


<p>HARVARD CAMPUS SERVICES</p>  <p>ENVIRONMENTAL HEALTH & SAFETY</p>	<p style="text-align: center;">COVID-19</p> <p style="text-align: center;"><u>HVAC, Mechanical Systems, & Building Maintenance: FAQs & Guidance</u></p>	
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This document has been developed by the EH&S Environmental Public Health and the Facilities and Life Safety groups. This guidance is offered in response to questions from University building managers and operators who seek best practices and independent perspectives in this evolving situation. For further insights on these or other issues, please call 617-495-2060 or reach out to your EH&S Designated Safety Officer.

COVID-19: FAQs and Guidance from EH&S for Building Operators

Building managers, operators, Deans, and other administrators are increasingly being bombarded with news reports, guidance from public health authorities, position documents and recommendations from engineering and trades associations, and promotional materials from manufacturers and service providers on tools and methods to reduce COVID-19 risks to their building occupants. The information and guidance are often unsolicited, conflicting, seemly change by the hour, and may not be practical to your (or any) situation.



Subject matter experts within Harvard's Department of Environmental Health and Safety have been continuously monitoring reports in the news, guidance from federal and state agencies (such as CDC, EPA, MDPH, MWRA), procedures from trade associations (such as ASHRE, ANSI), and the medical and scientific literature to assess risks and to evaluate mitigation strategies. EH&S officers are quite familiar with the complex portfolio of university buildings, diversity of building systems and spectrum of occupancies. Through these lenses EH&S scrutinizes and interprets the reports, news, claims, literature, and guidance to sort the wheat from the chaff to help guide and inform you through the risk mitigation challenges and uncertainty you face.

Many members of the Harvard community are under the misimpression that practical means exist to drive risks to zero. In addition, they often believe that every step – no matter how costly, speculative, or potentially counterproductive – should and must be pursued to achieve an unattainable goal. EH&S encourages members of the Harvard community consider all strategies, adjustments and methods that might enhance the comfort of building occupants and the safety of your facilities. Do carefully consider manufacturer's claims, and the experiences and results obtained elsewhere. **Currently, no practical engineering or operational solution exists that will eliminate all risks.** Anticipate that many devices and modified procedures may fail to provide any measurable gains, and they may dramatically divert limited funds from other strategies that are far more practical and likely to provide benefits.

To help guide your discussions and deliberations with your administrators, occupants and vendors, EH&S offers insights and guidance to FAQs. Do check back often, as these answers will be updated as new information becomes available. Do reach out to your DSO, LSA (Lab Safety Advisor) or to others in EH&S to discuss your specific needs and plans, and if you have other questions for which you seek answers. We are hopeful that this information will be helpful to you and to your community.

VENTILATION

COVID-19 AND HVAC

There is a lot of talk about HVAC and COVID-19. What role does HVAC play in the transmission of COVID-19?



Date of Answer: May 22, 2020

The means by which SARS-CoV-2 (the virus that causes the COVID-19 disease) is generally believed to occur via droplets from infected persons and by contact with contaminated surfaces. Larger droplets generated during coughing and sneezing are considered to contain more virus than are smaller aerosol particles elicited by talking. Larger droplets would almost invariably sediment rapidly from the air, and likely before they might enter HVAC systems. HVAC systems are important infection control components in clinical settings, labs, and certain hazardous environment workplaces, but are traditionally not relied upon for such purposes in other workplaces or residences. **Currently, objective data are lacking that would implicate or absolve HVAC systems as conduits for the spread of the SARS-CoV-2 virus.** Decisions to modify HVAC systems should be risk-based, and subject to careful cost/benefit analysis.

Occupants are encouraged/required to wear face coverings indoors. Face coverings are considered to serve as important source control strategies to lessen the abundance and velocity of particles generated and expelled by a person.

FILTERS

I have heard that I should increase the MERV-rating of my AHU filters to capture viruses within the HVAC. How do I know what rating to use?

