

Not enough is known about how the new coronavirus (2019-nCoV) spreads to offer much specific advice about how to control it. Strategies are based largely on what's known about other coronaviruses and what's worked for flu epidemics and pandemics. As experience with the new virus and the respiratory disease it causes (COVID-19) grows, better guidance will emerge.

In the meantime, trying every play in the book seems critical—literally. According to the U.S. Centers for Disease Control and Prevention (CDC), the death rate of those who have been infected with the flu this flu season is 0.05%. According to the research conducted by the Chinese CDC, the case-fatality rate of novel coronavirus in China is 2.3%. Critics of the Chinese agency believe it underreports morbidity but not mortality, so many more individuals may have contacted the virus, which would decrease the fatality rate.

If it were half as much, though, that would still be 23 times the U.S. flu fatality rate.

This document aims to support your efforts to maximize your linen and uniform service laundries' protection of your personnel and process textiles apparently contaminated by individuals who have contacted it. The information presented here is largely from U.S. government sources and the U.K. Textile Services Association. You will be updated as more is learned from TRSA's worldwide connections.

CDC, OSHA Templates for Employers

CDC's interim guidance provides:

- Recommended strategies for employers to use now
- Considerations for creating an outbreak response plan

The immediate steps resemble those of the agency's 2017 guidance on getting workplaces ready for pandemic flu. That document is more detailed and graphic and contains links to other CDC resources you can use perpetually. The COVID-19 guidance, published on webpages, is like an executive summary but effectively describes strategies and tactics:

Actively encourage sick employees to stay home

- Employees who have symptoms of acute respiratory illness are recommended to stay home and not come to work until they are free of fever [100.4°F (37.8°C)] or greater (using an oral thermometer), signs of a fever, and any other

symptoms for at least 24 hours, without the use of fever-reducing or other symptom-altering medicines (e.g. cough suppressants). Employees should notify their supervisor and stay home if they are sick.

- Ensure that your sick leave policies are flexible and consistent with public health guidance and that employees are aware of these policies.
- Talk with companies that provide your business with contract or temporary employees about the importance of sick employees staying home and encourage them to develop non-punitive leave policies.
- Do not require a healthcare provider's note for employees who are sick with acute respiratory illness to validate their illness or to return to work, as healthcare provider offices and medical facilities may be extremely busy and not able to provide such documentation in a timely way.
- Employers should maintain flexible policies that permit employees to stay home to care for a sick family member. Employers should be aware that more employees may need to stay at home to care for sick children or other sick family members than is usual.

Separate sick employees

Employees who appear to have acute respiratory illness symptoms (i.e. cough, shortness of breath) upon arrival to work or become sick during the day should be separated from other employees and be sent home immediately. Sick employees should cover their noses and mouths with a tissue when coughing or sneezing (or an elbow or shoulder if no tissue is available).

Emphasize staying home when sick, respiratory etiquette and hand hygiene by all employees

- Place posters that encourage **staying home when sick, cough and sneeze etiquette**, and **hand hygiene** at the entrance to your workplace and in other workplace areas where they are likely to be seen.
- Provide tissues and no-touch disposal receptacles for use by employees.
- Instruct employees to clean their hands often with an alcohol-based hand sanitizer that contains at least 60-95% alcohol, or wash their hands with soap and water for at least 20 seconds. Soap and water should be used preferentially if hands are visibly dirty.

- Provide soap and water and alcohol-based hand rubs in the workplace. Ensure that adequate supplies are maintained. Place hand rubs in multiple locations or in conference rooms to encourage hand hygiene.
- Visit the [coughing and sneezing etiquette](#) and [clean hands webpage](#) for more information.

Perform routine environmental cleaning

- Routinely clean all frequently touched surfaces in the workplace, such as workstations, countertops, and doorknobs. Use the cleaning agents that are usually used in these areas and follow the directions on the label.
- No additional disinfection beyond routine cleaning is recommended at this time.
- Provide disposable wipes so that commonly used surfaces (for example, doorknobs, keyboards, remote controls, desks) can be wiped down by employees before each use.

