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The Honorable Representative Maxine Dexter, Chair
The Honorable Representative Cedric Hayden, Vice-Chair
The Honorable Representative Wlnsvey Campos
The Honorable Representative Raquel Moore-Green
The Honorable Representative Andrea Salinas
House Committee on Health Care Subcommittee on COVID-19
900 Court St. NE
Salem, Oregon 97301

SUBJECT: Fitness Facilities Research

Dear Chair, Vice-Chairs, and Members of the Subcommittee:

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the virus that is the causative agent of the current coronavirus disease (COVID-19). SARS-CoV-2 is transmissible via respiratory droplets (typically within six feet of an infected individual) and via airborne spread (at greater distances over longer periods of time). While the spread of SARS-CoV-2 is thought to occur primarily through respiratory droplet transmission, the spread of the virus via airborne transmission is facilitated in enclosed spaces, with prolonged exposure and in the face of inadequate ventilation or air handling (see: Scientific Brief: SARS-CoV-2 and Potential Airborne Transmission).

Without wide availability of a safe and effective vaccine to prevent COVID-19 infection, non-pharmaceutical interventions (or community mitigation measures) are the primary tools available to prevent transmission of the virus causing COVID-19. Each of those measures, in and of themselves, is insufficient to control the spread of the virus, but when multiple measures are in place, they are more effective at controlling the spread of the virus. This concept, often referred to as the *Swiss Cheese Model*, uses the visualization of stacking multiple slices of Swiss cheese. The more slices of cheese that are stacked, the less likely that holes in each of the slices line up. The model was originally developed by James Reason, a psychologist, in looking at human error leading to patient harm, and how we need to look at the system design, not just the individual.

Testing, public health investigation, contact tracing and supportive isolation and quarantine are important tools in controlling the spread of communicable diseases, including COVID-19. The tools are less effective as asymptomatic transmission increases and in the face of increased disease burden in a community. Other non-pharmaceutical measures available for reducing the transmission of COVID-19 are implemented at the individual level (advising individuals to stay home when they are sick, cover their coughs and wash their hands); community level (physical distancing, use of face masks when around other individuals and closure of locations where people gather); and environmental level (routine surface cleaning). Each of these measure in and of themselves may be insufficient to stop

the spread of the virus causing COVID-19, but when implemented together can work to curtail transmission.

The risk of transmission differs among settings. Among other variables, the likelihood of transmission from an infected individual to a healthy individual depends on length of exposure, space between individuals, use or non-use of masks, whether expression of air through breathing and talking is greater than normal, and air flow in the environment, including whether it is indoors or outdoors. Good hygiene (such as frequent handwashing and the use of personal protective equipment like masks) also reduces the risk of transmission but does not eliminate it.

In Oregon, public health investigations attempt to identify the source of an infection as well as potential close contacts to an individual when they were potentially infected. Information is gathered through a series of open-ended questions asking cases where they were while potentially infected and with whom they may have been in close contact—within six feet for fifteen or more minutes. Specific questions are asked about employment in adults, thus facilitating identification of potential workplace outbreaks. Other linkages may be more difficult to identify because, for example, individuals may report multiple social get togethers in different locations.

In determining if cases are linked as an outbreak, public health authorities consider whether there are more cases in a location than would be expected for a given population and time, if there is a plausible transmission route within the facility, and whether there is no more likely means of acquisition identified.

To assess the risk of transmission in a particular environment, epidemiologists commonly rely on multiple types of research, rather than a single study, including associational studies, case reports, and modeling to understand the complex relationship between a pathogen's spread and human behavior in the built environment. Randomized trials of behavior patterns are generally not possible due to the practical and ethical limitations on random assignment of risky behavior.

Transmission of COVID-19 at Fitness Facilities

In October, the CDC updated guidance due to the fact that COVID-19 may spread through the droplets and airborne particles that are formed when a person who has COVID-19 coughs, sneezes, sings, talks, or breathes. The guidance states:

"Circumstances under which airborne transmission of SARS-CoV-2 appears to have occurred include:

- Enclosed spaces within which an infectious person either exposed susceptible people at the same time or to which susceptible people were exposed shortly after the infectious person had left the space.
- Prolonged exposure to respiratory particles, often generated with expiratory exertion (e.g., shouting, singing, exercising) that increased the concentration of suspended respiratory droplets in the air space.
- Inadequate ventilation or air handling that allowed a build-up of suspended small respiratory droplets and particles."