Date of Answer: May 22, 2020

Increasing the MERV rating of your filters will help capture finer particles, and this may add to the comfort of your building occupants. Finer filters would more efficiently remove smaller particles from outside and return air. Outdoor air is not considered a source of SARS-CoV-2 virus. To reduce the potential that droplets and aerosols may be drawn into the HVAC (Heating Ventilating and Air Conditioning) return, building occupants are encouraged to don face coverings. **Be mindful that adding higher rated filters to your HVAC system may impair airflow, exceed design static pressures, and strain the blowers and ductwork.** Increasing the filter ratings will also add costs for installation and maintenance.



OUTSIDE AIR

How much outside air should I select for my AHUs to purge the COVID-19 virus from the building?

Date of Answer: May 22, 2020

Increasing the proportion of outside air drawn into the building beyond the minimum required by [Massachusetts Mechanical Code and the ASHRAE Standard 62.1 \(Ventilation for Acceptable Indoor Air Quality\)](#) will improve general indoor air quality by reducing the amount carbon dioxide and other internal air pollutants in supply air. Even a 5-10% increase in outdoor air may provide some benefit. Carefully consider system design limitations and added costs. This adjustment does not apply to labs and other facilities designed to provide 100% outside air. **Currently, objective data are lacking that would implicate or absolve HVAC systems as conduits that would spread the SARS-CoV-2 virus.** Increasing the proportion of outdoor air in your system, therefore, may not measurably reduce virus transmission.

AIR EXCHANGE RATE

Should I increase the air-exchange rate in offices and other rooms?

Date of Answer: May 22, 2020

Increasing the air exchange rate will replace room air more frequently and theoretically should reduce the concentration of potentially virus-containing aerosols in the room. Enhancing air flow, however, may markedly disrupt room airflow patterns and mixing, thereby possibly encouraging aerosols and small droplets to remain suspended in the air column. Intensive air testing and computational fluid dynamic modeling would be necessary to predict the extent to which (if any) modifying the air exchange rate would affect the likelihood of SARS-CoV-2 virus transmission. **Currently, it is uncertain as to the effect of air exchange rates on risks associated with this virus.** Consider maintaining air exchange rates that facilitate reasonable turnover in rooms, offer comfort to occupants, and maintain your systems to be economical and efficient.



DEMAND CONTROL VENTILATION

How should I handle rooms provided with DCV ventilation?

Date of Answer: May 22, 2020

Deactivating demand control systems would ensure a minimum ventilation rate is always provided to intermittently occupied rooms. **Note that such modifications may not provide measurable benefits to the safety of occupants.**

OPERATING SCHEDULE

Do I need to keep the ventilation system running all the time?

Date of Answer: May 22, 2020

Many rooms require active ventilation only when they are occupied. Rather than running the systems 24/7, consider delaying shutoff for a defined interval to dilute and purge any remaining potential contaminants in the air. Areas such as laboratories that already require constant ventilation may still operate at reduced flow rates. Ensure that your systems provide adequate ventilation when the building is occupied.

PRESSURE

I understand that to keep viruses from wafting on the breeze into common areas, I should set my AHUs so that all rooms are under negative pressure. Is this necessary and wise?

Date of Answer: May 22, 2020

Pressure differentials control the movement of air from room to room within a building and between the inside and outside of the building. The goal is usually to keep the interior positive relative to the outside, and to direct airflow within the building from least hazardous to most hazardous areas. Changing, rebalancing and reprogramming pressure differentials in a building is complicated and costly. **It is uncertain that such changes to the HVAC system would measurably reduce risks from SARS-CoV-2.** Consult a ventilation specialist for guidance and to help evaluate and maintain your systems.



CLEANING

Do I need to have my building's ducts cleaned to eliminate COVID-19 virus?

