

Notes from the Field

School-Based and Laboratory-Based Reporting of Positive COVID-19 Test Results Among School-Aged Children — New York, September 11, 2021–April 29, 2022

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By April 29, 2022, a total of 702,686 COVID-19 cases were reported among children and adolescents aged 5–17 years in the state of New York.* Pediatric COVID-19 cases and hospitalizations increased during the 2021–22 school year, driven by transmission of the Omicron variant[†] (1). In late 2021, during the surge in Omicron BA.1 variant cases, state[§] and federal[¶] authorities expanded access to self-administered, at-home rapid antigen tests, which can increase a person's knowledge of their COVID-19 status and guide risk-reduction behaviors. New York government agencies sent millions of these tests to schools for distribution to teachers, students, and staff members. Because results of self-administered, at-home tests are not captured by electronic laboratory reporting (in contrast to health care provider–administered tests at a physician's office or laboratory that are reported through electronic health records or other means), expanded use of these tests might affect interpretation of trends in reported COVID-19 cases; however, this has yet to be assessed** (2). Furthermore, understanding changes in testing behavior before and after the Omicron variant surge might help public health officials better use available COVID-19 data to guide future policy.

COVID-19 case data from two independently operating New York State Department of Health systems were compared before and after expansion of at-home testing: 1) laboratory-reported data^{††} for children and adolescents aged 5–17 years and 2) a kindergarten through grade 12 (K–12) school-based

system^{§§} for reporting positive results from all testing sources^{¶¶} (3). Laboratory-reported data include results of school-administered tests (which are required to be reported) but exclude results from self-administered, at-home tests. School-reported data include positive results reported to the state from any test source, including those from clinical settings, school-based testing programs, and self-administered, at-home tests. Case totals for both data sets^{***} and the ratio of school-reported to laboratory-reported cases were calculated weekly during September 11, 2021–April 29, 2022, and compared. This activity was reviewed by CDC and was conducted consistent with applicable federal law and CDC policy.^{†††}

During the September 11–17, 2021, school week, among 6,928 New York schools, 5,201 (75.1%) reported to the school-based system; by the April 23–29, 2022, school week, 5,274 (76.1%) schools reported (weekly median = 80.7%; IQR = 76.1%–81.7%). During the entire analysis period, 477,538 student cases were reported to the K–12 school-based system, and 464,421 cases in children and adolescents aged 5–17 years were reported by laboratories^{§§§}; the overall ratio of school-reported to laboratory-reported cases was 1.03. During September 11–December 31, 2021, the ratio of school-reported to laboratory-reported cases was stable and near 1.0 (median = 0.82; IQR = 0.73–0.85) (Figure). From the January 1–7 to the April 29, 2022, school week, during and following state and federal expansion of at-home testing, the

^{§§} Since September 2020, all K–12 schools have been required to submit data on the number of students, teachers, and staff members who have reported receiving positive COVID-19 test results by 5:00 p.m. each day (excluding weekends, vacation breaks, and unexpected closures). <https://schoolcovidreportcard.health.ny.gov/>

^{¶¶} Schools report any notification of positive test results to the New York State Department of Health from a variety of sources, including school-based testing programs, results from community-based diagnostic and at-home testing reporting by families and providers, and notifications from a local health department as part of contact tracing efforts.

^{***} The number of school-reported cases is typically higher on Mondays because of the cumulative caseload from the preceding weekend. Therefore, 5-day weekly sums for schools were compared with 7-day weekly sums for laboratories, (e.g., Monday, September 13, 2021–Friday September 17, 2021, for school-reported data and Saturday, September 11, 2021–Friday, September 17, 2021, for laboratory-reported data). Both data sets are statewide and include New York City.

^{†††} 45 C.F.R. part 46.102(l)(2), 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

^{§§§} Laboratories in New York state are required to submit COVID-19 test results only if they receive specimens for testing. In 2021, the compliance rate for all laboratory facilities was 95.6%.

* <https://coronavirus.health.ny.gov/covid-19-data-new-york>

[†] <https://coronavirus.health.ny.gov/pediatric-covid-19-update-january-21-2022>

