Operational Strategy for K-12 Schools through Phased Mitigation

Updated Feb. 12, 2021 Print

Executive Summary

As communities plan safe delivery of in-person instruction in K-12 schools, it is essential to decide **when** and **under what conditions** to help protect students, teachers, and staff and slow the spread of SARS-CoV-2, the virus that causes COVID-19. It is critical for schools to open as safely and as soon as possible, and remain open, to achieve the benefits of in-person learning and key support services. To enable schools to open safely and remain open, it is important to adopt and consistently implement actions to slow the spread of SARS-CoV-2 both in schools and in the community. This means that all community members, students, families, teachers, and school staff should take actions to protect themselves and others where they live, work, learn, and play. In short, success in preventing the introduction and subsequent transmission of SARS-CoV-2 in schools is connected to and facilitated by preventing transmission in the broader community.

This operational strategy presents recommendations based on the best-available evidence at the time of release. As science and data on COVID-19 continue to evolve, guidance and recommendations will be updated to reflect new evidence. This document is intended to complement CDC's guidance, tools, and resources for K-12 schools, including guidance on operating schools during COVID-19 and overview of testing for SARS-CoV-2 (COVID-19). This document is intended to complement the U.S. Department of Education's Handbook on Strategies for Safely Reopening Elementary and Secondary Schools . It reflects evidence on COVID-19 among children and adolescents and what is known about SARS-CoV-2 transmission in schools, summarized in CDC's Science Brief on Transmission of SARS-CoV-2 in K-12 Schools. This operational strategy presents a pathway to reopen schools and help them remain open through consistent use of mitigation strategies, especially universal and correct use of masks and physical distancing.

Evidence suggests that many K-12 schools that have strictly implemented mitigation strategies have been able to safely open for in-person instruction and remain open.[1] This document provides an operational strategy to support K-12 schools in opening for in-person instruction and remaining open through an integrated package of mitigation components. These essential elements include:

1. Consistent implementation of layered mitigation strategies to reduce transmission of SARS-CoV-2 in schools
2. Indicators of community transmission to reflect level of community risk
3. Phased mitigation and learning modes based on levels of community transmission

The following public health efforts provide additional layers of COVID-19 prevention in schools:

- Testing to identify individuals with SARS-CoV-2 infection to limit transmission and outbreaks
- Vaccination for teachers and school staff, and in communities, as soon as supply allows

Health Equity Considerations

The absence of in-person educational options may disadvantage children from low-resourced communities, which may include large representation of racial and ethnic minority groups, English learners, and students with disabilities. Plans for safe delivery of in-person instruction in K-12 schools must consider efforts to promote fair access to healthy educational environments for students and staff. Thus, essential elements of school reopening plans should take into

account the communities and groups that have been disproportionately affected by COVID-19 infections and severe outcomes. Schools play a critical role in promoting equity in education and health for groups disproportionately affected by COVID-19.

Essential Elements of Safe K-12 School In-person Instruction

1. **Mitigation strategies to reduce transmission of SARS-CoV-2 in schools**

   Regardless of the level of community transmission, all schools should use and layer mitigation strategies. Five key mitigation strategies are essential to safe delivery of in-person instruction and help to mitigate COVID-19 transmission in schools:

   - Universal and correct use of masks
   - Physical distancing
   - Handwashing and respiratory etiquette
   - Cleaning and maintaining healthy facilities
   - Contact tracing in combination with isolation and quarantine, in collaboration with the health department

   Schools providing in-person instruction should prioritize two mitigation strategies:

   1. Universal and correct use of masks should be required, at all levels of community transmission. Require consistent and correct use of face masks, by all students, teachers, and staff to prevent SARS-CoV-2 transmission through respiratory droplets.
   2. Physical distancing (at least 6 feet) should be maximized to the greatest extent possible. To ensure physical distancing, schools should establish policies and implement structural interventions to promote physical distance of at least 6 feet between people. Cohorting or podding is recommended to minimize exposure across the school environment.

   All mitigation strategies provide some level of protection, and layered strategies implemented concurrently provide the greatest level of protection. CDC's K-12 Schools COVID-19 Mitigation Toolkit includes resources, tools, and checklists to help school administrators and school officials prepare schools for in-person instruction. These tools and resources include aspects for addressing health equity considerations such as class sizes, internet connectivity, access to public transportation, and other topics.
2. **Indicators of community transmission**

   School administrators, working with local public health officials, should assess the level of risk in the community since the risk of introduction of a case in the school setting is dependent on the level of community transmission. CDC recommends the use of two measures of community burden to determine the level of risk of transmission: total number of new cases per 100,000 persons in the past 7 days; and percentage of nucleic acid amplification test (NAATs) results that are positive during the last 7 days. The two measures of community burden should be used to assess the incidence and spread of SARS-CoV-2 in the surrounding community (e.g., county). The transmission level for any given location will change over time and should be reassessed weekly for situational awareness and to continuously inform planning.

   While risk of exposure to SARS-CoV-2 in a school may be lower when indicators of community spread are lower, this risk is also dependent upon the implementation of school and community mitigation strategies. If community transmission is low but school and community mitigation strategies are not implemented or inconsistently implemented, then the risk of exposure and subsequent transmission of SARS-CoV-2 in a school will increase. Alternately, if community transmission is high, but school and community mitigation strategies are implemented and strictly followed as recommended, then the risk of transmission of SARS-CoV-2 in a school will decrease.
3. **Phased mitigation, learning modes, and testing**

   At any level of community transmission, all schools have options to provide in-person instruction (either full or hybrid), through strict adherence to mitigation strategies[1]. Recommended learning modes vary to minimize risk of SARS-CoV-2 transmission in school by emphasizing layered mitigation, including school policies requiring universal and correct mask use. The recommended learning modes (in-person, hybrid, virtual) depend on the level of community transmission and strict adherence to mitigation.

This document presents an operational plan for schools that emphasizes mitigation at all levels of community transmission.

- K–12 schools should be the last settings to close after all other mitigation measures in the community have been employed, and the first to reopen when they can do so safely. Schools should be prioritized for reopening and remaining open for in-person instruction over nonessential businesses and activities.
- In-person instruction should be prioritized over extracurricular activities including sports and school events, to minimize risk of transmission in schools and protect in-person learning.
- Lower incidence of COVID-19 among younger children compared to teenagers[2] suggests that younger students (for example, elementary school students) are likely to have less risk of in-school transmission due to in-person learning than older students (middle school and high school).
- Families of students who are at increased risk of severe illness (including those with special healthcare needs) or who live with people at increased risk should be given the option of virtual instruction regardless of the mode of learning offered.
- Schools are encouraged to use cohorting or podding of students, especially in moderate (yellow), substantial (orange), and high (red) levels, to facilitate testing and contact tracing, and to minimize transmission across pods.
- Schools that serve populations at risk for learning loss during virtual instruction should be prioritized for reopening and be provided the needed resources to implement mitigation.
- When implementing phased mitigation in hybrid learning modes, schools should consider prioritizing in-person instruction for students with disabilities who may require special education and related services directly provided in school environments, as well as other students who may benefit from receiving essential instruction in a school setting.

Decisions should be guided by information on school-specific factors such as mitigation strategies implemented, local needs, stakeholder input, the number of cases among students, teachers, and staff, and school experience with safely reopening. A decision to remain open should involve considerations for further strengthening mitigation strategies and continuing to monitor case incidence and test positivity to reassess decisions.

Despite careful planning and consistent implementation of mitigation, some situations may occur that lead school officials to consider temporarily closing schools or parts of a school (such as a class or grade level) to in-person instruction. These decisions should be made based on careful considerations of a variety of factors and with the emphasis on ensuring the health and wellness of students, their families, and teachers and staff. Such situations may include classrooms or schools experiencing an active outbreak and schools in areas experiencing rapid or persistent rises in case incidence or severe burden on health care capacity.

Multiple SARS-CoV-2 variants are circulating globally. Some variants seem to spread more easily and quickly than other variants, which may lead to more cases of COVID-19. Rigorous implementation of and adherence to mitigation strategies is essential to control the spread of variants of SARS-CoV-2. As more information becomes available, it is possible that due to increased levels of community transmission resulting from a variant of SARS-CoV-2, mitigation strategies and school guidance may need to be updated to account for new evidence on risk of transmission and effectiveness of mitigation.

Additional COVID-19 Prevention in Schools

Testing

When schools implement testing combined with key mitigation strategies, they can detect new cases to prevent outbreaks, reduce the risk of further transmission, and protect students, teachers, and staff from COVID-19.

Diagnostic Testing

At all levels of community transmission, schools should offer referrals to diagnostic testing to any student, teacher, or staff member who exhibits symptoms of COVID-19 at school. Schools should advise teachers, staff, and students to stay home if they are sick or if they have been exposed to SARS-CoV-2 and refer these individuals for testing. They should also refer for testing asymptomatic individuals who were exposed to someone with a confirmed or suspected case of COVID-19. In some schools, school-based healthcare professionals (e.g., school nurses) may perform SARS-CoV-2 diagnostic testing (including rapid, point-of-care testing, and antigen testing) if they are trained in specimen collection and obtain a Clinical Laboratory Improvement Amendments (CLIA) certificate of waiver . It is important that school-based healthcare professionals have access to, and training on, the proper use of personal protective equipment (PPE). If a COVID-19

diagnosis is confirmed, schools can assist public health officials in determining which close contacts could be tested and either isolated or quarantined. Individuals should isolate or quarantine at home, not in school settings, and should stay home until it is safe for them to be around others.

