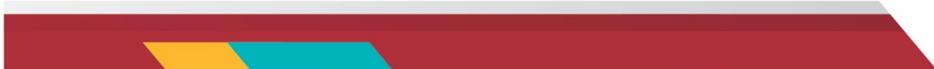




# COVID-19 Back to School PlayBook: Guiding Principles to Keep Students, Teachers, and Staff Safe in K-12 Schools



# Authors

**John Lowe, PhD**

Executive Director, Education  
Global Center for Health Security

**Jocelyn Herstein, PhD, MPH**

Director, Sub-Saharan Africa Region  
Global Center for Health Security

**Brandon Grimm, PhD, MPH**

Associate Dean, Public Health Practice  
UNMC College of Public Health

**David Brett-Major, MD, MPH**

Professor Epidemiology  
UNMC College of Public Health

**Ali S. Khan, MD, MPH, MBA**

Dean  
UNMC College of Public Health

**James Lawler, MD, MPH**

Executive Director, International Programs and  
Innovation  
Global Center for Health Security

**Bob Rauner, MD, MPH**

President  
Partnership for a Healthy Lincoln

**Michelle Schwedhelm, MSN, RN**

Executive Director, Emergency Management and  
Clinical Operations  
Global Center for Health Security

*This guide is intended to provide best practices and recommendations for K-12 schools to minimize the risk that COVID-19 presents to employees, students, and the community and to reduce disruptions to education. This is a guide only and should be adapted to the context of each organization and its employees and students.*

*Users of this guide should work in coordination with **local public health departments** to tailor their use of the guide to their specific situations and needs. The information provided in this guide does not, and is not intended to, constitute medical or legal advice and is provided for informational and educational purposes only. The recommendations in this guide reflect the best available information at the time this guide was prepared. All recommendations are consistent with CDC environmental services recommendations. For more information, please visit: [https://www.cdc.gov/coronavirus/2019-ncov/community/reopen-guidance.html?deliveryName=USCDC\\_2067-DM26911](https://www.cdc.gov/coronavirus/2019-ncov/community/reopen-guidance.html?deliveryName=USCDC_2067-DM26911) [cdc.gov].*

*Adherence to the recommendations in this guide does not guarantee that there will be no outbreak or further spread of COVID-19, and we do not assume responsibility for any injury or damage to persons.*

# **COVID-19 Back to School PlayBook Contents**

## **Introduction**

## **Prime Directives**

## **Logistical Benchmarks and Planning Principles**

## **Practical Considerations**

### **Engineering Controls**

- 1. Physical Barriers and Modification**
- 2. Ventilation**
- 3. Restricted Access**

### **Administrative Controls**

- 4. Administration Coordination and Logistics**
- 5. Cohorting and Alternative Schedules**
- 6. Universal Mask Policy**
- 7. Student and Workforce Safety Policies**
- 8. Flow/Movement**
- 9. Environmental Cleaning and Disinfection**
- 10. Food Services**
- 11. Active Screening**
- 12. Physical Distancing**
- 13. Communication/Education**
- 14. General Guidance for Protection at Home and in the Community**
- 15. Testing**

## **Personal Protective Equipment**

### **Special Considerations**

- 1. School Transportation**
- 2. Considerations for Different Age Groups**
- 3. Considerations for Sports and Extracurricular Activities**

## **Additional Resources**

### **Supplemental Material**

**Appendix A: School Outbreak Reports and Investigations Supporting Children's Ability to Transmit SARS-CoV-2**

**Appendix B: Reopening Thresholds and Best Practices for Schools That Have Reopened Successfully**

# Introduction

Coronavirus Disease 2019, or COVID-19, has caused a global pandemic affecting virtually every facet of life in the United States and across the globe. K-12 schools have not escaped these effects and, in fact, owing to their reliance on interpersonal interaction, have been substantially impacted. School-aged students are especially vulnerable to the social impacts of COVID-19: in addition to the educational effects of transitioning from traditional face-to-face instruction to remote learning and the resulting impacts to academic growth, particularly among those without access to home support or technologies (e.g., internet), the closure of schools has also impacted those who rely on school meals or health services through school-based health centers.<sup>1</sup> Few places have higher concentrations of individuals than schools, and diverse populations of students add cultural, linguistic, and socioeconomic challenges to physical distancing and other public health interventions.

COVID-19 is primarily spread person-to-person by close contact (within 6 feet) through respiratory droplets produced when an infected person sneezes, coughs, or talks and indirectly when a person touches an object (“fomite”) or surface contaminated with SARS-CoV-2, the virus that causes COVID-19, and then touches their nose, mouth, or eyes. The virus can also be rarely transmitted via small particles that can remain airborne in crowded closed spaces and through the fecal-oral route. Children make up only a small proportion of COVID-19 cases. While outbreaks have been reported in schools, the role children play in the transmission of the disease to others, including those they live with, remains uncertain.

There is much that remains to be known about this disease and how it moves through a community. However, on average, a person infected infects 2-3 other people. Nearly half of all transmission may occur from people before they show symptoms, and some people who never show symptoms may be able to transmit the disease. A unique feature of this disease are super-spreading events - up to 3 in 4 cases of the disease may happen from only 20% of patients. SARS-CoV-2 takes advantage of settings where people come together (e.g. long-term care facilities, conferences, religious retreats, sporting events, cruise ships, etc.). Very large gatherings (mass gathering events) can spread disease widely. Despite these complexities, a Test & Trace strategy together **with a commitment to masking, hand washing, and physical distancing** has allowed multiple countries to contain the disease and some to even eliminate the disease, for now.

The role of schools in accelerating community transmission is poorly defined since most schools were immediately closed with various degrees of national lockdown. However, current data (June 2020) suggests that school-aged children, unlike with influenza, are not a major source of household nor community transmission and closing schools had little impact on the spread of the disease<sup>2</sup>. On the other hand, there are emerging reports in the U.S. that summer camps, youth leagues, summer schools and large daycares have experienced significant transmission in school-aged children. Public health strategies have also allowed most countries in Europe, Australia, Japan, and China to reopen primary schools. A review of school openings in multiple countries has identified a clear pattern: all have waited until community transmission was below ~ 10 cases/million population/day. The main exception has been Denmark, which was the first to reopen in Europe with a national transmission rate of 35.5 cases/million person/day; however, Denmark’s staged opening was with micro-groups maintained in virtual cocoons with no outside contact. Others have also relied on staged openings, staggered schedules and other means to minimize social interactions outside small defined groups and maximize physical distancing and handwashing within the group of students. All these countries also implemented universal masking and, in some cases face shields, to protect students and teachers.

