

SYNOPSIS

Review of “Lifting Universal Masking in Schools — Covid-19 Incidence among Students and Staff”

Published: November, 2022

Article citation: Cowger TL, Murray EJ, Clarke J, Bassett MT, Ojikutu BO, Sánchez SM, et al. Lifting universal masking in schools - Covid-19 incidence among students and staff. *N Engl J Med.* 2022 Nov 9 [Epub ahead of print]. Available from: <https://doi.org/10.1056/nejmoa2211029>

One-minute summary

- The authors conducted an observational study comparing the incidence of Coronavirus Disease 2019 (COVID-19) among students and staff in 72 school districts (including 294,084 students and 46,530 staff) that lifted versus sustained masking requirements in the greater Boston area, Massachusetts during the 2021-2022 school year.
- During the 15 weeks after statewide lifting of masking policy, lifting masking requirements was associated with an additional:
 - 44.9 (95% confidence interval [CI]: 32.6–57.1) COVID-19 cases per 1,000 students and staff (cumulatively over the 15 week period there were 134.4 per 1000 cases in districts that lifted masks vs 66.1 cases in districts that sustained masking requirements), accounting for:
 - 33.4% (95% CI: 24.3%–42.5%) of cases in school districts that lifted masking requirements.
 - 29.4% (95% CI: 21.4%–37.5%) of the cases in all school districts.
 - 28,690 (95% CI: 17,505–39,877) missed school days for students and 9,019 (95% CI: 6,547–11,494) missed school days for staff were attributed to lifting school masking requirements (assuming 5-day isolation for COVID-19 cases).
 - 81.7 (95% CI: 59.3–104.1) COVID-19 cases per 1,000 staff, accounting for:
 - 40.4% (95% CI: 29.4%–51.5%) of cases among staff in school districts that lifted masking requirements.
- The authors concluded that universal masking is an important strategy for reducing COVID-19 incidence in school and loss of in-person school days and could be used as a tool for equitable COVID-19 mitigation.

Additional information

- On February 28, 2022, the Massachusetts Department of Elementary and Secondary Education (DESE) rescinded statewide masking policy. Out of the 79 public non-charter school districts in the greater Boston area, 7 were excluded from the study due to missing or unreliable COVID-19 data. Among the 72 school districts included in the study:
 - 46 (64%) lifted masking requirements in the first week after statewide lifting of masking policy.
 - 17 (24%) lifted masking requirements in the second week.
 - 7 (10%) lifted in the third week.
 - 2 (2%) sustained masking requirements throughout the study period.
- School districts that sustained masking requirements longer had a higher percentage of Black and Latinx staff, and a higher percentage of students who are from low-income families, with disabilities, English-language learners, and from Black and Latinx background. The school buildings were older, in worse physical condition (e.g., outdated or no ventilation or filtration system), and had more students per classroom.
- A difference-in-difference analysis was used to estimate the causal effects of masking policy on the observed incidence of COVID-19 over time. By comparing changes over time this reduces bias from unmeasured time-invariant confounders or time-varying confounders.
- Adjustment for time-varying covariates included: COVID-19 indicators at the community level, vaccination coverage, previous incidences of infection among students and staff, and potential effects of differences in testing definitions or programs across districts. All school districts in the greater Boston area were included as comparison districts, and matched based on school population size.
- COVID-19 incidence was similar across all the school districts before the statewide masking policy was rescinded.
- Community COVID-19 incidence was considered a mediator rather than a confounder for school masking policies.
 - COVID-19 incidence increased in schools several days before a rise was noted in the community. These increases occurred earlier for school districts that lifted masking requirements compared to those that sustained masking requirements.
- Masking policies in a community did not always align with those in schools. The authors also note that masking was still encouraged in most school settings in the study.

- The impact of masking policy removal may be underestimated as individuals move between community and school districts.
 - The authors concluded that their finding that school masking policy had the greatest effect in weeks when community incidence was highest, suggesting that implementing masking policies before and during high transmission periods (versus based on lagging indicators) may be most effective.
- A limitation noted by authors was the lack of COVID-19 testing data in individual school districts.
 - Prior to January 2022 DESE had a policy of testing close contacts of unmasked cases. As of January 2022, testing of unmasked close contacts was no longer required by DESE; however, some school districts may have continued this practice which could be responsible for some of the excess cases observed. The authors postulated that could not adequately explain the results of the study as most schools did not continue with the “test-and-stay” program.

PHO reviewer’s comments

- Overall, the findings in this study are consistent with published data which show that schools with masking mandates have been associated with lower incidence of COVID-19 compared to schools without masking mandates. This is also consistent with observations at other jurisdictional levels.¹ However, it is challenging to measure the independent impact of masking as most schools had layered infection prevention measures.²
- This study adds to previous observational studies as it utilized a natural experiment in Massachusetts of a staggered approach to lifting mask mandates, including 2 districts which never lifted mask mandates in their schools. The study was also conducted during a time when Omicron and its subvariants were circulating where there is limited data on the effectiveness of mask mandates.
- There are potential for residual biases in this study including changes to other infection control measures in the schools that were temporally associated with lifting mask mandates. According to the authors there were substantial socioeconomic and demographic differences between the groups and there may be residual unmeasured confounding.
- This study did not evaluate the effectiveness of masks, but provides supporting evidence that mask policies, in conjunction with layers of infection prevention controls in schools, were associated with reduced incidence of COVID-19 in students and staff. The findings are relevant to consider from an equity lens, noting the inequitable impacts of disruption to in-person learning in Ontario during the COVID-19 pandemic.³

References

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Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Review of “Lifting universal masking in schools — COVID-19 incidence among students and staff”. Toronto, ON: King’s Printer for Ontario; 2022.

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