Screening Testing

Some schools may also elect to use screening testing as a strategy to identify cases and prevent secondary transmission. Screening testing can be used as an additional layer of mitigation to complement mitigation strategies in schools. Screening testing is intended to identify infected individuals without symptoms (or prior to development of symptoms) who may be contagious so that measures can be taken to prevent further transmission. For schools that implement expanded screening testing, screening testing should be offered at moderate (yellow), substantial (orange), and high (red) levels of community transmission, to students, teachers, and staff and at low (blue) levels to teachers and staff who have no symptoms and no known exposures. Additional considerations in implementing screening testing:

- When determining which individuals should be selected for screening testing, schools and public health officials may consider prioritizing teachers and staff over students given the higher risk of severe disease outcomes among adults. In selecting among students, schools and public health officials may choose to prioritize high school students, then middle school students, then elementary school students, where applicable.
- Public health officials and school administrators may consider placing a higher priority for access to testing in schools that serve populations experiencing a disproportionate burden of COVID-19 cases or severe disease. These may include schools in communities with moderate or large proportions of racial and ethnic groups that have experienced disproportionately high rates of COVID-19 cases relative to population size, and schools in geographic areas with limited access to testing due to distance or lack of availability of testing.
- Every COVID-19 testing site is required to report to state or local health officials all testing performed. Schools that use testing must apply for and receive a Clinical Laboratory Improvement Amendments (CLIA) certificate of waiver. Schools must report test results to state or local public health departments as mandated by the Coronavirus Aid, Relief, and Economic Security (CARES) Act.
- Testing should be offered on a voluntary basis. Consent from a parent or legal guardian (for minor students) or from the individual (for adults, including adult students and teachers and staff) is required for school-based testing.

Vaccination for teachers and staff, and in communities as soon as supply allows

Teachers and school staff hold jobs critical to the continued functioning of society and are at potential occupational risk of exposure to SARS-CoV-2. State, territorial, local and tribal (STLT) officials should consider giving high priority to teachers in early phases of vaccine distribution. The Advisory Committee on Immunization Practices (ACIP) recommends that frontline essential workers, including those who work in the education sector (teachers and school staff), be prioritized for vaccine allocation in phase 1b, following health care personnel and residents of long-term care facilities (phase 1a). Vaccinating teachers and school staff can be considered one layer of mitigation and protection for staff and students. Strategies to minimize barriers to accessing vaccination for teachers and other frontline essential workers, such as vaccine clinics at or close to the place of work, are optimal. Access to vaccination should not be considered a condition for reopening schools for in-person instruction. Even after teachers and staff are vaccinated, schools need to continue mitigation measures for the foreseeable future, including requiring masks in schools and physical distancing.

Overview

CDC's Operational Strategy for K-12 Schools through Phased Mitigation [818KB, 2 pages]

Background

Schools are an important part of the infrastructure of communities, as they provide safe, supportive learning environments for students, employ teachers and other staff, and enable parents, guardians, and caregivers to work. Schools also help to mitigate health disparities by providing critical services including school meal programs and facilitate access to social, physical, behavioral, and mental health services. Many students are either missing or have had interruptions in these services due to school building closures and virtual and hybrid learning. The occurrence of SARS-CoV-2 infection in schools reflects transmission in the surrounding community.[1] When making decisions on when to open or reopen schools for in-person learning, it is important to understand SARS-CoV-2 transmission within the surrounding community to determine the possible risk of introduction and transmission of SARS-CoV-2 within the school.

There is evidence to suggest that K-12 in-person school attendance is not a primary driver of community transmission[2-5]. Although children can be infected with SARS-CoV-2, can get sick from COVID-19, and can spread the virus to others[3,6-7], evidence indicates that children are less susceptible than adults, and may be less infectious[8-9]. In addition, children are less likely than adults to have severe illness or die and are more likely to be asymptomatic[10-12]. Evidence from available studies suggests that the risk for SARS-CoV-2 introduction and transmission among elementary school-aged children might be lower than that for reopening middle schools and high schools[1,3,9,13]. As a result, evidence suggests a need to adjust mitigation strategies based on higher susceptibility and infectiousness among teens compared to younger children. Data suggest that it is possible for communities to bring down cases of COVID-19 while keeping schools open to in-person instruction[2]. Furthermore, models of consistent implementation of mitigation measures in schools have shown success in limiting outbreaks and infections in schools[14-18]. CDC's Science Brief on Transmission of SARS-CoV-2 in K-12 Schools summarizes evidence on COVID-19 among children and adolescents and what is known about SARS-CoV-2 transmission in schools.

International and domestic experiences have demonstrated that even when a school carefully coordinates, plans, and prepares for delivering in-person instruction, cases of COVID-19 may still occur[14,19]. Expecting and planning for the occurrence of one or more cases of COVID-19 in schools can help schools respond immediately to mitigate the impact, minimize spread within schools, and allow the school to remain open for in-person learning. When mitigation strategies are consistently and correctly used, the risk of spread within the school environment is decreased[1,14,17]. For schools to operate in-person learning safely, the association between levels of community transmission and risk of transmission in school must also be considered. Communities that fully implement and strictly adhere to multiple mitigation strategies, especially universal and proper masking, will reduce COVID-19 incidence within the community as well as within schools to protect students, teachers, and staff members.

Essential Elements of Safe K-12 School Operations for In-Person Learning

CDC has developed guidance for mitigation strategies that K-12 school administrators can use to help protect students, teachers, and staff and slow the spread of COVID-19. If mitigation strategies are strictly adhered to[2], K-12 schools can safely open for in-person instruction and remain open[20]. In addition, the association between COVID-19 incidence and outbreaks in school settings and levels of community transmission underscores the importance of controlling disease spread in the community to protect teachers, staff, and students in schools[1]. This document provides an operational strategy for safe delivery of in-person instruction in K-12 schools through the integration of a package of mitigation and control components.

1. Consistent implementation of layered mitigation strategies to reduce SARS-CoV-2 transmission in schools
2. Indicators of community transmission to reflect levels of community risk
3. Phased mitigation and learning modes based on levels of community transmission

The following public health efforts provide additional layers of COVID-19 prevention in schools.

- Testing to identify individuals with a SARS-CoV-2 infection to limit transmission and outbreaks
- Vaccination for teachers, staff, and in communities as soon as supply allows

Health Equity Considerations

Long-standing systemic health and social inequities have put many racial and ethnic minority groups at increased risk of getting sick and dying from COVID-19. People who identify as American Indian/Alaska Native, Black, and Hispanic are disproportionately affected by COVID-19; these disparities have also emerged among children[11]. Conditions in the places where people live, learn, work, play, and gather affect a wide range of health risks and outcomes, such as SARS-CoV-2 exposure, infection, severe illness, and death.

The absence of in-person educational options may disadvantage children from all backgrounds, particularly children in low-resourced communities who may be at an educational disadvantage. These students may be less likely to have access to technology to facilitate virtual learning and more likely to rely on key school-supported resources like food programs, special education and related services, counseling, and after-school programs. Some parents and caregivers may have less-flexible jobs that do not permit staying at home to provide childcare and aid with virtual learning if schools are closed to in-person instruction. On the other hand, certain racial and ethnic groups have borne a disproportionate burden of illness and serious outcomes from COVID-19. These health disparities are evident even among school-aged children[11], suggesting that in-person

instruction may pose a greater risk of COVID-19 to disproportionately affected populations. For these reasons, health equity considerations related to in-person instruction are an integral part of this complex decision-making. In order to enable in-person learning in schools that serve racial and ethnic groups disproportionately affected by COVID-19, school administrators and public health officials can work together to assist schools with planning and implementing comprehensive mitigation strategies, engage community partners, and assist with referrals to medical care. It is important that these schools have the resources and technical assistance needed to adopt and diligently implement actions to slow the spread of the virus that causes COVID-19 inside the school and out in the community. Studies have also highlighted racial and ethnic differences in parents' attitudes and concerns about school reopening during COVID-19. Compared with White parents, non-White parents may be less likely to feel that schools should reopen for all students and are more concerned about adherence to mitigation strategies, schools reopening safely, their child becoming ill with COVID-19, and their child bringing home COVID-19[21]. Understanding racial/ethnic differences in parental attitudes and concerns about school reopening can inform communication and mitigation strategies and highlights the importance of considering risks for severe COVID-19 and family resource needs when developing options for school attendance during the COVID-19 pandemic.

Plans for safely delivering in-person instruction in K-12 schools must consider efforts to promote fair access to healthy educational environments for students and staff. Thus, essential elements of school reopening plans should take into account the communities and groups that have been disproportionately affected by COVID-19 infections and severe outcomes. These considerations must extend to planning and implementation of phased mitigation, testing, and vaccination strategies to ensure equitable access to supports and services.

School administrators and public health officials can help ensure access to education and to health and other social support services. To prevent the spread of SARS-CoV-2 in schools, school administrators and staff, public health officials, and community leaders must work together to ensure that schools, students, and families have resources to be intentionally engaged in educational activities and opportunities to maintain and manage their health and wellness. Schools play a critical role in promoting equity in education and health for groups disproportionately affected by COVID-19.

