



Environmental cleaning and disinfection principles for health and residential care facilities

This advice has been developed by the Infection Control Expert Group and endorsed by the Australian Health Protection Principal Committee. For additional guidance on infection prevention and control during the COVID-19 pandemic, see the [Department of Health](#) website.

Cleaning is an essential part of disinfection as organic matter can inactivate many disinfectants. Cleaning is the mechanical action using a detergent and warm water to remove organic matter allowing the disinfectant to work. Disinfection is the use of chemicals to kill germs. Removal of germs, such as SARS-CoV-2 (the virus that causes COVID-19), requires thorough cleaning, followed by disinfection.¹

For a disinfection solution to be effective, it must be made and applied in line with the manufacturers instructions.

Coronaviruses can survive on surfaces for many hours but are readily inactivated by cleaning and disinfection. The length of time that SARS-CoV-2 survives on inanimate surfaces will vary depending on factors such as the amount of contaminated body fluid (e.g. respiratory droplets or soiling) present, the type of surface, environmental temperature and humidity.

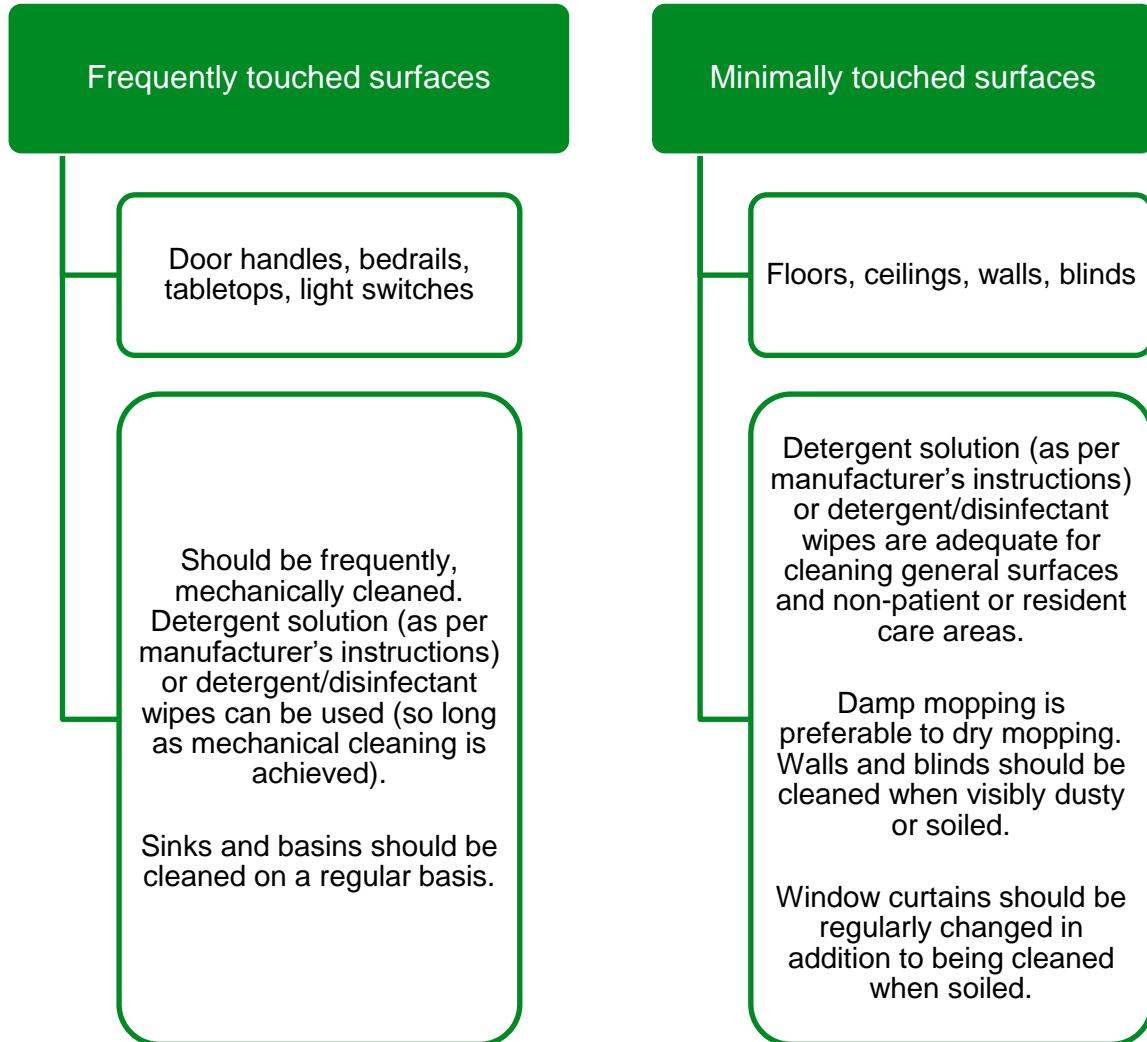
In addition to regular cleaning schedules, in the context of COVID-19, surfaces should be cleaned and disinfected as follows:

- Clean frequently touched surfaces with detergent solution or detergent/disinfectant wipes.
- Clean general surfaces and fittings immediately when visibly soiled and after spills.

¹ A list of disinfectants for use against COVID-19 is available on the TGA website.

Routine environmental cleaning requirements can be divided into two groups:²

Routine environmental cleaning



² Adapted from Australian Guidelines for the Prevention and Control of Infection in Healthcare, Canberra: National Health and Medical Research Council (2019).

Environmental cleaning in the context of COVID-19

Health care settings

Primary and community care

Non-patient areas, well residential care facility (RCF) residents' rooms and communal 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.
- Carpets should be vacuumed using a vacuum equipped with a high-efficiency particulate air (HEPA) filter. Do not vacuum in a room or space that has people in it.

Patient areas

- Clean and disinfect frequently touched surfaces, such as, door handles, light switches, railings etc, 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 patients have had direct contact with, or that have been exposed to respiratory droplets.
- The frequency of cleaning inpatient areas may need to be increased, depending on the local epidemiology and rates of community transmission. This may be of particular note in areas such as emergency departments, in areas where there are high levels of community transmission of SARS-CoV-2.
- Gross contamination of an area following a patient may require a terminal clean (see below).

Inpatient care

- Clean and disinfect frequently touched surfaces with detergent and disinfectant wipe/solution at least daily.
- Frequency of cleaning in inpatient care areas should be increased in:
 - areas where care is provided to patients with suspected, probable or confirmed COVID-19.
 - areas of high traffic (e.g. radiology, outpatients), in areas where there is community transmission of SARS-CoV-2.
- Clean and disinfect all 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.

- Carpets should be vacuumed using a vacuum equipped with a HEPA filter. Do not vacuum in a room or space that has people in it.

Communal staff, public and patient/resident support areas

These environments include (but are not limited to) staff dining rooms, cafes, retail outlets, staff meeting rooms and patient transport vehicles.



The risk of transmission of COVID-19 in these settings can be minimised through a good standard of general hygiene. This includes:

- Removal of PPE (with the exception of face masks, face shields or eye protection) and performance of hand hygiene before entering these areas.
- Promoting cough etiquette and respiratory hygiene.
- Practicing physical distancing (>1.5m apart).
- Routine cleaning of frequently touched hard surfaces with detergent/disinfectant solution/wipe.
- Providing adequate alcohol-based hand rub (ABHR) for staff and consumers to use. ABHR stations should be available, especially in areas where food is on display and frequent touching of produce occurs.
- Training staff on the use of ABHR.
- Use of a mask, consistent with local recommendations at any given time.