COVID-19 transmission risk is elevated during cardiovascular exercise and increased respiration; forceful respiration when coughing, sneezing, and yelling; close physical contact; and sustained physical contact.

A CDC published report detailed cluster of COVID-19 cases associated with fitness dance classes. During 24 days in Cheonan, South Korea, 112 persons COVID-19 infection were associated with fitness dance classes at 12 sports facilities. Intense physical exercise in densely populated sports facilities could increase risk for infection. The report concluded that vigorous exercise in confined spaces should be minimized during outbreaks.

A recent CDC report of an outbreak of COVID-19 among attendees at an exercise facility in Chicago where 55 cases were identified reinforced the need for multiple risk mitigation measure including appropriately wearing masks, maintaining 6 feet or more of physical distance, improved ventilation and appropriate isolation and quarantine in a setting that poses high risk for transmission of COVID-19.

Another recent report of likely spread of COVID-19 from fitness instructors in Hawaii demonstrated that transmission of COVID-19 was most likely in the day prior to symptom onset and at 1-2 days prior to symptom onset compared to more than two days before development of symptoms. These cases demonstrate the need for multiple risk reduction measures in place as individuals may be present on-site before onset of symptoms. This transmission occurred in a state with low levels of COVID-19 documented in the community.

In addition, there are numerous news media stories summarizing COVID-19 outbreaks associated with gyms.

When exercising, individuals often perspire. Perspiration can dampen a face mask and may decrease the effectiveness of the mask in preventing the spread of the virus causing COVID-19. A wet mask can make it difficult to breathe and the mask may not work as well when wet. A CDC report on effectiveness of cloth masks found that the poor performance of cloth masks in the study may have been because the masks were not washed frequently enough or because they became moist and contaminated.

Outbreaks of COVID-19 at Fitness Facilities
Examples of media stories about COVID-19 outbreaks associated with gyms can be found here, here, and here.

Since the beginning of the pandemic, OHA is aware of eight COVID-19 outbreaks in gyms or other fitness-related facilities in Oregon (through Dec 18, 2020), though these facilities were closed during much of the pandemic:

- Athletic club (June-July): 30 cases that were associated with an aerobics class that was not wearing masks.
- Small private gym (September): 4 cases that overlapped with an outbreak in a university wrestling team.
- Trampoline center (October): 3 cases that were associated with a birthday party held in the center.
- Dance studio (October): 3 cases among persons who attended a class together.

- Martial arts studio (October): 18 cases among persons who were attending the studio in person, including staff and students.
- Crossfit gym (October): 10 cases.
- Pickleball facility (November): 13 cases.
- Pickleball facility (November): 12 cases.

For the purpose of outbreak reporting, OHA considers fitness-related facilities as workplaces. OHA publishes data on cases in workplace outbreaks in the Weekly Outbreak Report. Some outbreaks will not be listed in the outbreak report because, to protect privacy, OHA only reports workplace outbreaks with five or more cases and only for workplaces with at least 30 employees.

There may be additional cases associated with fitness-related facilities that we are not yet aware of. Additionally, many of Oregon's gyms and other fitness-related facilities have been closed or have had limited access during the pandemic, and we believe there would have been many more outbreaks at these facilities had they remained fully open to the public.

Maximum Occupancy Policy at Fitness Facilities
OHA set absolute group sizes – rather than as a percentage of occupancy – because they want smaller groups to limit contact, and possible transmission between individuals. Often times in larger venues/spaces, there can be mixing on ingress/egress, in bathrooms or other shared parts of the facility. Also airborne spread can lead to transmission of the virus across larger areas with shared airspace. So, the guidance is set on absolute number based on phase and type of facility guidance.

Balancing Mental and Physical Health Needs
OHA weighed the potential negative consequences from actions in comparison to the benefits to reducing transmission. Fitness facilities are not the only location for people to participate in physical activity. Fitness facilities can provide opportunities to engage with clients virtually or outdoors with lower risk. Risk level guidance was updated to allow limited indoor activity with measures in place to reduce risk in counties at every risk level. This change was made after discussions with stakeholders.

Please let me know if I can address any other questions you may have. Thank you.

Sincerely,

Patrick M. Allen
Director

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Health Officer and State Epidemiologist