Engagement with educators, families, and the school community

A successful school reopening strategy requires engaging the entire school community to establish a safe environment for all educators, school staff, and students and promote trust and confidence. School reopening planning should include, at a minimum, administrators, teachers, student and parent representatives, and specialized instructional support personnel, including school counselors, school social workers, school psychologists, and nurses, as well as facilities managers and custodial staff, transportation personnel, food personnel, and family services representatives. School reopening planning should include student and parent representatives, and individuals and organizations that represent the interests of students, staff, and parents with disabilities or limited English proficiency, and others with access and functional needs, so that specific interests are included in the early stages of planning.

Consistent with health equity considerations, schools and school districts should conduct active and specific outreach to underserved families – including parents/guardians of students of color, students from low-income backgrounds, students with disabilities, English learners, students experiencing homelessness, and students in foster care. This communication should be conducted in families' home languages or mode of communication and in alternate formats as needed to facilitate effective communication for individuals with disabilities, and, where appropriate, in partnership with trusted community-based organizations.

1. Mitigation strategies to reduce transmission of SARS-CoV-2 in schools

Regardless of the level of community transmission, it is critical that schools use and layer mitigation strategies. Five key mitigation strategies are essential to safe delivery of in-person instruction and help to mitigate COVID-19 transmission in schools:

- Universal and correct use of masks
- Physical distancing
- Handwashing and respiratory etiquette
- Cleaning and maintaining healthy facilities
- Contact tracing in combination with isolation and quarantine, in collaboration with the health department

Schools providing in-person instruction should prioritize two mitigation strategies:

1. Universal and correct use of masks should be required, at all levels of community transmission.
2. Physical distancing (at least 6 feet) should be maximized to the greatest extent possible. In hybrid instruction, scheduling should be planned to ensure physical distancing.

All mitigation strategies provide some level of protection, and layered strategies implemented concurrently provide the greatest level of protection. When planning for in-person instruction, schools should place particular emphasis on universal and correct masking and physical distancing as top priorities for implementation. These strategies have the greatest potential for reducing transmission and can also be monitored for consistent and correct implementation.

Schools should adopt the key mitigation strategies to the largest extent practical —a layered approach is essential. Additional information about each of the mitigation strategies and options for implementation of the strategies are provided, along with core principles for how schools may consider each of these strategies.

Health equity considerations in mitigation strategies

- Federal disability laws require an individualized approach for students with disabilities consistent with the student's IEP or Section 504 plan, if applicable. These students include those who have limited mobility; have difficulty accessing information due to visual, hearing, or other disabilities; require close contact with direct service providers; have trouble understanding information; have difficulties with changes in routines; or have other concerns related to their disability. In these instances, educators and school leaders must remain aware of their obligations under Federal disability laws, and should also consider adaptations and alternatives to mitigation strategies, while maintaining efforts to protect students, teachers, and staff from COVID-19.
- CDC's K-12 Schools COVID-19 Mitigation Toolkit includes resources, tools, and checklists to help school administrators and school officials prepare schools to open for in-person instruction and to manage ongoing operations. These tools and resources include aspects for addressing health equity considerations such as class sizes, internet connectivity, access to public transportation, etc.

Universal and correct use of masks

Core principle for masks: Require consistent and correct use of face masks, by all students, teachers, and staff to prevent SARS-CoV-2 transmission through respiratory droplets. Masks should be worn at all times, by all persons in school facilities, with exceptions for certain persons who, because of a disability, cannot wear a mask or wear a mask safely, or for certain settings such as while eating or drinking[3]. Masks should be required in all classroom and non-classroom settings, including hallways, school offices, restrooms, gyms, auditoriums, etc.

- **Mask policies** for all students, teachers, and staff set the expectation that individuals will use masks throughout the school.
- Most students, including those with disabilities, can tolerate and safely wear a mask. However, a narrow subset of students with disabilities may not be able to wear a mask or cannot safely wear a mask. Those who cannot safely wear a mask – for example, a person with a disability who, for reasons related to the disability, would be physically unable to remove a mask without assistance if breathing becomes obstructed – should not be required to wear one. For the remaining portion of the subset, schools should make individualized determinations as required by Federal disability laws in order to determine if an exception to the mask requirement is necessary and appropriate for a particular student. If a child with a disability cannot wear a mask, maintain physical distance, or adhere to other public health requirements, the student is still entitled to an appropriate education, which in some circumstances may need to be provided virtually.
- If visitors are permitted in school, they should be required to wear masks at all times and should maintain at least 6 feet of distance from others.
- Schools should encourage modeling of correct and consistent mask use by school leaders, local leaders, and others respected in the community.
- The most effective fabrics for cloth masks are tightly woven such as cotton and cotton blends, breathable, and in two or three fabric layers. Masks with exhalation valves or vents, those that use loosely woven fabrics, and ones that do not fit properly are not recommended.

Physical distancing

Core principle for physical distancing: Establish school policies and implement structural interventions to promote physical distance of at least 6 feet between people. In areas with substantial and high community transmission, physical distancing is essential in providing protection, minimizing risk of exposure, and limiting the number of close contacts among cases. The interventions presented in this section provide examples of ways to promote physical distancing and alternatives when physical distancing is not always feasible.

- **Cohorting:** Cohorts (or "pods") are groups of students, and sometimes teachers or staff, that stay together throughout the school day to minimize exposure to other individuals across the school environment. Cohorts should remain as static as possible by having the same group of students stay with the same teachers or staff (all day for young children, and as much as possible for older children). If additional space is needed to support cohorting, consider all available safe spaces in school and community facilities. Limit mixing between cohorts.
- When developing cohorts it is important to consider services for students with disabilities, English language learners, and other students so that they may receive services within the cohort, but also ensuring equity, integration, and other requirements of civil rights laws, including Federal disability laws. If itinerant staff (e.g., speech language pathologists, Title I targeted assistance teachers) are required to provide services within existing cohorts, mitigation measures should be taken to limit the potential transmission of SARS-CoV-2 infection, including providing masks and any necessary PPE for staff and children who work with itinerant staff. Itinerant staff members should keep detailed contact tracing logs.
- **Staggered scheduling:** Stagger school arrival and drop-off times or locations by cohort, or put in place other protocols to limit contact between cohorts, as well as direct contact with parents.
- **Alternate schedules with fixed cohorts** of students and staff to decrease class size and promote physical distancing.
- **Install physical barriers and guides** such as sneeze guards and partitions particularly in areas where it is difficult for individuals to remain at least 6 feet apart (e.g., reception desks).
- **Visitors:** Limit any nonessential visitors, volunteers, and activities involving external groups or organizations as much as possible – especially with individuals who are not from the local geographic area (e.g., not from the same community, town, city, county). Exceptions should be made for students with disabilities who require related services administered by direct service providers (e.g., speech therapists who serve multiple schools). Require all visitors to wear masks and keep a 6-foot distance from others. Schools should permit visitors only in areas of low (blue) community transmission.

Handwashing and respiratory etiquette

Core principle for handwashing and respiratory etiquette: Through ongoing health education units and lessons, teach children proper handwashing and reinforce behaviors, and provide adequate supplies. Ensure that teachers and staff use proper handwashing and respiratory etiquette.

- **Teach and reinforce handwashing** with soap and water for at least 20 seconds and increase monitoring to ensure adherence among students, teachers, and staff. Schools can explore options for curricular integration, such as in health and science lessons.
- Encourage students and staff to cover coughs and sneezes with a tissue when not wearing a mask and immediately wash their hands after blowing their nose, coughing, or sneezing.
- Some students with disabilities may need assistance with handwashing and respiratory etiquette behaviors.

- **Adequate supplies:** Support healthy hygiene behaviors by providing adequate supplies, including soap, a way to dry hands, tissues, face masks (as feasible) and no-touch/foot-pedal trash cans. If soap and water are not readily available, schools can provide alcohol-based hand sanitizer that contains at least 60% alcohol (for staff and older children who can safely use hand sanitizer).

Cleaning and maintaining healthy facilities

Core principle for cleaning and maintaining healthy facilities: Routinely and consistently clean high-touch surfaces (such as doorknobs and light switches). Make changes to physical spaces to maintain a healthy environment and facilities.

- **Cleaning:** Regularly clean frequently touched surfaces (e.g., playground equipment, door handles, sink handles, toilets, drinking fountains) within the school and on school buses at least daily or between use as much as possible.

- **Modified layouts: adjust physical layouts in classrooms and other settings to maximize physical space, such as by turning desks to face in the same direction.**
- **Physical barriers and guides: Install physical barriers and provide guides such as tape on floors and arrows to promote physical distancing and minimize crowding.**
- **Shared objects:** Discourage sharing items, particularly those that are difficult to clean.
- **Water systems:** Take steps to ensure that all water systems and features (e.g., sink faucets, decorative fountains) are safe to use after a prolonged facility shutdown.
- **Communal spaces:** Close communal use of shared spaces, such as dining halls, if possible; otherwise, stagger use and clean between use. Consider use of larger spaces such as dining halls for academic instruction, to maximize physical distancing.
- **Food service:** Avoid offering any self-serve food or drink options such as hot and cold food bars, salad or condiment bars, and drink stations.
- **Ventilation:** Improve ventilation to the extent possible such as by opening windows and doors to increase circulation of outdoor air to increase the delivery of clean air and dilute potential contaminants. Opening windows and doors should be consistent with school safety protocols and safety plans. Do not open windows and doors if doing so poses a safety risk or a health risk (e.g., risk of falling, triggering asthma symptoms) to anyone using the facility. Opening windows and doors should be consistent with school safety protocols and safety plans.

