

Surface decontamination procedures for coronavirus and other respiratory viruses—Interim recommendations

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Important: These recommendations are based on [CDC guidance](#) and are **appropriate for cleaning and disinfecting facilities where persons suspected or confirmed to have COVID-19 were present**. For large-scale contamination (e.g., large spills of biological agents, airborne releases of highly infectious biological agents that enter ventilation systems), please contact one of the ASU-approved vendors listed in [Appendix A](#).

Introduction

A new coronavirus, 2019-nCoV, has caused an outbreak of coronavirus disease 2019, or COVID-19, respiratory illness. Coronaviruses are part of a large family of viruses, with some causing illness in people and others causing illness in animals. Some examples of previous coronaviruses causing illness in people include Severe Acute Respiratory Syndrome, or SARS, and Middle East Respiratory Syndrome, or MERS.

Based on what is currently known about the virus, spread from person-to-person happens most frequently among close contacts (within about six feet). This type of transmission occurs via respiratory droplets. Transmission of novel coronavirus to persons from surfaces contaminated with the virus has not been documented. Transmission of coronavirus in general occurs much more commonly through respiratory droplets. [Current evidence](#) suggests that the new coronavirus may remain viable for hours to days on surfaces made from a variety of materials. Disinfection is a best practice measure for prevention of COVID-19 and other viral respiratory illnesses.

This guidance provides recommendations on the cleaning and disinfection of rooms or areas where those with suspected or with confirmed COVID-19 have visited. It is aimed at limiting the survival of the new coronavirus in key environments, such as offices, bathrooms, and common areas used by the affected persons. These recommendations will be updated if additional information becomes available.

Employee Reporting for COVID-19 Exposure Issues—24/7

1. If an employee is made aware that they have had significant contact with an individual that has a positive diagnosis of COVID-19 or that employee has received a diagnosis, they should immediately contact their supervisor and [Elizabeth Badalamenti, RN](#), using electronic means.
2. If the employee has been in an ASU owned or operated area within the last three hours, it should be vacated for a minimum of three hours by all personnel. The area should be secured by either locking the office door or placing tape across the entrance to their cubicle.
3. The supervisor should call the ASU Help Desk at 480-965-3633 with details about the space the employee occupies for surface decontamination. If possible, that space should be secured by either locking the door or using a strip of tape across the entry to a cubicle for a minimum of three hours.

4. The Help Desk will inform the appropriate custodial contractor of the area in question and have them conduct full surface decontamination of the affected area.
5. Facilities Management will collect all pertinent location information and forward it to the following recipients:
 - a. ASU Police
 - b. ASU Safety Partners—formerly Environmental Health and Safety
 - c. EOSS, if a residence hall or dining facility is affected.
 - d. Facilities Maintenance—onsite personnel
6. If a hazardous substance is present or the space cannot be safely secured for three hours after the employee has vacated the premises, the supervisor should inform the Help Desk. They will route the request to one of our Biohazard Remediation Companies for immediate response.
7. The same information routing in this instance will apply.

Section I: Before work begins

In accordance with ASU Health Services recommendations and [CDC guidelines](#), this document was established for the cleaning and disinfection of facilities where individuals of suspected or confirmed cases of COVID-19 are reported. Before work begins:

- Ensure that the affected person has vacated the space.
- Close off areas used by the affected persons and lock or restrict access.
- Wait as long as practical before beginning cleaning and disinfection to minimize potential for exposure to respiratory droplets. If possible, wait a minimum of 3 hours up to 24 hours before beginning cleaning and disinfection.
- Open outside doors and windows to increase air circulation in the area.

Section II: Personal protective equipment

Personal protective equipment must be worn before entering spaces to be decontaminated. Recommended PPE items:

- Disposable face shield.
- Disposable gloves.
- Disposable gowns.
- N95 respirator or surgical mask.

Note: All disposable masks, gowns and gloves must be disposed of as biohazardous waste after use. **Do not reuse.**

Section III: Preparations before disinfecting

1. All solutions of detergents or disinfectants must be prepared in a clean, dry container.
2. All solutions must be prepared **fresh** daily with tap water and at the proper mixture for the dilution (for example, a 10 percent bleach dilution is one-part concentrated bleach to nine parts water). Ensure that bleach or other disinfectants are not expired.

3. **Do not use spray bottles** when cleaning surfaces. Spraying surfaces may cause aerosols. Containers that dispense liquid can be used to apply disinfectants to surfaces or disinfectants can be poured gently onto cleaning cloths to clean surfaces.
4. EPA-registered disinfectants must be used. Examples include bleach, Conflikt and CaviCide. Please review the [complete list of EPA-registered disinfectants](#).
5. Pre-mixed “ready-to-use” disinfectant solutions or wipes may also be used. Examples include EZ-KILL Disinfectant Wipes, CaviWipes and CiDecon Plus Wipes.

