Arif Quraishi

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RE: COVID-19 in Schools

**Options: Risk High:4**

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| --- | --- | --- | --- |
| Risky Activities | Risk level | Why is it risk? | Ref: |
| Band | 4 | People close together.  Enclosed space with modest ventilation  Large number of particles generated by wind instruments | Solution - Virtual band:  <https://minnesota.cbslocal.com/video/4552843-cathedral-high-school-band-gets-creative-for-spring-concert/> |
| Choir | 4 | People close together inside.  Enclosed space with modest ventilation  Large number of particles generated during singing | [Churches could be deadliest place for COVID-10](https://www.infectioncontroltoday.com/covid-19/churches-could-be-deadliest-places-covid-19-pandemic) – Infection Control Today |
| Indoor Gym | 4 | Moving, talking, heavy breathing, tough to exercise with masks |  |
| Cafeteria (lunch time traditional) | 4 | Interactions with cook staff, students sitting together, talking, no cloth masks while eating |  |
| Theater class/speech | 4 | Speaking producing particles  Sharing props and make up  Interior space  Audience performances | [Resources for theater production COVID-19](https://www.setc.org/covid-resources/) |
| Indoor sports (basketball, volleyball, wrestling swimming) | 4 | Indoor space with cheering, talking crowd with large amount of particle generation Good mixing of air. (>1 hour together in space) Concessions, entrance, lockers for teammates. Contact between participants on court and bench. | [Five died after attending Indiana basketball tournament](https://www.insider.com/five-died-of-covid-19-after-attending-indiana-basketball-tournament-2020-4) |
| Contact sports - Football | 3-4 | Locker room and sidelines. Close contact with players from other schools, being outside mitigates some exposure |  |
| Full classroom (no masks) | 4 | Discussion, sharing papers, small space, Teacher lecturing |  |
| Current method of going to class | 4 | Hallway interactions, lockers, speaking, random interactions at less than 6 feet |  |
| Live indoor concerts or indoor performances | 4 | Particle generation by performer  Large amount of people in enclosed space  Long time (1-2 hours) together in the same space.  Exit, entrance, lobby concessions |  |

**Options: Risk: Medium to medium high**

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| --- | --- | --- | --- |
| Risky Activities | Risk level | Why is it risk? |  |
| Marching Band outside practice – | 3 | No masks but outside with better ventilation Could social distance | Remote band |
| Choir – Singing outside | 3 | No masks but outside with better ventilation. Could social distance | Remote choir |
| Outdoor gym | 3 | No masks but outside with better ventilation. Showering after gym and lockers are a problem. |  |
| Cafeteria Bag lunch in class | 3 |  |  |
| Outdoor Theater and speech class |  |  |  |
| Outdoor sports – baseball, softball, soccer, lacrosse, tennis, golf | 2-3 | Golf has the lowest risk, Tennis there is sharing of tennis balls, Baseball/Softball has home plate interaction. Lacrosse and soccer higher risk because of contact. | Outdoor sports have better ventilation than indoor sports |
| Classroom 1/4 | 2-3 | Reduced interaction. Wearing cloth respirators will reduce transmission. |  |

**Options for health screening:**

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| --- | --- | --- | --- |
| Schools must be able to screen for COVID-19 symptoms at door (probably means temp monitoring) - CDC |  | Would self-assessment at home using standard flu protocol work for pre-screening? | <https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/Schools-Decision-Tree.pdf> |
| Symptoms list |  | CDC symptoms list and Self checker: | <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html> |
| Someone sick at school - cleaning |  | Cleaning guidance | <https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html> |
| Sick at school MDH guidance |  | Information about staying at home and what to do with a positive test. MN will be instituting contact tracing with each confirmed positive test. | <https://www.health.state.mn.us/diseases/coronavirus/schools/exguide.pdf> |
| Guidance on cloth masks |  | The guidance for cloth masks for higher ed is applies to high schools. Use cloth masks in situations where other social distancing measures are difficult to maintain.  Care and use guidance (U of MN):  <https://www.uhs.umn.edu/using-cloth-face-covers-masks> | <https://www.health.state.mn.us/diseases/coronavirus/schools/masks.html#ihe> |