Advise employees before traveling to take certain steps

- Check the [CDC's Traveler's Health Notices](#) for the latest guidance and recommendations for each country to which you will travel. Specific travel information for travelers going to and returning from China can be found at on the [CDC website](#).
- Advise employees to check themselves for symptoms of **acute respiratory illness** before starting travel and notify their supervisor and stay home if they are sick.
- Ensure employees who become sick while traveling or on temporary assignment understand that they should notify their supervisor and should promptly call a healthcare provider for advice if needed.
- If outside the United States, sick employees should follow your company's policy for obtaining medical care or contact a healthcare provider or overseas medical assistance company to assist them with finding an appropriate healthcare provider in that country. A U.S. consular officer can help locate healthcare services. However, U.S. embassies, consulates, and military facilities do not have the legal authority, capability, and resources to evacuate or give medicines, vaccines, or medical care to private U.S. citizens overseas.

If employees or their family members catch COVID-19

- Employees who are well but who have a sick family member at home with COVID-19 should notify their supervisor and refer to CDC guidance for [how to conduct a risk assessment](#) of their potential exposure.
- If an employee is confirmed to have COVID-19, employers should inform fellow employees of their

possible exposure to COVID-19 in the workplace but maintain confidentiality as required by the Americans with Disabilities Act (ADA). Employees exposed to a co-worker with confirmed COVID-19 should refer to CDC guidance for [how to conduct a risk assessment](#) of their potential exposure.

Planning for an outbreak

This guidance starts with urging employers to tell employees the organization is committed to:

- Reducing transmission among staff
- Protecting people who are at higher risk for adverse health complications
- Maintaining business operations
- Minimizing adverse effects on other entities in the supply chain.

Tactics are then described for determining how to accomplish these, such as forecasting disease severity, possible impacts on vulnerable employees, employee absences, impacts on satellite business locations and the need to coordinate with public health officials.

Steps in creating an effective plan are described, including employee involvement and involving other businesses in the community. Plan components may include:

- Identification of work-related exposure and health risks
- Review of human resources policies for consistency with public health recommendations
- Use of flexible work sites and hours and telecommuting
- Classifying essential business functions, jobs, roles and supply chain considerations
- How the plan will be triggered
- How exposure will be minimized between employees and between employees and the public
- Process to communicate the plan to employees, customers and supply chain
- Flexible workplace and leave policies for parents due to school closings

OSHA guidance document

This 2009 publication covers much of the same ground as CDC's COVID-19 webpage and pandemic flu guide. It differs by customizing guidance for workplaces based on the flu risk of their work: very high, high, medium or lower risk. Linen and uniform service laundries likely fall into medium exposure category, which applies to businesses with a preponderance of jobs that require frequent, close contact (within 6 feet) exposures to other people such as coworkers,

the general public, outpatients, school children, or other such individuals or groups.

Unfortunately the guidance for such workplaces doesn't seem particularly useful for protecting laundry production workers or route service personnel. Possible work practices and engineering/administrative controls include instructing employees to avoid close contact, work remotely and limit access to customers. In contrast, consideration of installation of physical barriers, such as clear plastic sneeze guards, is suggested. Advice on PPE use is extensive.

Industry-Specific Tactics

A recent TRSA e-news article on best practices for containing the virus also emphasizes PPE and notes standard precautions for handling and laundering healthcare textiles, namely adhering to federal and state requirements for the protection of personnel from exposure to pathogens.

World Health Organization (WHO) guidance

Following are relevant portions of the World Health Organization (WHO) guide to controlling epidemic- and pandemic-prone acute respiratory infections. Terminology is directed at healthcare personnel as opposed to their outsourced laundries.