Cleaning

- The frequency of cleaning in communal areas may need to increase, depending on the local epidemiology.
- The frequency of cleaning in communal areas used by staff who are caring for patients/residents with suspected, probable or confirmed COVID-19, or in areas of high intensity (e.g. COVID-19 wards, ICU, ED), may also need to increase.

Transport

- Vehicle air-conditioning should be set to fresh air.  
- For patient transport services, vehicles are to have furnishings that are able to be easily cleaned (e.g. vinyl, leather, plastic). Patient transport service vehicles include those that transfer patients between hospitals or places of residence. For the purpose of this document, this excludes ambulances.

Disinfectant fogging

Disinfectant fogging (widespread fumigation) is a chemical application method where very fine droplets of disinfectant are sprayed throughout a room in a fog. Disinfectant fogging is not recommended. This method usually involves high-volume, random application by spraying. Using this method means required chemical concentration and application times may not be achieved. Safe Work Australia provide information on cleaning to prevent the spread of COVID-19 on their [website](#).

Novel environmental disinfectants

There may be alternative processes, which are not considered fogging, that deliver a measured droplet dosage and coat surfaces. Such novel techniques for environmental decontamination are not recommended for routine disinfection, not do they replace the need to frequently clean and disinfect surfaces. These may be considered for enhanced environmental decontamination in situations where all other methods have been exhausted.

Hand hygiene

Soap and water can be used for hand hygiene at any time and **should** be used when hands are visibly soiled. ABHR can be used as an alternative to soap and water, except when hands are visibly soiled.

Cleaning hands regularly also helps to reduce environmental contamination.

Information for cleaning staff of health and residential care facilities

- The risk of acquiring COVID-19 from performing environmental cleaning is less than the risk when face-to-face with a sick person who may be coughing, sneezing or exhibiting aerosol generating behaviours (such as shouting).
- When performing environmental cleaning in health and residential care rooms where suspected, probable or confirmed cases of COVID-19 have been treated, cleaners should:
 - Be informed to avoid touching their face, especially their mouth, nose, and eyes when cleaning.
 - Be trained in the correct PPE to be worn when performing their duties and the correct procedure for donning and doffing PPE.
 - Wear a full-length disposable gown, impermeable disposable gloves, a surgical mask, and eye protection or a face shield while cleaning. The surgical mask and eye protection act as barriers to people inadvertently touching their face with contaminated hands and fingers, whether gloved or not. Prescription glasses are not considered protective eyewear.

- Perform hand hygiene, either using soap and water or an ABHR, before putting on and removing any PPE.

Use of disinfectant

- Following cleaning to remove any organic matter, a disinfectant that describes antiviral activity (meaning it can kill the virus) should be used. Disinfectants should be used in accordance with the manufacturer's instructions to ensure sufficient contact time is allowed.
- Safety Data Sheets must be available in all locations where the product is used.
- The [Australian Register of Therapeutic Goods](#) lists products that have virucidal claims.
- If using freshly made bleach solution (sodium hypochlorite), follow manufacturer's instructions for appropriate dilution and use (see Appendix 1 for dilution instructions).
- Wipe the area with disinfectant solution using disposable paper towels or a disposable cloth.
- On completion of cleaning/disinfecting, remove PPE in the correct order.
- Wash hands well using soap and water and dry with disposable paper or single-use cloth towel, or use an ABHR (unless hands are visibly soiled).

Terminal cleaning of rooms of patients/residents known to have COVID-19

Terminal cleaning of rooms of patients/residents confirmed to have COVID-19, requires both thorough cleaning and disinfection for environmental decontamination.

Ensure room is prepared prior to cleaning. Remove medical equipment and resident/patient-used items. Remove clutter and discard disposable items/waste.

Cleaning should be followed by, or combined with, a disinfectant process (see 2-step clean and 2-in-1 step clean below).