**Options Rooms: Risk (1- low 4 – high)**

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| Room with Radiant heat, no operable windows, and no ventilation | 4 | Particles stay in the air longer in rooms with poor ventilation. With a room at full capacity and no cloth masks transmission is very likely. | [Indoor Transmission of SARS – CoV-2](https://www.medrxiv.org/content/10.1101/2020.04.04.20053058v1) |
| Room with recirculating fan coil, no operable windows, and poor filtration, minimal outside air | 3 | Air dilution and some filtration may help. If room is at lower density and class duration is short, it would also help. |  |
| Room with good air filtration (MERV 13+) adequate outside air | 2 | Better environment – A smaller size space is more problematic than a larger one |  |
| Room with operable windows and perimeter radiant heat | 2 | Increased air exchange will help. Humidity control will be lost and there will be issues with outdoor air allergens. |  |
| Room with good air filtration (MERV 13+), adequate outside air and in room HEPA or shielded UVC | 1-2 | Combine cloth masks with good air circulation, low room density and additional UVC or HEPA filtration may work. Larger rooms will minimize the effectiveness of the portable HEPA filtration | [UV and Measles (1947)](https://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.37.5.529)  [History of germicidal irradiation](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2789813/)  [**4**](https://www.medrxiv.org/content/10.1101/2020.04.21.20072397v1.full.pdf) |
| Very large rooms: Lunchroom/ gymnasium with ample social distancing | 1-2 | Convert these areas to classrooms. If wearing cloth masks in these environments the risk will be lower. |  |
| Classes held outside with social distancing | 1 | Minimal transmission due to high air exchange. | [**3**](https://www.medrxiv.org/content/10.1101/2020.04.04.20053058v1) |

**Reference for Ventilation:**

1. [How Coronavirus transmits through the air](https://www.scientificamerican.com/article/how-coronavirus-spreads-through-the-air-what-we-know-so-far1/) – Scientific American May 12, 2020 – Summary: Proximity, crowding, mask wearing, time spent in a space, ventilation, and surface contamination are all important factors.
2. [Airborne Transmission of SARS CoV-2](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7151430/)  - NIH April 10, 2020 – Summary: SARS CoV-2 is spread by larger droplets that stay close to people. Additional smaller viral particles are also produced that appear to be infectious. The authors suggest that possibility of small particle transmission should not be dismissed.
3. [Indoor Transmission of SARS – CoV-2](https://www.medrxiv.org/content/10.1101/2020.04.04.20053058v1) – China Study- MedRxiv – April, 2020 – All but one studied outbreaks of two or more people occurred inside. Outdoor air is much safer.
4. [Ventilation Masks and Transmission of SARS-CoV-2](https://www.medrxiv.org/content/10.1101/2020.04.21.20072397v1.full.pdf) – A Chinese modeling study found that high ventilation rates reduced transmission. The use of masks by the infector and the susceptible person reduced transmission at a lower ventilation rate.

**References:**

[**https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/Schools-Decision-Tree.pdf**](https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/Schools-Decision-Tree.pdf)

[**https://www.cdc.gov/coronavirus/2019-ncov/downloads/schools-checklist-teachers.pdf**](https://www.cdc.gov/coronavirus/2019-ncov/downloads/schools-checklist-teachers.pdf)

[**https://www.cdc.gov/coronavirus/2019-ncov/downloads/schools-checklist-parents.pdf**](https://www.cdc.gov/coronavirus/2019-ncov/downloads/schools-checklist-parents.pdf)

[**https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/guidance-for-schools-h.pdf**](https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/guidance-for-schools-h.pdf)

[**https://www.cdc.gov/coronavirus/2019-ncov/downloads/FAQ-schools-child-care.pdf**](https://www.cdc.gov/coronavirus/2019-ncov/downloads/FAQ-schools-child-care.pdf)

<http://www.marylandpublicschools.org/newsroom/Documents/MSDERecoveryPlan.pdf>

Sincerely,



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