

New Mexico Medical Advisory Team (MAT) Assessment

MAT Workgroup Name: Clinical Care

Date: May 30, 2020

Question or request: Air Conditioning and ventilation: Please provide guidance and risk analysis for the use of air conditioning and other facility air flow in public spaces (restaurants, churches, etc.) as these facilities re-open. Please include recommended measures to mitigate risk of COVID-19 spread in air-conditioned facilities (for fans, evaporative coolers, and central cooling).

Recommendation/s in bullet form:

- The most effective methods to reduce transmission of SARS-CoV-2 (and far more important than anything related to an HVAC system) continues to be:
 - Social distancing of 6 feet or more;
 - High touch surface cleaning and disinfection;
 - Handwashing and other strategies for good hand hygiene;
 - Source control – i.e. wearing of masks in public to prevent asymptomatic carriers from transmitting the disease to others they may encounter while in a public place.
- In general, the disabling of heating, ventilating, and air-conditioning systems is not a recommended measure to reduce the transmission of the virus.
- Air flow management appears to play a greater role than air conditioning in exposure risk reduction of public spaces. Modest air flow can provide comfort without significantly increasing distribution of infectious droplets prior to settling (as could be predicted for high air flow).

The following recommendations are provided from sources with partial relevance to the posed question and are made as suggestions only, based on the current availability of data and research. These should not be viewed as requirements for reopening, but rather recommendations to support infection prevention accompanying social distancing and source control.

Guidance from the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) to be considered

<https://www.ashrae.org/news/ashraejournal/guidance-for-building-operations-during-the-covid-19-pandemic>

For public office buildings that remain open:

Suggested Non-HVAC Actions

- Increase disinfection of frequently touched surfaces.
- Install more hand sanitation dispensers, assuming they can be procured.
- Supervise or shut down food preparation and warming areas within office buildings. This includes office pantries and coffee stations.
- Close or post warning signs at water fountains in favor of bottle filling stations and sinks, or even better, encourage employees to bring their water from home. If watering stations remain open, consider installing hand sanitizer stations beside them.

Suggested HVAC Actions [as practicable]

- Increase outdoor air ventilation (use caution in highly polluted areas); with a lower population in the building, this increases the effective dilution ventilation per person.
 - Disable demand-controlled ventilation (DCV).
 - Further open minimum outdoor air dampers, as high as 100%, thus eliminating recirculation (in the mild weather season, this need not affect thermal comfort or humidity, but clearly becomes more difficult in extreme weather).
- Improve central air filtration to the MERV-13 or the highest compatible with the filter rack, and seal edges of the filter to limit bypass.

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- Keep systems running longer hours, if possible 24/7, to enhance the two actions above.
- Consider portable room air cleaners with HEPA filters.
- Consider UVGI (ultraviolet germicidal irradiation), particularly in high-risk spaces such as waiting rooms, prisons and shelters. Mount high in rooms or within AC ducting to protect occupants from radiation.

CDC Recommendations for Cooling Centers

Cooling centers (a cool site or air-conditioned facility designed to provide relief and protection during extreme heat) are used by many communities to protect health during heat events. However, the use of cooling centers can result in congregating of groups of at-risk people, such as older adults or those with respiratory diseases, and potentially provide a route for the transmission of the SARS COV-2 virus and subsequent development of COVID-19 disease among both visitors and staff. (<https://www.cdc.gov/coronavirus/2019-ncov/php/cooling-center.html>)