Contact tracing in combination with isolation and quarantine

Core principle for contact tracing: Schools should collaborate with the STLT health department, to the extent allowable by privacy laws and other applicable laws, to confidentially provide information about people diagnosed with or exposed to COVID-19. Persons with positive test results should isolate, and close contacts should quarantine. Individuals should isolate or quarantine at home, not in school settings, and should stay home until CDC recommendations for isolation or quarantine have been met.

- **Staying home when appropriate:** Educate teachers, staff and families about when they and their children should stay home and when they can return to school. Students, teachers, and staff who have symptoms should stay home and be referred to their healthcare provider for testing and care. Schools may need to consider flexible sick leave policies and practices that enable staff to stay home when they are sick, have been exposed, or are caring for someone who is sick. School systems should recruit and train sufficient substitute educators to ensure that teachers can stay home when they are sick or have been exposed to someone who is confirmed or suspected of having COVID-19.
- **Isolation** should be used to separate people diagnosed with COVID-19 from those who are not infected. Students, teachers, and staff who are in isolation should stay home and follow the direction of the local public health authority about when it is safe for them to be around others.
- **Contact tracing:** Schools should work with the state, territorial, local, or Tribal health department to facilitate, **to the extent allowable by applicable laws,** systematic contact tracing of infected students, teachers, and staff, and consistent implementation of isolation of cases and quarantine of contacts. Schools can prepare and provide information and records to aid in the identification of potential contacts, exposure sites and mitigation recommendations, consistent with applicable laws, including those related to privacy and confidentiality. Health department collaboration with K-12 school administration to obtain contact information of other individuals in shared rooms, class schedules, shared meals, or extracurricular activities will expedite contact tracing. For schools to remain open, health departments should ensure they have a sufficient number of contact tracers to complete case investigation and notify contacts within 48 hours of a positive test result.
- **Case investigation** and contact tracing are essential interventions in a successful, multipronged response to COVID-19, and should be implemented along with other mitigation strategies. As K-12 schools resume in-person learning, case investigation and contact tracing with staff, teachers and students should be anticipated as a crucial strategy to reduce further transmission once a case is identified. Prompt and coordinated actions, including case investigation and contact tracing, may inform decision-making about strengthening, focusing, and relaxing mitigation strategies. Case investigation and contact tracing help to prevent further transmission of disease by separating people who have (or may have) COVID-19 from people who do not. Prompt identification, voluntary self-quarantine, and monitoring of those contacts exposed to SARS-CoV-2 can effectively break the chain of transmission and prevent further spread of the virus in a community.
- **Quarantine** should be used for students, teachers, and staff who might have been exposed to COVID-19. Close contacts, identified through contact tracing, should quarantine. Students, teachers, and staff who are in quarantine should stay home and follow the direction of the local public health department about when it is safe for them to be around others.

If a child with a disability is required to quarantine, the school is required to provide services consistent with Federal disability laws.

2. Indicators of Community Transmission

During the COVID-19 pandemic, states, tribes, localities, territories and school districts have asked CDC for guidance to inform decision-making about when and how to safely open schools.

Given the likely association between levels of community transmission of SARS-CoV-2 and risk of SARS-CoV-2 exposure in schools[1,16], a **first step** in determining when and how it is safe to reopen involves assessing the level of community transmission. School administrators, working with local public health officials, should assess the level of risk in the community and the likelihood of a case in a school facility, the likelihood that a case would lead to an outbreak, and the consequences of in-school transmission.

CDC recommends the use of two measures of community burden to determine the level of risk of transmission: total number of new cases per 100,000 persons in the past 7 days; and percentage of nucleic acid amplification tests (NAATs), including RT-PCR tests that are positive during the last 7 days. The two measures of community burden should be used to assess the incidence and spread of SARS-CoV-2 in the surrounding community (e.g., county) and not in the schools themselves. If the two indicators suggest different levels, the actions corresponding to the higher threshold (in Table 2) should be chosen. The transmission level for any given location will change over time and should be reassessed weekly for situational awareness and to continuously inform planning.

Table 1. CDC Indicators and Thresholds for Community Transmission of COVID-19[1]

Indicator	Low Transmission Blue	Moderate Transmission Yellow	Substantial Transmission Orange	High Transmission Red
Total new cases per 100,000 persons in the past 7 days[2]	0-9	10-49	50-99	≥100
Percentage of NAATs that are positive during the past 7 days[3]	<5.0%	5.0%-7.9%	8.0%-9.9%	≥10.0%

[1]If the two indicators suggest different levels, the actions corresponding to the higher threshold should be chosen. County-level data on total new cases in the past 7 days and test percent positivity are available on the County View tab in CDC's COVID Data Tracker.

[2]Total number of new cases per 100,000 persons within the last 7 days is calculated by adding the number of new cases in the county (or other community type) in the last 7 days divided by the population in the county (or other community type) and multiplying by 100,000.

[3]Percentage of positive diagnostic and screening NAATs during the last 7 days is calculated by dividing the number of positive tests in the county (or other administrative level) during the last 7 days by the total number of tests resulted over the last 7 days. Additional information can be found on the Calculating Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Laboratory Test Percent Positivity: CDC Methods and Considerations for Comparisons and Interpretation webpage.

[4]Previously, CDC provided guidance for schools through the Indicators for Dynamic School Decision-Making. The current indicators and thresholds are an update to that document that reflect a focus on the past 7 days, and four (rather than five) categories of community transmission.

While risk of exposure to SARS-CoV-2 in a school may be lower when indicators of community spread are lower, this risk is also dependent upon the implementation of school and community mitigation strategies, including requiring universal and correct use of masks, physical distancing handwashing and respiratory etiquette, cleaning and maintaining healthy facilities, and contact tracing in combination with isolation and quarantine. If community transmission is low but school and

community mitigation strategies are not implemented, then the risk of exposure and subsequent transmission of SARS-CoV-2 in a school will increase. Alternately, if community transmission is high, but school and community mitigation strategies are implemented and strictly followed as recommended, then the risk of transmission of SARS-CoV-2 in a school will decrease.

Success in preventing COVID-19 in schools begins with and is connected to preventing transmission in communities. Schools and communities must implement a layered approach that adheres to multiple mitigation strategies and adjust them as needed to reduce COVID-19 risk for students, teachers, school staff, families, and the community. In areas of low or moderate community transmission, the spread of SARS-CoV-2 infection in schools is low when consistent use of layered mitigation strategies is in place.

When communities implement and strictly adhere to mitigation strategies, the level of community transmission is slowed. This will in turn enable schools that are open for in-person learning to stay open and help schools that have not yet reopened to return to in-person instruction. The application and utility of these indicators are inextricably linked to both schools and communities following recommended mitigation strategies.

3. Phased mitigation, learning modes, and testing

For schools to operate safely for in-person learning, communities should fully implement and adhere to mitigation strategies to reduce COVID-19 incidence and make decisions that prioritize safely opening schools for in-person learning over nonessential businesses and activities. Additionally, to reduce the risk of transmission in schools, schools should fully implement and strictly adhere to recommended layered mitigation strategies, especially universal and correct masking and physical distancing.

The phased mitigation recommendations are meant to assist school and STLT officials in making decisions, through regular monitoring of local indicators. As school officials monitor indicators and thresholds, they should take local trends and other factors into account when making decisions about in-person learning. For example, implementation of mitigation strategies should be intensified if indicators worsen (i.e., moving from low to moderate to substantial to high community transmission). Intensifying mitigation may also involve imposing restrictions on sports and extracurricular activities. If increasing trends persist in or plateau in substantial levels, school should transition to hybrid instruction. Similarly, mitigation strategies and transitions to full in-person instruction should only be relaxed or lifted after improvements are documented continuously for several weeks, such as decreasing to moderate from substantial levels. To make these decisions, school and STLT officials should take levels of community transmission, information on adherence to mitigation strategies, and data on COVID-19 cases and numbers of people in quarantine into account. CDC also provides secondary indicators that school and STLT officials can use to inform these decisions. Secondary indicators are available in CDC's prior Indicators for Dynamic School Decision Making.

Phased mitigation in schools that do not implement screening testing

Table 2 presents an operational plan for opening and remaining open for schools that do not offer screening testing either on premises or through a collaboration with a community service or department of public health. The mitigation plan emphasizes mitigation at all levels of community transmission, with particular emphasis on school policies that require universal and correct use of masks

Table 2. Recommended Implementation of Mitigation Strategies and K-12 School Learning Modes by Level of Community Transmission for Schools That Do Not Implement Expanded Screening Testing

Low Transmission[1] Blue	Moderate Transmission Yellow	Substantial Transmission Orange	High Transmission Red
All schools: Universal and correct use of masks is required; physical distancing; handwashing and respiratory etiquette; cleaning and maintaining healthy facilities; contact tracing in combination with isolation and quarantine. **Diagnostic testing[2]:** Symptomatic students, teachers, and staff and close contacts referred for diagnostic testing			

<table>
<tr><td colspan="2" rowspan="2">K-12 schools open for full in-person instruction
Physical distancing of 6 feet or more to the greatest extent possible[3]</td><td colspan="2">Elementary schools in hybrid learning mode or reduced attendance[4]
Physical distancing of 6 feet or more is required</td></tr>
<tr><td>Middle and high schools in hybrid learning mode or reduced attendance
Physical distancing of 6 feet or more is required</td><td>Middle and high schools in virtual only instruction unless they can strictly implement all mitigation strategies, and have few cases; schools that are already open for in-person instruction can remain open, but only if they strictly implement mitigation strategies and have few cases[5]</td></tr>
<tr><td>Sports and extracurricular activities occur; physical distancing of 6 feet or more to the greatest extent possible[6]</td><td>Sports and extracurricular activities occur with physical distancing of 6 feet or more required</td><td>Sports and extracurricular activities occur only if they can be held outdoors, with physical distancing of 6 feet or more</td><td>Sports and extracurricular activities are virtual only</td></tr>
</table>

[1]Levels of community transmission defined as total new cases per 100,000 persons in the past 7 days (low, 0-9; moderate, 10-49; substantial, 50-99; high, ≥100) and percentage of positive tests in the past 7 days (low, <5%; moderate, 5-7.9%; substantial, 8-9.9%; high, ≥10%).

