

Update on Preventing COVID-19 Transmission in Schools During the 2021-2022 School Year

When there is widespread transmission of COVID-19 in the community, children and adults will come to schools infected with COVID-19. The key is for schools to prevent the transmission of COVID-19 within schools.

Summary of the Effectiveness of Universal Masking

Schools with universal masking policies had extremely low within-school transmission during the 2020-2021 school year.

This has been shown in a series of publications:

1. From the fall of 2020 in North Carolina ([view in Pediatrics](#))
2. From the winter of 2020-2021 in North Carolina ([view in Pediatrics](#))
3. From the Spring of 2021 in North Carolina ([view final report](#))
4. From Georgia elementary schools (Cobb County) in 2020 ([view CDC MMWR](#)) and compare this to Cobb County high rates in 2021 ([view AJC article](#))
5. From a school district in Utah in 2020 ([view CDC MMWR](#))
6. From a school district in Wisconsin ([view CDC MMWR](#))
7. From Missouri ([view CDC MMWR](#))
8. From Chesapeake, Virginia ([view in PIDS](#))

On the ABC Science Collaborative [website](#), we outline many of the strengths and limitations of these studies. While the data for masking are imperfect, the best available data support universal masking in schools until we can achieve widespread vaccination in children. The studies use strong epidemiologic research methods and also include contact tracing, testing, and, for one study, go so far as to include whole genome sequencing to track the source of infection. The benefits of universal masking in schools observed by these studies are consistent: Masking limits within-school transmission of COVID-19.

We are now at the point that the burden of proof has clearly shifted to those who advocate for voluntary masking. Voluntary masking in schools should be limited to IRB-approved, prospective, multi-district studies that include contact tracing and routine testing of exposed children and adults.

Delta Variant and Comparison of Universal vs Voluntary Masking from Summer and Fall 2021

Preliminary data from the summer of 2021 (not yet published) suggest that within-school transmission is also low if schools employ universal masking in communities that have a substantial fraction of COVID-19 due to the Delta variant. Summary and interpretation of these data are in preparation and will be made available on the ABC Science Collaborative website in September 2021.

In brief, however, as of Aug. 28, 2021, we have data from 18 school districts in North Carolina for summer school. This includes the time frame this summer when the Delta variant emerged as the predominant variant. More than 70,000 students and staff were in-person during summer school with universal masking in place. During mid-June to mid-August, there were 65 within-school transmissions of COVID-19.

Unfortunately, school districts that do not employ universal masking have thus far not subjected voluntary masking to level of scrutiny that universal masking has withstood. However, a sparse amount of information is publically available. When schools do not employ universal masking, within-school transmission of COVID-19 is widespread, as evidenced by a charter school in Union County, NC (see reporting by [WFAE](#) and [The Charlotte Observer](#)) that resulted in **more than 100 COVID-19 cases (most attributed to within-school**

spread) in one school in two weeks; [high rates in Mississippi](#), where schools opened without a mask mandate this academic year (compare to high rates of transmission observed 2021 vs 2020); and other school districts as summarized briefly in the table below.

In an [August 2021 publication](#) from the Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report, the secondary attack rate was 50% from an unmasked teacher in one school in Marin County, California:

“The teacher reported becoming symptomatic on May 19, but continued to work for 2 days before receiving a test on May 21...the teacher read aloud unmasked to the class despite school requirements to mask while indoors. Beginning May 23, additional cases of COVID-19 were reported among other staff members, students, parents, and siblings connected to the school.... On May 26, (the health department) initiated case investigation and contact tracing that included whole genome sequencing of available specimens. A total of 27 cases were identified, including that of the teacher. During May 23–26, among the teacher’s 24 students, 22 students, all ineligible for vaccination because of age, received testing for SARS-CoV-2; 12 received positive test results. The attack rate in the two rows seated closest to the teacher’s desk was 80% and was 28% in the three back rows ($p = 0.036$). During May 24–June 1, six of 18 students in a separate grade at the school, all also too young for vaccination, received positive SARS-CoV-2 test results. Eight additional cases were also identified, all in parents and siblings of students in these two grades.”

Thus, one unmasked teacher, in one school, in one week, was responsible for 26 within-school transmissions, whereas 18 school districts in North Carolina were able to provide summer school instruction for two months across over 70,000 students and staff and have only 65 transmissions.

Can a universal masking policy be ineffective?

Yes. This is primarily seen when:

1. Mask exemptions are granted
2. Lack of adherence
3. Mask breaks
4. Mealtimes

There should be **approximately zero mask exemptions in the mainstream curriculum**. Clearly the universal masking policy in Marin County, California, was ineffective because the teacher refused to follow the school’s mask requirements. Other places where masking is ineffective is when adherence drops below 90% (at least 9 out of every 10 children and adults should have their mask over their nose, mouth, and chin), and during meals, which should be eaten outside and distanced whenever possible.

