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MINISTRY OF HEALTH - ETHIOPIA  
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# Cleaning and disinfection Protocol for COVID-19 suspected or confirmed patients contacted area



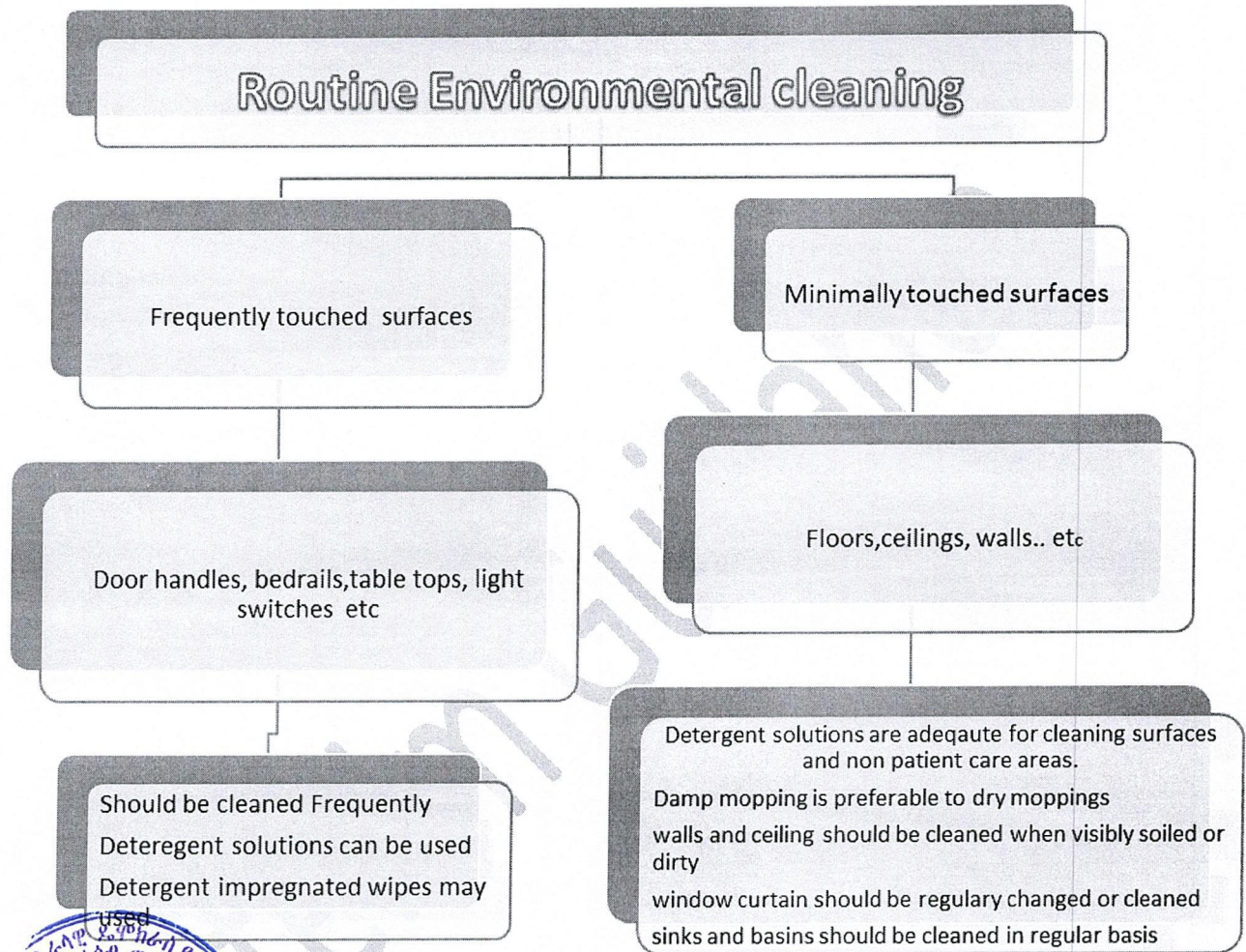
## Routine environmental cleaning

- **Cleaning refers** to the removal of dirt and impurities, including germs, from surfaces. Cleaning alone does not kill germs. But by removing the germs, it decreases their number and therefore any risk of spreading infection
- Cleaning is an essential part of disinfection. Organic matter can inactivate many disinfectants. Cleaning reduces the soil load, allowing the disinfectant to work.
- **Disinfecting** works by using chemicals to kill germs on surfaces. This process does not necessarily clean dirty surfaces or remove germs. But killing germs remaining on a surface after cleaning further reduces any risk of spreading infection.
- Removal of germs such as the virus that causes COVID-19 requires thorough cleaning followed by disinfection.
- The length of time that the virus that cause COVID-19 survives on inanimate surfaces will vary depending on factors such as the amount of contaminated body fluid – such as respiratory droplets – present and environmental temperature and humidity.
  - In general, coronaviruses are unlikely to survive for long once droplets produced by coughing or sneezing dry out. It is good practice to routinely clean surfaces: Clean frequently touched surfaces with





- Detergent solution (see diagram below). Clean general surfaces and fittings when visibly soiled and immediately after any spillage.



## Information for cleaning staffs

- Cleaning staff should be informed to avoid touching their face, especially their mouth, nose, and eyes when cleaning.
- Cleaning staff should wear heavy duty glove and a surgical mask plus eye protection or a face shield while cleaning.
- Cleaners should use alcohol-based hand rub or wash their hands with water and soap before putting on and after removing gloves.
- Alcohol-based hand rub or washing hands with water and soap should also be used before and after removing the surgical mask and eye protection.
- The disinfectant used should be one for which the manufacturer claims antiviral activity, meaning it can kill the virus such as chlorine-based disinfectants, which are commonly used.
- If there is visible contamination with respiratory secretions or other body fluid, the cleaners should wear a full length disposable gown in addition to the surgical mask, eye protection and heavy duty gloves.
- Advice should be sought from health professionals on correct procedures for wearing Personal protective equipment (PPE).

## Social contact environments

Social contact environments include transport vehicles, shopping centres and private businesses etc. The risk of transmission of COVID-19 in the social and non-health care work settings can be minimised through a good standard of general hygiene. This includes:

- Promoting cough etiquette and respiratory hygiene.
- Routine cleaning of frequently touched hard surfaces with detergent/ disinfectant solution/ wipe.
- Providing adequate alcohol-based hand rub for staff and consumers to use and prepare proper hand washing facilities with soap and appropriate drainage system.





- Training staff on use of alcohol-based hand rub and proper hand washing steps.
- Consider signs to ask customers to only touch what they intend to purchase

## **Cleaning and Disinfection after Persons suspected/Confirmed with COVID-19 have been in the Facility**

### **1. School, day-care Center, office, or other facility that does not house people overnight:**

- Close off areas used by the ill persons and wait as long as practical before beginning cleaning and disinfection to minimize potential for exposure to respiratory droplets.
- Open outside doors and windows to increase air circulation in the area.
- Cleaning staff should clean and disinfect all areas (e.g., offices, bathrooms, and common areas) used by the ill persons, focusing especially on frequently touched surfaces.

### **2. At a facility that does house people overnight:**

- Close off areas used by the patient.
- Open outside doors and windows to increase air circulation in the area and then begin cleaning and disinfection.
- Cleaning staff should clean and disinfect all areas (e.g., offices, bathrooms, and common areas) used by the COVID-19 patient focusing especially on frequently touched surfaces.
- If surfaces are dirty, they should be cleaned using a detergent or soap and water prior to disinfection.



### 3. Cleaning and Disinfection of Households with People Isolated in Home Care (e.g. Suspected/Confirmed to have COVID-19)

- Household members should educate themselves about COVID-19 symptoms and preventing the spread of COVID-19 in homes.
- Clean and disinfect high-touch surfaces daily in household common areas (e.g. tables, hard-backed chairs, doorknobs, light switches, remotes, handles, desks, toilets, sinks)
- In the bedroom/bathroom dedicated for an ill person: consider reducing cleaning frequency to as-needed (e.g., soiled items and surfaces) to avoid unnecessary contact with the ill person.
- As much as possible, an ill person should stay in a specific room and away from other people in their home
- The caregiver can provide personal cleaning supplies for an ill person's room and bathroom, unless the room is occupied by child or another person for whom such supplies would not be appropriate. These supplies include tissues, paper towels, and cleaners.
- If a separate bathroom is not available, the bathroom should be cleaned and disinfected after each use by an ill person.
- If this is not possible, the caregiver should wait as long as practical after use by an ill person to clean and disinfect the high-touch surfaces

