July 12, 2021

State of California—Health and Human Services Agency

California Department of Public Health (CDPH)

To: All Californians

Subject: K-12 school-based COVID-19 testing strategies for school year 2021-22

OVERVIEW

High vaccine uptake state-wide and safety precaution measures for COVID-19 allow schools to plan for full in-person instruction for students of all ages for the upcoming school year. Although vaccines are now widely available and vaccinated peoples are less likely to be infected with or transmit COVID-19, vaccines are not yet available for students 11 years old and younger. In addition, not all students and staff who are eligible for vaccination have been vaccinated. This highlights the continued need for proven COVID-19 prevention strategies, including testing unvaccinated peoples in school communities. Therefore, COVID-19 testing in K-12 schools remains a powerful tool for preventing transmission of COVID-19. To learn about your county's vaccination rates (and case rates), see the CA Covid19 website and the CDC tracker.

Both the California and Federal Governments have invested substantially in testing infrastructure to support schools. This allows schools to be prepared for changes in pandemic dynamics, including whether community outbreaks, a change in the virus that increases cases, or limitations in vaccine effectiveness or uptake.

This document outlines testing options and approaches for schools to consider implementing with their school communities. It will likely be very helpful for LEAs to prepare for the 2021-22 school year by signing up for school-based testing, which can provide maximal flexibility for any pandemic shifts, and can allow for optimized in-person learning time under the K-12 Schools Guidance. **The three-step process is displayed in Figure 1.**