---

<sup>1</sup> Sharfstein JM, Morpew CC. The Urgency and Challenge of Opening K-12 Schools in the Fall of 2020. *JAMA*. Published online June 01, 2020. doi:10.1001/jama.2020.10175

<sup>2</sup> Benjamin L, Raszka WV. COVID-19 Transmission and Children: The Child Is Not to Blame. *Pediatrics* Jul 2020, e2020004879; DOI: 10.1542/peds.2020-004879

In the United States, of those COVID-19 cases reported to the CDC, 5% died. However, current estimates suggest that the true infection-fatality ratio, if everyone infected was known and received good medical care, is closer to 0.5-1%.<sup>3</sup> For the most part, those who have died have some combination of age greater than 65 years, heart and blood vessel disease, diabetes, obesity, and chronic lung disease. People with these underlying conditions or advanced age have required hospitalization six times more than others and died twelve times as often.<sup>4</sup> However, hospitalization and deaths are not limited to the elderly and those with known underlying conditions. While disease in those under 19 and especially those under 9 is relatively uncommon, among all cases reported to the CDC through May 30, 2020, ~5% were between 0–19 years old; of those, a little over 5% required hospitalization and 1 in 1000 died. Moreover, recent reports suggest children may be vulnerable to a rare, albeit serious, disease called Multisystem Inflammatory Syndrome in Children (MIS-C).

Since the initial surge of cases in New York and New Jersey, the disease has hopped across the United States causing new hotspots of intense transmission; currently in Florida, California, Texas, and Arizona. Over 90% of Americans are still susceptible to this infection. COVID-19 is therefore likely to continue smoldering in some places and cause more dramatic outbreaks in others for some time, possibly years without an effective public health response or vaccine. Containment (< 5 cases/million population/day) will not occur until cases drop below a thirtieth of what they currently are across the United States. Unfortunately, COVID-19 is not contained in any of the US states and there is sustained and substantial community transmission at over 50,000 cases per day (150 cases/million population/day) across the nation.

COVID-19 is most likely to continue with spikes in case counts, and larger waves are expected throughout the year. If COVID-19 persists into the Fall, identifying the difference between COVID-19 and influenza infections - both of which can have fever, cough, and shortness of breath - will cause challenges for everyone in and out of healthcare. It is possible to have more than one illness at the same time and co-infections with COVID-19 and Influenza have already been documented.<sup>5</sup> Influenza season alone already stresses healthcare systems. There will be additional strain on the medical community as this necessitates multiple tests to determine the appropriate diagnosis and treatment of patients. All of this will make trying to manage a careful approach to attending school during the influenza season very complicated.

Minimum requirements for and timing of reopening schools should be determined by a risk assessment informed by local prevalence of active COVID-19 in the community (see Logistical Benchmarks and Planning Principles on page 9); the ability of schools to implement and maintain COVID-19 infection prevention interventions; capacity of local public health resources to conduct activities such as timely contact tracing, quarantine, and isolation; availability of diagnostic and treatment services; and, turnaround times on obtaining testing results. Strategies to promote learning in a 'new normal' must be innovative, take into consideration the needs of students, parents/guardians, teachers, administrative personnel, and school districts, and be flexible and adaptable based on ever-evolving local situations and updated information on COVID-19.

This guide is intended to provide best practice recommendations and considerations for schools to minimize the risk that COVID-19 poses to students, parents/guardians, staff, and the community and to reduce disruptions to education. **Plans should be tailored to the needs of each school and school district and should be developed in partnership with local public health agencies.** The ability to implement these guidelines is grounded on if all facilities and teachers are considered a pooled resource to maximize flexibility for learning spaces, students, and teachers who may be best suited for remote education activities due to personal or health reasons. It is important

---

<sup>3</sup> Meyerowitz-Katz G, Merone L. A systematic review and meta-analysis of published research data on COVID-19 infection-fatality rate. medRxiv 2020.05.03.20089854; Pre-print.

<sup>4</sup> Stokes EK, Zambrano LD, Anderson KN, et al. Coronavirus Disease 2019 Case Surveillance — United States, January 22–May 30, 2020. MMWR Morb Mortal Wkly Rep 2020;69:759–765.

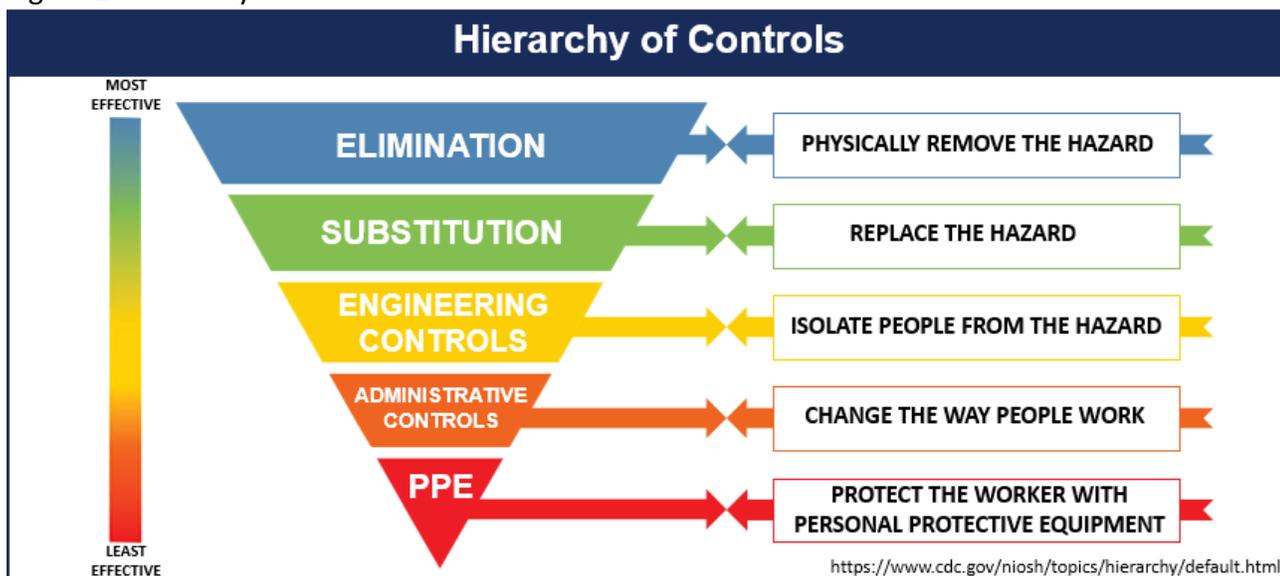
<sup>5</sup> Konala VM, Adapa S, Gayam V, et al. Co-infection with Influenza A and COVID-19. *Eur J Case Rep Intern Med*. 2020; 7(5): 001656. Published online 2020 Apr 20.

to note that this document is informed by current understanding of the virus and best practices worldwide; as this knowledge base is rapidly evolving, schools should routinely review and tailor the described recommendations as more information becomes available on virus transmission potential, effectiveness of certain interventions, epidemiological characteristics, and pharmaceutical interventions. Moreover, due to the potential for evolving COVID-19 situations at the local and state level, each school should account and plan for multiple scenarios and changing conditions. Considerations and recommendations are meant to augment, not replace or supersede, state and local guidance and directives.