- Consider implementing or expanding programs that provide utility assistance, such as the low-income home energy assistance program (LIHEAP) or similar methods that provide financial assistance for home air conditioner use.
- Plan for staff and volunteer absences.
- If resources are available, consider [implementing verbal screening or temperature checks](#) before admitting visitors to the cooling center.
 - If possible, provide alternative cooling sites for those showing symptoms of COVID-19 (i.e., fever, cough, shortness of breath). This may be separate rooms within cooling centers or a space that can be used to accommodate visitors with symptoms and separate them from others.
 - Designate an alternate site, or a separate room and bathroom (if available) for visitors with mild illness who remain at the cooling center.
- Maintain social (physical) distancing within cooling centers, ideally at least six feet between individuals.
 - Consider separation of furniture and creating spaces for individual family units (families who live together do not need to maintain physical distancing in a cooling center).
 - In larger cooling center facilities, it may be possible to provide adequate space for social distancing among visitors.
 - Smaller cooling centers can limit the number of visitors, in accordance with local guidelines that limit the size of gatherings.
- It may not be possible to locate cooling centers in buildings with high ventilation capacity similar to healthcare facilities. If possible, cooling centers should be equipped with [air exchange systems](#), and be in buildings with tall ceilings.
 - Utilize the highest efficiency filters that are compatible with the cooling center's existing HVAC system, and adopt "clean-to-dirty" directional airflows.
 - If resources allow, ceiling fans with upward airflow rotation combined with upper-air ultraviolet germicidal irradiation (UVGI) disinfection systems can be utilized.
 - When conditions allow (low humidity), shaded outdoor spaces with cross-draft airflow augmented by evaporative coolers may provide a safer alternative.
- Follow the Centers for Disease Control and Prevention (CDC) [cleaning and disinfection guidelines for community facilities](#), and [cleaning facilities if someone is sick](#).
- Enhance communication about COVID-19 onsite. Use health messages and materials developed by credible public health sources, such as your local and state public health departments or CDC.
 - **Identify and address potential language, cultural, and disability barriers associated with communicating COVID-19 information to workers, volunteers, and those visiting cooling centers.**
- **If available, provide COVID-19 prevention supplies onsite at cooling centers.**
 - Have supplies on hand for staff, volunteers, and visitors, such as soap, alcohol-based hand sanitizers that contain at least 60% alcohol, tissues, and trash baskets.
 - Visitors and staff should wear a cloth face covering, or if supplies are available, be given a clean disposable facemask, even if they are not showing any symptoms.

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Other Recommendations

- To prevent the spread of the virus in restaurants, limit occupancy to a reasonable percentage of maximum occupancy that supports social distancing accompanied by the requisite increase of distance between tables, and optimize ventilation.

Assessment: Maintaining appropriate social distancing, surface disinfection, hand hygiene and source control continue to be the most effective methods to reduce the transmission of COVID-19. In addition, according to the CDC, increasing ventilation rates and increasing the percentage of outdoor air that circulates can reduce exposure risk in shared-occupancy settings.

ASHRAE’s statement on airborne transmission of SARS-CoV-2/COVID-19

Transmission of SARS-CoV-2 through the air is sufficiently likely that airborne exposure to the virus should be controlled. Changes to building operations, including the operation of heating, ventilating, and air-conditioning systems, can reduce airborne exposures.

ASHRAE’s statement on operation of heating, ventilating, and air-conditioning systems to reduce SARS-CoV-2/COVID-19 transmission

Ventilation and filtration provided by heating, ventilating, and air-conditioning systems can reduce the airborne concentration of SARS-CoV-2 and thus the risk of transmission through the air. Unconditioned spaces can cause thermal stress to people that may be directly life threatening and that may also lower resistance to infection. In general, disabling of heating, ventilating, and air-conditioning systems is not a recommended measure to reduce the transmission of the virus.

HVAC filters, along with other strategies, help to reduce virus transmission while removing other air contaminants that may have health effects.

Red flags and concerns: This interim guidance is based on what is currently known about the transmission and severity of coronavirus disease 2019 (COVID-19). These are suggestions only, and should not be considered gating (maybe use another word here for clarity, as “requirements” instead of “gating”) criteria for reopening, though they do have the *potential* to reduce the risk of transmission.

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Level of Consensus: 100%

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Resources/Reference:

ASHRAE Guidance for Building Operations During the COVID-19 Pandemic:

<https://www.ashrae.org/news/ashraejournal/guidance-for-building-operations-during-the-covid-19-pandemic>

ASHRAE Issues Statements on Relationship Between COVID-19 and HVAC in Buildings:

<https://www.ashrae.org/about/news/2020/ashrae-issues-statements-on-relationship-between-covid-19-and-hvac-in-buildings>

ASHRAE Position Document on Infectious Aerosols:

https://www.ashrae.org/file%20library/about/position%20documents/pd_infectiousaerosols_2020.pdf

CDC Interim guidance to reduce the risk of introducing and transmitting SARS COV-2 in cooling centers:

<https://www.cdc.gov/coronavirus/2019-ncov/php/cooling-center.html>

CDC Research Letter – COVID-19 Outbreak Associated with Air Conditioning in Restaurant, Guangzhou, China, 2020:

https://wwwnc.cdc.gov/eid/article/26/7/20-0764_article

CDC Interim Guidance for Businesses and Employers to Plan and Respond to Coronavirus Disease 2019 (COVID-19):

https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fspecific-groups%2Fguidance-business-response.html