Section IV: Disinfecting hard surfaces

To disinfect minimal hand-contact surfaces:

1. For windowsills, walls and ceilings, prepare the disinfecting solutions (for example, a 10 percent bleach dilution is one-part concentrated bleach to nine parts water) using the recommended PPE.
2. Follow standard procedures for cleaning with the **exception that no spray bottles should be used**. Disinfectant must be poured gently into cleaning cloth and surfaces wiped gently and allowed to dry completely.
3. Methods for disinfecting hard floors include wet mopping and wet vacuuming. Water-disinfectant solutions for mopping should be prepared as described in **Section III**.
4. Disinfectant solutions used for mopping must be replaced regularly, after every three or four rooms, at no longer than one-hour intervals.
5. Replace soiled cloths and mop heads with clean ones every time the disinfectant solution is replaced, after every three or four rooms.
6. A source of contamination in the cleaning process is the cloth or mop head. **Never leave cloths or mop heads to soak in dirty cleaning solutions**. Cloths and mop heads must be decontaminated by immersing in 10 percent bleach solution (one-part concentrated bleach to nine parts water) for a contact time of 20 minutes. Then rinse mop heads and cloths with cool water and allow to dry completely before reuse.
7. Single-use, disposable cleaning cloths and mop heads can also be used as an alternative. If using disposable cleaning cloths and mops, place into a plastic bag before final disposal into a labeled biohazardous waste bag (double-bagged).
8. After cleaning, remove all disposable PPE and place into a plastic bag double bag biohazardous waste before final disposal into a labeled biohazardous waste bag (double-bagged).
9. Wash hands and forearms thoroughly, or scrub, for at least 20 seconds with soap and warm water after removing PPE.
10. Keep a log of locations and surfaces that are cleaned with the date and time and cleaning staff’s initials.

To disinfect frequent hand-contact surfaces:

1. For counters, doors, handrails, bathrooms and other surfaces that are hard or non-porous, such as plastic, glass or metal, wear the recommended PPE and pour an EPA-registered disinfectant gently into a cleaning cloth or use disinfectant wipes (EZ-KILL, CaviWipes, etc.) and wipe down the surfaces. Allow the surfaces to dry completely.
2. Follow with a second wipe with a clean cloth and disinfectant or disposable disinfecting wipes.
3. Place disposable wipes in a sealed, Ziploc plastic bag after cleaning then transfer to appropriate biohazardous waste for final disposal. Reusable cloths must be placed in a sealed plastic bag until laundered or immediately transferred to a clean bucket and decontaminated by immersing them in 10 percent bleach solution (one-part concentrated

bleach to nine parts water) for a contact time of 20 minutes. Rinse cloths with cool water and allow to dry completely before reuse. If a plastic bag was used to hold any cleaning cloths, discard it in the appropriate biohazardous waste for final disposal.

4. All disposable materials used for cleaning and disinfecting must be double-bagged and labeled as biohazardous waste for final disposal.
5. After cleaning or disinfecting, remove all disposable PPE and double bag as biohazardous waste for final disposal.
6. Wash hands and forearms thoroughly, or scrub, for at least 20 seconds with soap and warm water after removing PPE.
7. Keep a log of locations and surfaces that are cleaned with the date and time and cleaning staff's initials.

Section IV: Disinfecting soft surfaces

To disinfect furniture:

For surfaces that are soft or made of cloth, such as furniture — even though pathogenic microorganisms have been isolated from these surfaces — evidence does not suggest they create an increased risk of infection compared with areas that contain hard-surfaced furniture. Furniture may be cleaned with disinfectant wipes using the recommended PPE. For gross contamination of furniture, an outside vendor must be contacted. Please see **Appendix A** for a list of ASU-approved vendors.

To disinfect carpet:

For gross contamination of carpets, an outside vendor must be contacted. Wet vacuum cleaners may be used to decontaminate smaller areas using the recommended PPE. According to OSHA, carpeting contaminated with blood or other potentially infectious materials cannot be fully decontaminated. Allow carpet and rugs to completely air dry without the use of fans, which can create aerosols.

Section V: Potential exposures

Cleaning staff should immediately report breaches in PPE (e.g., tear in gloves) or any potential exposures to their supervisor immediately.

If personal clothing becomes contaminated during the clean-up process, it should be removed in a manner that minimizes the potential for exposure to mucous membranes (e.g., to the eyes, face, mouth) and placed into sealed bags (preferably red biohazard waste bags). Any exposed body surfaces must be washed and scrubbed for at least 20 seconds with soap and water.