Safety measures in many industries are guided by National Institute of Occupational Safety and Health (NIOSH)'s hierarchy of controls, a hazard mitigation framework that outlines controls in decreasing order of effectiveness from engineering controls, to administrative controls, to personal protective equipment (PPE) (see Figure). While this framework was designed with industrial entities in mind, many of its basic principles are applicable to all workplaces, including schools. In the current context of mitigating COVID-19 risks, the most effective controls, Elimination and Substitution, are not feasible as the virus is unable to be physically removed at this time (e.g., through vaccination) or substituted for something less hazardous. The latter three steps, involving the application of engineering and administrative controls, along with the proper use of personal protective equipment, are applicable to the mitigation of contagious risk within schools and are the focus of this document. Images from schools such as those in [South Korea](#) and [elsewhere around the world](#) that have started the reopening process provide examples of implementation of many of the controls detailed in this document.

***This document provides a comprehensive list of potential interventions for K-12 schools, but details considerations only. Implemented interventions will vary based on facility layouts, size of school districts, population of individual schools, ages of students, and other factors. Schools will need to evaluate which measures are feasible and practical for their settings. This document should be adapted to the context of each facility and school district.***

Figure 1: Hierarchy of controls



# Prime Directives

1. Nothing protects children, teachers, and staff more, including from getting infected within the learning setting, than decreasing community transmission.
2. Designate someone responsible for responding to COVID-19 concerns. Staff, students, parents, and volunteers should know who this person is and how to contact the designated staff member if they become sick or are around others diagnosed with COVID-19. The designated staff person should also be aware of state or local regulatory agency policies related to school guidelines and will serve as the contact with local health authorities and monitor illness among school faculty, staff, and students. A back up person should be identified who can fill this role if the designated person becomes unavailable due to illness or other reason.
3. Understand current levels of community transmission. Is it controlled or uncontrolled? If controlled, is there substantial, moderate or low transmission in your community? Nebraska public health jurisdictions have data dashboards to help monitor the situation.
4. Establish and maintain communication with local and State authorities to determine current levels of community mitigation. These authorities may frame this as phases of community reopening. Please note that community reopening guidelines are often economically and politically determined and may be independent of actual disease risk in the community.
5. Review local, state, and organization guidelines for schools. Review your facility plans including the size of the building, all points of entry, and air handling systems to understand how to implement recommended state and local guidelines and the considerations detailed in this document.
6. Schools are encouraged to continue to use and develop strategies for online and other remote education technologies until the spread of COVID is contained in their communities as is being done successfully in Asia, Oceania, and Europe.
7. Develop strategies to reduce the potential for mass exposure of cases occurring in schools that include physical distancing of all persons. Define strategies for groups of students and staff who remain together with limited interaction to others. Reduce the maximum number of people allowed in a building based on physical distancing, and implementation of mask wearing requirements for indoor activities.
8. All children in grades 3-12 must wear face coverings – with medical caveats – as well as teachers, staff, and volunteers. If tolerated, masks should be used for children between 3 years of age and third grade.
9. Assess the health status of your staff and children as voluntarily shared or based on basic demographics such as age distribution. Provide protections for staff and children at higher risk (or who reside in households with persons at particularly high risk) for severe illness from COVID-19. Offer options for staff at highest risk for severe illness (including older adults and people of all ages with certain underlying medical conditions) that limit their exposure risk. Offer options for students at higher risk of severe illness or those that live with others (e.g., grandparents, parents) at higher risk of severe illness that limit their exposure risk (e.g., remote participation in education).
10. Attempt to implement and maintain consistent small cohorts of students and teachers so that a single infection does not lead to closure of the whole school.
11. ALL sick children and adults will stay home; and, quarantine will be observed by those with COVID-19 infected persons at home (ALL with direct exposure to COVID-19 cases will stay home in accordance with local quarantine rules).
12. All children and adults with confirmed infection will not be allowed to return to school until completing a [CDC-defined period of isolation](#).
13. Schools and public health authorities will work together on a plan to rapidly report, assess, and act on frequent school absenteeism, influenza-like illness and other disease reporting health measures. Planning should include mechanisms to rapidly test students, teachers, and staff if an outbreak is suspected.
14. Plan to address the increased behavioral health and emotional needs of students and the mental health of teachers, staff, and volunteers.

# Logistical Benchmarks and Planning Principles

We encourage that schools reopen no sooner than controlled community transmission, regardless of the political phase. Local public health is monitoring community transmission levels and will be a key resource for schools to determine how to open safely.

- A. There should be a minimum of three operating levels:
  1. Full reopening with all students in all schools with enhanced safety protocols (Green)
  2. Partial reopening with reduced students in schools with emergency safety protocols (Yellow/Orange) should be considered at 26-50 cases/million population/day
    - a. This operating level is frequently broken into additional tiers to accommodate escalation of safety protocols before activation of Red operating level
    - b. Age levels of school will likely be handled differently, for example, K-5 may have much higher threshold due to increased ability to cohort, possibly lower risk of spread, and potential greater harms to all remote learning. Similarly, rural schools may have smaller number of students in larger facilities.
  - 3: Remote learning with no students in schools (Red)
  
- B. Operating levels should be determined by transmission severity status that has been defined and widely adopted. A suggested approach is as follows:
  1. Low community incidence= Green
  2. Moderate to controlled substantial community incidence= Yellow/Orange
  3. Uncontrolled substantial community incidence = Red

\*at this time, **all in-person education should require face coverings, physical distancing and enhanced hygiene** until an effective vaccine is developed and vaccination rate in a school population is appropriate to employ herd immunity (this will depend upon vaccine performance and likely will be in excess of 60%); or, transmission of SARS-CoV-2 has remained at “Low” for two weeks or been eliminated.