[2]Diagnostic testing for SARS-CoV-2 is intended to identify occurrence of SARS-CoV-2 infection at the individual level and is performed on individuals with or without suspected COVID-19 infection in accordance with the test's authorization and labeling.

[3]If physical distancing of at least 6 feet among all students, teachers, and staff within a class, cohort, or pod is not possible at all times, schools should ensure physical distancing between classes, cohorts, and pods.

[4]Hybrid learning or reduced attendance is intended to maximize physical distance between students. Schools may consider hybrid learning models or instructional modes where substantial percentages of students are in virtual only instruction. At all levels of community transmission, schools should provide families the option to participate in virtual learning if a student or family member is at risk of severe illness from COVID-19.

[5]Strict implementation of mitigation strategies refers to policies that require consistent and correct use of masks, physical distancing of at least 6 feet, all other key mitigation strategies.

[6]School officials should implement limits on spectators and attendees for sports, extracurricular activities, and school events as consistent with recommendations for masking and physical distancing for each phase.

Phased mitigation in schools that implement screening testing

Table 3 presents an operational plan for schools that offer screening testing either on premises or through a collaboration with a community service or department of public health. The phased plan integrates implementation of mitigation strategies and testing by level of community transmission. Similar to the plan for no testing, this plan emphasizes mitigation with particular emphasis on school policies that require universal and correct use of masks.

Table 3. Recommended Implementation of Mitigation Strategies, Testing, and Safe K-12 School Learning Modes by Level of Community Transmission for Schools that Implement Expanded Screening Testing

<table>
<tr><th>Low Transmission[1]
Blue</th><th>Moderate Transmission
Yellow</th><th>Substantial Transmission
Orange</th><th>High Transmission
Red</th></tr>
<tr><td colspan="4">All schools implement 5 key mitigation strategies: Universal and correct use of masks required; physical distancing; handwashing and respiratory etiquette; cleaning and maintaining healthy facilities; contact tracing in combination with isolation and quarantine.
Diagnostic testing[2]: Symptomatic students, teachers, and staff and close contacts referred for diagnostic testing</td></tr>
<tr><td colspan="4">Screening Testing[3]</td></tr>
<tr><td colspan="4">Routine screening testing of teachers and staff offered once per week</td></tr>
<tr><td>No screening testing for students</td><td colspan="3">Routine screening testing of students offered once per week[4]</td></tr>
<tr><td colspan="4">School Status</td></tr>
<tr><td colspan="2">K-12 schools open for full in-person instruction
Physical distancing of 6 feet or more to the greatest extent possible[5]</td><td colspan="2">K-12 schools in hybrid learning mode or reduced attendance[6]
Physical distancing of 6 feet or more is required</td></tr>
<tr><td>Sports and extracurricular activities occur; physical distancing of 6 feet or more to the greatest extent possible[7]</td><td>Sports and extracurricular activities occur with physical distancing of 6 feet or more required</td><td>Sports and extracurricular activities occur only if they can be held outdoors, with physical distancing of 6 feet or more</td><td>Sports and extracurricular activities are virtual only</td></tr>
</table>

[1]Levels of community transmission defined as total new cases per 100,000 persons in the past 7 days (low, 0-9; moderate, 10-49; substantial, 50-99; high, ≥100) and percentage of positive tests in the past 7 days (low, <5%; moderate, 5-7.9%; substantial, 8-9.9%; high, ≥10%).

[2]Diagnostic testing for SARS-CoV-2 is intended to identify occurrence of SARS-CoV-2 infection at the individual level and is performed when there is a reason to suspect that an individual may be infected, such as having symptoms or suspected recent exposure.

[3]Screening testing is intended to identify infected asymptomatic individuals who may be contagious so that measures can be taken to prevent further transmission.

[4]Schools may consider testing a random sample of at least 10% of students or may conduct pooled testing of cohorts/pods for screening testing in areas of moderate and substantial community transmission.

[5]If physical distancing of at least 6 feet among all students, teachers, and staff within a class, cohort, or pod is not possible at all times, schools should ensure physical distancing between classes, cohorts, and pods.

[6]Hybrid learning or reduced attendance is intended to maximize physical distance between students. Schools may consider hybrid learning models or instructional modes where substantial percentages of students are in virtual only instruction. At all levels of community transmission, schools should provide families the option to participate in virtual learning if a student or family member is at risk of severe illness from COVID-19.

[7]School officials should implement limits on spectators and attendees for sports, extracurricular activities, and school events as consistent with recommendations for masking and physical distancing for each phase.

A phased mitigation approach to learning modes and testing for K-12 schools relies on several core concepts.

- **K–12 schools should be the last settings to close after all other mitigation measures in the community have been employed, and the first to reopen when they can do so safely.** This implies that decision-makers and communities should prioritize schools for reopening and remaining open for in-person instruction over nonessential businesses and activities including indoor dining, bars, social gatherings, and close contact sports as community transmission is controlled.
- **In-person instruction should be prioritized over extracurricular activities including sports and school events, to minimize risk of transmission in schools and protect in-person learning**. Prolonged periods of remote or virtual learning can have negative effects on educational progress for students, potentially slowing or reversing academic gains. Students from low-resourced communities, English learners, and students with disabilities may disproportionately experience learning loss due to limited access to remote learning technology and fewer learning support systems and services outside of schools. Safe in-person schooling can also offset the negative social, emotional, and mental health impacts of prolonged virtual learning. Minimizing the risk of spread during extracurricular activities and social gatherings outside of school can help maintain in-person instruction. Some close-contact sports may not be able to be implemented at any level of community transmission given the risk of transmission and the inability to implement mitigation strategies[22].
- **Lower susceptibility and incidence among younger children compared to teenagers suggests that younger students (for example, elementary schools) are likely to have less risk of in-school transmission due to in-person learning than older students (middle schools and high schools).** In addition, younger children may benefit more from in-person instruction and are less independent than older students. For these reasons, a phased mitigation approach emphasizes in-person learning modes for younger students throughout all levels of community transmission.
- **Families of students who are at increased risk of severe illness (including those with special healthcare needs) or who live with people at high risk should be given the option of virtual instruction regardless of the mode of learning offered**.
- **Schools are encouraged to use cohorting or podding of students**, especially in moderate (yellow), substantial (orange), and high (red) levels, to facilitate testing and contact tracing, and to minimize transmission across pods.

Schools that **do not** implement expanded screening testing: Learning modes and phased mitigation

For schools that do not implement expanded screening testing, recommended learning modes vary to minimize risk of SARS-CoV-2 transmission in school by emphasizing layered mitigation, including school policies requiring universal and correct mask use.

- **Low (blue) and moderate (yellow) community transmission:** Elementary, middle, and high schools are open for full in-person learning with all 5 key mitigation strategies. Universal and correct use of masks is required. Physical distancing is maintained to the greatest extent possible. Schools may benefit from using pods or cohorts to facilitate testing protocols and contact tracing and minimizing risk of transmission. If physical distancing of at least 6 feet among all students, teachers, and staff within a class, cohort, or pod is not possible at all times, schools should ensure physical distancing between classes, cohorts, and pods.
- **Substantial (orange) community transmission:** Elementary, middle, and high schools transition to hybrid instruction to maximize physical distancing and reduce risk of transmission. Schools may consider hybrid learning models or instructional modes where substantial percentages of students are in virtual only instruction. All 5 key mitigation strategies are implemented. Universal and correct use of masks and physical distancing are required.
- **High (red) community transmission:** Elementary schools continue hybrid instruction with all 5 key mitigation strategies in place. Universal and correct use of masks and physical distancing are required. For middle schools and high schools, transition to virtual instruction is recommended. Some middle schools and high schools may consider opening or remaining open if mitigation strategies are consistently implemented, school policies requiring universal and correct use of masks are in place, and monitoring of cases in school suggests limited transmission. In communities with high levels

of transmission, high prevalence of COVID-19 in the community could also result in many teacher and staff quarantines due to exposures in the community, limiting the ability of schools to remain safely open.

Schools should closely and regularly monitor the numbers of students, teachers, and staff with COVID-19, as well those in isolation and in quarantine. Schools may consider convening a team or committee with representation from local public health and members of the school community (e.g., students, parents, teachers, and staff) to review data regularly, share information, and discuss opportunities to support open communication with school stakeholders. In collaboration with the local health department, decisions should be guided by information on school-specific factors such as implementation of mitigation strategies, local needs, stakeholder input, school experience, and the number of cases among students, teachers, and staff. A decision to remain open should involve considerations for further strengthening mitigation strategies and continuing to monitor cases to reassess decisions.