Date of Answer: May 22, 2020

Accumulated dust and debris within ducts will degrade the efficiency of air flow and may impart odors and clog filters. So, do keep your ducts clean as a matter of course. Virus particles that might enter the ducts may be captured by impaction on the duct material, the dust, and the filters. Such viruses are then expected to remain 'out of circulation.' Even if infectious when they enter the return grates, viruses will likely lose infectivity within hours or days. **Accordingly, there seems little to gain from cleaning the ducts if the sole reason is to reduce the spread of this virus.**

HVAC STERILIZATION

What kind of ultraviolet system should I install to sterilize the air within the HVAC?

Date of Answer: May 22, 2020

It is possible that some viruses within droplets, aerosols or dusts may enter room exhaust grates. It is likely that most viruses will be inactivated and/or captured on filters, and the dilution effect is expected to significantly minimize their concentration before they reenter rooms. UV illuminators within ducts could conceivably further reduce risks. Such systems, however, can be costly to install and maintain and can pose risks to maintenance personnel who may be exposed as well as to building occupants if lamps are damaged. **Their efficacy of these unit in reducing the spread of SARS-CoV-2 remain unclear.**

TEMPERATURE AND HUMIDITY

What temperature and humidity set points are needed to reduce the risks of COVID-19?

Date of Answer: May 22, 2020

The stability and duration of infectiousness of the SARS-CoV-2 virus in the environment is complex and remains controversial. Select set points that are comfortable to workers and appropriate to the items housed within the building. **It is unlikely that changing the temperature and RH (Relative Humidity) of your building will measurably reduce risk to your building occupants by this virus.**



WINDOWS

Can't I just open the windows for fresh air?

Date of Answer: May 22, 2020

Opening windows provides a no-cost means to passively ventilate a building. Doing so allows in fresh air and exhausts stale room air. Occupants often prefer natural breezes from opened windows. Unless your building is specifically designed for passive ventilation, this may not be an efficient process. Open windows become problematic during particularly cold and hot seasons, and when wind-driven rain may enter.

Ensure that operable windows are sufficiently secure to prevent unauthorized entry, and that each is fitted with a screen that will exclude insects, birds, and small mammals. Protect items within from rain and wind.

Be mindful that air flowing through opened windows will bypass your HVAC filters, perturb the air balance of your AHUs, and permit entry by pollen and dusts. The CDC encourages open windows to reduce risks of coronavirus¹.

ROOM AIR CLEANING

ELECTROSTATIC PRECIPITATORS AND PLASMA IONIZERS

I received a call from a company telling me that I needed to install electrostatic or plasma systems in my HVAC ducts to extract and kill virus from the air. Is this something I need?

Date of Answer: May 22, 2020

Electrostatic devices ionize or impart an electrical charge on particles passing by in the airstream, and then use an opposing charged plate or filter to remove (precipitate) the particles. Although such devices can remove a considerable quantity of particles of all sizes, they can be costly to install and maintain. Plasma systems also produce ions, and these are claimed to kill or otherwise disrupt microbes in the air stream.

¹ [CDC: Steps to Stay Safe](#), Retrieved May 22, 2020



Currently, the efficacy of these units in reducing risks of COVID-19 to building occupants remains unproven.

PORTABLE HEPA AIR PURIFIERS

My Dean wants me to buy more than one hundred portable HEPA-filtered air purifiers. What size should I get?

Date of Answer: May 22, 2020

HEPA-filters are expected to remove tiny particulates, including many viruses, from the air. Air purifiers are rated according to the volume of air that passes through the filters per unit time. To calculate the size unit for any room, measure the volume of air in the room, and consider the number of air changes per hour you desire.

Be mindful that these units take up real estate on the floor, are costly to purchase and operate, and may be offensively noisy. Such units might provide value in certain clinical settings, but they are more difficult to justify elsewhere. **Currently, there are no data to demonstrate that such portable air purifiers measurably reduce risks of COVID-19 to persons in most workplaces or residences.**

OZONE GENERATORS

I have seen an ad that claims ‘activated oxygen’ will kill coronaviruses. Are devices that produce ozone effective, and are they safe to use?