<b>Uncontrolled Substantial (mitigation)</b>	<b>Controlled Substantial*</b>	<b>Moderate</b>	<b>Low (containment)</b>
> 50 cases / per million / per day	26-50 cases / per million / per day	5-25 cases / per million / per day	<5 cases / per million / per day

\* Range at which reopening should be considered

- C. Risk assessment and indicators that determine the appropriate operating level should at a minimum incorporate BOTH disease in the community and disease in the school:
  1. Cases per day from a 7-day rolling average in a defined community (state, region, city, school district)

2. Cases in a defined school population (students and staff)
  - a. Transmission in a school population of 2 cases within a week, or 0.5% of the school population should initiate immediate, targeted health measures including enhanced social distancing or fewer students within the school environments, increased screening, and increased environmental cleaning of classroom and common areas. Transmission in a school population of 2 cases within a week or 0.5% of the school population (whichever is greater) should also initiate immediate discussions with local public health authorities on escalating the operational level as well as its implications for needs in community risk management. Transmission within the school that is 2-fold higher than community transmission should trigger halting of in-class activities
  - b. The primary determinate of the operating level is community transmission severity. The secondary determinate that overrides the primary trigger to escalate to a higher level of precaution should occur if transmission level in the school population is greater than that in the community. It takes very few cases in a school to achieve this.

In many areas, local public health and city officials have developed risk dials to summarize current conditions in their jurisdiction based on various measures (e.g., current COVID-19 testing positivity rate, number of hospitalized patients in the area, testing availability, etc). It is important to note that in most cases, these dials were used to inform business and community reopening and were not necessarily created with schools in mind. Schools should have early discussions with local public health officials regarding local risk dials/benchmarks and how these operating frameworks will differ and/or fit within the context of local risk dials.

The recommended threshold ranges detailed above allow for various local considerations and should be adapted to the context of each school and community. Thresholds for individual schools should be discussed with local public health officials on a continuous basis and informed by, among other measures: case trends in the area (e.g., if community has 45 cases/million/per day, but nearly all are located in long-term care facilities, this threshold should be evaluated more favorably to reopen); capacity of local public health resources to conduct activities such as timely contact tracing, quarantine, and isolation; availability of diagnostic and treatment services; turnaround times on obtaining testing results; population of community; and school population and facilities (e.g., rural school with large physical footprint but very small class sizes that allow for maximal physical distancing)

# Practical Considerations

## Reopening with students with emergency safety protocols – Moderate to controlled substantial community transmission (Yellow).

A maximum capacity for schools should be set based on the ability to socially distance all individuals in a building at all times. Schools that typically operate at maximum occupancy may consider a target of 50% student population which has been used in multiple countries with success. However, this limit should be locally tested, and the gold standard should be the ability to adequately socially distance in a classroom, hallways, dining areas and other school environments while managing the range of recommendations in this document.

If there are resource constraints to opening elementary, middle, and high schools at the same time, it is recommend that priority be given to K-5 since educational losses at an early age are the hardest to recover; these children are least able to effectively utilize remote learning; have the highest proportion of free reduced cost lunch and likely the most food insecurity; and schools are resources to identify child endangerment<sup>6</sup>. These children are also the least likely to transmit diseases to contacts<sup>7</sup>.

For high school and middle school, students/families should be provided the option of in-person or remote learning for their students. This will likely address the learning needs/preferences of 20-40% of the student population, force schools to develop robust remote or hybrid learning plans, and avoid the all-or-nothing decision matrix that will drive delays in response to increased transmission. It also provides an opportunity for staff/teachers at high risk of developing severe disease to conduct remote learning. Remote learning should also be considered for K-6 students who either have health constraints or who live with a parent or guardian at higher risk of severe illness, until community transmission is persistently low.

For the remainder of students, the school should use the facility layout, needs/preferences and the 50% capacity threshold to determine if students will be taught in person on a rotating daily, multi-day, or weekly schedule to accommodate the 50% (or other max level) capacity limit. Preference for in-person learning should be given to students with barriers to remote learning, need for special educational services that can only be provided in person, and teacher referral.

---

<sup>6</sup> American Academy of Pediatrics. COVID-19 Planning Considerations: Guidance for School Re-entry. COVID-19 Planning Considerations: Guidance for School Re-entry June 25, 2020. Available at: <https://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/covid-19-planning-considerations-return-to-in-person-education-in-schools/>

<sup>7</sup> Park YJ, Choe YJ, Park O, Park SY, Kim YM, Kim J, et al. Contact tracing during coronavirus disease outbreak, South Korea, 2020. Emerg Infect Dis. 2020 Oct. <https://doi.org/10.3201/eid2610.201315>

## Engineering Controls

*Engineering Controls are controls that place a barrier between an individual and the virus. They are not dependent on a person's knowledge, practice, or compliance; therefore, they reduce the opportunity for human error. These recommended controls represent best practices; the more of them that can be implemented based on available resources, the lower the risk. However, it is recognized that facilities may not be able to institute each control.*

*Schools should generally have infection prevention and control measures implemented in accordance with safety requirements and COVID-19 guidelines set by the Centers for Disease Control and Prevention (CDC).*

*A school district and/or individual facility may consider designating someone responsible for coordinating facility planning and/or changes recommended pursuant to this document. This designated person would work closely with school COVID-19 coordinators and other necessary personnel for following guidelines.*

### Physical Barriers and Modification

When possible, use physical barriers to separate staff and students from one another to minimize the opportunities for person-to-person transmission of COVID-19. Strategies for physical modification include:

- Identify opportunities to place physical barriers (e.g., plexiglass) in critical locations. Examples include:
  - At teaching podiums, tables in classrooms, cafeterias, etc. (e.g., plastic, plexiglass partitions)
    - Extending partitions several inches past the end of the table provides an additional measure to prevent leaning back and extending over to space of person sitting next to them
  - Between individuals on service lines such as in food preparation and cafeteria services
  - In front of walk-up windows (e.g., reception desks)
  - In open, administrative office areas, when applicable
  - In high-traffic hallways (e.g., plastic sheeting) to guide student/staff traffic and limit crossover
- Identify opportunities to implement non-touch controls (e.g., foot-operated door opener, keep doors open to allow movement without touching knobs when possible)
- Remove and rearrange tables and chairs in classrooms, cafeterias, and common areas to maximize physical distancing
  - Open up additional areas (e.g., gymnasiums, auditoriums) or add tents or other portable options outside of the building for classrooms
  - For tables with built-in seating, use tape to restrict seating and increase distancing between seating spaces
  - Arrange all desks/tables so students face the same direction
- Disable automated dryers in bathrooms and replace with motion-sense dispensers for paper towels
- Disable water fountains in favor of touchless bottle fill stations
- Identify an "isolation room" or area where a sick student could be kept under supervision pending transport home or to a health care facility

## Ventilation

- Increase air exchange rates in buildings and maximize fresh air in all facilities by minimizing recirculation; where recirculation is required, explore options for HEPA-equivalent filtering or sterilization measures (e.g., UV light irradiation)
- Adjust HVAC systems to create negative pressure, or inward directed airflow, in areas of higher risk for contamination and aerosol generation (e.g., bathrooms, classrooms)
- The use of fans should be curtailed
  - Turbulent airflow from fans may contribute to re-aerosolization of viral particles from surfaces
- When weather conditions permit, consider conducting lessons outdoors if physical distancing can be maintained
  - Put together kits for each class, to include sanitizer, disinfectant wipes, first aid kit, etc., that can be easily transported when conducting lessons outdoors
  - If using picnic tables or benches, disinfect before and after use