#### Hand hygiene and other preventive measures

- Household members should clean hands often, including immediately after removing gloves and after contact with an ill person, by washing hands with soap and water for 20 seconds.
- If soap and water are not available and hands are not visibly dirty, an alcohol-based hand sanitizer that contains more than 70% alcohol may be used. However, if hands are visibly dirty, always wash hands with soap and water.





- Household members should follow normal preventive actions while at work and home including recommended hand hygiene and avoiding touching eyes, nose, or mouth with unwashed hands. Additional key times to clean hands include:
  - After blowing one's nose, coughing, or sneezing
  - After using the restroom
  - Before eating or preparing food
  - After contact with animals or pets
  - Before and after providing routine care for another person who needs assistance (e.g. a child)
- The ill person should eat/be fed in their room if possible. Non-disposable food service items used should be handled with gloves and washed with hot water or in a dishwasher. Clean hands after handling used food service items.
- If possible, dedicate a lined trash can for the ill person.
- Use gloves when removing garbage bags, handling, and disposing of trash

## How to clean and disinfect

### Surfaces

- Wear disposable gloves when cleaning and disinfecting surfaces. Gloves should be discarded properly as hazardous waste after each cleaning. If reusable gloves are used, those gloves should be dedicated for cleaning and disinfection of surfaces for COVID-19 and should not be used for other purposes.
- Clean hands immediately after gloves are removed.
- If surfaces are dirty, they should be cleaned using a detergent or soap and water prior to disinfection.
- For disinfection, diluted household bleach solutions (in 1 part bleach to 9 part water mix), alcohol solutions with at least 70% alcohol, and most common disinfectants should be effective.

- Diluted household bleach solutions can be used if appropriate for the surface.
- Follow manufacturer's instructions for application and proper ventilation.
- Check to ensure the product is expired or not.



- Never mix household bleach /Berekina/ with ammonia or any other cleanser or hot water
- Unexpired household 0.5% concentration bleach will be effective against coronaviruses when properly diluted.
- For soft (porous) surfaces such as carpeted floor, rugs, and drapes, remove visible contamination if present and clean with appropriate cleaners indicated for use on these surfaces.

## Healthcare settings

### Patient areas

- Clean and disinfect frequently touched surfaces with detergent and disinfectant wipe/solution between each episode of patient care (according to normal infection prevention and control practice).
- Take care to clean/disinfect surfaces in areas that patients have directly in contact with or have been exposed to respiratory droplets.
- Comply with hand hygiene at critical times.

### Non-patient areas

- Perform routine cleaning of frequently touched surfaces with detergent/disinfectant solution/wipe at least daily or when visibly dirty.
- Floors should be cleaned using a detergent solution

### Inpatient care

- Clean and disinfect frequently touched surfaces with detergent and disinfectant wipe/solution at least daily or more frequently in high intensity (e.g. ICU)
- Clean and disinfect equipment after each use (as per normal infection prevention and control practice).
- Clean and disinfect surfaces that have been in direct contact with or exposed to respiratory droplets between each patient episode.





## General cleaning

Laundry should be done and surfaces in all environments in which COVID-19 cases receive care (for example, treatment units) should be cleaned at least once a day and when a patient is discharged. Many disinfectants are active against enveloped viruses, such as the COVID-19 virus, including commonly used hospital disinfectants. Currently, WHO recommends using:-

- 70% ethyl alcohol to disinfect small areas between uses, such as reusable dedicated equipment (for example, thermometers);
- Sodium hypochlorite at 0.5% (equivalent to 5000 ppm) for disinfecting surfaces.