Schools that implement expanded screening testing: Learning modes and phased mitigation

Relying on these core concepts, a phased approach takes into account levels of community transmission and presents options for learning modes and testing strategies based on the risk of SARS-CoV-2 transmission in school.

- Low (blue) community transmission: Elementary, middle, and high schools are open for full in-person learning with all 5 key mitigation strategies in place. Universal and correct use of masks is required. Schools may benefit from using pods or cohorts to facilitate testing protocols and contact tracing and minimizing risk of transmission.
- Moderate (yellow) community transmission: Elementary, middle, and high schools are open for full in-person learning with all 5 key mitigation strategies in place, using pods or cohorts. Universal and correct use of masks is required.
- Substantial (orange) community transmission: Elementary, middle, and high schools transition to hybrid instruction to maximize physical distancing and reduce risk of transmission. Schools may consider hybrid learning models or instructional modes where substantial percentages of students are in virtual only instruction. All 5 key mitigation strategies are implemented. Universal and correct use of masks is required; physical distancing is maintained.
- High (red) community transmission: Elementary, middle, and high schools continue hybrid instruction with all 5 key mitigation strategies in place. In communities with high levels of transmission, high prevalence of COVID-19 in the community could result in many teacher and staff quarantines due to exposures in the community, limiting the ability of schools to remain safely open. Universal and correct use of masks is required; physical distancing is maintained.

At all levels of community transmission, employers should provide reassignment, remote work, or other options for staff who have documented high-risk conditions or who are at increased risk for severe illness from COVID-19 to limit the risk of workplace exposure. When these conditions are disabilities under the Americans with Disabilities Act, employers must provide reasonable accommodation subject to undue hardship. Options for reassignment may include but are not limited to telework, virtual teaching opportunities, modified job responsibilities, environmental modifications, scheduling flexibility, or temporary reassignment to different job responsibilities. These options should likewise be extended to staff who have a household member with a high-risk condition or who are at increased risk for severe illness from COVID-19. Policies and procedures addressing issues related to teachers and other staff at higher risk of serious illness and the application of reassignment, remote work or other options for mitigation should be made in consultation with occupational medicine and human resource professionals with knowledge of the specific situation, keeping in mind Equal Employment Opportunity (EEO) and other potential legal concerns.

Unplanned school closures

Despite careful planning and consistent implementation of essential elements of safe in-person instruction in K-12 schools, some situations may occur that lead school officials to consider temporarily closing schools or parts of a school (such as a class or grade level) to in-person instruction, typically in consultation with the local public health department. These decisions should be made based on careful considerations of a variety of factors and with the emphasis on ensuring the health and wellness of students, their families, and teachers and staff. In such cases, schools should make efforts to provide continuity of instruction through synchronous remote learning or at-home activities.

Classrooms or schools experiencing an active outbreak may temporarily close for in-person learning. If the school is experiencing an outbreak, school leaders should immediately notify public health officials and collaborate to facilitate increased testing and contact tracing, as necessary. The local health department may facilitate testing for students, teachers, and staff who are in schools with an active outbreak. The health department may also conduct contact tracing in these

situations. Schools can assist by providing information, to the extent allowable by privacy laws and other applicable laws, to identify close contacts (e.g., class rosters, seating charts, and student emergency contact information) that could be tested and either isolated or quarantined.

Schools in areas experiencing rapid or persistent rises in case incidence or severe burden on health care capacity. School leaders and public health officials should monitor indicators of community transmission (Table 1) and review trends over time. In communities that have rapid or persistent rises in case incidence or severe health care capacity burden, school leaders may decide to temporarily close schools to in-person instruction until levels of community transmission stabilize.

New COVID-19 variants and mitigation in schools

Multiple SARS-CoV-2 variants are circulating globally. This includes several new variants that have been detected in the United States in December 2020 and January 2021. Some of these variants are of concern as they seem to spread more easily and quickly than other variants, which may lead to more cases of COVID-19. Rigorous implementation of and adherence to mitigation strategies is essential to control the spread of variants of SARS-CoV-2. In the event of increased levels of community transmission resulting from a variant of SARS-CoV-2, updates to this guidance may be necessary.

Rigorous and increased compliance with public health mitigation strategies, such as vaccination, use of masks, physical distancing, hand hygiene, and isolation and quarantine, will be essential to limiting the spread of SARS-CoV-2 and protecting public health. CDC, in collaboration with other public health agencies, is monitoring the situation closely and studying these variants quickly to learn more to control their spread. As more information becomes available, it is possible that mitigation strategies and school guidance may need to be adjusted to new evidence on risk of transmission and effectiveness of mitigation.

Health equity considerations in phased mitigation

- Schools that serve student populations that are at greater risk for learning loss during virtual instruction (e.g., due to their more limited access to technology) should be prioritized for reopening and be provided the needed resources to implement mitigation and testing strategies.
- In implementing phased mitigation in hybrid learning modes, schools should consider prioritizing in-person instruction for students with disabilities who require special education and related services directly provided in school environments, as well as other students who may benefit from receiving essential instruction in a school setting.
- Schools should develop plans to continue meal service provision such as free breakfast and lunch to families for every phase and learning mode, including in-person, hybrid, and virtual.

Additional COVID-19 Prevention in Schools

Testing

Viral testing strategies in partnership with schools should be part of a comprehensive mitigation approach. Testing should not be used alone, but in combination with other mitigation components to reduce risk of transmission in schools. When schools implement testing combined with mitigation strategies, they can detect new cases to prevent outbreaks, reduce the risk of further transmission, and protect students, teachers, and staff from COVID-19.

Diagnostic Testing

At all levels of community transmission, schools should offer referrals to diagnostic testing to any student, teacher, or staff member who is exhibiting symptoms of COVID-19 at school. Diagnostic testing for SARS-CoV-2 is intended to identify occurrence of SARS-CoV-2 infection at the individual level and is performed when there is a reason to suspect that an individual may be infected, such as having symptoms or suspected recent exposure. Examples of diagnostic testing strategies include testing symptomatic teachers, students, and staff who develop symptoms in school, and testing asymptomatic individuals who were exposed to someone with a confirmed or suspected case of COVID-19. The U.S. Food and Drug Administration's (FDA) FAQs on Testing for SARS-CoV-2 also address diagnostic testing for SARS-CoV-2. Additional considerations for diagnostic testing:

- Schools should advise teachers, staff, and students to stay home if they are sick or if they have been exposed to SARS-CoV-2. Schools can encourage these individuals to talk to their healthcare provider about getting testing for SARS-CoV-2

CoV-2. Schools can encourage these individuals to talk to their healthcare provider about getting testing for SARS-CoV-2 in a healthcare or public health facility.

- If a student, teacher, or staff member becomes sick at school or reports a new COVID-19 diagnosis, schools should follow the steps of the COVID-19 Diagnosis flowchart on what to do next. This includes appropriately notifying a student's parent or guardian and initiating testing strategies. Notifications must be accessible for all students, parents or guardians, including those with disabilities or limited English proficiency (e.g., through use of interpreters or translated materials).
- In some schools, school-based healthcare professionals (e.g., school nurses) may perform SARS-CoV-2 antigen testing in school-based health centers if they are trained in specimen collection, conducting the test per manufacturer's instructions, and obtain a Clinical Laboratory Improvement Amendments (CLIA) certificate of waiver . Some school-based healthcare professionals may also be able to perform specimen collection to send to a lab for testing, if trained in specimen collection, without a CLIA certificate. It is important that school-based healthcare professionals have access to, and training on the proper use of personal protective equipment (PPE).
- Not every school or school-based healthcare professional will have the staff, resources or training to conduct testing. Public health officials should work with schools to help link students and their families, teachers, and staff to other opportunities for testing in their community. Testing could be offered by referral to community-based testing sites, through collaboration with local public health, or through a centralized test location offered by the school district.

The presence of any of the symptoms below generally suggests a student, teacher, or staff member has an infectious illness and should not attend school, regardless of whether the illness is COVID-19. For students, staff, and teachers with chronic conditions, symptom presence should represent a change from their typical health status to warrant exclusion from school. Occurrence of any of the symptoms below while a student, teacher, or staff member is at school suggests the person may be referred for diagnostic testing.

- Temperature of 100.4 degrees Fahrenheit or higher
- Sore throat
- Cough (for students with chronic cough due to allergies or asthma, a change in their cough from baseline)
- Difficulty breathing (for students with asthma, a change from their baseline breathing)
- Diarrhea or vomiting
- New loss of taste or smell
- New onset of severe headache, especially with a fever

Students should not attend school in-person if they or their caregiver identifies new development of any of the symptoms above.

Schools can provide options to separate students with COVID-19 symptoms or suspected or confirmed COVID-19 diagnoses by, for example, placing students in isolation room/areas until transportation can be arranged to send them home or seek emergency medical attention.

If a COVID-19 diagnosis is confirmed, schools can support public health officials in determining which close contacts and other potentially exposed persons in the school setting could be tested and either isolated or quarantined (see Table 4). Schools can assist by providing information, where appropriate, to identify close contacts (e.g., class rosters, seating charts, and information to facilitate outreach to contacts).