## Restricted Access

- Designate points of entry and, where possible, a different point(s) of exit
- Secure all facility entry and exit points (e.g., with proximity ID cards)

## Administrative Controls

*Administrative controls are considered less effective than engineering controls but are the most common control measures available for COVID-19. These include policies, procedures, training, and workplace practices. Ineffective policies or practices or inconsistent compliance may heighten exposure risks for all.*

### Administration Coordination and Logistics

- Identify and convene school board leadership and experts in the community who can advise in critical areas, such as engineering, instruction, student services, environmental services, public safety, and health care
  - Group should convene routinely and be available to address challenges and opportunities as well as questions when they arise
- Prior to returning to school, all staff should be provided online training and education on COVID-19 and implemented COVID -19 policies and interventions to clarify new expectations
  - Develop a resource handbook for teachers and staff that is frequently updated
- In partnership with local health authorities, develop and widely distribute standard operating procedures (SOPs) if a student, staff member, parent, or visitor is symptomatic or tests positive for COVID-19 or is exposed to an individual with COVID-19. In concert with public health authorities, this should include:
  - Processes to trace and contact relevant third parties who may have been exposed
  - Communication with environmental services for rapid cleaning and disinfecting surfaces to immediately limit student and staff exposure
  - Strategies for testing and if necessary, quarantine/isolate or treatment referral
  - Develop criteria for return to school of symptomatic individuals and positive cases
    - See this [Decision Tree for Youth, Student, and Child Care Programs](#) as an example
- Develop specific protocols for substitute teachers. These may include:
  - Substitute teachers remain fixed to particular schools
  - Substitute teachers are required to participate in regular daily screening (i.e., through an app or web-based platform)
  - Screen other non-school system employees present on a daily basis such as resource officers and posted law enforcement
- Limit non-essential visitors and volunteers who interact with students and staff as much as possible
  - Incorporate entry screening for visitors that occurs prior to building entry
  - Require mask use
  - Limit school admission to no more than one parent/guardian at a time
  - Provide sanitary wipes and hand sanitizer
- Students and staff should limit nonessential statewide, national and international travel
- Legal review and school system policies should be developed to address students, staff and parents who are unable or unwilling to comply with implemented guidelines. Legal review of refused entry to the school and advise on acceptable alternative strategies for education, services and access as appropriate should be developed.

## Cohorting and Alternative Schedules

Students around the world have started to return to classrooms as their local COVID-19 situations have improved and case counts have fallen. Strategies to promote learning in a 'new normal' will be innovative and may require altered schedules and class sizes to maximize physical distancing in school settings and limit interactions among students and staff while supporting a productive learning environment. These describe *considerations* only, based on best practices in other sectors to limit capacity within facilities/rooms and minimize personal interactions among various students/groups.

### Cohorting

Wherever possible, implement cohorting of small, consistent groups of students and their associated faculty and staff in order to minimize the number of potential exposures for each person. Cohorting will also simplify the identification process of possible exposures when cases of COVID-19 are confirmed.

- Consider having the same group of students and staff remain in the same classroom and take breaks and lunch together
- Each cohort should have minimal, if any, interaction with other cohorts
- Identify options to keep teachers with the same group of students
  - For older students, when not possible, consider having teachers switch classrooms rather than students, with the recognition that this might not be achievable for certain classes (e.g., chemistry, shop)
- Size of cohorts should be determined by local public health guidelines, size of facilities/classroom areas, facility spacing arrangements, and other relevant guidelines
- Pre- and after-school programs should be accounted for in cohorting of small groups

### Altered Schedules

- Determine the maximum capacity of the schools (e.g., 50%) and the specific rooms within the schools to be used in adherence with physical distancing standards
- Consider alternating use of facilities daily by class groups, with environmental hygiene of spaces prior to use by the next cohort
- Stagger arrival and pick-up times to limit crossover of multiple cohorts
- Expand timetable, if possible, so that some students and teachers attend in morning, others in afternoon, others in evening
  - This may require expanding usual classroom hours
- Consider options for a hybrid approach (e.g., flexible/partial remote learning paired with partial face-to-face instruction)

## Universal Mask Policy

A universal mask mandate is strongly recommended for all staff, parents/guardians, visitors, and children (particularly students in 3<sup>rd</sup> grade and older) entering the school. They should wear a face mask/cloth face covering at all times unless eating or at personal desks in closed-door environments (e.g., a teacher at their desk alone in a classroom, student eating in location with barriers or more than 6 ft from other students, etc.). It is common for an individual to have COVID-19 and be able to transmit the disease to others in close contact while showing no signs or symptoms. As a result, the Centers for Disease Control and Prevention has issued [guidelines](#) recommending all persons wear face coverings in public settings where other physical distancing measures cannot be achieved. This policy may be reviewed as levels of disease spread and prevalence and incidence change.

More information and considerations for masking in schools is provided in the personal protective equipment section on Page 23.

## Student and Workforce Safety Policies

- Institute flexible workplace and sick leave policies appropriate for all staff and students
  - For older staff members or those at risk for more severe disease, provide options for teleworking or modify responsibilities to reduce exposure risks (e.g., support distance teaching rather than in-person teaching)
  - For students with pre-existing conditions, or those who live with someone at higher risk for more severe disease, provide remote learning options
  - Determine additional support needs for students with disabilities
- Institute a no-penalty approach for students and staff staying home while sick
  - Avoid awards tied to perfect attendance
  - Develop a plan for transitioning students quickly into and out of remote learning and their classrooms (e.g., student readiness, classroom and remote learning synchronization, rapid notification, registration, and alerting approaches)
  - Consider temporarily suspending assessment of schools based on absenteeism
- Identify a coordinator(s) at each school with access to all aspects of school function to lead response to COVID-19 and reduce its impact (e.g., a vice principal)
  - Coordinators should be known and accessible to all, including staff, students, and parents/guardians
  - They should ensure that clear lines of communication and information sources are available, such as via the school nurse, and oversee implementing COVID-19 guidelines, addressing concerns and issues, and evaluating school impact
- Engage teachers in development and implementation of strategies as well as serving to promote adherence to agreed upon guidelines
- Cross-train staff to perform essential functions to maintain school safety and a full set of instructional operations
- Focus on establishing consistent, reliable relationships between staff and students
- Engage school nurses, when feasible and appropriate, to follow-up with parents calling in students sick to provide and obtain information and facilitate linkages to public health authorities, including testing, treatment, and recovery
- School and/or community support for staff with loss of resiliency, stress, depression and suicidal ideation should be accessible and confidential

- Ensure students and teachers work closely with accessibility services staff to manage specific accommodations related to in-person or remote teaching and learning.
- In the event of school closure, ensure continuity of meal programs including methods to distribute food and changing to options such as “grab and go” bagged lunches or meal delivery.
- Conduct routine internal audits using an Audit Tool checklist to validate implemented practices (e.g., mask adherence, physical distancing, hand hygiene)

### Flow/Movement

To limit congregating and crossover of students/staff in hallways, adjust and promote unidirectional flow.

