

## SYNOPSIS

# Review of “School masking policies and secondary SARS-CoV-2 transmission”

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## One-minute summary

- Using a prospective, observational, open cohort study design, the authors estimated the impact of district-level masking policies on school-associated transmission of COVID-19 among kindergarten to grade 12 students and staff in nine states from July 26 to December 13, 2021, when the Delta variant predominated in the United States.
- Included in the study were 61 school districts that provided contact tracing data and adjudication of source of infections. Overall, there were eight school-associated cases for every 100 community-acquired cases:
  - 40,601 community-acquired (primary) infections (36,032/1,112,899 students and 4,569/157,069 staff).
  - 3,085 school-associated (secondary) infections (2,844/1,112,899 students and 241/157,069 staff).
- Comparing districts with universal (n=46) vs. optional (n=6) masking policies throughout the study period, predicted school-associated transmissions (95% confidence interval) using quasi-Poisson regression analysis were:
  - 72% lower overall in districts with universal masking, with 7.3 (6.3–8.4) vs. 26.4 (10.9–64.4) predicted school-associated cases per 100 community-acquired cases.
  - 87% lower after adjusting for district size and weeks reporting data, with 5.8 (3.6–9.3) vs. 43.5 (31.0–61.1) predicted school-associated cases per 100 community-acquired cases.
- Sensitivity analyses noted similar predicted reductions in school-associated transmission:
  - 74% when the 11 districts with >20,000 students were removed (6.9 vs. 26.4 predicted secondary cases per 100 community-acquired cases).
  - 78% when the 15 districts with >10,000 students were removed (5.9 vs. 26.4 predicted secondary cases per 100 community-acquired cases).

- The authors concluded that school-associated transmission rates were modest overall, and that universal masking policies were associated with a significant reduction in secondary transmission compared with districts with optional masking.

## Additional information

- Data collection for this study ended when Omicron incidence began to surge in the United States.
- Participating school districts reported weekly aggregate counts of primary and secondary COVID-19 cases and quarantines for staff and students, as defined by local health departments. In addition, district-level policies were reported via monthly surveys. At the start of the study period, school districts also reported their lunch procedures, definitions of close contacts, and vaccination requirements.
- Of the 61 participating school districts:
  - 46 (75%) had a universal masking policy while 6 (10%) had an optional masking policy throughout the study period. Partial masking policies were adopted in 9 (15%) districts (four switched from optional to universal, two changed between optional and universal more than once, and three required masking either at different grade levels or as per community transmission rate).
  - An average of 13.5 (standard deviation: 4.8) weeks of infection data was reported.
- Aside from masking, other mitigation strategies adopted by various schools included vaccination for eligible children and adults, physical distancing, and prolonged post-exposure quarantines. At the end of the study, 38% of students between age 5 and 18 years had received at least one dose of COVID-19 vaccine (38% in districts with universal masking policies, 42% in districts with optional masking policies). COVID-19 vaccination was authorized for children age 5 to 11 years after the study had started.
- Despite district-level masking policies, within cluster variation in transmission risk has been noted and could often be linked to adherence to mitigation practices.
- Limitations noted by the authors include:
  - Potential confounders may not be randomly distributed among masking policy groups.
  - Generalizability of findings may be limited given that only nine states participated in the study; case identification and adjudication may vary by availability of testing and contact resources; more transmissible variants have emerged since the study.

## PHO reviewer's comments

- The impact of mitigation policies (including masking) may be more accurately assessed taking compliance into consideration.
- Adjustment for mitigation measures related to masking (e.g., type, exemption); mitigation measures beyond masking (e.g., vaccination, physical distancing, household infection rates); and transmission at school setting or outside was not reported.
- Testing protocols for exposed cohorts were not reported in each district. Therefore, it is unclear the extent to which asymptomatic secondary cases would be identified (an important consideration given >50% of pediatric cases may be asymptomatic.)
- Generalizability of findings may further be limited by variations in contact definitions under different exposure scenarios and how cases are subsequently identified and assigned.

## Citation

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