Table 4. Tiered approach of diagnostic testing for SARS-CoV-2[1,2]

Students, teachers, and staff with symptoms of COVID-19 Refer for diagnostic testing	Students, teachers, or staff with symptoms of COVID-19 at school, at all levels of community transmission. • Individuals with positive test results should go to their home and isolate until they have met criteria for release from isolation. • People with symptoms should be isolated away from others as soon as symptoms appear and sent home. Those with positive test results should remain in isolation until they have met all three criteria for release: 10 days have passed since symptom onset; at least 24 hours have passed since resolution of fever without medication; and other symptoms have improved. CDC does not recommend that people be tested again before leaving isolation because people who have recovered can test positive for several weeks without being contagious. If an individual with symptoms tests negative, they should still stay home until their symptoms resolve to avoid spreading any infection – coronavirus or otherwise.
Close contacts Refer for diagnostic testing	Students, teachers, or staff who had contact with someone diagnosed with COVID-19, defined as those who were within 6 feet from an infected person for a cumulative total of 15 minutes or more for a 24-hour period starting from 2 days before illness onset (or, for asymptomatic persons, 2 days prior to date the person with COVID-19 was tested). The definition of a close contact applies regardless of whether either person was wearing a mask. • Regardless of the test result, close contacts should quarantine for 14 days. Based on local circumstances and resources, options to shorten quarantine provide acceptable alternatives of a 10-day quarantine or a 7-day quarantine combined with testing. • To minimize impact of quarantines on delivery of instruction, schools should limit the potential for exposures across pods and classrooms (e.g., teachers should limit close contacts with other teachers and with students not in their own classrooms).
Potential contacts Schools may consider screening testing to potential contacts	Students, teachers, and staff in the same classroom, cohort, or pod as the person with COVID-19 who always kept at least 6 feet distance between persons. For example, this includes individuals in the following scenarios: • Students in the same classroom but who were not within 6 feet for a total of 15 minutes or more. • Students, teachers, or staff in the same hallway, but not sharing a classroom or bathroom, as a person with COVID-19. • Students who took the same bus but were farther than 6 feet apart from other riders at the same time as a person with COVID-19.
Potentially exposed individuals Schools may consider screening testing to potentially exposed individuals	Students, teachers, and staff who shared a common space (e.g., teacher's lounge, library) and were not using the space at the same time as the person with COVID-19, but where short duration exposure (< 15 minutes) to those with confirmed COVID-19 cannot be definitively ruled out. • For example, this includes individuals who are in the school on a different schedule and in different rooms than the individual with confirmed COVID-19, but exposure cannot be definitively ruled out.

[1]The tiers above are intended to be applied to the Diagnostic Testing component across all levels of community transmission: low (blue), moderate (yellow), substantial (orange), and high (red).

[2] Information should be provided with appropriate safeguards to protect personally identifiable information and HIPPA-sensitive information from unlawful release.

For diagnostic testing, selection of tests should prioritize tests with highly accurate results with high sensitivity and specificity such as NAATs. Referral to diagnostic testing for students, teachers, and staff who have symptoms of COVID-19 at school and for close contacts is recommended for all levels of community transmission. Students, teachers, and staff who have diagnostic testing performed should be isolated away from others and quarantined at home until test results are received. Diagnostic testing turnaround times depend on the type of test. Local capacity in diagnostic tests should ensure that cases and contacts and be tested with result return within 48 hours. At low levels of community transmission (blue), schools should refer students, teachers, and staff with symptoms or recent history of close contact with a confirmed case for diagnostic testing to identify or rule out SARS-CoV-2 infection. At moderate (yellow), substantial (orange), and high (red) levels, and at low (blue) levels for teachers and staff, referral to diagnostic testing is combined with screening testing to monitor for increases in infection rates.

For students, teachers, and staff who had previously received positive test results and do not have symptoms of COVID-19, retesting is not recommended for up to 3 months from their last positive test result. Data currently suggest that some individuals test persistently positive due to residual virus material but are unlikely to be infectious. Parents or guardians may request documentation from their health care provider to indicate the date and type of the student's most recent COVID-19 test. Guidance on testing strategies for individuals who are fully vaccinated will be provided once more information is available.

Screening Testing

Some schools may also elect to use screening testing as a strategy to identify cases and prevent secondary transmission. Screening testing involves using SARS-CoV-2 viral tests (diagnostic tests used for screening purposes) intended to identify occurrence at the individual level even if there is no reason to suspect infection—i.e., there is no known exposure. This includes, but is not limited to, screening testing of asymptomatic individuals without known exposure with the intent of making decisions based on the test results. Screening testing is intended to identify infected individuals without symptoms (or prior to development of symptoms) who may be contagious so that measures can be taken to prevent further transmission. Examples of screening include weekly testing in a workplace to test employees, and testing plans developed by a school to test its students, teachers, and staff. In both examples, the intent is to use the screening testing results to determine who may return to in-person school or work and the protective measures that will be taken or to identify and isolate positive persons to prevent spread. FDA's FAQs on Testing for SARS-CoV-2 also address screening testing for SARS-CoV-2.

Screening testing is particularly valuable in areas with moderate, substantial, and high levels of community transmission. Screening testing for K-12 schools may allow schools to move between different testing strategies as community prevalence (and therefore risk assessment) changes. As risk decreases but the likelihood of multiple infected individuals at the school remains high, frequent routine screening tests can be deployed to help identify and contain outbreaks.

For schools that implement expanded screening testing, screening testing should be offered at moderate (yellow), substantial (orange), and high (red) levels of community transmission, to students, teachers, and staff and at low (blue) levels to teachers and staff who have no symptoms and no known exposures. Screening testing can identify cases early and can minimize secondary transmission. Screening testing can be especially useful in areas with moderate to high community transmission. Achieving substantial reduction in transmission with testing requires more frequent testing and shorter lags between test administration and reporting of results, which may not be possible for every school district.

Schools may consider using pooled testing as a screening testing strategy for students. Pooled testing involves mixing several samples from different individuals together in a "batch" or pooled sample, then testing the pooled sample with a diagnostic test. This approach increases the number of individuals that can be tested and reduces the need for testing resources[23-24]. This approach may be particularly helpful in schools using "pods" or cohorts. Because of the complexities of acting on a positive result, pooled testing is best used in situations where the number of positives is expected to be very low. Pods could be established in grade groups, such as all students in a particular grade or in similar grades (e.g., K-grade 2; grades 3-5). Schools may have alternative methods for assigning pods based on instructional and facility considerations. If a confirmed positive case is found, close contacts of anyone in that pod should be quarantined and tested.

School officials making decisions about schools in areas of moderate, substantial, or high community transmission could adopt a regular screening program to prevent infections from spreading within the school. Achieving substantial reduction in transmission requires more frequent testing and shorter lags between test administration and reporting of results. When combined with mitigation measures such as mask use, physical distancing, and others, testing protocols may be an effective tool in reducing transmission. Screening testing can be administered directly at a school facility (see Feasibility considerations section below), at a central location through the school district, or through referral to community-based testing providers.

- Moderate (yellow) and substantial (orange) community transmission: students, teachers, and staff participate in regular screening testing to reduce the risk of transmission within the school.
  - Teachers and staff participate in routine screening testing at least once per week. In areas with substantial and high community transmission, twice a week screening testing may be preferable to quickly detect cases among teachers and staff.
  - Students in elementary, middle, and high schools participate in weekly routine screening testing. If a confirmed positive case is found, any close contacts are quarantined and tested.
  - Schools may consider testing a random sample of at least 10% of students. For example, a school may randomly select 20% of the students each week for testing out of the entire population of students attending in-person instruction. Alternatively, a school may select one pod for each grade level each week for testing. Different strategies for random selection may be used based on most adequate fit for a school screening testing strategy.
- High (red) community transmission: students, teachers, and staff participate in regular screening testing to reduce the risk of transmission within the school.
  - Teachers and staff in elementary schools participate in routine screening testing weekly. In areas with substantial and high community transmission, twice a week screening testing may be preferable to quickly detect cases among teachers and staff.
  - Students in elementary schools participate in weekly routine screening testing, as described above for moderate (yellow) and substantial (orange).

When considering which tests to use for screening testing, schools or their testing partners should select tests that can be reliably supplied and that provide results within 24 hours. NAATs are high-sensitivity tests for detecting SARS-CoV-2 nucleic acid. Most NAATs need to be processed in a laboratory with variable time to results (may be 1-3 days), but some NAATs are point-of-care tests with results available in about 15 minutes. Pooled testing — in which samples from multiple people are initially combined — may reduce costs and turn-around times. These may be considered for weekly screening testing in areas of moderate (yellow) community transmission.

Antigen tests are generally less sensitive than NAATs for clinical diagnosis, and most can be processed at the point-of-care with results available in about 15 minutes. Antigen test results may need confirmation with a NAAT, such as a negative test in persons with symptoms and a positive test in persons without symptoms. Schools should work with the health department to develop a confirmation and referral plan before implementing testing. The immediacy of results (test results in 15-30 minutes), modest costs, and feasibility of implementation of antigen tests make them a reasonable option for school-based screening testing. The feasibility and acceptability of tests that use nasal (anterior nares) swabs make these types of tests more readily implemented in school settings. Tests that use saliva specimens may also be acceptable alternatives for younger children, if tests are available and results are returned within 24 hours.

Taking into consideration the potential for limited availability of supplies for screening testing or feasibility of implementing screening testing, schools may consider a prioritization strategy. When determining which individuals should be selected for screening testing, schools and public health officials may consider prioritizing teachers and staff over students given the increased risk of severe illness among certain adults. In selecting among students, schools and public health officials may prioritize high school students, then middle school students, and then elementary school students, reflecting higher infection rates among adolescents compared to younger children.