In the event of an exposure to an infectious agent or material:

1. ASU Health Services is available during business hours in person, and at all times by phone at 480-965-3346. Contact 911 for life-threatening situations.
2. For all incidents involving ASU employees, contact CorVel for assistance at 602-542-WORK or 602-542-9665.
3. Report all incidents or potential incidents immediately to the supervisor and to ASU Biosafety and Biosecurity at 480-965-1823 or biosafety@asu.edu.

If any spill or cleaning situation cannot be managed by ASU personnel, notify ASU Biosafety and Biosecurity at 480-965-1823. For response outside of business hours,

contact the ASU Police at 480-965-3456. Always call 911 for life-threatening emergencies.

References

1. Centers for Disease Control and Prevention. Environmental Cleaning and Disinfection Recommendations (2020). [cdc.gov/coronavirus/2019-ncov/community/organizations/cleaning-disinfection.html](https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/cleaning-disinfection.html)
2. Centers for Disease Control and Prevention. 2019 Novel Coronavirus, Wuhan, China Prevention and Treatment. [cdc.gov/coronavirus/2019-ncov/about/prevention-treatment.html](https://www.cdc.gov/coronavirus/2019-ncov/about/prevention-treatment.html)
3. Centers for Disease Control and Prevention. Background E. Environmental Services Guidelines for Environmental Infection Control in Health-Care Facilities (2003). [cdc.gov/infectioncontrol/guidelines/environmental/background/services.html#anchor_1554827215](https://www.cdc.gov/infectioncontrol/guidelines/environmental/background/services.html#anchor_1554827215)
4. United States Environmental Protection Agency. EPA's Registered Antimicrobial Products Effective Against Mycobacterium Tuberculosis, Human HIV-1 and Hepatitis B Virus. [epa.gov/sites/production/files/2018-01/documents/2018.05.01.liste_.pdf](https://www.epa.gov/sites/production/files/2018-01/documents/2018.05.01.liste_.pdf)
5. United States Environmental Protection Agency. Pesticide Product and Label System. <https://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1>
6. World Health Organization. First Data on Stability and Resistance of SARS Coronavirus Compiled by Members of WHO Laboratory Network. [who.int/csr/sars/survival_2003_05_04/en/](https://www.who.int/csr/sars/survival_2003_05_04/en/)
7. World Health Organization. Home Care for Patients with Suspected Novel Coronavirus (nCoV) Infection Presenting with Mild Symptoms and Management of Contacts. [who.int/internal-publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-\(nCoV\)-infection-presenting-with-mild-symptoms-and-management-of-contacts](https://www.who.int/internal-publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-(ncov)-infection-presenting-with-mild-symptoms-and-management-of-contacts)
8. World Health Organization. Infection Prevention and Control During Health Care When Novel Coronavirus (nCoV) Infection is Suspected. [who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected)
9. Centers for Disease Control and Prevention. Show Me the Science - How to Wash Your Hands. [cdc.gov/handwashing/show-me-the-science-handwashing.html](https://www.cdc.gov/handwashing/show-me-the-science-handwashing.html)
10. Centers for Disease Control and Prevention. Environmental Infection Control Guidelines. [cdc.gov/infectioncontrol/guidelines/environmental/index.html#e](https://www.cdc.gov/infectioncontrol/guidelines/environmental/index.html#e)
11. Centers for Disease Control and Prevention. Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008. [cdc.gov/infectioncontrol/pdf/guidelines/disinfection-guidelines-H.pdf](https://www.cdc.gov/infectioncontrol/pdf/guidelines/disinfection-guidelines-H.pdf)

12. Casanova, Lisa M et al. "Effects of air temperature and relative humidity on coronavirus survival on surfaces." *Applied and environmental microbiology* vol. 76,9 (2010): 2712-7. doi:10.1128/AEM.02291-09.

Appendix A

Local biohazard cleanup companies*

Biohazard cleanup vendors	
American Technologies (ATI)	602-297-7856
Belfor	480-220-3469
BioPro	602-234-6856 call center
Clean Harbors Environmental Services	800-645-8265 or 602-258-6155 local office
Damage Control	480-892-3855
East Valley Disaster	480-833-4538
Environmental Response, Inc.	480-967-2802
Kary Environmental Services, Inc.	480-945-0009
ServPro of Phoenix	602-402-8718

***NOTE:** These outside vendors should only be contacted for large-scale contamination (e.g., large spills of biological agents, airborne releases of highly infectious biological agents that enter ventilation systems). **The ASU department calling outside vendors for biohazardous waste cleanup is responsible for ensuring funding is available to cover vendor expenses.**