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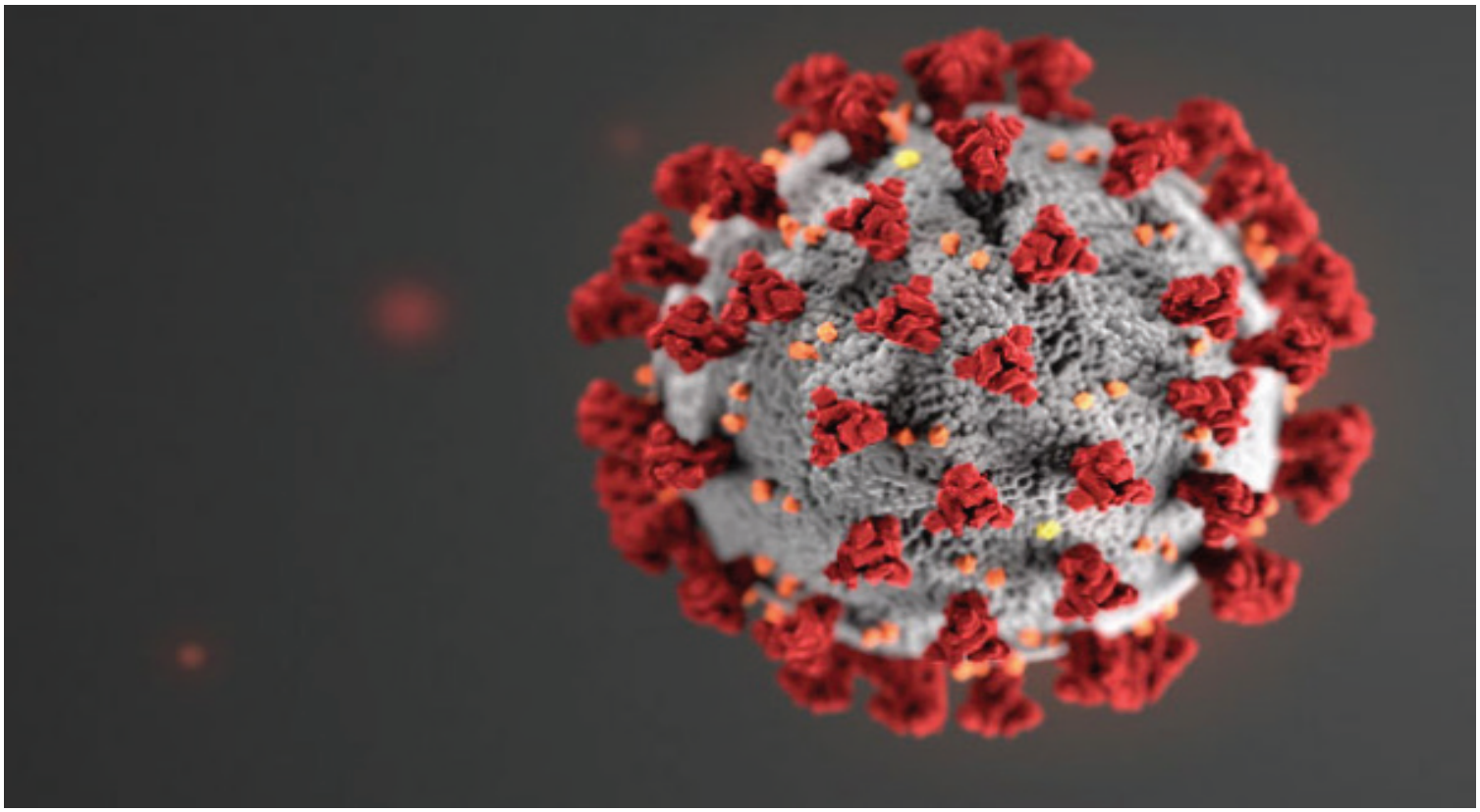
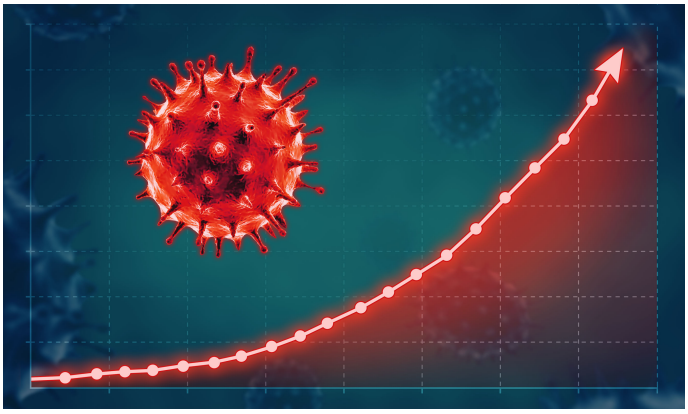


Coronavirus Update: Infection Potential and Precautions for Portable Sanitation Users and Personnel

In the past week, news of a potential coronavirus outbreak in the US and other countries has ramped up, affecting the stock market, creating a black market for face masks, and otherwise causing concern among the general population. Here is the latest information we have relating to coronavirus and how it may impact your workers and your business.[1]



How is the disease spread?

COVID-19, which is an official acronym for Corona Virus Disease and the year (2019) it first appeared, was probably first transmitted from animals to people, but it is now being transmitted between people. According to the CDC:

- Most often, when coronavirus is spread from person-to-person it happens among close contacts (about 6 feet).

1 On February 5 the PSAI first reported on COVID-19 and portable sanitation. Review that article for the basics and background information.

