Rapid Reviews COVID-19 •

Review 3: "SARS-CoV-2 Aerosol Transmission in Schools: The Effectiveness of Different Interventions"

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RR:C19 Evidence Scale rating by reviewer:

- **Potentially informative.** The main claims made are not strongly justified by the methods and data, but may yield some insight. The results and conclusions of the study may resemble those from the hypothetical ideal study, but there is substantial room for doubt. Decision-makers should consider this evidence only with a thorough understanding of its weaknesses, alongside other evidence and theory. Decision-makers should not consider this actionable, unless the weaknesses are clearly understood and there is other theory and evidence to further support it.

Review:

Overall, I would rate the paper as potentially informative. The results are obvious and confirm previous work, more air exchanges in classrooms yield lower estimates SARCoV-2 airborne particles. However, the article can help public health professionals with risk assessment and implementation of controls to reduce exposure. The heat maps were particularly useful and showed that portable HEPA filtration can provide a comparable reduction in viral concentrations as natural ventilation and can be used in situations where classrooms have window issues and/or the temperature gradients between indoors and outdoors is small. The main limitation of the paper is that the particle estimates have not been validated with any real-world data and rely on simplistic models. Although this is a weakness, this method of infectious disease risk assessment has been utilized for a number of years and helps in the risk prioritization process. Other limitations that should be addressed:

- 1) the estimates of 35%-80% reduction in particle transmission from mask wearing is high and not based upon data for children. The authors should consider reducing this for more realistic estimates.
- 2) The study also does not consider removal of particles via a HVAC system.