

## Issue Brief

# Indoor Air Quality in Early Care and Education Facilities

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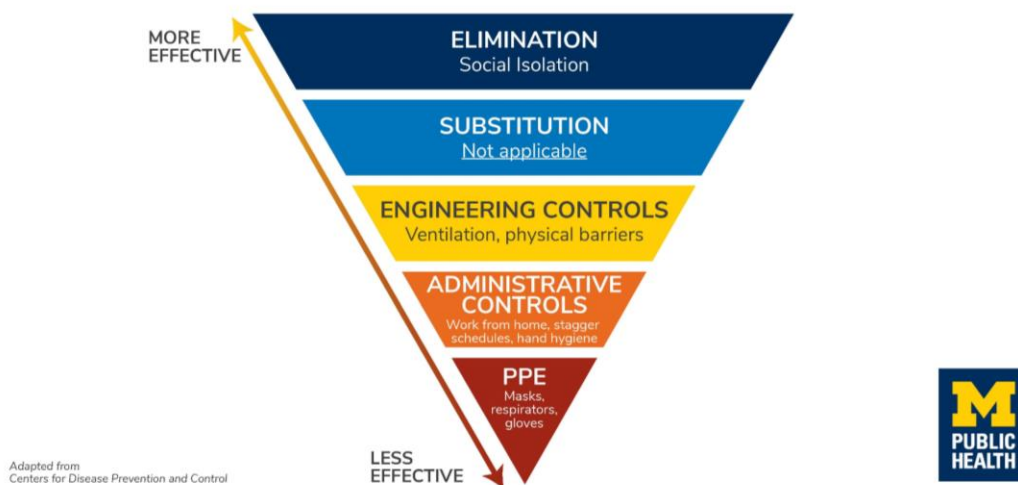
*This issue brief provides an overview of strategies based on current guidance for mitigating airborne transmission of SARS-CoV-2 in early care and education facilities. These strategies may be subject to change based on emerging evidence for controlling the spread of COVID-19.*

### Overview

[According to CDC](#), airborne transmission of SARS-CoV-2 appears to occur in enclosed spaces with an infectious individual during prolonged exposure to respiratory particles, or in spaces with inadequate ventilation or air handling. In many states, early care and education (ECE) facilities have either returned to in-person instruction or are in the process of reopening. Given the risk of airborne transmission in these facilities, this brief seeks to provide examples of current federal and state guidance on indoor air quality and COVID-19 prevention.

### Framework for Controlling Spread of COVID-19

The [graphic](#) below illustrates how the Hierarchy of Controls may be applied for controlling the spread of COVID-19 in indoor spaces. While engineering controls like ventilation and filtration are often emphasized, it is crucial for states and territories to consider a holistic approach when implementing measures to protect air quality in ECE facilities.



### Layered Risk Mitigation Strategies

The strategies outlined below are based on CDC guidance for ventilation in [buildings](#) and [ECE facilities](#); EPA guidance for [indoor air](#) and COVID-19; American Society of Heating, Refrigerating, and Air-Conditioning Engineers guidance for [airborne aerosols](#) and [air cleaners](#); American Industrial Hygiene Association guidance for [reopening schools](#); and guidance developed by state health agencies. States and territories can use the following indoor air control strategies, alongside broader risk mitigation measures, to create a plan for protecting children and adults in ECE facilities.

Control Measure	Mitigation Strategy	State Example
<b>Elimination of Exposure</b>	<p><a href="#">Develop</a> a written protocol to identify children or adults who have COVID-19 symptoms and isolate infectious individuals.</p> <p><a href="#">Communicate</a> with staff and families when they should be staying home.</p>	<a href="#">South Carolina</a> developed eligibility criteria for returning staff and children.
<b>Ventilation</b>	<p>When appropriate, <a href="#">utilize</a> outdoor spaces and open windows or doors to promote natural air infiltration. Use fans to cool the space, while being careful to point them away from people and limiting use of ceiling fans.</p> <p><a href="#">Ensure</a> proper operation of HVAC systems and consider consultation with an HVAC professional to optimize outside airflow, control indoor humidity, and upgrade filtration systems. Contact maintenance personnel before making any changes to ventilation systems.</p>	<a href="#">Kentucky's</a> recommendations include upgrading to MERV-13 filters, if possible, and maintaining relative humidity around 50%.
<b>Filtration</b>	Utilize HEPA portable air cleaners (PAC) or air purifiers in smaller spaces to supplement HVAC ventilation and filtration systems. <a href="#">Understand</a> manufacturers' specifications for the intended room size and filter rating. Be careful to avoid using air cleaners that generate ozone.	<a href="#">Washington state</a> suggests using this <a href="#">tool</a> for sizing a PAC appropriately.
<b>Disinfection</b>	<p><a href="#">Install</a> upper-room ultraviolet germicidal irradiation (UVGI) to supplement ventilation and filtration in indoor spaces.</p> <p>Routinely clean and disinfect surfaces to reduce the risk of transmission. Refer to CDC's <a href="#">cleaning and safe disinfection guidance</a>.</p>	<a href="#">Vermont</a> recommends optimizing ventilation, filtration, and air change rates before considering using UVGI.
<b>Administrative Controls</b>	<p><a href="#">Group</a> students into cohorts or pods that do all activities together. Limit cross-pod interactions outside of the classroom (e.g., lunch, PE, recess).</p> <p>Increase time between activities by incorporating breaks or periods of rest. Create physical distance between desks and assign seating or designated play areas.</p> <p>Reduce speaking and limit activities such as singing and vigorous exercising.</p> <p>Minimize face-to-face contact outside of classrooms (e.g., hallways, restrooms, locker rooms, cafeterias, buses).</p> <p><a href="#">Maintain</a> sanitation and practice handwashing upon arrival, before and after meals, and after using the restroom and returning from outdoors.</p>	<a href="#">North Carolina</a> suggests serving meals directly to students and discontinuing self-service food distribution, as well as suspending in-person activities that involve assembling or close contact.
<b>PPE</b>	Require face coverings for both adults and children over age two. If <a href="#">needed</a> , allow for children to take mask breaks in well-ventilated areas.	<a href="#">California</a> requires masks for staff and students grades 3-12.

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