Date of Answer: May 22, 2020

‘Activated oxygen’ is a Madison Avenue term for ozone (O₃). Ozone is an unstable gas that often results naturally from lightning and certain wavelengths of light in the atmosphere. Ozone is also readily produced by ‘ozone generators.’ Ozone has been heavily touted as a means to ‘clean’ or ‘disinfect’ air in rooms and for ‘disinfecting’ medical equipment. Supporting data for these claims are scant. It is far better established that ozone poses risks to persons, and it is considered a pollutant. **The use of ozone for general cleaning and disinfecting is discouraged.** For more information, see [EPA: Ozone Generators that are Sold as Air Cleaners](#).



PLUMBING

WATER SUPPLY SYSTEMS

Some of my building occupants are fearful that they will be exposed to COVID-19 through the water supply, and they want me to test the water or to install water jugs. What should I do?

Date of Answer: May 22, 2020

There is no evidence that SARS-CoV-2 (the virus that causes COVID-19 disease) is transmitted through drinking water, and there is no reason to test for this virus in the water supply. You are encouraged to maintain your water systems (domestic cold and hot, RO/DI, and other systems), and to frequently purge all pipes to maintain adequate levels of disinfectants. Water supplied by municipal water systems in eastern Massachusetts tends to be as good if not better than commercially bottle water.

For more guidance visit:

- [CDC: COVID-19 and Water](#)
- [CDC: Guidance for Reopening Buildings After Prolonged Shutdown or Reduced Operation](#)
- [CDC: Commercially Bottled Water](#)

WASTE SYSTEMS

Can someone with COVID-19 contaminate the waste plumbing with this virus? What are the risks to building occupants and plumbers?

Date of Answer: May 22, 2020

The virus that causes COVID-19 can be passed by infected persons into the wastewater system. The virus, as well as bits of the virus' genetic elements (RNA) have been detected in sewers containing untreated wastewater. **There are no reports of wastewater workers or others becoming infected by this route.** Standard best operating practices are expected to minimize risks to plumbers and wastewater workers.



Remember to keep all plumbing traps hydrated or otherwise protected to prevent passage of sewer gases and pests.²

ROOM DISINFECTION

SHOWERS & SINKS

NEW: What are the risks from shared sinks and showers?

Date of Answer: June 5, 2020

[The SARS-CoV-2 virus has not been detected in municipal drinking water](#). Water serving sinks, showers and other faucets and appliances connected to domestic water should be considered free of risk from this virus.

A person infected by the SARS-CoV-2 virus is generally believed to shed this virus mainly by respiratory droplets during coughing, sneezing and talking. Similarly, an infected person who has coughed/sneezed into their hands, or touched their mouth or nose, may also spread virus and contaminate sinks, handles and other surfaces. Accordingly, high-touch surfaces (such as faucets, door handles, grab bars) should be cleaned and disinfected frequently to reduce the risks of acquiring disease-causing microbes.³ This guidance extends to cleaning (at least daily) surfaces associated with public pools and water playgrounds.⁴

Accordingly, building managers are encouraged to evaluate and enhance (as appropriate) their current schedule and procedures for cleaning and disinfecting sinks and shower stalls in shared bathrooms in public spaces, work settings and dormitory corridors.