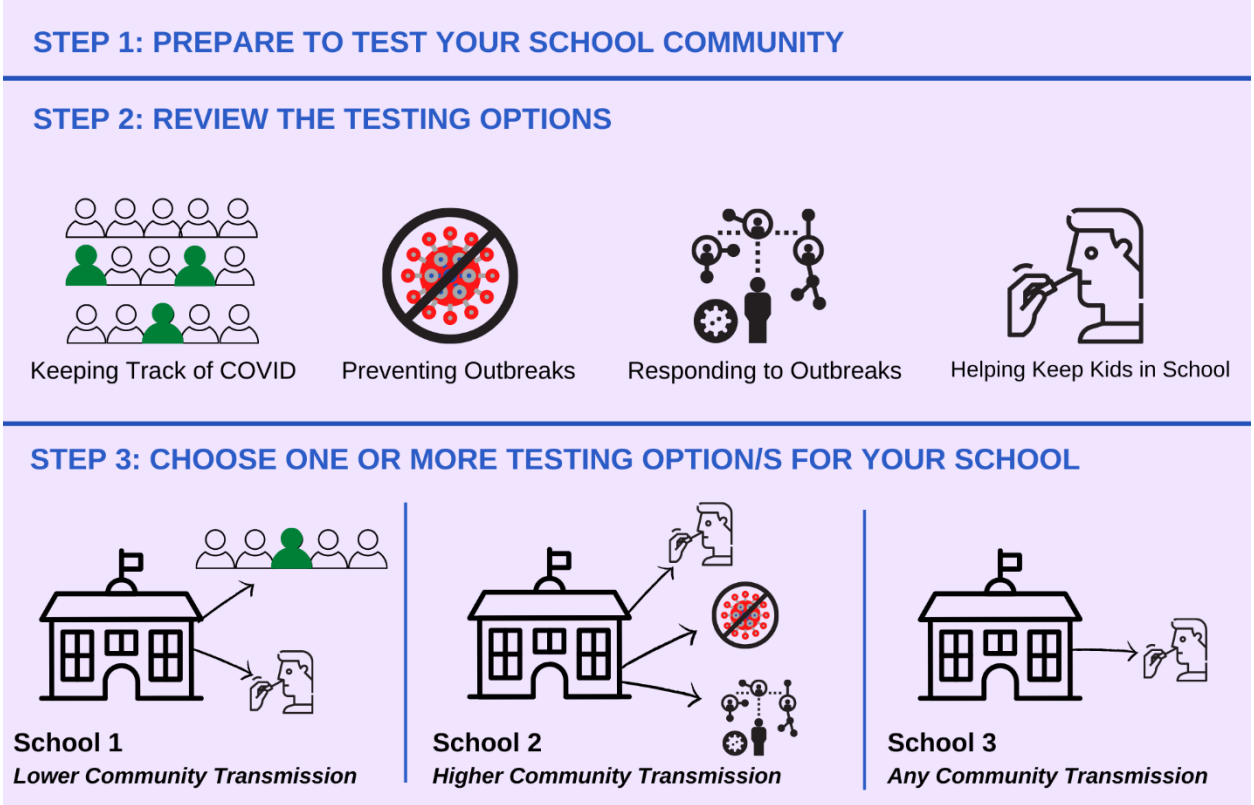


Figure 1. Three step process for LEAs considering school-based testing. The Steps are discussed in greater detail below. Step 3 in the graphic shows how three different schools might choose one or more of the testing options. "Helping Keep Kids in School" is testing for symptomatic people or testing to modify quarantine as allowed under the new K-12 schools guidance. This supports minimizing missed school days.

STEP 1: PREPARE TO TEST YOUR SCHOOL COMMUNITY

It will likely be very helpful for LEAs preparing for the upcoming school year to enroll in a testing program, such as the free CDPH K-12 Testing Program, available to any public, private and charter K-12 school in California, that provides both PCR and rapid testing options. LEAs can prepare in advance of the school year by on-boarding with a testing platform, consenting families for testing (with other beginning of the year paperwork), training staff to implement testing, and having test kits on hand. This is like having a good insurance policy.

LEAs can assess which of the options in **Table 1. K-12 School-based Testing Options** are most likely to be applicable to guide what to set up for use as needed. For those who are unsure, consider consulting with a local public health department school liaison, using the state technical assistance (TA) portal, or access resources from the testing task force California K-12 Schools Testing Program for assistance in decision-making.

STEP 2: REVIEW THE TESTING OPTIONS

The options described below reflect the lessons learned from the 2020-21 school year in California and nationwide regarding how schools used testing to effectively support safe and successful schools. This is not intended to be a comprehensive list, but aims to present the strategies that seemed to be most useful and feasible for schools.

Schools may use one or multiple testing options at any time. Schools may also choose to use a different combination of one or more testing options as situations change and the school year progresses. See below for a brief summary of the testing options.

- **Keeping Track of COVID-19 (lower case rates in the community) -** periodic testing of a portion of unvaccinated asymptomatic staff and students to understand school rates of COVID-19

- **Preventing Outbreaks of New Cases via Screening (higher case rates or outbreaks in the community)** - screening testing for all unvaccinated people at high frequency (weekly or twice weekly) in order to prevent in-school transmission and prevent an outbreak on campus.

- **Responding to School Outbreaks (might happen at low or high community case rates)** - testing unvaccinated close contacts in a school outbreak, to find any potentially asymptomatic infectious individuals who should isolate at home to prevent infecting others.

- **Helping Keep Kids in School (symptom testing and testing to modify quarantine) *** - testing students and staff with symptoms, and testing to modify quarantine for unvaccinated close contacts as described in the CDPH K-12 schools guidance.

Universal pre-entry testing can be used along with any of the Testing Options to test all unvaccinated individuals prior to starting school.

To assist in decision making around testing, we suggest that LEAs review **Table 1. K-12 School-based Testing Options** and decide which best describes their situation.

Table 1. K-12 School-based Testing Options				
Questions for Consideration	**Keeping Track of COVID-19**	**Preventing Outbreaks of New Cases via Screening**	**Responding to School Outbreaks****	**Helping Keep Kids in School**
What is the COVID-19 rate in your community?	Low community case rates* *No active community outbreaks*	Moderate, Substantial or High community case rates* *Active community outbreaks or increasing community rates*	Any community case rates	Any community case rates
When might schools consider this option?	To reassure and support members of the school community and/or To track case rates in schools for decision-making	To prevent outbreaks in schools where there are higher community case rates	There is an active outbreak occurring in the LEA	To provide on-site access to testing for those with symptoms or close contacts of cases, to limit missed school days with a modified quarantine†

* Low, moderate, substantial and high community rates are defined and tracked here by the CDC.

**Consult and coordinate with your local health department to decide when to implement these testing approaches. In the event of an outbreak, the state-supported programs can also provide additional testing and contact tracing capacity, via a strike team deployed by the Testing Task Force.