Reporting test results

Every COVID-19 testing site is required to report to the appropriate state or local health officials all diagnostic and screening tests performed. Schools that use antigen testing must apply for and receive a Clinical Laboratory Improvement Amendments (CLIA) certificate of waiver, and report test results to state or local public health departments as mandated by the Coronavirus Aid, Relief, and Economic Security (CARES) Act.

Parents should be asked to report positive cases to schools, to facilitate contact tracing and ensure communication and planning in schools. In addition, school administrators should notify staff, teachers, families and emergency contacts or legal guardians immediately of any case of COVID-19 while maintaining confidentiality in accordance with the Health Insurance Portability and Accountability Act of 1996 (HIPAA), the Americans with Disabilities Act (ADA), and the Family Educational Rights and Privacy Act (FERPA), and other applicable laws and regulations. Notifications must be accessible for all students, faculty and staff, including those with disabilities or limited English proficiency (e.g., through use of interpreters or translated materials).

Health equity considerations in school-based testing

Public health officials and school administrators may consider placing a higher priority for access to testing in schools that serve populations experiencing a disproportionate burden of COVID-19 cases or severe disease. These may include:

- Schools in communities that have experienced disproportionately high rates of COVID-19 cases relative to population size, including communities with moderate or large proportions of racial and ethnic groups such as American Indian/Alaska Native, Black, and Hispanic persons.
- Schools in geographic areas with limited access to testing due to distance or lack of availability of testing[25].

Ethical considerations for school-based testing

Testing should be offered on a voluntary basis. It is unethical and potentially illegal to test someone who does not want to be tested, including students whose parents or guardians do not want them to be tested. School-based testing should never be conducted without consent from a parent or legal guardian (for minor students) or from the individual (for adults, including adult students and teachers and staff). Assent may also be considered for minor students. Schools should make a communication plan to notify local health officials, staff, and families immediately of any case of COVID-19 while maintaining confidentiality in accordance with the Americans with Disabilities Act (ADA) and Family Educational Rights and Privacy Act (FERPA), the Protection of Pupil Rights Amendment (PPRA), and other applicable laws and regulations. Collaboration with local counsel, education and /or public health is recommended to ensure appropriate consent is obtained and maintained and results are retained with appropriate privacy and confidentiality.

Considerations before starting ANY testing strategy

Before implementing testing in their schools, K-12 administrators should coordinate with public health officials to ensure there is support for this approach from students, parents, teachers, and staff and to develop a testing plan that has key elements in place.

- Dedicated infrastructure and resources to support school-based testing.
- Use of tests that are authorized by FDA for the specific intended use (i.e., screening, pooling), and a mechanism in place for prescriptions/test orders by a licensed health care provider.
- CLIA certificate of waiver requirements to perform school-based testing with EUA authorized tests.
- Mechanism to report all testing results (both positive and negative) as required by the STLT health department.
- Ways to obtain parental consent for minor students and assent/consent for the students themselves.
- Physical space to conduct testing safely and privately.
- Ability to maintain confidentiality of results and protect student privacy.
- Plans for ensuring access to confirmatory testing when needed through the STLT health department for symptomatic persons who receive a negative test result and asymptomatic persons who receive a positive test result.

If these elements are not in place, schools may consider a referral-based testing strategy in collaboration with public health officials.

Schools should work with STLT public health officials to decide whether and how to use testing. K-12 schools operated by the federal government (e.g., for Department of Defense Education Activity [DoDEA], which operates K-12 schools for DoD Dependents) should collaborate with federal health officials. In addition to state and local laws, school administrators should follow guidance from the Equal Employment Opportunity Commission, and applicable federal laws when offering testing to faculty, staff, and students who are employed by the K-12 school.

Feasibility considerations and challenges of school-based testing

These challenges must be considered carefully and addressed as part of plans for school-based testing developed in collaboration with public health officials.

- In some schools, school-based healthcare professionals (e.g., school nurses) may perform COVID-19 viral testing if the school or test site receives a Clinical Laboratory Improvement Amendments (CLIA) certificate of waiver. Some school-based healthcare professionals may also be able to perform specimen collection to send to a lab for testing, if trained in specimen collection, without a CLIA certificate. It is important that school-based healthcare professionals have access to,

and training on the proper use of personal protective equipment (PPE). Facilities should be aware of the FDA EUA for antigen tests and the Center for Medicare & Medicaid (CMS's) enforcement discretion regarding the CLIA certificate of waiver when using tests in asymptomatic individuals.

- Not every school system will have the staff, resources or training (including the CLIA certificate of waiver) to conduct testing. Public health officials should work with schools to help link students and their families, teachers, and staff to other opportunities for testing in their community.
- School-based testing may require a high degree of coordination and information exchange among health departments, schools, and families.
- There may also be legal and regulatory factors to consider with onsite school-based testing regarding who will prescribe the tests, who will administer the tests, how tests will be paid for, and how results will be reported. Such factors include local or state laws defining the services school nurses and other school-based health professionals are permitted to provide, as well as applicable privacy laws.
- The benefits of school-based testing need to be weighed against the costs, inconvenience, and feasibility of such programs to both schools and families.
- Antigen tests usually provide results diagnosing an active SARS-CoV-2 infection faster than NAATs, but antigen tests have a higher chance of missing an active infection even in symptomatic individuals and confirmatory molecular testing may be recommended.

Vaccination for teachers and staff, and in communities as soon as supply allows

Vaccines are an important tool to help stop the COVID-19 pandemic. STLT health officials are the best resource in answering questions about when and where school staff can be vaccinated in each state, territory, or jurisdiction. Vaccines are now authorized for use by the FDA and are being distributed to help protect against COVID-19. The end goal is to offer vaccines to the entire U.S. population. With limited supply, identifying priority groups for COVID-19 vaccination is critical for implementation planning using a phased approach. The ACIP COVID-19 Vaccines Work Group considered evidence related to SARS-CoV-2 epidemiology, vaccination program implementation, and ethical principles in developing the interim recommendation for allocation of COVID-19 vaccine. ACIP reviewed evidence-based information pertaining to COVID-19 vaccines, including initial allocation of COVID-19 vaccine supplies. ACIP recommended that health care personnel and residents of long-term care facilities be offered vaccination in the initial phase of the COVID-19 vaccination program (Phase 1a). Following ACIP's interim recommendation for vaccine allocation in Phase 1a, the Work Group proposed vaccine allocation for Phases 1b and 1c. Phase 1b includes frontline essential workers, including those who work in the education sector (teachers and school staff). Teachers and school staff hold jobs critical to the continued functioning of society and are at potential occupational risk of exposure to SARS-CoV-2. STLT officials should consider giving high priority to teachers in phase 1b.

Vaccinating teachers and school staff can be considered one layer of mitigation and protection for staff and students. Strategies that minimize barriers to access vaccination for teachers and other frontline essential workers, such as vaccine clinics at or close to the place of work, are optimal. STLT health officials have worked with community and school leadership and developed approaches that include on-site employer/occupational clinics, use of pharmacies, mobile clinics, and health department point of dispensing strike teams. Survey data also suggest that there is broad support for vaccinating teachers and school staff early in the phased vaccination approach[26].

Observational data demonstrate that pregnant people with COVID-19 have an increased risk of severe illness compared with non-pregnant people of reproductive age. Additionally, pregnant people with COVID-19 might be at increased risk of adverse pregnancy outcomes, such as preterm birth, compared with pregnant people without COVID-19. Currently, there are limited data about the safety of COVID-19 vaccines for people who are pregnant. Teachers and school staff who are pregnant may choose to be vaccinated. A conversation between pregnant patients and their healthcare providers may help them decide whether to get vaccinated with a vaccine that has been authorized for use under Emergency Use Authorization (EUA).

School officials and health departments can work together to also support messaging and outreach regarding vaccination for members of school communities as they become eligible for vaccination in their jurisdictions. For example, school communication platforms can be leveraged for outreach to older adult family members of students, particularly for students living in multi-generational households. In later phases of vaccination, school communication can facilitate outreach to encourage vaccination of household members of school-age children as they become eligible. This should include outreach in a language that limited English proficient family members of students can understand and in alternate formats as needed to facilitate effective communication for individuals with disabilities.

Implementation of layered mitigation strategies will need to continue until we better understand potential transmission among people who received a COVID-19 vaccine and there is more vaccination coverage in the community. In addition, vaccines are not yet approved for use in children under 16 years old. For these reasons, even after teachers and staff are vaccinated, schools need to continue mitigation measures for the foreseeable future, including requiring masks in schools and physical distancing.

Footnotes

[1]Middle and high schools in virtual only instruction unless they can strictly implement all mitigation strategies, and have few cases; schools that are already open for in-person instruction can remain open, but only if they strictly implement mitigation strategies and have few cases.

[2]School staff in this document refers to any school employees, contractors, or independent consultants interacting with students and/or teachers during the course of the school day, including, for example, school administration, bus drivers, cafeteria workers, school nurses, speech/occupational therapists, custodians, and other school employees.

[3]Additional information about operating school meals is provided in CDC's K-12 school guidance.

[4]Previously, CDC provided guidance for schools through the Indicators for Dynamic School Decision- Making. The current indicators and thresholds are an update to that document that reflect a focus on the past 7 days, and four (rather than five) categories of community transmission.

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Last Updated Feb. 12, 2021