

ENVIRONMENTAL HEALTH AND SAFETY IN CHILD CARE SETTINGS: CONSIDERATIONS DURING VIRAL OUTBREAKS

Health and safety in child care settings are always paramount. The COVID-19 pandemic has illuminated unique conditions that require additional attention to ensure the environment is safe and healthy for young children. This resource highlights important environmental health and safety considerations in child care settings during viral outbreaks. Information that is shared applies to both family and center-based child care settings.

How Viruses Spread

Infections with respiratory viruses are transmitted primarily in three ways: contact, droplet, and airborne. Per the Centers for Disease Control and Prevention (CDC):

- **Contact transmission** is infection spread through direct contact with an infectious person (e.g., touching during a handshake) or with an article or surface that has become contaminated.
- **Droplet transmission** is infection spread through exposure to virus-containing respiratory droplets (i.e., larger and smaller droplets and particles) exhaled by an infectious person. Transmission is most likely to occur when someone is close to the infectious person, generally within about 6 feet.
- **Airborne transmission** is infection spread through exposure to those virus-containing respiratory droplets comprised of smaller droplets and particles that can remain suspended in the air over long distances (usually greater than 6 feet) and time (typically hours).

These transmission methods necessitate ensuring that surfaces and the shared air in child care programs are as virus free as possible. Additionally, water quality issues may arise when buildings that house child care programs re-open after a prolonged building closure.

Environmental Strategies to Mitigate Spread

Clean & Sanitized Surfaces

Child care professionals are accustomed to [keeping objects and surfaces in child care settings clean](#) and sanitary. Doing so protects everyone – children, their families and child care providers, ancillary staff and administrators.

[Intensified cleaning](#) practices are warranted during a viral outbreak, epidemic or pandemic. During periods of high viral community transmission, child care program staff should focus on high-traffic and smaller spaces as well as high touch areas. Visibly dirty hard and non-porous surfaces first should be cleaned with soap and water. Once cleaned, surfaces may be [disinfected safely and effectively](#). During a severe outbreak, such as during the COVID-19 pandemic, use an [EPA-approved disinfectant](#) tested against the circulating virus.

When using cleaning and disinfection products in child care settings:

- Ensure that products are safe for use around children.
- Do not mix products.
- Be mindful of required product contact/dwell time for effective disinfection.
- Ensure that there is proper ventilation when applying the product to avoid fume inhalation.
- Consider using [environmentally-friendly products](#) that are less likely to irritate children’s eyes, skin and lungs.
- Secure products and always keep them out of reach of children.

High touch areas include:

- door knobs
- edges of doors where people use hands to open and close
- countertops
- sink handles
- chairs
- tables
- light switches
- toilets
- diapering station surfaces
- nap pads



Air Quality

The virus that causes COVID-19, and other viruses, spread from person to person, primarily through respiratory droplets produced when an infected person breathes, speaks, sings, coughs or sneezes. These short-range droplets (less than six feet) can land in the mouths or noses of people who are nearby or be inhaled into the lungs. Spread is more likely when people are in close contact with one another. Ventilating and filtering air in

indoor spaces can [improve air quality and reduce droplet or airborne virus transmission](#).

Child care program staff should circulate fresh air into indoor child care spaces when feasible. Whenever possible, increase ventilation by opening screened windows and doors. If possible, increase the effectiveness of open windows by using child-safe window fans to draw in fresh air from other windows and blow room air out. Avoid opening windows or doors, however, if doing so poses risk to children due to extreme temperatures or humidity. Also, be mindful of outdoor air pollution levels and do not open screened windows and doors if outdoor air quality is low.

Ventilation and filtration provided by heating, ventilating, and air-conditioning (HVAC) systems can reduce the airborne concentration of SARS-CoV-2 (the virus that causes COVID-19) and other viruses and reduce the risk of transmission through the air. Consult with a HVAC professional to verify that ventilation systems are operating at maximum capacity and efficiency and that you are using the most appropriate air filter. Secure additional back up filters to stay on schedule with recommended routine filter replacements. Also consider setting the fan control switch on thermostats to “On” instead of “Auto” for continuous air flow and filtration.



If a central air filtering system is not feasible, consider using portable HEPA filtration units in child care spaces. Determine the number of portable air purifiers and size you need. Air purifier product descriptions specify the square footage one purifier can cover. Some larger rooms may need more than one purifier or a purifier with a larger capacity.

For more information on indoor air quality, refer to the American Society of Heating, Refrigerating and Air-Conditioning Engineers' (ASHRE) [Guidance for Reopening Buildings](#), [Guidance for Residential Buildings](#) and [Guidance for Building Operations During the COVID-19 Pandemic](#).

Water Quality

In cases where buildings used as child care settings must close temporarily, it is important to consider potential water quality hazards when reopening. Water quality may become compromised with prolonged building closure or limited use. Water stagnation can lead to a buildup of harmful contaminants and pathogens. Hazards include [Legionella](#) (the cause of [Legionnaire's Disease](#)) and [lead and copper contamination](#) from corroded plumbing.

How to prevent water contamination during a building closure?

The best way to prevent contamination is to maintain the water supply properly. In maintained water supplies, Legionella bacteria cannot grow and multiply and lead or copper is less likely to dislodge into the water supply. Water systems should be used frequently to prevent stagnation. During building closure, regularly replace (flush) water in the child care home or center before reopening. Flushing removes dissolved contaminants. Keep water heaters turned on and maintain routine heat level settings to discourage the growth of Legionella bacteria. Water systems also should be periodically inspected and, if necessary, disinfected.

What to do upon re-opening after a prolonged closure?

For Legionella, a prolonged period can be days, weeks or months, depending on building-specific factors, season and weather. For lead and copper contamination, a prolonged period can be hours, days, weeks or months, depending on plumbing and water-specific factors, protective coatings in the pipes and materials to build the plumbing system. Contact your [state or local public health department](#) if you are concerned or suspect that the water quality in your child care program has been compromised after a prolonged building closure. Your health department's environmental health professionals can help to determine if testing is advisable and steps to take to initiate testing, if warranted.

Legionnaires' Disease is a serious type of pneumonia (lung infection) caused by Legionella bacteria. Legionella bacteria can build up when water is stagnant in plumbing fixtures, such as during a temporarily building closure. People can get sick when they breathe in mist or accidentally swallow water into the lungs containing Legionella.

Resources

March 2021 CDC guidance: [CDC's Guidance for Operating Child Care Programs during COVID-19](#)

Children's Environmental Health Network – Safer Cleaning and Disinfecting in Child Care Facilities – COVID-19: General Guidance/ [Part 1](#) and [Part 2](#)

Caring for our Children – Section 3.3.0 – [Cleaning, Sanitizing, and Disinfecting](#)

Child Care Aware of America CCAoA - [Safety and Environment: Protecting Kids from Hidden Hazards](#) e-book

Centers for Disease Control and Prevention (CDC) - [Scientific Brief: SARS-CoV-2 and Potential Airborne Transmission](#)

[Ventilation in Schools and Childcare Programs](#)

Children's Environmental Health Network – [Healthy Indoor Air Quality in Child Care Facilities](#)

American Society of Heating, Refrigerating and Air-Conditioning Engineers' (ASHRE) - [Guidance for Reopening Buildings](#)

American Society of Heating, Refrigerating and Air-Conditioning Engineers' (ASHRE) - [Guidance for Residential Buildings](#)

Centers for Disease Control and Prevention (CDC) - [Guidance for Reopening Buildings After Prolonged Shutdown or Reduced Operation](#)