In the subsection on laundry and linen, a subsection of environmental controls for cleaning and disinfection, listed among isolation precautions:

- Remove large amounts of solid material (e.g. feces) from heavily soiled linen (while wearing appropriate PPE), and dispose of the solid waste in a toilet before placing the linen in the laundry bag
- Avoid sorting linen in patient-care areas. Place contaminated linen directly into a laundry bag in the isolation room or area with minimal manipulation or agitation, to avoid contamination of air, surfaces and people
- Wash and dry linen according to routine standards and procedures of the healthcare facility. For hot-water laundry cycles, wash with detergent or disinfectant in water at 70°C (160°F) for at least 25 minutes. If low-temperature (i.e. < 70°C; < 160°F) laundry cycles are used, choose a chemical that is suitable for low-temperature washing when used at the proper concentration

From the subsection on packing and transporting patient-care equipment, linen and laundry, and waste from isolation areas:

- Place used equipment and soiled linen and waste directly into containers or bags in the isolation room or area.

- Contain the used equipment and soiled linen and waste in a manner that prevents the containers or bags from opening or bursting during transport.
- One layer of packing is adequate, provided that the used equipment and soiled linen and waste can be placed in the bag without contaminating the outside of the bag. Double-bagging is unnecessary.
- Ensure that all personnel handling the used equipment and soiled linen and waste use Standard Precautions, and perform hand hygiene after removing PPE. Heavy-duty tasks (e.g. cleaning of the environment) require more resistant PPE (e.g. rubber gloves and apron, and resistant closed shoes).

Guidance for hospital isolation rooms or areas:

- Stock the PPE supply and linen outside the isolation room or area (e.g. in the change room). Set up a trolley outside the door to hold PPE. A checklist may be useful to ensure that all equipment is available.

For home care:

- Avoid types of possible exposure to the ill person or contaminated items; sharing toothbrushes, cigarettes, eating utensils, drinks, towels, washcloths or bed linen.

U.K. experience: all textiles, hospitality

In a risk management guidance document, the Textile Services Association (TSA) advises laundries to undertake a risk assessment process that covers at least the following:

- Identifying stock exposure to suspected/known cases
- Employee awareness
- Sanitization facilities for employees
- Staff symptoms reporting
- Sorting staff health/pre-existing conditions
- Procedures in relation to managing visitors
- PPE/Respiratory protective equipment

“Coronavirus is a lipid enveloped virus and can survive on surfaces for several days; therefore, infected (confirmed / known cases) linen may pose a risk to laundry staff through textile or contaminated surfaces/PPE. Laundry operations should be able to make a final decision on whether to take the linen back to the laundry to be processed or would they like the linen in question incinerated,” TSA writes.

The association notes that thermal or chemical-thermal laundering processes, such as those validated by laundry certifications, may be adequate to inactivate lipid enveloped viruses in textiles. But it's difficult to find any specific published guidance.

TSA turned to Public Health England, which offered: “The infected linen should be bagged in accordance with infection control procedures. Current decontamination guidance for the National Health Service states, ‘After cleaning with neutral detergent, a chlorine-based disinfectant should be used, in the form of a solution at a minimum strength of 1,000 ppm available chlorine.’”

Also published by TSA: parallel documents for outsourced hotel laundries and their customers. The one for laundries addresses factors their management may want to consider if notified that linen to be collected is or may be infected. The one for hotels guides their planning if affected by any case of communicable or transmissible disease, but particularly as related to managing infected linen.

As a first step, laundries are told to develop a working relationship with hotels/venues to ensure that these have the confidence and right communications channels available to promptly inform you of a suspected or known case of communicable disease. Strategies are then outlined for working together if such a customer alerts a laundry of a suspected infection, including helping them manage bagging.

Hotels are urged to develop diligent procedures and guest-reporting processes to identify recent visits to any region that may have been affected by an outbreak of any communicable/transmissible disease. Depending on that assessment, properties need to consider ways to manage staff allocation taking into account any employees with weakened immune systems or pre-existing conditions. If an infection is suspected or confirmed, hotel management should aid their laundry in deciding how to manage the linen.

At this stage, hotels and their laundries are urged to select processes based on:

- Whether the potentially infected linen is still in the hotel and has been identified, contained in a room, or is otherwise clearly traceable; or it can't be traced
- If it's in the laundry's possession and no longer traceable

If a hotel operates an on-premises laundry, management should ensure its wash program is adequately equipped with temperature validation to process infected linen.

