

Healthcare Facility Cleaning and Disinfection Guide

May 12, 2020

Coronavirus-disease 2019 (COVID-19) is spread most commonly via respiratory droplets among close contacts (within 6 feet for greater than 10 minutes). While person-to-person transmission is likely the most important driver of spread, transmission from contaminated surfaces could be a potential source. Recent studies indicate SARS-CoV-2 (the virus that causes COVID-19) can remain on plastic up to 3 days, stainless steel 2-3 days, and cardboard 24 hours¹. Healthcare facilities should implement and adhere to policies and practices which minimize exposures to all pathogens including SARS-CoV-2. This should be a joint venture between infection prevention and control (IPaC) and environmental services (EVS).



Cleaning and Disinfecting

Cleaning and disinfecting rooms occupied by patients/residents suspected or confirmed to have COVID-19 is critical. Cleaning with soap (detergent) and water is usually adequate for surfaces and items in contact with non-infected, healthy, intact skin (“non-critical” items). Thorough cleaning renders most items free of infection risk, and safe to handle. However, for SARS-CoV-2, as for all transmissible pathogens, cleaning alone is inadequate.

Disinfectants should be used on environmental surfaces.

Cleaning vs Disinfecting

Cleaning refers to removal of germs, dirt, and impurities from surfaces. It does not *kill* germs, but by removing them, lowers their numbers, effectively lowering risk of spread.

Disinfecting refers to the use of chemicals (e.g., EPA-registered disinfectants) to kill germs on surfaces. This process does not necessarily clean dirty surfaces or remove germs, but by killing germs on a surface after cleaning, can further lower risk of spreading infection.

When cleaning and disinfecting rooms or surfaces potentially exposed to SARS-CoV-2:

- Perform adequate hand hygiene immediately before and after removing gloves, and after any contact with potentially infected fluids or contaminated surfaces
 - Hand sanitizer (at least 60% alcohol) or soap and water both valid options
 - When hands are visibly soiled always wash with soap and water
- Wear disposable gloves and gowns for all tasks in the cleaning process, including handling trash, laundry, wastes
- Additional personal protective equipment (PPE) such as respiratory and eye protection might be required based on the cleaning/disinfectant products being used and whether there or Transmission-Based Precautions that need to be followed
 - Disposable PPE should be treated as potentially infectious material (as regulated medical waste, **not** considered category A waste)
 - PPE should be removed carefully to avoid contamination of the wearer and the surrounding area.

Disinfectants

Environmental Protection Agency (EPA) registered, hospital-grade products should always be used. Products that meet EPA’s criteria for use against SARS-CoV-2 can be found [on List N](#). These products include sprays, surface wipes, and other liquids². They may be labeled as “antimicrobials”, “disinfectants”, or “biocides”, and are **not meant for use on humans**.

Commonly used antimicrobial agents effective against varied coronaviruses, EPA approved					
Antimicrobial Agent	Concentrate	Coronaviruses Tested	EPA #	Contact time	Examples
Ethanol	70%	HCoV-229E, MHV-2, MHV-N, CCV, TGEV	4264-17 70144-4 70145-5 84368-1 88494-3 88494-4 42964-17 88494-1	1-2 min.	
Sodium hypochlorite (i.e. dilute bleach)	0.1-0.5% 0.05% - 0.1%	HCoV-229E, SARS-CoV	1677-235 9480-8 70590-2 70271-15, 70271-13 3573-77 87518-6 37549-1, 37429-2 56392-7 5813-105 5813-111	1-2 min.	
Sodium chlorite	0.23%	MHV-2, MHV-N, CCV	58232-2 70271-15	1-5 min.	
Isopropanol	50%	MHV-2, MHV-N, CCV	9480-12 88897-1 70144-2 70144-2 1130-15 46781-12 46781-6 10492-4	2-3 min.	

Adapted from European CDC: [Environmental Cleaning Options](#) and EPA-registered disinfectants under [EPA’s emerging pathogens program for use against SARS-CoV-2](#); **this is not an exhaustive list** of all SARS-CoV-2 EPA-registered disinfectants

Types of Surfaces

Routine cleaning and disinfection procedures are appropriate for SARS-CoV-2 in health care settings, *including* areas in which aerosol-generating procedures (AGP) were performed. Follow instructions found on product/equipment labels to ensure proper cleaning and disinfection.