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- Typically, with respiratory viruses, people are thought to be most contagious when they are most symptomatic (the sickest). With COVID-19, however, there have been reports of spread from an infected patient with no symptoms. Therefore, it is important to be aware that taking precautions to avoid others' germs is essential, whether or not they—or you—appear or feel sick.
- Person-to-person spread is thought to occur mainly via respiratory droplets produced when an infected person coughs or sneezes, similar to how influenza and other respiratory pathogens spread. These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.

- COVID-19 can probably live a very long time outside the human body.
- COVID-19 can probably live a very long time on surfaces.
- COVID-19 probably lives longest in cool, moist environments.

COVID-19 probably lives a long time outside the human body

Although COVID-19 is too new to have much research on it, a study in the *The Journal of Hospital Infection* on similar coronaviruses showed:

- At temperatures of around 4°C or 39.2°F, certain versions of the coronavirus could remain viable for up to 28 days. At temperatures of 30–40°C (86–104°F), coronaviruses tended to persist for a shorter time.
- At room temperature, a coronavirus responsible for the common cold (HCoV-229E) persisted significantly longer in 50% humidity than 30% humidity.

Overall, the authors of the study conclude:

> **"Human coronaviruses can remain infectious on inanimate surfaces at room temperature for up to 9 days. At a temperature of 30°C [86°F] or more, the duration of persistence is shorter."**

When the scientists delved into the literature on the persistence of coronaviruses on different surfaces, the results were variable. For instance, the MERS virus persisted for 48 hours on a steel surface at 20°C (68°F). However, on a similar surface and at the same temperature, TGEV survived for up to 28 days. Similarly, two studies investigated the survival of two strains of SARS coronavirus on a paper surface. One survived 4–5 days, the other for just 3 hours.

Implications for portable sanitation

The global community is going to great lengths to isolate COVID-19 by shutting down travel and putting other restrictions in place. Still, based on the news of the past week, it now appears inevitable that COVID-19 will become more common around the world.

Portable sanitation companies should be aware of the following findings from the above research regarding substances that will likely kill COVID-19:

- Agents, including hydrogen peroxide (0.5% concentration), ethanol (62–71%), and sodium hypochlorite (a chemical in bleach at 0.1%), quickly and successfully inactivate coronaviruses with a 1-minute exposure time.
- Solutions of a biocide called benzalkonium chloride which is found in some hand sanitizers and cleaning products produced conflicting results; and
- Chlorhexidine digluconate, which people use as a topical antiseptic, was ineffective.

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What else can be done to decrease the chances of getting the virus?

There is currently no vaccine to prevent COVID-19 infection. The best way to prevent infection is to avoid being exposed to this virus. However, as a reminder, the CDC always recommends everyday preventive actions to help prevent the spread of respiratory viruses.

Recommended preventive actions include:

- Wash your hands often with soap and water for at least 20 seconds. Use an alcohol-based hand sanitizer that contains at least 60% alcohol if soap and water are not available.
- Avoid touching your eyes, nose, and mouth with unwashed hands.
- Avoid close contact with people who are sick.
- Stay home when you are sick.
- Cover your cough or sneeze with a tissue, then throw the tissue in the trash.
- Clean and disinfect frequently touched objects and surfaces.

These are everyday habits that can help prevent the spread of several viruses.

If you are sick, or you are around people who are sick, wear a face mask.

Operational actions you should take

No one knows how long the outbreak of COVID-19 will last or how far it will reach. Regardless of whether it reaches your area or not, you should prepare your company and demonstrate that you have taken every responsible action you can to protect your workers and the public. At a minimum we recommend:

- Review your cleaning products and make sure you are using one of the ingredients listed above that is most likely to be effective on COVID-19. If necessary, check with your disposal facility to ensure they will accept loads containing this substance.
- Make sure you have the right concentrations to maximize the chance of killing COVID-19. For example, in some pre-mixed commercial cleaning products containing hydrogen peroxide, the substance is present at 1.5% which should be more than adequate for these purposes.

  If you choose to mix your own cleaning products, do your research before mixing. Again looking at hydrogen peroxide, this liquid comes in various strengths – basic household strength is 3%, food grade is 35%. Make sure you know how to mix it properly and safely. Check this online resource. Similar guides are available online for other substances. You should also consult the Safety Data Sheet and train your staff for any chemical you use in your operation.
- Educate your team about COVID-19 and review your cleaning procedures with your service personnel. Your cleaning products won't kill anything if they aren't used properly. Note that the tests reported above required a 1-minute exposure to the cleaning product.

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- Make sure your staff are using precautions and wearing proper PPE to protect themselves. Right now face masks are challenging to get in some places. Be proactive to ensure you have the PPE you need. Reminder: it is the employer's responsibility to provide necessary PPE at no cost to employees.
- Update your Exposure Control Plan if you have not already done so this year. Information about this is on the OSHA website.
- Consult with your suppliers to learn where you might have any supply chain vulnerabilities. Right now the market is reacting to fears that supply chain disruptions will affect sales and production. Where are yours? What will happen if your favorite products and equipment are not available for a while due to troubles importing or domestic production slowdowns due to worker illnesses? Make a plan, but don't panic.
- Update your business continuity plan for how you will operate if key staff are too ill to work. You deal with people calling out all the time, but what if it is in larger numbers than you've ever experienced? Have those discussions and make your plan proactively so you don't have to figure it out on the fly.

The PSAI will continue to monitor the COVID-19 situation and keep Members informed. Let us know what you are running into in your market and how things unfold. Email anything you experience as a result of COVID-19 to karleenk@psai.org. ❖