† As described in the CDPH K-12 schools guidance

Table 2. Suggested Implementation of Potential K-12 School-based Testing Options describes operational, implementation strategies for each approach. The state-supported Testing Task Force's school testing team can assist schools in streamlined implementation. See CDPH's updated Testing Guidance for additional description of tests types.

Table 2. Suggested Implementation of Potential K-12 School-based Testing Options*				
	Keeping Track of COVID-19	**Preventing Outbreaks of New Cases via Screening**	**Responding to School Outbreaks**	**Testing Symptomatic People and to Modify Quarantine**
Appropriate Test Types	Pooled PCR in elementary schools with reflex antigen or PCR** Antigen Lab-based PCR	Pooled PCR in elementary schools with reflex antigen or PCR** Antigen Lab-based PCR	Lab-based PCR Antigen on-site Rapid molecular tests (PCR-like)	Lab-based PCR Antigen on-site or at home Rapid molecular tests (PCR-like)
Population Tested	At least 10% of elementary classrooms *And*/or At least 10% of all unvaccinated staff and students	All unvaccinated students and staff	All exposed unvaccinated students and staff All symptomatic students and staff, regardless of vaccination status	Staff or students with symptoms, regardless of vaccination status *and/or* Unvaccinated students or staff who are close contacts, to remain in school for a modified quarantine†
Frequency of Testing	Pre-entry testing once before school begins, and consider after school breaks	Weekly or twice weekly testing	Testing of all exposed unvaccinated people at beginning of quarantine and to modify	As needed

	and/or Adaptive approach: weekly, every 2 weeks, or monthly, adapting if in-school or community case rates shift***		quarantine if appropriate for the outbreak†	

*Other operational options, with rationale, are described below in "Step 3: Choose One or More Testing Option/s for Your School." See CDPH's updated Testing Guidance for additional description of tests.

**See "Testing Types" section below for pooling approach description. This will be available for schools in the 2021-2022 school year through the state- and federally-supported CDPH K-12 Testing Program.

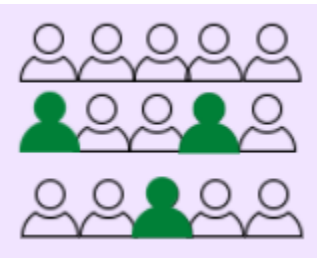
*** Schools could consider doing this once at the start of the school year and then every other week or monthly thereafter and if rates increase, could consider increasing the frequency or the percent of people tested. Schools whose communities or leadership need more assurance could consider doing this weekly for 3-6 weeks initially and if in-school rates are low overall and no in-school transmission is occurring, could change to test every two weeks or monthly.

† As described in CDPH K-12 Guidance.

STEP 3: CHOOSE ONE OR MORE TESTING OPTION/S FOR YOUR SCHOOL

The following section provides more detail about the options regarding the reasons schools have chosen these options and the implementation approaches.

KEEPING TRACK OF COVID



Encouraging vaccination for those eligible is the best means of prevention. However, periodic testing of a portion of unvaccinated asymptomatic staff and students can be used to understand whether particular schools have higher or lower rates of COVID-19 rates compared to the community. This knowledge can guide decisions about safety in schools and inform the school and local public health departments about in-school COVID-19 rates. Throughout the pandemic, K-12 schools have generally had low COVID-19 rates, so this strategy can provide assurance to school communities where local case rates have been high and communities that have been disproportionately impacted, or communities where schools have not yet opened since the start of the pandemic.

Implementation: This option can be implemented in a variety of ways (see below). Schools have been successful throughout the pandemic around the country using this method. Schools can set-up testing ahead of time by signing up for the free CDPH K-12 Testing Program or with an outside vendor.

Periodic screening testing for assurance: Testing a percent of school classrooms (at least 10%) with unvaccinated students or a percent of unvaccinated staff and students (at least 10%) periodically. This approach, suggested in the CDC K-12 guidance, if done on a random subset of people, provides a snapshot of what is happening for the overall group without testing everyone in the group. This can be done by testing a random subset of classrooms with unvaccinated students or a random subset of unvaccinated individuals. Generally, it will be more feasible to do a random subset of classrooms each time testing is done. Some LEAs also may choose to test all unvaccinated individuals in a school during a testing event for a higher level of assurance, particularly if they have low levels of participation in the testing program. Testing in low-prevalence settings might produce false positive results, but testing can be an important prevention strategy and safety net to support in-person education.