High-touch surfaces – are places within the patient/resident-care area that are most frequently touched, such as counters, tables, hard-backed chairs, doorknobs, light switches, keyboards, tablets, touch screens, remote controls, handles, desks, toilets, sinks

Hard surfaces – non-porous, such as stainless steel, plastic, counters, vinyl-covered recliners, polyurethane and other water-resistant upholstery

- Hand hygiene, don gloves and needed PPE
- **Clean:** visibly dirty surfaces need to be wiped with detergent or soap and water prior to disinfection
- **Disinfection:** EPA-registered, hospital disinfectants should be effective, following contact time per label



Electronics – such as keyboards, computer or touch screens, remote controls

- Hand hygiene, don gloves and needed PPE
- Consider wipeable covers for electronics
- **Clean:** remove visible contamination if present (soap and water +/- appropriate cleaners indicated by surface)
- **Disinfect:** EPA-appropriate agents, if no manufacturer guidance by electronic, consider 70% alcohol wipes over sprays, dry thoroughly to avoid pooling of liquids

Soft surfaces – porous, such as carpeted floor, rugs, and drapes

- Hand hygiene, don gloves and needed PPE
- **Clean:** remove visible contamination if present (soap and water +/- appropriate cleaners indicated by surface)
- **Disinfect:** material-appropriate EPA-registered disinfectant
- **Launder items** (if possible, according to the manufacturer's instructions): use the hottest appropriate water setting and dry items completely, avoid shaking wet items (may disperse virus)



Use Products Effectively²

To kill the virus, the surface must stay wet for the entire time on the disinfectant product label – look for “**contact time**” or “**dwel time**”

- Surface wipes can dry out during use, they must remain wet to be effective
- Each product has only been shown to work where the label says it can be used – look for “**use sites**” on label, not all disinfectants work on all surfaces

“Cleaning” wipes do not kill viruses – they do not make claims to disinfect and are not registered with the EPA.

For disinfection – ensure the product is labeled as “**antimicrobial**”, “**disinfectant**”, or “**biocide**”

Linens

- Keep laundry from ill persons separate from that belonging to non-ill persons. Ensure ill patient's laundry is carefully handled using appropriate PPE (i.e. following needed Transmission-Based Precautions the ill-person is under).
- Hand hygiene, don gloves and needed PPE
- Do not shake dirty or wet laundry (to minimize the possibility of aerosolizing virus)
- **Clean:** launder per manufacturer's instructions, use hottest water setting possible
- Completely dry laundry
- Clean and disinfect clothes hampers according to guidance above for surfaces, consider a bag liner that is either disposable or can be laundered



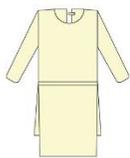
Frequency of Room Cleaning & Disinfection

High-touch surfaces should be cleaned plus disinfected on a frequent and regular daily schedule (at minimum once per shift, more would be better, but we understand it might not always be possible to do more), when visibly dirty, and upon terminal room cleaning. After a person with suspected or confirmed COVID-19 vacates a room, all surfaces (including high-touch) need to be terminally cleaned and disinfected.

Routine daily room cleaning (no AGPs performed in room but ill-person present)

As much as possible, limit entry into rooms of persons suspected or confirmed to have COVID-19 to essential staff (i.e. nursing personnel). Assign daily cleaning to nursing staff if possible. If EVS staff will be doing this cleaning they can follow the same instructions below.

PPE Needed*:



Gown



Mask

OR



N-95 Mask



Eye Protection



Gloves

*(staff might feel more comfortable and can use N95s, however facemasks are sufficient in the absence of AGPs)

- **Clean:** remove visible contamination
- **Disinfect:** follow disinfection processes as above and according to your facility practices, thoroughly cleaning all high-touch surfaces
- After cleaning/disinfecting, doff PPE appropriately using hand hygiene throughout

Expanded room cleaning (AGPs performed)

If possible, **wait 2 hours before entering to clean;** the amount of time that is commonly used when

Aerosol-Generating Procedures (AGPs)

Anything which stimulates cough or promotes generation of aerosols:

- Positive pressure ventilation (CPAP, BiPAP)
- Endotracheal intubation/extubation
- Airway suction
- Sputum induction
- Bronchoscopy
- CPR

See others in the [CDC FAQ for Healthcare Infection Prevention and Control](#)

dealing with pathogens spread by the airborne route (e.g., measles, tuberculosis) to remove potentially infectious particles in a typical ventilation system with 6 air exchanges/hour. For airborne isolation/negative pressure rooms there is not a need to remain empty for 2 hours prior to cleaning because these have ventilation systems with more air exchanges/hour specifically designed to protect occupants by removing potentially infectious particles. The room should then undergo appropriate cleaning and surface disinfection as above, using the following PPE:

- Gown
- Glove



If waiting 2 hours is not a possibility, the room should undergo appropriate cleaning and surface disinfection as above, using the following PPE:

- Gown
- N95
- Eye protection
- Gloves



Terminal room cleaning (ill-person has vacated the room, needs to be turned over for re-use) If possible, **wait 2 hours before entering to clean**. For airborne isolation/negative pressure rooms there is not a need to remain empty for 2 hours prior to cleaning. The room should then undergo appropriate cleaning and surface disinfection as above, using the following PPE:

- Gown
- Gloves



Immediate turnover of room (waiting 2 hours is not a possibility), the room should undergo appropriate cleaning and surface disinfection as above, using the following PPE:

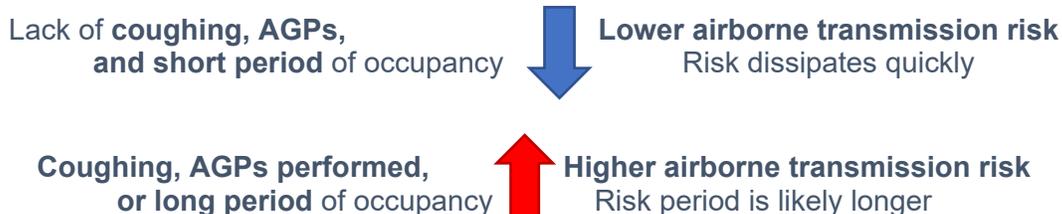
- Gown
- Facemask (staff might feel more comfortable and can use N95s, however facemasks are sufficient in the absence of AGPs)
- Eye protection
- Gloves



Length of Time Post-Vacancy Prior to Entry without PPE

COVID-19 spreads predominantly via respiratory droplets. The amount of time that the air inside an examination room remains potentially infectious is unknown, and likely depends on many factors (see below). Facilities will need to consider these factors when deciding when the vacated room can be entered by someone who is not wearing PPE (e.g., for cleaning/disinfection, for re-use of the room).

- Physical factors: room size, number of [air changes/hour](#), if coughing or sneezing occurring, whether AGPs performed
- Time factors: how long ill-person was in the room



Waste Disposal

SARS-CoV-2 is not considered a Category A infectious substance. Waste potentially contaminated with SARS-CoV-2 should be treated as routine regulated medical waste. Management of laundry, food service utensils, medical waste should be performed in accordance with routine procedures. Lab waste or specimens from suspected or confirmed COVID-19 patients should be handled as all other biohazardous waste. There is currently no evidence to suggest that lab waste needs any additional packaging or disinfection procedures. More information on medical waste management can be found [here](#).

Additional Considerations for Employers

- Develop **policies for worker protection and provide training** to all cleaning staff on site prior to providing cleaning tasks
- **Train** when to use PPE, what PPE is necessary, how to properly don and doff PPE, how to properly dispose of PPE
- Ensure workers are **trained on the hazards of the cleaning chemicals** used in the workplace in accordance with OSHA's Hazard Communication standard ([29 CFR 1910.1200external icon](#))
- **Comply** with OSHA's standards on Bloodborne Pathogens ([29 CFR 1910.1030external icon](#)), including proper disposal of regulated waste, and PPE ([29 CFR 1910.132external icon](#))
- **Educate workers** performing cleaning, laundry, and trash pick-up to recognize the symptoms of COVID-19
- Provide instructions **on what to do if they develop symptoms within 14 days** after their last possible work exposure (or any known exposure)



Cited References:

1. van Doremalen N, Morris D., Holbrook M, et al. Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1. 2020 New Engl J Med; 382;16.
2. National Pesticide Information Center, NPIC. Using disinfectants to control the COVID-19 virus. March 5, 2020. Retrieved April 24, 2020 from: <http://npic.orst.edu/ingred/ptype/amicrob/covid19.html>.

Other References:

- CDC. *Cleaning and Disinfecting Your Facility, everyday steps, steps when someone is sick, and considerations for employers*. April 14, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html>. April 23, 2020.
- CDC. *Cleaning and Disinfection for Community Facilities: interim recommendations for U.S. Community Facilities with Suspected/Confirmed Coronavirus Disease 2019 (COVID-19)*. April 1, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/cleaning-disinfection.html>. April 23, 2020.
- CDC. *Healthcare Infection Prevention and Control FAQs for COVID-19*. May 11, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-faq.html>. May 12, 2020.