- Limit crossover in entrances, hallways, and common spaces by adjusting flow and physical structure, as needed
  - Limit the number of students in a hallway or entryway at one time
  - Stagger arrival, pickup, and break times for different cohorts; limit restroom occupancy
  - If multiple cohorts must arrive/depart at the same time, use different entrances/exits for different classes/cohorts, if available
  - As able, limit contact with high-touch surfaces (e.g., keep doors open to allow movement without touching knobs when possible)
- As able, promote unidirectional flow through hallways and when entering/exiting the building and gathering spaces
  - Encourage staff and students to walk to the right in common hallways and gathering spaces
  - Staff and students should enter each area with clean hands with easy access to hand sanitizer

### Environmental Cleaning and Disinfection

Current evidence suggests that the virus that causes COVID-19 can remain viable on surfaces for hours to days. As such, sound environmental cleaning and disinfection is a key factor in preventing COVID-19 transmission in schools. Daily and routine cleaning and disinfection should be conducted to minimize surface contamination in common areas and on high-touch surfaces.

- **Develop Standard Operating Procedures (SOPs)**
  - Develop an SOP for enhanced cleaning and disinfection of common contact areas
  - Identify common high-touch surfaces and develop a checklist to ensure frequent sanitization with either an EPA-approved disinfectant or dilute bleach solution (1/3 cup bleach in 1 gallon of water) at least twice daily
    - High-touch surfaces include:
      - Doorknobs and door handles
      - Railings
      - Automatic door openers
      - Overhead light and lamp switches
      - Tables and chairs
      - Restroom surfaces and fixtures
  - Develop a process for routine deep cleaning of common areas, either daily/nightly or, at minimum, weekly

- Ensure environmental services team is well-trained and provided appropriate personal protective equipment (PPE)
- Consider having prompts for students and staff to use hand sanitizer at regular intervals (e.g., every 30 minutes)
- All students, staff, and visitors should wash hands thoroughly with soap and water or sanitize with alcohol-based hand rub immediately before entering the school and common areas and upon exiting
- **Maintain adequate supplies**
  - Place hand sanitizer dispensers throughout facility, particularly at entrances, exits, transition areas, classrooms, hallways, gymnasiums, and other common and high-traffic areas
    - The more accessible hand sanitizer dispensers are, the more they will be used
    - Touchless hand sanitizer dispensers are preferred to manual dispensers (e.g., pumps)
    - Use soap and water when hands are visibly soiled
  - Assess supply of cleaning supplies, sanitizers, and disinfectants and encourage practical use
    - Note: Follow manufacturer recommendations; some disinfectants may be caustic and require gloves and ventilation
  - Provide sanitizing wipes and hand sanitizer to teachers for use in classrooms and common areas (e.g., cafeteria)
  - Use only [EPA-registered disinfectants](#) for use against SARS-CoV-2
- **Minimize touching of shared items/spaces**
  - Identify common shared items (e.g., technology and equipment, gym equipment) and develop procedures to limit when possible, or sanitize between users
  - Avoid sharing items that are difficult to disinfect
    - When unavoidable, build in dedicated time and protocols to sanitize or replace shared items during the school day
  - Provide students their own dedicated labeled area or containers where they should keep their personal items (e.g., backpacks, lunchboxes, lockers)
  - Use no-touch receptacles, sinks, door openers, etc. when possible
  - Disable water fountains and employ water bottle fill stations
  - Playgrounds (if used), gymnasiums, and other common spaces should be used by only one cohort of students at a time and high-touch surfaces should be disinfected between use
    - For recess and physical education classes, opt for physical activities that minimize contact of shared surfaces

### **Environmental Cleaning and Disinfection Resources:**

The CDC has guidance for [cleaning and disinfecting facilities](#)

The EPA has a list of [EPA-registered disinfectants](#) effective against the virus that causes COVID-19

OSHA has general guidance for [environmental cleaning and decontamination](#) for COVID-19

### **Food Services**

- As possible, have students eat lunch in their dedicated classroom rather than communal dining spaces/cafeterias
- Remove self-service food options and food lines; switch to prepackaged food options
  - Encourage students to bring their own meals or serve individual meals in the classroom or have lunch outside
  - Avoid buffet-style food and shared dishes in staff break rooms

- Avoid sharing of food and utensils
- Avoid the use of communal drinking fountains and provide alternatives (e.g., reusable water bottles)

### Active Screening

Not every school may have the resources and capacity to conduct daily screening of staff and students. However, ensuring that staff and students stay home when presenting any signs or symptoms of COVID-19 is fundamental to reducing transmission of COVID-19 in school settings and to the effectiveness of other control measures. As such, consider implementing a self-screening and reporting policy for students (which may have to be completed by parents/guardians) and staff. Use a web-based or mobile device screening application to populate a single secured database for students, staff, and for any visitors. If students are supplied with a mobile device (e.g., Chromebook, iPad) for home use, have student (or parent, depending on age) complete the daily screening on the device prior to leaving for school. All who screen positive or ones residing in the same dwelling as someone who has screened positive should stay home and maintain quarantine until directed by a healthcare worker, public health, or criteria for return to school of symptomatic individuals (see this [Decision Tree for Youth, Student, and Child Care Programs](#) as an example). This can be linked to referrals to remote learning.

All schools should strive to provide active screening of all individuals, including students, prior to entering the facility; however, for schools with limited capacity to conduct daily screening of staff and students, screening should be prioritized for all visitors entering the facility. This should include temperature screening as well as screening questions designed to identify visitors with other [COVID-19 symptoms](#) or exposure risks. Designated points of entry should be used to facilitate visitor screening prior to entry. Provide masks at the earliest possible point during the screening process, when needed, ideally prior to screening and prior to or immediately upon entering the facility.

