamination as they can quickly become contaminated during the cleaning process. Ideally, cleaning solutions used in a facility are hospital-approved detergents.

Disinfectants

Disinfectants inactivate or kill microorganisms on surfaces that have been cleaned. They are not intended for use as antiseptics. Like cleaning solutions, disinfectant solutions in buckets can quickly become contaminated, which can transfer more microorganisms to surfaces. Replace these solutions frequently.

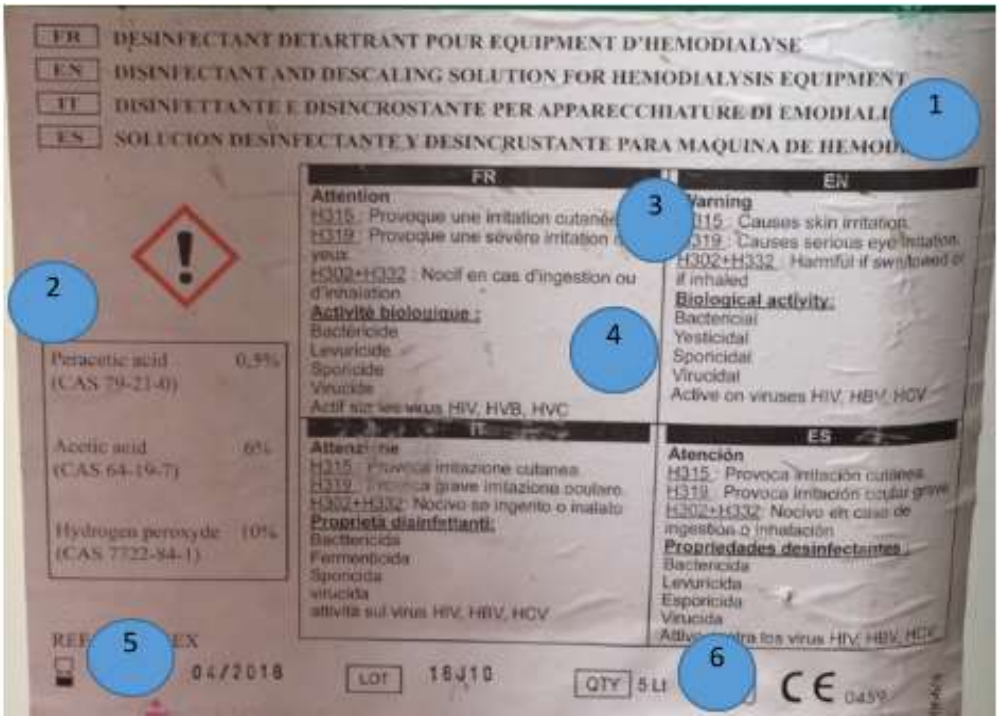
If there is a shortage of hospital disinfectants, decontamination may be performed with 0.1% sodium hypochlorite (dilution 1:50 if household bleach at an initial concentration of 5% is used) after cleaning with a neutral detergent, although no data are available for the effectiveness of this approach against SARS-CoV-2 [24]. Surfaces that may become damaged by sodium hypochlorite may be cleaned with a neutral detergent, followed by a 70% concentration of ethanol.

Commonly used disinfectants include: Alcohols (60-90% ethyl or isopropyl) for small surfaces and Hypochlorite (HTH): Disinfectants containing hypochlorite (70%) can easily be found in low-resource settings. If using hypochlorite, prepare a fresh solution every day using a standardized dilution and keep prepared solutions in a labeled container with a lid (to protect from sunlight and debris). Discard the hypochlorite solution at the end of the day, even if it has not been used.

Less commonly used disinfectants include: Phelonics (e.g., chloroxylenol, hexachlorophene), Quaternary Ammonium Compounds (e.g., benzalkonium chloride) and Hydrogen Peroxides (hydrogen peroxide that includes ingredients that improve its antimicrobial activity, cleaning efficiency, and material compatibility).

To be effective, disinfectants should be diluted to the correct concentration and remain on the surface for the appropriate contact time[3]*. Indications for use, dilution instructions, contact time, and safety information are found on the disinfectant label, which is provided by the manufacturer. Always check the product label to confirm the intended use of the chemical.

The image below is taken from an actual disinfectant. Let us examine it in more detail using the numbered legend below to mark critical areas on the label.



1. Indication for use (disinfectant for hemodialysis equipment)
2. Active ingredients
3. Health warnings
4. Biological activity/ product claims
5. Manufacture date

Quantity Notice that the dilution instructions, instructions for use, and contact time for disinfection are not on this label. Often, these instructions will be on the back label.

Selecting Chemicals

When selecting a cleaning agent (detergent) or disinfectant, consider the following:

- Intended use: Will it be used for cleaning (detergent), disinfection (chemicals), or both?