Testing types: All types of tests are appropriate for these approaches. For elementary schools, pooled testing (described in "Testing Types") increases feasibility. Individual antigen or PCR tests are also appropriate.

Frequency: As noted in the footnote to Table 2, schools could consider doing this once at the start of the school year and then every other week or monthly thereafter. If rates increase, schools could consider increasing the frequency or the percentage of people tested. Schools whose communities or leadership need more assurance could consider testing weekly for 3-6 weeks and if in-school rates are low overall and no in-school transmission is occurring, testing could change to every two weeks or monthly.

Preventing Outbreaks of New Cases via Screening

K-12 schools in communities with moderate, substantial or high (per CDC levels of community transmission), or rising COVID-19 case rates, or an ongoing community outbreak may choose to provide screening testing for all unvaccinated people using antigen or PCR tests at high frequency (weekly or twice weekly) in order to prevent in-school transmission and thereby prevent school outbreaks. Pooled PCR testing is also an option. The CDC K-12 schools guidance provides information regarding potential cadence for the frequency of screening testing based on community case rates. The decision to implement screening testing can be done in collaboration with the local public health department. It is useful for schools to be prepared to do testing if the case rate increases in their community, in order to support on-going in-person instruction with confidence in the safety measures in place.

Implementation: To prepare for this situation, schools can set-up testing ahead of time by signing up for testing, using the free CDPH K-12 Testing Program or an outside vendor. As needed, schools can then start a screening testing program, or can increase the frequency of testing if already using a Keeping Track of COVID approach.

Schools can implement screening programs using on-site personnel, or can consider hiring from the local community or working with a vendor that provides end to end testing, including personnel. Testing personnel do not need additional healthcare training other than how to administer the test itself and some schools have successfully hired local community members to assist with testing.

Testing types and frequency: High frequency testing: PCR testing and pooled PCR testing with reflex rapid antigen conducted weekly. Antigen testing conducted twice weekly.

Responding to School Outbreaks

If a school has an active outbreak, it is helpful to have testing for unvaccinated individuals already available on site. The recommendation is to test close contacts in an outbreak to find any potentially asymptomatic infectious individuals who should isolate at home to prevent infecting other household members. Having testing available at school allows for easy access to testing and reduces further spread of COVID-19 in the school and the community. In addition, as described in the CDPH K-12 guidance, exposed unvaccinated students can stay in school in a modified quarantine under certain circumstances or have a shortened quarantine at home if using testing (see CDPH K-12 guidance for additional details). The decision to use these modified quarantine options should be discussed with the county public health officer during an outbreak.

Implementation: Same as above for Preventing Outbreaks. If the volume of testing needed is high in the outbreak, LEAs should reach out to their local health department for assistance or to the state testing task force K-12 Schools Testing Program for potential outbreak management assistance.

Testing types and frequency: High frequency testing: PCR conducted weekly. Antigen testing conducted twice weekly.

HELPING KEEP KIDS IN SCHOOL (SYMPTOMATIC TESTING OR TESTING TO MODIFY QUARANTINE)

To decrease the risk of in-school transmission and spread of COVID-19 infections in school, students and staff with symptoms of an illness, regardless of vaccination status, are recommended to stay home from school, or go home if at school, and seek testing. With influenza and cold season approaching, testing will become a key component for students and staff with symptoms, regardless of vaccination status. In addition, the CDPH schools guidance describes situations in which testing can be used to decrease missed school days for exposed students. School-based testing can support those with mild symptoms or who were exposed to decrease missed school days in the following ways:

- Testing Symptomatic People: COVID-19 symptoms can be quite common among students and staff in schools, since there is extensive overlap with symptoms of other normal illnesses (cough, sore throat, cold, fever, etc.). If following CDC K-12 Students Staying Home When Sick and Getting Tested recommendations, a

substantial number of students and staff will likely undergo testing prior to return to school.

A school-based testing program using molecular tests (such as individual PCR, but not antigen) can provide testing access for symptomatic students or staff. Those who have symptoms at school can get tested prior to going home. Those with symptoms at home could come to school or a centralized district or county office of education testing site to get rapid access to testing.