- Disposable cleaning equipment is preferred, however, if any reuseable cleaning equipment is used, it must be bagged and sent for laundering after each cleaning activity (e.g. after cleaning each patient room or shared communal area). Metal items (e.g. mop handles), must be disinfected after each use. Wear PPE – surgical mask, protective eyewear, gloves and gown.
- Bed screens, privacy curtains, and window curtains (if fitted), are to be removed and sent for laundering or dry cleaning, or disposed of if disposable versions.
- Clean/disinfect all surfaces, furniture (including all surfaces of the bed and mattress) and fittings.

- Mop floor.
- Steam clean any soft furnishings.
- Remove PPE and perform hand hygiene.
- Replace any bed/privacy screens.
- In separate area, don fresh gloves and protective eyewear, then clean any reusable cleaning equipment (e.g. mop handles all cleaning equipment) and return it to the cleaners' room or storage area, or dispose of if disposable versions.
- Remove gloves and other PPE and perform hand hygiene.

2-step clean

Physical cleaning with detergent followed by disinfection with a TGA-listed hospital-grade disinfectant with activity against viruses (according to label/product information) or a chlorine-based product such as sodium hypochlorite.

2-in-1 clean

A physical clean using a combined detergent and TGA-listed hospital-grade disinfectant with activity against viruses (according to label/product information) or a chlorine-based product such as sodium hypochlorite, i.e. a combined detergent/disinfectant wipe or solution.

More information

For the latest advice, information and resources, go to www.health.gov.au

For more information regarding considerations for chlorine use in infection control, go to <https://www.cdc.gov/vhf/ebola/clinicians/non-us-healthcare-settings/chlorine-use.html>

For more information regarding safety when using chlorine-based solutions, go to <https://www.cdc.gov/niosh/topics/chlorine/default.html>, <https://www.ag.ndsu.edu/flood/home/chlorine-bleach-safety>, and <https://www.ccohs.ca/oshanswers/chemicals/bleach.html>

Call the National Coronavirus Health Information Line on 1800 020 080. It operates 24 hours a day, seven days a week. If you require translating or interpreting services, call 131 450.

The phone number of each state or territory public health agency is available at www.health.gov.au/state-territory-contacts

If you have concerns about your health, speak to a doctor.

References

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For information on the evidence and use of ATP bioluminescence

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Appendix 1

Preparation of chlorine-based disinfectant solution

- Chlorine (bleach) can effectively kill viruses but handling it can be hazardous for humans if handled incorrectly and not in accordance with manufacturer's instructions.
- Use a safer alternative, where possible, and always follow manufacturer's instructions.
- Know when and how to dilute it correctly (e.g. always pour concentrate into the water, never the other way around).
- Work in a well ventilated area and wear personal protective equipment (see below).
- DO NOT use with any other products (e.g. toilet bowl cleaners, acids - including vinegar - or anything containing ammonia).

When preparing bleach solutions, observe the following:

- Gloves should be worn when handling and preparing bleach solutions.
- Appropriate protective eye wear should be worn in case of splashing.
- Bleach solution should be:
 - made up daily.
 - used mainly on hard, non-porous surfaces (it can damage textiles and metals).
- Sufficient time is required to kill the virus; follow manufacturer's instructions. 10 minutes of contact time is required at a concentration of 0.01% or 1 minute for a concentration of 0.1%.

Household bleach comes in a variety of strengths. The concentration of active ingredient —hypochlorous acid² — can be found on the product label.

Table 1. Recipes to achieve a 1000 ppm (0.1%) bleach solution

Original strength of bleach		Disinfectant recipe		Volume in standard 10L bucket
%	Parts per million	Parts of bleach	Parts of water	
1	10,000	1	9	1000 mL
2	20,000	1	19	500 mL
3	30,000	1	29	333 mL
4	40,000	1	39	250 mL
5	50,000	1	49	200 mL

² Hypochlorous acid (HOCl) is a weak acid formed when chlorine (Cl) dissolves in water and dissociated to hypochlorite (ClO⁻) which is the oxidising disinfectant in bleach.

Note that prediluted bleach solutions lose potency over time and on exposure to sunlight.