To further reduce risks and concerns, consider:

²[CDC: COVID-19 and Water](#), Retrieved May 22, 2020

³ [CDC: Reopening Guidance for Cleaning and Disinfecting Public Spaces, Workplaces, Businesses, Schools, and Homes \(Revised May 7, 2020\)](#), Retrieved June 5, 2020

⁴ [CDC: Considerations for Public Pools, Hot Tubs, and Water Playgrounds During COVID-19 \(May 27, 2020\)](#), Retrieved June 5, 2020



- Enhancing ventilation in bathrooms (particularly those with showers) to hasten venting of droplets/aerosols and to reduce humidity.
- Encouraging users to clean sinks before and after each use. Supply cleaning materials, as appropriate.
- Installing sensor-activated automatic faucets, when practical.
- Installing and maintaining stocked paper towel dispensers, and encouraging occupants to use a paper towel to operate manual faucets, and also to grasp door handles.
- Siting waste receptacles just inside and/or outside bathroom doors for towel disposal. Ensure custodians service these receptacles at least daily, and more frequently if necessary.

For specific guidance on cleaning bathrooms used by persons diagnosed/presumed infected, see EPH ECP Enhanced Cleaning Suspected/Confirmed Illness: Offices/Academic/Common Areas. Please contact your DSO for a copy of this document.

WATER FOUNTAINS

NEW: Do water fountains pose risks from COVID-19?

Date of Answer: June 5, 2020

[The SARS-CoV-2 virus has neither been detected nor is expected within municipal water supplies.](#) Surfaces of the fountains and bottle fillers, themselves, could potentially become contaminated by respiratory droplets (as from sneezing or coughing), or as persons touch surfaces with virus-laden hands.

Risks to users may be reduced by:

- Relying upon non-contact sensor-activated bottle/cup filling stations in place of traditional fountains. Ideally, the area behind the bottle filling water outlet is sufficiently recessed so that the bottle being filled does not contact the rear panel.
- Ensuring that the arc of water produced by the fountain is neither too high or low, and does not contact the shield.
- Cleaning and disinfecting water fountains and filling stations frequently, particularly areas that might be touched or that may splash liquids.



- Reminding building occupants to wash hands well before and after touching water dispensers, and to refrain from mouth contact with fountain spigots.

Do ensure that the building's water distribution system is thoroughly flushed, and water filters (if present) are replaced, before resuming operations, refer to guidance elsewhere in this FAQ document.

HAND DRYERS

NEW: Do hand dryers in restrooms spread viruses? Should they be removed?

Date of Answer: June 5, 2020

Washing hands well is critical in preventing the spread of diverse disease-causing microbes including the virus that causes COVID-19. The CDC and WHO consider air drying and paper towel use as appropriate methods to dry hands after they're thoroughly washed. Many restrooms and handwashing stations are currently supplied with air hand dryers.

The vigorous flow of air from a hand dryer, whether heated or filtered, will displace and evaporate water from the hands, and it may propel droplets (including those containing microbes) into the air stream. **Currently, no person is known to have become infected by SARS-CoV-2 by this route.**

To further reduce the chance of spreading this virus and other microbes, consider:

- Educating users to thoroughly clean their hands before drying. That way, any droplets that are spread will be of minimal concern.
- Using touch-less hand dryers. If your dryers must be manually activated, post a sign advising users to activate the devices using their elbow. Direct custodians to clean and disinfect such buttons as part of their bathroom cleaning efforts.
- Supplying paper towels for any persons who prefer to use those for drying purposes, as well as for turning off manually operated faucets and for opening the door.
- Siting waste receptacles just inside and/or outside bathroom doors for towel disposal. Ensure custodians service these receptacles at least daily, and more frequently if necessary.



UV

I saw on the news that I can install UV germicidal lamps in my ceiling fixtures and use super-bright UV illuminators in the center of my rooms. What kinds of lamps do I need, and how many should I install?