Implementation: Schools or LEAs would have test kits on hand and personnel on site to perform testing as needed for those with symptoms. This could be a system set up at individual schools or through a more centralized district or county office of education testing program. This can be established through the K-12 schools testing program.

- Testing to Modify Quarantine: As noted above in "Responding to Outbreaks", per the K-12 Schools Guidance, students can stay in school under a modified quarantine under certain circumstances, and otherwise quarantine may be discontinued early through testing. Having this type of testing available can minimize missed school days and optimize in-person instruction time.

  Implementation: Same as for symptom testing.

UNIVERSAL PRE-ENTRY TESTING

Universal pre-entry testing can be used with any of the testing options. This approach involves offering testing to all unvaccinated individuals prior to starting school at the beginning of the school year (or upon return from an extended break). This can be helpful for understanding baseline rates in schools and identifying any potential infectious people prior to opening schools. Universal testing of all unvaccinated people who consent is a substantial effort, and is only a snapshot in time, but can also be a good way to get testing personnel trained and comfortable with testing at the beginning of the year.

TYPES OF TESTS

Pooled PCR testing with response antigen or PCR test: In addition, testing for COVID-19 can be done in the K-12 schools context using pooled PCR testing with antigen or PCR response testing. Pooled testing is an approach where specimens from all students in one group (up to 25) are combined and tested with a single test. If the test for all the specimens is negative, all students have a

negative test result. If the test for all specimens is positive, a response antigen or PCR test is conducted to confirm which individual or individuals are positive, allowing for isolation of those infected people and quarantine and further testing of unvaccinated close contacts. Parents provide consent to the testing at the beginning of the school year. The advantage to this approach is that during specimen collection, students do not need to be registered individually, substantially reducing time spent on testing.

Because COVID-19 rates in K-12 schools have been low even during times of high community prevalence, the pooled test is infrequently positive, and so the need for subsequent individual antigen or PCR testing is uncommon. CDPH is currently piloting this approach in summer programs, with the hope of being able to offer it for free through the state-based program for the 2021-22 school year.

At-home self-testing with PCR or antigen tests: CDPH is currently piloting the feasibility of at-home self-testing for staff and students using software that allows the schools to track testing results. This may be a viable way to decrease time spent on testing in schools and can be used for students undergoing modified quarantine to stay in class.

Molecular tests: Molecular tests amplify and then detect specific fragments of viral RNA. Depending on the test, different sequences of RNA may be targeted and amplified. Examples of this method include *polymerase chain reaction (PCR), loop-mediated isothermal amplification (LAMP), and Nucleic Acid Amplification Test (NAAT)*. The real-time reverse transcriptase polymerase chain reaction (PCR) is the most commonly used molecular test and the most sensitive test for COVID-19. PCR (and similar tests) are typically performed in a laboratory and results typically take one to three days. On-site rapid molecular tests (PCR-like) are also available and can produce results in 15 minutes, but may have lower sensitivity (might not detect all active infections) compared with laboratory-based PCR tests. Most molecular tests are done as laboratory-based tests, but there are increasing numbers of molecular on-site rapid molecular tests available.

Antigen tests: Antigen tests identify viral nucleocapsid protein fragments. They are typically performed at a point of care (POC) setting and produce results in approximately 15- 30 minutes. POC antigen tests have a slightly lower sensitivity (may not detect all active infections), but similar specificity (likelihood of a negative test for those not infected with SARS CoV-2) for detecting SARS-CoV-2 compared to PCR tests.

In symptomatic individuals a negative antigen test requires molecular test (PCR, LAMP, NAAT) confirmation and individuals should isolate until test results are available. If an individual is asymptomatic and tests positive with an antigen-based test, conduct confirmatory testing with a molecular test (PCR, LAMP, NAAT) and individuals should isolate until confirmatory test results are available.

These are the only types of tests that are recommended to diagnose COVID-19 infection. The FDA maintains a list of diagnostic tests for COVID-19 granted Emergency Use Authorization (EUA). No test is 100% accurate and test performance can vary depending on a number of test and patient factors as well as the underlying disease burden and pre-test probability in the individual being tested. See Updated Testing Guidance for more information about types of testing.