[3] *Contact time is the length of time a chemical needs to remain on a surface to inactivate microorganisms. Contact time varies by chemical.*

- Efficacy: Does it kill microorganisms in the local environment? What is the recommended contact time?
- Acceptability: Does it damage surfaces or leave a film or an unpleasant smell?
- Safety: Does it have side effects for those who come in contact with it? What equipment is required for handling/use?
- Cost and availability: Does it fit the budget? Is it easy to obtain in the required quantity?
- Volume: Is it available in the amount needed, based on facility requirements?

Introduction to environmental monitoring

Monitoring and assessing environmental cleaning

It's important to monitor and assess environmental cleaning to make sure that it meets best practices and is performed consistently and correctly. It is important to note that monitoring, feedback, and data will help you improve IPC programs in your facility. See below for a brief description of the primary methods for monitoring environmental cleaning.

Observation

- **Direct observation** is watching an individual's cleaning routine and giving feedback. Sometimes this method results in an individual changing their behavior because they know they are being observed.
- **Indirect observation** is visually inspecting an area after it is cleaned. This method is subjective—you can check for visible cleanliness but cannot tell if a surface is clean.

Environmental marking

This is the application of a colorless solution to surfaces. After the surface is cleaned, ultraviolet light detects any remaining solution.

Here is an example of a sink handle in a patient room. This image below shows the solution to the uncleaned handle.

This image is the same handle **after cleaning.** You can see that cleaning was inadequate because there are still fluorescent markings on the handle.

It's important to note that although visual markers can help identify what has been cleaned, sometimes these solutions

can be hard to remove. Also, visualization using these markers might not reflect actual cleaning practices.

Other methods

Swabs for environmental culture and adenosine triphosphate (ATP) testing to assess the residual bioburden are available, but will not be discussed given the resources needed to implement and the limitations of these methods. Remember that routine swabbing of the environment for microbiological culture is not recommended unless in particular outbreak situations or at the

Summary

The health care environment can be a reservoir for potential pathogens. In this module, you have learned how environmental cleaning reduces the risk of potential pathogens in the health care environment. As the IPC focal person, your duties include collaborating with environmental services to ensure IPC is integrated into the daily workflow of cleaning staff. You also assist in reviewing and approving protocols for environmental cleaning throughout the facility. You will need to identify frequently touched and frequently contaminated surfaces in your facility to understand where the risk of contamination is high.

Patient care areas have procedures for routine and terminal cleaning. Routine cleaning occurs when a patient occupies a bed or room. Terminal cleaning occurs when a patient has been discharged or transferred and is meant to remove microorganisms that could contaminate the next patient occupying that space. Precautions for patients on Transmission-based precautions should be followed during cleaning activities.

Some patient care areas, such as the operating theatre, will require specific cleaning protocols given the risk of infection. If a blood spill occurs in any part of the facility, it needs to be cleaned and disinfected immediately according to protocol. Staff performing cleaning duties adhere to standard precautions, including hand hygiene and appropriate use of PPE.

As the IPC focal person, you also maintain awareness of the chemicals being used in the facility for cleaning and disinfection. You will need to understand the purpose and function of each chemical. This is another area where collaboration with EVS is essential. Lastly, ensure that any environmental monitoring serves its intended purpose and is used to improve adherence to facility cleaning protocols.

You can also reinforce environmental cleaning by using a multimodal strategy:

- **System change:** having easily accessible products at the right concentrations
- **Training and education:** making sure that all relevant staff are trained on the importance of cleaning
- **Monitoring and feedback:** checking and providing feedback that cleaning has taken place and is of the right standard

- **Reminders in the workplace:** making it easy for EVS to implement protocols through posters and signage
- **Institutional safety climate:** having a culture in your facility that values the critical role of cleaning.

Resources

Environmental cleaning and disinfection resource

- Best Practices for Environmental Cleaning in Healthcare Facilities: in Resource-Limited Settings, the document provides guidance on best practices for environmental cleaning procedures and programs in healthcare facilities in resource-limited settings. It was developed as a collaboration between the US Centers for Disease Control and Prevention (CDC) and the Infection Control Africa Network (ICAN).

General

- WHO Core Components support countries as they develop and execute their national antimicrobial resistance (AMR) action plans, among other aspects of health system strengthening.
- WHO Core Components Guidelines cover eight areas of IPC and comprise 14 recommendations and best practice statements.
- Improving Infection Prevention and Control at the Health Facility Guide is a practical manual that outlines how to implement the Core Component Guidelines.
- WHO Multimodal Strategy consists of several elements (3 or more; usually 5) implemented in an integrated way to guide action and provide a clear focus for the implementer.
- WHO Infection Prevention and Control Assessment Framework (IPCAF) is a tool that can provide a baseline assessment of IPC program activities within a health care facility as well as ongoing evaluations through repeated administration to document progress over time.
- Interim Practical Manual Supporting National Implementation of the WHO Guidelines on Core Components of Infection Prevention and Control Programmes is a resource to strengthen IPC and improve the quality and safety of health service delivery through the establishment of evidence-based and locally adapted integrated IPC programs.