Date of Answer: May 22, 2020

Certain wavelengths of ultraviolet light (UV-C) are germicidal; that is, under the right conditions, they can kill and inactivate viruses and other microbes. The efficacy of such UVGI (ultraviolet germicidal irradiation) treatments depends upon the specific portions of the spectrum emitted, the intensity of that light, the distance objects are situated from the lamp, the cleanliness of the bulbs and target objects, the time of exposure, and yet other factors. UV can be used within HVAC ducts (see discussion of this in the Ventilation section above), or they may be installed within shielded (to protect personnel) upper room air specialty appliances. Certain specialty bulbs can be installed in existing ceiling fixtures (without diffusers) to bathe the room and air column with UV of wavelengths less hazardous to persons. High-intensity emitters can be placed in unoccupied and secured rooms or vehicles, and the devices operated remotely. Smaller wand-like devices are marketed with claims that they will ‘disinfect’ phones, keyboards, and other objects. Many of these claims are unsubstantiated.

UVGI can cause direct health effects, such as skin irritation and serious eye damage. The emissions can bleach pigments and degrade certain plastics and other materials. **Before you consider using UVGI systems, reach out to your EH&S DSO to discuss your goals and your specific applications.** A careful analysis will be needed to ensure the products you consider will be efficacious, and the manner of their use safe to persons. For more information visit [CDC: Miscellaneous Inactivating Agents](#).

COPPER HANDLES & BUTTONS

My building occupants want me to replace or cover door handles, handrails and elevator buttons with copper to kill virus. Is this necessary?

Date of Answer: May 28, 2020



Based upon current evidence CDC advises that SARS-CoV-2, the virus that causes COVID-19 disease, is mainly transmitted from person-to-person via contaminated droplets.⁵ This virus might also be spread by contacting virus-contaminated surfaces (fomites).

A person who coughs or sneezes onto their hand, touches their mouth or nose, or contacts any other object with their hand may thereby acquire and spread diverse kinds of microbes, including the SARS-CoV-2 virus. CDC advises that [high touch surfaces](#) (such as door handles, handrails, and elevator buttons) be cleaned and disinfected frequently to reduce the risks of acquiring disease-causing microbes.

The SARS-CoV-2 virus was recently [reported](#) to remain stable and potentially infectious for hours or even days on certain surfaces. Of the materials tested, virus was least persistent on copper. Subsequently, the marketplace has become inundated with offers of copper replacements or covers for doorknobs, railing, elevator buttons and more. The offerings often are accompanied with vague suggestions or unsubstantiated claims as to the health-promoting and virus-killing attributes of these products. **Currently, objective data are lacking to conclude the extent to which such surfaces pose risk of transmitting or acquiring SARS-CoV-2, and to the benefits of replacing or covering devices with copper.** Building managers are advised to consider the sometime dubious claims and the expense of purchasing and installing such 'protective' covers. Even if they do measurably reduce the stability of virus, such surfaces should still be frequently cleaned and disinfected.

VACUUM CLEANING

Some of my residents insist that we not vacuum rugs. Do vacuum cleaners spread the COVID-19 virus? What about HEPA-filtered units?

Date of Answer: May 28, 2020

Vacuum cleaners can effectively remove dust and other debris from floors, rugs, upholstered furniture, and other items. Many particles sucked into the vacuum are captured within a canister or by a filter. Properly installed and maintained HEPA filters in some units remove and retain much smaller particles that would

⁵ [CDC: How COVID-19 Spreads](#), Retrieved May 28, 2020



otherwise be simply expelled in the exhaust of the appliance. The exhaust of any self-contained vacuum cleaner, regardless of the kind of filter, may agitate and propel dust particles around a room.

The SARS-CoV-2 virus was recently reported to remain stable and potentially infectious for hours or even days on certain surfaces.⁶ Even if stable virus was present (for instance from settled respiratory droplets), the chances of inhaling or otherwise becoming infected by these residues would seem remote. **Currently, no confirmed case of COVID-19 has been associated with vacuuming.**

To further reduce risks, CDC advises to consider using a HEPA-equipped vacuum cleaner, waiting until the room is empty of persons before vacuuming, and delaying vacuuming (for perhaps a day) if the room was just occupied by a person with suspected or confirmed COVID-19 disease.⁷

TOILETS & TOILET SEATS

How often do toilet seats need to be cleaned and disinfected, do seats need to be covered, and should we be worried about aerosols from flushing?