- **Screening questions**
  - Develop and implement screening question. Examples could include:
    - Have you been in contact with someone confirmed with or suspected to have COVID-19 in the last 14 days?
    - Are you currently experiencing any of the following symptoms (e.g., fever, cough, shortness of breath, new loss of taste or smell, chills, muscle pain, sore throat, diarrhea)
  - These questions could be displayed on a poster and asked for each individual, or printed on a sheet that is acknowledged and signed by the individual
- **Temperature Screening**
  - Implement a temperature screening prior to entering the facility
  - Train screener on how to administer temperature checks
  - Validate screener has adequate PPE and, as applicable, maintains physical distancing during screening
    - Where able, separate screeners with a physical barrier or divider
  - If using an infrared temperature screening tool, ensure proper validation prior to use
  - An individual should be sent home to isolate if a temperature of over 100°F (38°C) is recorded

### Physical Distancing

Physical distancing should inform maximum capacity considerations. Administrative personnel that are able to telework should be encouraged to do so. Staff, students, parents, and visitors should maintain a distance of at least 6 feet from others whenever possible.

- Stagger arrival and pick-up times to limit large groups entering/exiting at one time
  - Enforce a curbside drop-off and pick-up policy wherein parents/guardians remain in their vehicles to avoid direct contact as much as possible

- Stagger break and physical activity times to avoid multiple cohorts of students interacting
- Provide additional rooms for classrooms or add tents or other portable options outside of building
- Use tape on floors, wherever lines form, to designate spots 6 feet apart (e.g., entrances, screening areas, classrooms, administrative area)
- Prohibit physical contact (e.g., contact sports, hugs, high fives, handshakes)
  - Prohibit use of locker rooms for physical education courses and for sports
- Discourage yelling, singing loudly, and screaming, all which facilitate further travel of aerosols and droplets
- Certain classes/activities pose a higher risk (e.g., choir, band) and require additional considerations for risk-mitigation. Schools and school districts should carefully weigh risks associated with these activities and risk-mitigation strategies to determine whether they should be cancelled or how they can be modified. These should only be offered if particular arrangements are met, to include:
  - Adequate physical distancing can be maintained, which will likely require larger rooms than normal and/or a smaller number of participants
  - Practice conducted outdoors with adequate physical distancing, when conditions permit
  - Processes for disinfection of equipment have been developed
  - See Special Considerations for Extracurricular Activities on Page 25 for guidance resources
- If office staff are required onsite, maintain 6 feet distancing practice in all work areas
  - Conduct meetings from office using video or conference call technology as much as possible
- As able, assign individuals (e.g., teachers, administrative staff) to monitor physical distancing at start times, during breaks in hallways, and when school ends
- Create online options for traditional walk-up window services for parents and visitors

### Communication/Education

Communicating to and educating students, staff, and parents is a critical measure to manage risk and ensure accurate information on COVID-19 is provided. Educational materials should be available in all languages spoken by students, parents/guardians, and staff.

- Develop and institute a COVID-19 education and communication plan for students, staff, and parents/guardians, that includes information related to COVID-19 symptoms, basic protective measures, and school system policies and procedures
- Provide frequent updates from leadership to staff, parents/guardians, and community partners using multiple communication modalities (e.g., social media, e-mail, video, virtual town halls, open letters, etc.)
  - Consider having a website to provide information to staff and families
  - Develop a communication plan for exposures and illness of students, staff, etc.
- Post multilingual signage throughout facility on risk-minimizing behaviors. Examples include:
  - Hand-washing reminders and procedures
  - COVID-19 symptoms and how to stop the spread
  - Facility screening process/requirements
  - Cough/sneeze etiquette
- Provide easy to understand information such as videos, posters and infographics in the languages spoken by students, staff, and parents/guardians
- Refresh staff and students on proper hand hygiene, refraining from touching their face, and other risk-minimizing behaviors

- Encourage frequent verbal cues and reminders to reinforce behaviors among students
- Share information and training resources via onsite televisions, websites, etc.
- Provide regular announcements and strategies to reduce transmission of COVID-19 on PA systems
- Host virtual town halls periodically with parents/guardians, staff, and administrative personnel to relay information related to policies, education, and address concerns
- Develop and quickly implement messaging to counter potential stigma and discrimination against persons who become infected and ensure confidentiality of the student, teacher, or staff member as required by the Americans with Disabilities Act and the Family Education Rights and Privacy Act.

### **Communication and Education Resources:**

CDC has compiled printable posters for COVID-19 awareness and stopping transmission [here](#)

CDC has resources/posters in [languages other than English](#)

Nebraska Impact in partnership with the Office of Nebraska Governor Pete Ricketts have [educational videos](#) in 6 languages on staying healthy and guidance if one is sick, as well as [infographics](#) for each video

WHO has printable posters for handwashing procedures [here](#)

### General Guidance for Protection at Home and in the Community

Provide information and resources to staff, parents/guardians, students, and visitors on safe physical distancing measures and protective measures against COVID-19 outside of the school (e.g., at home, during transportation, places of worship). Partnering with respected local community leaders (e.g., religious and spiritual leaders, elders) and community organizations to further educate and disseminate information to surrounding communities can enhance practice of safety precautions taken at home and in the community. A strategy for disseminating educational materials should be developed in coordination with local public health departments.

- Provide staff, parents/guardians, and students with information on safe [social distancing practices](#)
- Provide information on self-monitoring of [COVID-19 symptoms](#)
  - Encourage them to stay home if they have ANY symptoms of COVID-19 or who have had recent contact with a person confirmed with or suspected to have COVID-19
- Promote basic [protective measures against COVID-19](#)
  - Wash hands with soap and water for at least 20 seconds frequently
  - Avoid touching eyes, nose, and mouth
  - Avoid contact with people who are sick
  - Clean and disinfect frequently touched surfaces in the home (e.g., doorknobs, tables, phones)
  - Follow guidance of local and state public health on staying home, avoiding non-essential errands, and avoiding social gatherings that exceed the number of individuals determined by local/state public authorities
  - Avoid going to the grocery store except when necessary
- Make available educational handouts/materials on the above practices in all languages spoken by students and staff to take home
- Masks and face-coverings outside of school
  - Encourage students, parents, and staff to wear face-coverings in public places
  - Encourage students, staff, and parents/guardians to wear face-coverings during transport to school or work, particularly if carpooling
    - If using cloth face-coverings, provide information on [cleaning and use of cloth face-coverings](#)

- *Individuals should be careful not to touch their eyes, nose, or mouth during removal*
- *Perform hand hygiene immediately after removal*
- Provide educational materials for home cleaning and disinfection
- Carpooling
  - Encourage staff, parents/guardians, and students to minimize carpooling, when possible
  - As able, limit the number of people per vehicle and space out seating
  - Remind carpoolers of risk-minimizing personal behaviors such as cough etiquette and avoiding touching their faces

## Testing

PCR (from nasopharyngeal swab or other appropriate sample) is critical to providing both pandemic surveillance and contact tracing. These recommendations apply to those with influenza like illness (ILI) and/or COVID-19 associated symptoms and other asymptomatic cohorts or individuals.