All individuals dealing with soiled bedding, towels and clothes from patients with COVID-19 infection should:-

- Wear appropriate PPE before touching it, including heavy duty gloves, a mask, eye protection (goggles or a face shield), a long-sleeved gown, an apron if the gown is not fluid resistant, and boots or closed shoes and should perform hand hygiene after exposure to blood or body fluids and after removing PPE.
- Soiled linen should be placed in clearly labelled, leak-proof bags or containers, after carefully removing any solid excrement and putting it in a covered bucket to be disposed of in a toilet or latrine.
- Machine washing with warm water at 60–90° C with laundry detergent is recommended.
- The laundry can then be dried according to routine procedures. If machine washing is not possible, linens can be soaked in hot water and soap in a large drum using a stick to stir and being careful to avoid splashing.
- The drum should then be emptied, and the linens soaked in 0.05% chlorine for approximately 30 minutes. Finally, the laundry should be rinsed with clean water and the linens allowed to dry fully in sunlight.



- If excreta are on surfaces (such as linens or the floor), the excreta should be carefully removed with towels and immediately safely disposed of in the latrine. If the towels are single use, they should be treated as infectious waste; if they are reusable, they should be treated as soiled linens. Socked with 0.5% chlorine for 10 minutes. The area should then be cleaned and disinfected with 0.5% chlorine solution

Interim Guidance





## Annex: How to prepare a bleach solution (0.5% chlorine solution)

### 1. Formula for making a dilute solution from a concentrated solution

- Check concentration (% concentrate) of the chlorine solution.
- Determine total parts of water using the formula below.

$$\text{Total Parts (TP) of water} = \left[ \frac{\% \text{ Concentrate}}{\% \text{ Dilute}} \right] - 1$$

- Mix 1 part concentrated bleach with the total parts water required

**Example:** Make a dilute solution (0.5%) from 5% concentrated solution

**STEP 1:** Calculate TP water

$$\begin{aligned} \text{Total Parts (TP) of water} &= \left[ \frac{5\%}{0.5\%} \right] - 1 \\ &= 9 \end{aligned}$$

**STEP 2:** Take 1 part concentrated solution and add to 9 parts water.

### 2. Formula for making a dilute solution form a dry powder

- Check concentration (% concentrate) of the powder you are using.
- Determine amount of chlorine (gm.) to be add in a liter of water using the formula below.

$$\text{Gm/Lit} = \left[ \frac{\% \text{ Dilute}}{\% \text{ Concentrate}} \right] * 1000$$

- Mix the calculated amount of dry powdered with one liter of water.



**Example:** Make a dilute chlorine solution (0.5%) from a concentrated powder (35%)

**STEP 1:** Calculate grams/liter:

$$Gm/Lit = \left[ \frac{0.5\%}{35\%} \right] * 1,000$$

$$= 14.2 \text{ gm/lit}$$

**STEP 2:** Add 14.2 grams to 1 liter of water

Most of hand sprayers available in the market have a volume of 12L, 16L, 18L, 20L and so we need the amount of chlorine powder and liters of bleach as follow.

**Table 1.** Shows that the volume of chlorine and water needed for 0.5 % spray solution from 5% chlorine concentration based on above calculation.

S. No	Volume of hand spray	Amount of water in liter	Amount of bleach in liter
1	12 liter	10.7	1.3
2	16 liter	14.2	1.8
3	18 liter	16	2
4	20 liter	17.8	2.2

▪ **Material needed**

- PPE (gown, glove heavy duty/exam, face mask, boots, cap, eye Goggle
- Hand sprayer
- Spray man
- Bleach and water
- Measuring jar





## HAND SPRAYERS



Table 2. Volume of chlorine and water needed for preparing bleach solution

Concentration of commercially available hypochlorite solution	Required chlorine Concentration	To prepare 1000 ml	
		Bleach in ml	water in ml
5%	2	400	600
	1	200	800
	0.50%	100	900
10%	0.50%	50	950
	1	100	900
	2	200	800
<b>Preparation of dilute solutions of bleaching powder</b>			
Strength of bleaching powder	Volume of water	Desired concentration	Bleaching powder in grams per litre
20%	1 litre	0.50%	25
		1%	50
		2%	200
		5%	250
		10%	500
25%	1 litre	0.50%	20
		1%	40



		2%	80
		5%	200
		10	400
30%	1 litre	0.50%	17
		1%	33
		2%	67
		5%	167
		10	333
70%	1 litre	0.50%	7.14
		1%	14.3
		2%	28.5
		5%	71
		10	143