Date of Answer: May 28, 2020

Toilets, toilet seats, flush levers/buttons and yet other surfaces may become contaminated by diverse disease-causing microbes. Such contamination might result from direct contact with soiled hands, by settling of droplets (as from sneezing or coughing), or from fecal matter. SARS-CoV-2, the virus that causes COVID-19, has been detected in the feces of some patients as well as within sewer systems, and these findings have caused some persons to express concern. The CDC advises, however, that no person is known to have become infected with this virus by contact with human wastes.⁸

To further minimize risks of acquiring any contact-acquired infectious agent, persons are encouraged to thoroughly [wash their hands with soap and water](#) after using the toilet. Building managers are encouraged

⁶ [NEJM: Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1](#), Retrieved May 28, 2020

⁷ [CDC: Cleaning and Disinfection](#), Retrieved May 28, 2020

⁸ [CDC: COVID-19 and Water](#), Retrieved May 28, 2020



to review toilet cleaning frequency and procedures. Where practical, consider efforts to enhance the cleaning and disinfection of toilet seats, door handles and other contact and high-touch surfaces.

To avoid direct contact with the seat, many persons prefer to cover toilet seats with flushable toilet seat covers or toilet paper. Some building managers may provision bathrooms with disposable towels/wipes and spray bottles of disinfectants. To avoid clogs of the sanitary waste system, educate your building occupants to discard towels and wipes (even those marketed as 'flushable') in the trash, never in the toilet.

Chlorine and other disinfectants in municipal water are expected to help inactivate viruses, but this process in the toilet is far from complete or rapid. As toilets are flushed, the resulting turbulence has been reported to propel droplets and bioaerosols into the air.⁹ Some of these particles may be contaminated with pathogenic microbes. As yet, **no person has been known to become infected with the SARS-CoV-2 virus by exposure to droplets from toilet flushing.**

Maintaining floor drain traps fully hydrated will block passage of sewer odors and sewage-associated pests and may also potentially retard the upward flow of aerosols as wastewater flows downwards. Accordingly, building managers are encouraged to inspect and periodically add water to all floor drains not served by autoprime devices.

Be aware that diverse products are marketed with claims that they sterilize the toilet bowl. Some contain small ultraviolet (UV) illuminators that are placed on or within the bowl. Currently, data to support such claims seem elusive.

ELECTROSTATICALLY APPLIED/VAPORIZED DISINFECTANTS

I have seen devices that spray or mist bleach or hydrogen peroxide into the air and onto objects. They seem to make it simple to disinfect entire rooms and vehicles. What should I know about them?

⁹ [AJIC: Toilet plume aerosol generation rate and environmental contamination following bowl water inoculation with Clostridium difficile spores](#), Retrieved May 28, 2020



Date of Answer: May 22, 2020

[Certain kinds of disinfectants have met the EPA criteria for use against SARS-CoV-2 virus.](#) The product label specifies the manner of their use. Some are applied directly with a wet rag or mop, and others may be applied as sprays, mists or even as vapors. **In each case, the product must be used in accordance with the label instructions and SDS.**

Devices that spray or vaporize a disinfectant must be composed of materials compatible with the specific disinfectant used. Personnel operating the devices and applying disinfectants must be appropriately trained, and they must wear proper PPE and exercise care to protect themselves and others.

The disinfectants must be applied at the appropriate rate, distance from treated objects, and the liquid must remain for at least the minimum dwell time to achieve the desired results. The disinfectants may damage certain objects, and they do not provide residual activity. A treated room or surface may become re-contaminated by the first infected person who enters. **Before you consider purchasing such products or services, reach out to your EH&S DSO to discuss your goals and your specific applications.**

DISTANCING

MEASUREMENTS

I keep hearing that persons must remain 6 feet (or is it 9 feet?) apart. How do I manage this with corridors and stairwells that are less than 6 feet wide, and in a cubicle office environment?

