

ARTS ED NJ

DATE: July 16, 2020

TO: All New Jersey Music Educators, Administrators, Principals, Superintendents, and School Board Members

FROM: Robert B. Morrison, Arts Ed NJ

SUBJECT: University of Colorado Aerosol Dispersion in Music Study Preliminary Findings
September Ready Fall 2020 Arts Education Guidance Update Number 1

Arts Ed NJ is part of a consortium of more than 100 organizations supporting the COVID-19 Aerosol Dispersion Study being conducted at the University of Colorado and the University of Maryland led by the distinguished researchers Dr. Shelly Miller and Dr. Jelena Srebric, respectively and commissioned by the National Federation of State High School Associations and the Collegiate Band Directors National Association.

As an update to the **September Ready Fall 2020 Arts Education Guidance** released last week we are providing the preliminary results to help guide the development of your opening plans. Additional findings will be sent to you as soon as they become available on or about July 25, 2020.

- [Link to the study results](#)
- [Link to a webinar with Dr. James Weaver of the NFHS and Co-Chair of the COVID-19 Aerosol Study](#)
- [Link to the Arts Ed NJ Fall 2020 Guidance for Arts Education](#)

Below is a summary of the findings.

From the research team:

These preliminary results are from the 1st week of exploratory testing. They will be further defined as the study continues. The research team is providing these preliminary results to assist in the safe return to classrooms. (Normally they do not release data until they have been quality assessed and peer-reviewed). This study focuses strictly on the distribution of respiratory aerosols that are released while playing wind and brass instruments, singing, acting, speaking, dancing, and during a simulated aerobic activity. This study did not use a live virus or infected participants and therefore cannot be used to determine specific infection rates. This study was designed to (1) identify performing arts activities that generate respiratory aerosols including volume, direction, density, (2) estimate the emission rates of respiratory aerosol, (3) model the dispersion of these aerosols, and (4) investigate mitigation strategies.

The guidance does not purport to replace or contradict the guidelines issued by the Centers for Disease Control (CDC), the State of New Jersey, or local public health departments regarding the timing or protocols for how schools should operate in our new reality of education.

Guidance for Instrumental Music (Wind Instruments)

- For planning purposes, schools should schedule instrumental music classes to take place following proper social distancing measures and other health considerations.
- When possible, a surgical style mask with a small slit for mouthpiece access should be worn while playing.
- In instrument groups where a mask cannot physically be worn the mask should be worn over the chin and replaced during periods where the student is not playing. No talking without a mask.
- Bell covers are highly recommended as “masks” for the instruments. Bell covers tested so far were made from pantyhose made of 80 denier in 2 layers.
- Masks on students and bell cover “masks” on instruments should be used together for maximum mitigation.
- Social distancing should occur as suggested by the CDC. Currently, that distance is a 6x6 foot space around each student with the student sitting in the center. Straight lines should be used as curved setups can affect the aerosol movement in a room.
- Students should sit all facing the same direction back to front to minimize potential exposure.
- Trombones should have an additional three feet of distancing making their space 9x6. The player should be seated three feet in front of the backline, leaving an additional six feet in front of them due to the extended nature of the instrument and slide that can be in the extended position.
- Where possible, outdoor rehearsals are encouraged, using individual mitigation techniques described above.
- Indoor rehearsal times should be reduced to 30 minutes or less (which may increase with additional research) followed by clearing the room 20-minutes for the HVAC system to change the air indoors with outside air.
- Spit valves should not be emptied on the floor. Recommend using a puppy pad (or similar) to catch the contents of the spit valve and discard it.
- Storage areas should be managed to limit the number of students at a time in the room. Anyone who enters the room should bring a 70% alcohol wipe to wipe all surfaces before and after touching. The wipe should be discarded properly upon leaving the storage area.
- Teachers should consider using a portable amplifier to keep their voices at a low conversational volume. Students should also ask questions in a low conversational volume with a mask.
- Teachers are assumed to talk the most and as a result, should wear the most efficient mask possible that is readily available, which are surgical masks. (N95s are not recommended at this time due to supply chain issues.)

Guidance for Vocal Music

- For planning purposes, schools should schedule vocal music classes to take place following proper social distancing measures and other health considerations.
- At this time, it appears that if singers wear surgical style masks (others will be tested soon), aerosol emission is reduced.
- Where possible, outdoor rehearsals are encouraged, using individual mitigation techniques described above.
- Indoor rehearsal times should be reduced to 30 minutes or less (which may increase with additional research) followed by clearing the room 20-minutes for the HVAC system to change the air indoors with outside air.
- Teachers should consider using a portable amplifier to keep their voices at a low conversational volume. Students should also ask questions in a low conversational volume with a mask.
- Teachers are assumed to talk the most and as a result, should wear the most efficient mask possible that is readily available, which are surgical masks. (N95s are not recommended at this time due to supply chain issues.)
- More specific recommendations for the successful implementation of vocal music will be released by the end of July.
- Indoor group or ensemble singing should be avoided prior to the return to school and until tested mitigation techniques are proven effective. Planning for vocal classes to meet when school opens should continue.

Guidance Regarding HVAC

- Existing HVAC systems should be fitted with HEPA filters if possible.
- The more HEPA filtration the better, and the higher the air exchange rate (ACH) the better.
- There are HEPA air purifiers on the market to provide additional filtration appropriate to the size of the rehearsal space which will increase the air change rate from standard HVAC systems.
- Air change rate accounts for the volume of the room. A minimum of 3 times per hour should be the goal. The more frequent the ACH the faster the room air will be cleaned.
 - Air refresh rate per room to “clean” the room:
- Air changes per hour (ACH)
 - $(1/\text{ACH}) \times 60 \text{ min/h} \times 3$
 - $3 \text{ ACH} = (1/3) \times 60 \times 3 = 60 \text{ minutes}$ to “clean” the room.
 - If volumetric flow rate (L/min) is available divide by room volume to find the air change rate

Please refer to the Association for Heating, Ventilating and Air-Conditioning Engineers (ASHRAE) guidance on ventilation during COVID-19: <https://www.ashrae.org/technical-resources/resources>