Advice provided from Netherlands

Comité International De L'Entretien du Textile (CINET), the Committee for Professional Textile Care, published guidance for commercial laundering as cases appeared in its home country (Netherlands). Its blog post starts with bullet points covering COVID-19's characteristics and risks. Suggestions are then provided for handling and washing contaminated laundry, protecting staff and caring for sick staff. This guidance points out, however, that the life cycle of the virus outside a human host cell is less than 20 minutes,

based on the SARS coronavirus. WHO points out this is duration is still being determined, noting possibilities of a few hours to several days.

Thoughts for the moment from TRSA

At the time of this writing, community outbreaks have not occurred in North America. This suggests the unusually high current value of TRSA's *Recommended Professional Practices for Disaster Planning*, a 16-page document that will prompt linen and uniform service facility management to consider how local COVID-19 disasters might compare with others they have faced. Reading this document's case studies and following its guidance can help govern your approaches related to COVID-19 in:

- Using a structured planning process that builds on day-to-day operations
- Identifying and anticipating potential risks
- Ensuring business processes continue to operate
- Providing for employee safety and welfare
- Developing strategies for dealing with potential operational problems
- Implementing emergency plans as early as possible
- Maintaining effective crisis communications
- Planning for business recovery

Regarding business continuation, if your plant is located in an area that experiences an outbreak on the scale of those who are weathering them in China, a full shutdown of your facility is possible. Most plants have arrangements, or understandings, with nearby competitors for such occurrences. But most often these networks are triggered because of a shutdown from a localized natural disaster or fire. With the possibility of shutdown of multiple facilities in the same area due to large numbers of sick workers or quarantines, now is the time to geographically broaden these networks. This helps ensure continued service to customers, although with longer delivery times.

In laundering, keep in mind it's not certain how long the virus that causes COVID-19 survives on surfaces. WHO's preliminary information on 2019-nCoV indicates it may persist for a few hours or up to several days, like other coronaviruses. Studies suggest that the time may vary by type of surface or temperature or humidity of the environment. Laundries benefit from the likelihood that items they pick up from customers have remained there for hours or even days. That's good news for your soil sorters, whose PPE should protect them under any circumstances. But the most prudent risk minimization suggests leaving items bagged and sealed in the laundry for as long as possible before subjecting human hands and respiration to them, even when well-protected.

Interim Guidance for Businesses and Employers to Plan and Respond to Coronavirus Disease 2019 (COVID-19), February 2020, U.S. Centers for Disease Control, <https://www.cdc.gov/coronavirus/2019-ncov/specific-groups/guidance-business-response.html>, accessed February 28, 2020

Get Your Workplace Ready for Pandemic Flu, U.S. Centers for Disease Control, April 2017, U.S. Centers for Disease Control, <https://www.cdc.gov/nonpharmaceutical-interventions/pdf/gr-pan-flu-work-set.pdf>

Guidance on Preparing Workplaces for an Influenza Pandemic, Occupational Safety & Health Administration, 2009, https://www.osha.gov/Publications/influenza_pandemic.html

Healthcare Alert: Best Practices to Contain Coronavirus, TRSA, January 30, 2020, <https://www.trsa.org/news/healthcare-alert-best-practices-contain-coronavirus/>

Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care, World Health Organization, 2014, <https://apps.who.int/iris/rest/bitstreams/583365/retrieve>

Discussion on Managing Risks Related to Wuhan novel coronavirus (2019-nCoV) in Textile Services Operations, Textile Services Association, 31 January 2020, <https://www.tsa-uk.org/resource/2019ncov-discussion.html>

Coronavirus Briefing: Managing Linen in Hotels & the Hospitality Sector, Textile Services Association, February 2020, <https://www.tsa-uk.org/resource/2019ncov-discussion.html>

Coronavirus Briefing: Hospitality Laundries, Textile Services Association, February 2020, <https://www.tsa-uk.org/resource/2019ncov-discussion.html>

Coronavirus: prevention, risks and protocols for Professional Textile Care, CINET, February 28, 2020, <https://www.cinet-online.com/coronavirus-prevention-risks-and-protocols-for-professional-textile-care/>

Canton, Lucien, Recommended Professional Practices for Disaster Planning, TRSA, 2013, www.trsa.org/store