Date of Answer: May 22, 2020

As the distance between persons increases, droplets (from sneezing and coughing) will more likely settle before they reach another person. Based upon the known settling rates of droplets in still air, CDC and other public health agencies suggest that persons should strive to stay 6 or more feet apart whenever practical. When such distancing is not possible or practical, persons should wear face coverings to limit the spread of droplets that they might produce.

Be mindful that there is nothing magical about the '6-foot' figure. It is a good rule of thumb, but nothing more. Many corridors, elevators, stairwells, building and room doorways do not lend themselves to a strict



6-foot zone of separation. Many building operators are considering directing traffic flow with one-way arrows on floors and stairs, and demarcating occupation zones in elevators and waiting distances elsewhere. These efforts may help remind occupants and visitors to maintain physical distancing. Be mindful that a profusion of signs and arrows can sometimes be counterproductive. As the abundance of signs increases, there is a tendency for the audience to suffer from 'sign fatigue,' and to ignore the presence or content of each additional placard or sign. Note also that signs, placards, and labels have limited lives. They will become eroded with time and foot traffic, and they may become difficult to remove.

Accordingly, consider carefully the kinds, abundance, and placement of any guidance throughout your facility. Strive for a 'just right' balance. For more guidance on Harvard-recommended signs and uses visit [COVID Building & Workplace Signage](#).

PESTS

VECTORS FOR SARS-COV-2

Can mosquitoes, roaches and rodents spread this virus?

Date of Answer: May 22, 2020

No. **There is no evidence that the SARS-CoV-2 virus can be carried and spread by any kind of pest.** This virus is likely spread by droplets and by direct contact with contaminated surfaces.

PEST ABUNDANCE

Can I save money by reducing or cancelling my pest control service contract?

Date of Answer: May 22, 2020

Pests will continue to try to invade your building and to create havoc within. Rodents and many insect pests will increasingly infest food and waste facilities to harvest whatever foods and grease residues that remain. As food becomes limiting, rodents may gnaw through door gaskets, walls, and ceilings to reach food, even in refrigerators and freezers. Some will disperse widely in their quest for food. Hungry and bored rodents have a habit of gnawing on and through wire insulation, and this activity can thereby create risks to persons and the infrastructure. As drains dry from evaporation, roaches and flies may be unleashed from the



sewers. Accordingly, you are encouraged to maintain an active pest monitoring program to protect your buildings as well as the occupants and items within.

SANITATION

WASTE

My building occupants will increasingly be eating in their rooms. All those food packages and take-out containers will accumulate inside. Do I need to worry about anything?

Date of Answer: May 22, 2020

The increasing profusion of food and food wastes will be attractive to and nutritious for rodents and insect pests. Encourage your building occupants to keep their residences and workspaces clean and free from soiled packages, plates, cups, crumbs, and residues. Next, direct occupants (and custodial workers) to keep waste containers lined with plastic bags and secured with good covers. Bags of food wastes should be frequently hauled to secure dumpsters, and those areas kept tidy. **Such actions will dramatically reduce pest problems and odors associated with festering food wastes.** Consider enhancing the frequency of trash pickups within the building to stay ahead of any problems.

DISPOSABLE MASKS AND GLOVES

I am seeing gloves and masks littering the floors and grounds in and around my building, and all over the community. Do these pose risks, and what can I do in response?

Date of Answer: May 22, 2020

Gloves, masks, and other disposable items should be carefully discarded in waste receptacles as normal trash. Unfortunately, some persons are careless as to where they discard such items. Encourage your building occupants to dispose of their items responsibly. As with any kind of litter, collect the items carefully. Use a gloved hand, broom and dustpan, tongs, or litter collection stick to remove and discard littered items. **Ensure those performing these tasks wash their hands frequently and thoroughly, and to apply appropriate hand sanitizer when soap and water are not readily available.**