

April 11, 2020

Letter to All Facilities

VIA INTERNET

RE: COVID-19 Indoor Air Guidance from OSHA

To all whom it may concern:

The safety of indoor air is particularly critical at this time because of the danger of airborne infection by the currently pandemic novel coronavirus (SARS-CoV-2).

The Occupational Health and Safety Administration (OSHA) is addressing this risk by recommending Engineering Controls such as **increased ventilation and improved filtration** (1).

Airflow, filtration, and avoidance of the “breath cloud” is important in all places where infected people may gather – particularly hospitals, homes and other essential services, as well as the outdoors including sidewalks, plazas, trails, and bikeways where it is possible to breathe the air emitted from other persons.

There is mounting and clear evidence that airborne transmission is a significant route of infection. In other words, the breath of an infected person contains a cloud of particles containing the virus which may remain suspended in the air as an aerosol, and infect others, even hours later.

The virus has been found in hospital air (2), including in the hallways outside patient rooms, and at distances greater than 6 feet (3). In experimental laboratory conditions the virus persists as an aerosol for over three hours (4). Researchers in Wuhan concluded that room ventilation and open space “can effectively limit aerosol transmission of SARS-CoV-2” and that virus aerosol “resuspension is a potential transmission pathway” (2). Surgical and N95 masks may be only 1/3 and 2/3 effective respectively (5).

The prestigious National Academy of Sciences’ Standing Committee on Emerging Infectious Diseases and 21st Century Health Threats advised the White House’s Office of Science and Technology Policy on Wednesday, April 1, 2020 that “while the current [coronavirus] specific research is limited, the results of available studies are consistent with aerosolization of virus from normal breathing” (6). Add to this that many infected individuals show no symptoms and the average onset of any symptoms being on the order of five days, with undocumented cases responsible for a large portion of documented cases (7).

Mass infection events further point to the likelihood of airborne transmission, such as the Mount Vernon Choir event of March 6 leading to illness in at least 45 of 60 choir members and a number of deaths (8) at a time when there were only 402 identified cases in the entire country (9); the rapid spread in New York City where crowds share breathing space in large numbers (10.11); and the mass spreading event at an Italian soccer game widely credited with the spread in that country (12). These events are facilitated by the large percent of infected persons who are contagious before showing symptoms, and who may never show symptoms.

Videos of three-dimensional simulations and real-life detection technology are available online helping demonstrate the otherwise unseen spread of infectious aerosol “microdroplet” particles which improved filtration and ventilation seek to mitigate (13, 14).

Despite all this and more evidence, official safety guidelines have been slow to alert the public to the risks of airborne transmission of SARS-CoV-2 let alone urging effective and available action such as increasing airflow and filtration in essential service facilities. Certainly there is a great deal more science and top scientists have voiced concern that public messaging “hinge on science” and include the concern of airborne transmission (15).

I hope every hospital, grocery, and any other facility where people gather will take immediate action to increase airflow throughout its buildings and as well as all other available OSHA recommendations. Those actions are essential to preventing infection in all present: workers, clients, visitors and patients.

Essential services need to be informed of this critical concern so they too may take action. Grocery stores and food services for example need to be apprised that even simple actions such as opening doors or windows and using fans can make a significant difference in exposure. Not every business has adequate ventilation systems, knowledge of how to increase the ventilation rate of existing ventilation systems, nor access to high quality filtration technologies. This is certainly true for a vast majority of small businesses around the world. A HEPA filter, if available, is expected to filter the virus and all particles containing the virus (16), however, filtration is no substitute for avoidance and depends on ventilation rate. Airflow and filtration are not a substitute for physical separation and avoidance.

I hope whoever receives this communication will take effective action as soon as possible.

I am available as a resource to the extent I can assist.

Sincerely,



Jason N. Meggs, MCP/MPH

Email: jason@eschercity.com

Phone: +1 510-725-9991

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