What should my school district do?

Institute universal masking, complete contact tracing for exposed school attendees, and submit data to the ABC Science Collaborative. ABC Science Collaborative does not want indefinite masking. We view masking as a bridge to widespread vaccination and can work with districts to leverage to relax (or strengthen) masking based on the district’s own data.

1Results from voluntary masking at 22 school districts from 7 different states. Thousands of students and staff were infected in the month of August. Schools were typically open with ²voluntary masking for <3 weeks prior to changing policy.

District Charter School	State	Closed School or Switch to Virtual	Changed to Require Masking	Number of Students Infected*	Number of Staff Infected*	Source
Phoenix Union	AZ	No	Yes	77**		https://www.pxu.org/Page/27630
Henry Co.	GA		Yes	69**		https://www.cbs46.com/news/henry-county-schools-to-require-masks-for-all-indoor-activities/article_1a8cf204-f958-11eb-80c3-bfa47063aebd.html
Murfreesboro	TN		Yes	138		http://www.cityschools.net/message-parents-regarding-covid-protocols
Sarasota Co.	FL	No	Yes	1179	203	https://www.heraldtribune.com/story/news/2021/08/23/schools-sarasota-now-requiring-masks/8239269002/
Hillsborough Co.	FL		Yes	***	***	https://districtadministration.com/track-school-mask-rules-requirements-state-by-state/
Duval Co.	FL	No	opt-out	826	117	https://www.jacksonville.com/story/news/education/2021/08/23/duval-county-public-schools-required-wear-masks-medical-opt-out/8244480002/
Cobb Co.	GA	Yes		555**		https://www.cobbk12.org/page/40801/covid-case-notification
Williamson Co.	TN		opt-out	485	94	
Orange Co.	FL		Yes	203	128	https://app.powerbi.com/view?r=eyJrlojMzdmYWM1N2QNiXMS00ODk3LWI3ZGUYiZmODQzNTY4ZDA0liwidC6iMmYtczNzNzLnRkNWEtNDY5MmY1hNGFmLTFmNWQ0ZTQ0Y2E5MylsImMiQF9
Indian River Co.	FL	No	Yes (K-8)	149	98	https://cbs12.com/news/local/indian-river-county-school-district-to-make-masks-mandatory
5 schools in Clayton Co.	GA	Yes		115	43	https://www.cnn.com/2021/08/11/us/school-districts-rising-covid-19-cases/index.html
Vestavia Hills	AL		No	104		https://www.al.com/educationlab/2021/08/vestavia-parents-continue-to-battle-over-school-mask-policy.html
3 schools in Hancock Co.	MS	Yes		87	6	https://www.sunherald.com/news/local/education/article253528339.html
Rankin Co.	MS			78	40	https://www.rcsd.ms/coronavirus-information/smart-restart-2122
Chester Co.	SC		Yes	70		https://www.wbtv.com/2021/08/24/chester-county-schools-defies-sc-mask-mandate-ban-requires-masks-indoors/
2 Schools in Lamar Co.	MS	Yes		41	6	https://www.mississippifreepress.org/14272/as-outbreaks-force-schools-to-go-all-virtual-districts-reinstate-mask-mandates/
Burke County	GA	Yes		40		https://www.ajc.com/education/metro-atlanta-schools-record-nearly-4000-covid-cases-in-new-reports/RAATM33ERBDIZBU67LERDVUGQU/
Palm Beach	FL		Yes	37	14	https://www.palmbeachschools.org/students_parents/health_services/coronavirus_disease_2019_covid_19/covid-19_dashboard
2 schools George Co.	MS	Yes		27	12	https://www.sunherald.com/news/local/education/article253528339.html
Springfield	MO		Yes	17	2	https://www.sps.org/covidstats
Broward Co.	FL		Yes	13	138	https://www.browardschools.com/site/default.aspx?PageType=3&DomainID=20645&ModuleInstanceID=150127&ViewID=6446EE88-D30C-497E-9316-3F8874B3E108&RenderLoc=0&FlexDataID=234685&PageID=62583
Talladega Co.	AL		Yes	319	27	https://www.wbr.com/2021/08/27/talladega-county-schools-require-masks/

¹The summary data provided in the table have not been validated; these are not data submitted to Duke but rather obtained through publicly available search; the numbers in the table have not undergone QA/QC. ²The table is assembled from media reports because as of Aug. 22, 2021, school districts with voluntary masking policies are not submitting individual infection data differentiating within-school transmission from community-acquired infection to a prospective multi-district, IRB approved protocol as was done for ABC Science Collaborative research. *Infections in staff were not always reported for privacy/HR reasons; **For two districts, only total number infected were reported, these are listed under the student column, but include adults: ***One school district did not report infections, but quarantined over 10,000 children and staff.