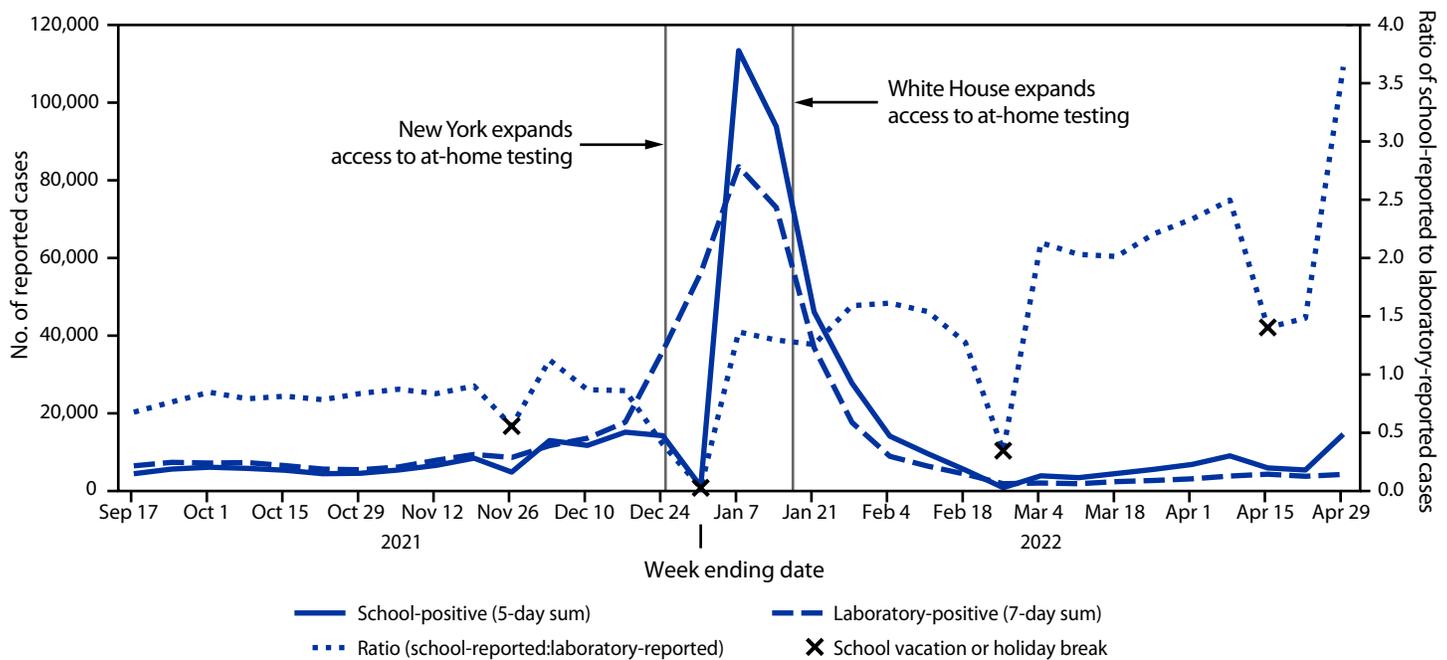
[§] <https://www.governor.ny.gov/news/video-audio-photos-rush-transcript-governor-hochul-announces-comprehensive-winter-surge-plan>

[¶] <https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/14/fact-sheet-the-biden-administration-to-begin-distributing-at-home-rapid-covid-19-tests-to-americans-for-free/>

** <https://www.cdc.gov/coronavirus/2019-ncov/testing/self-testing.html>

^{††} Laboratories in New York state report results from both reverse transcription–polymerase chain reaction and antigen tests.

FIGURE. School-reported* and laboratory-reported† COVID-19 cases — New York, September 11, 2021–April 29, 2022



* School-reported data include positive results from any test source, reported through the New York state COVID-19 report card system for children in kindergarten through grade 12.

† Laboratory-reported data include positive results of SARS-CoV-2 reverse transcription–polymerase chain reaction and antigen tests conducted at laboratories or physician offices, reported through electronic health records or other means.

ratio of school-reported to laboratory-reported cases increased 167%, from 1.36 to 3.64 (median = 1.58; IQR = 1.36–2.13).

These findings are subject to at least three limitations. First, because school-reported data include some students aged <5 years or >17 years, and not all children and adolescents aged 5–17 years attend schools that reported cases, school-reported and laboratory-reported case data were not directly comparable. Second, these results might reflect both underreporting of infection and increased detection because of at-home test use. Finally, results from school-aged children and adolescents are not representative of those from the general population.

The changing relationship between school-reported and laboratory-reported data, during a period of stable school reporting, suggests a decline in the capture of positive laboratory test result data for children and adolescents aged 5–17 years following the expansion of at-home testing. Throughout the pandemic, public health programs have relied on laboratory-reported data to guide risk communication; underestimation of cases based on these data could affect interpretations of epidemic trends and metrics derived from them, including community COVID-19 incidence. This

analysis suggests that methods of capturing data on results from self-administered, at-home tests can augment laboratory-reported data to provide a more complete picture of positive COVID-19 test results within communities. Jurisdictions that prioritize both at-home COVID-19 testing and comprehensive epidemiologic monitoring of the COVID-19 pandemic might consider implementing reporting systems that operate alongside electronic laboratory reporting. As the pandemic has evolved, however, the level of vaccine- and infection-derived immunity has increased in the population; thus, prioritization of reducing medically significant illness and minimizing strain on the health care system has increased.^{***} Health officials and the public should consider current information about COVID-19 cases and hospitalizations in the community, as well as the potential for strain on the local health system, when making decisions about community prevention strategies and individual behaviors.^{****}

^{***} <https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/indicators-monitoring-community-levels.html>

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