



GUIDANCE FOR LABORATORY FACILITIES¹

The laboratory environment may be considered a low risk for aerosol transmission since these facilities are typically designed to minimize cross-contamination through the use of 100% outside supply air systems (i.e., no recirculation), high ventilation rates, and exhaust systems designed to minimize re-entrainment of contaminated air. However, these same systems provide unique operating conditions that require distinct mitigation strategies to minimize the risk of transmission of infectious aerosols. Several recommended mitigation strategies that may be prudent for other building types may adversely impact the air flow patterns within the lab and/or the performance of existing containment devices.

This document provides a brief listing of items that should be considered when evaluating the effectiveness of the ventilation system with a laboratory facility under epidemic conditions. It is broken down into those steps that should be avoided, as they may adversely impact the performance of the existing system and highlights the most critical steps that should be addressed. For more details on these items, please refer to the [ASHRAE ETF Laboratory Guidance Document](#).

Actions to Avoid:

- Don't arbitrarily adjust internal pressurization or airflow rates within the laboratories or adjacent rooms.
- Don't add supplemental in-room air cleaning devices.
- Don't disable demand control ventilation devices.
- Do not operate fume hoods and other protective devices outside of normal operating conditions.
- No need to update filtration in outdoor air handling units, unless recirculating air from adjacent spaces.
- Don't adjust humidification levels without considering impact on the building envelope, scientific equipment, and research activities within the space.
- Don't add physical barriers between workspaces within the lab, as they can adversely impact the effectiveness of the ventilation system and containment devices.
- Don't assume that space pressurization strategies alone are sufficient to avoid the transfer of aerosolized particles between spaces.
- The laboratory exhaust systems should already be designed to provide sufficient dilution at nearby air intakes to avoid adverse re-entrainment, thus, no adjustments should be necessary for these systems.

Recommended Steps

- Operate ventilation system in "Occupied" mode as required to meet ASHRAE flushing guidance.
- Verify that the ventilation system is operating per current specifications.
- Make sure the facility is maintaining proper pressurization and directional flow cascades.
- Follow public health guidelines for space cleaning if a known infected individual has occupied the space.
- Refer to the [Practical Guidance for Epidemic Operation of Energy Recovery Ventilation Systems](#).
- Update, as applicable, your Laboratory Ventilation Management Plan (LVMP), per [ANSI/AIHA Z9.5](#); and
- Consult the [ASHRAE ETF Building Readiness Guide](#) for further evaluation of systems.

¹ ASHRAE is a global professional society of over 55,000 members committed to serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration and their allied fields. ASHRAE has established a Task Force to help deploy technical resources to address the challenges of the COVID-19 pandemic and possible future epidemics as it relates to the effects of heating, ventilation, and air-conditioning (HVAC) systems on disease transmission.

Please be aware that each building, each set of occupants and each HVAC system is different. Please consult the full ASHRAE guidance for all building types for further detail and caveats; consider reaching out to HVAC design professionals when detailed analysis of your specific building, your circumstances and your HVAC equipment might be helpful.