- Develop a surveillance and testing strategy in coordination with local public health officials
- If a student is suspected or confirmed to have COVID-19, quarantining and testing should be prioritized among close contacts of the confirmed case in coordination with the local public health officials
  - If cohorting of small and consistent learning groups was implemented, this would include other individuals in the group, as well as all family members. If student cohorting strategies are not in place contact tracing within the school population will need to be conducted to identify individuals with high-risk exposures.
  - Households with contacts of confirmed cases should adhere to and complete required quarantine or isolation periods recommended by local public health, and screening and testing practices for students to return to the school
- If a staff member is suspected or confirmed to have COVID-19, quarantining and testing should be prioritized among close contacts of the confirmed case
  - Work with local and state public health officials to conduct testing of all staff cases
  - Provide onsite professional screening and testing when possible, where convenient for staff
- Have protocols in place for referral to telehealth and traditional medical care in event that a student or staff member needs a referral
  - Ensure appropriate contact information is available in case of need to transfer student to a health care center

## **Testing Resources:**

[CDC Interim Considerations for K-12 School Administrators for SARS-CoV-2 Testing](#)

## Personal Protective Equipment (PPE)

*The effectiveness of PPE is dependent on the user; if the user wears improperly, or the PPE fails, the individual is exposed. Staff, parents/guardians, and, where appropriate, students should therefore be trained on its correct use.*

Appropriate PPE should be provided to all staff and students upon request. Per the Universal Mask policy recommendation (page 16), a mask mandate should be implemented that requires all staff, parents/guardians, older students, and visitors to be masked with a cloth face-covering upon entrance to the facility due to close contact with other staff and students. School nurses should be provided procedure masks, face shields or goggles, and N95 respirators, if available. If a student becomes symptomatic during the school day, they should don a procedure mask and be placed in the designated isolation area.

- **All PPE should be worn properly and consistently**
  - The mask should cover both the mouth AND nose
  - Avoid touching the front of the mask and do not allow the mask to hang around the neck
- If necessary, identify auditors/observers to help ensure compliance
  - Careful compliance to proper mask use is essential
- Masks may be a challenge for younger students to wear all day, without posing more of a hazard due to excessive touching of the face and cloth mask
  - Consider requiring students in 3<sup>rd</sup> grade and older to wear masks, and provide them the necessary education and resources to be able to do so correctly. Masking of students younger than 3<sup>rd</sup> grade should be strongly encouraged if tolerated. Physically distanced outside breaks can be employed to provide respite, though may need to be structured with activities to be able to maintain physical distance.
  - In cases where masks are unlikely to be used consistently and properly by younger students, ensure maximal physical distancing between desks and install physical barriers, where able
- Emphasize proper hand hygiene before and after masks are removed
- When taking off the mask during lunch to eat, remove by the ear loops and place on a clean paper towel with the exterior side of mask down
  - Do not touch the front of the mask
  - The mask should not be pushed under the chin to rest on the neck
- Post a checklist or instructions informing proper donning and doffing of PPE in the languages spoken by the students, staff, and parents/guardians and include visual images

### **Resources for Personal Protective Equipment**

[OSHA Guidance for Prevention and Control](#)

[Nebraska Medicine “Dos and Don’ts” for Masks](#)

[The National Emerging Special Pathogens Training and Education Center Webinar on Varying masks](#)

[CDC Information on cleaning and use of cloth masks](#)

# Special Considerations

## School Transportation

Educational information on risk-minimizing behaviors (e.g., cough/sneeze etiquette, refraining from touching face) should be distributed to students and staff that may rely on school buses, public transportation, or carpooling on how to safely commute.

- Staff (including the bus driver) and older students should wear masks at all times while taking public transportation, riding a school bus, or carpooling.
- Encourage hand hygiene prior to entering transportation vehicle and upon arriving to school or home.
- As much as possible, encourage limited use of school transportation. In order to limit number of students using buses, school transportation should only be used by those unable to identify an alternative strategy.
- If school transportation must be used, create a minimum 6-foot distance on school buses between children by assigning seats and limiting seating options such as one child per seat spaced out every other row.
- Sync staggered arrival and drop off times of different cohorts; this, in conjunction with fewer students per bus, may increase the number of buses per school.
- School districts should provide bus drivers with education and training on COVID-19 and provide routine and updated educational resources to drivers.
- Bus drivers should be separated from all students by a minimum of 6-feet and, where possible, have students enter and exit at the rear or center of the bus to avoid close contact between students and the bus driver.
- Institute hand hygiene stations at bus drop off and pick-up locations in front of the school and assign a staff member to monitor hand hygiene compliance of students entering or exiting buses.
- Drivers should be provided ample disinfectant wipes and appropriate PPE (e.g., mask and gloves) and sanitize high-touch surfaces (e.g., handrails, seats, seatbelts, steering wheel, door handles) throughout the day.
- Buses should be thoroughly cleaned and disinfected daily between routes. A Standard Operating Procedure (SOP) should be developed in the case of transporting a student who is exhibiting symptoms of COVID-19.

Resources:

[CDC: What Bus Transit Operators Need to Know About COVID-19](#)

[National Association for Pupil Transportation: COVID-19](#)

## Considerations for different age groups

Recommendations described in this document will have to be tailored to different age groups and made appropriate for implementation in elementary, middle, or high schools. In developing various plans to cover multiple scenarios and changing conditions, school districts should consider prioritizing the age groups that might be better suited for remote/virtual learning and those that should be prioritized for in-person education. The latter may include elementary students, given challenges in remote learning for younger cohorts, while high school students may better adapt to remote learning opportunities. Likewise, on-site education may be prioritized for those who experience barriers to remote learning, including younger learners but also those with limited access to internet and remote learning technologies and those who receive special education services.

The ability of younger students to adhere to implemented interventions must also be considered and taken into account. Masking of younger students should be discussed and decided based upon their ability to adhere to requirements; as they may have a tendency to frequently adjust it and touch their face, masking may pose more of a hazard than a benefit to younger cohorts. Younger learners may also have more difficulties adhering to physical distancing measures; as such, considerations should be made for smaller class sizes or larger teaching spaces with

lengthier staggered break times that will maximize physical distancing in classrooms and during arrival, breaks, and pickups.

### Considerations for Sports and Other Extracurricular Activities

School districts should work closely with local public health officials to determine guidelines for resuming youth sports and extracurricular activities. In Nebraska, districts and sports teams should refer to their local [Directed Health Measures](#) for the most updated information on restrictions. All students may not be able to return to and sustain activity at the same time, depending on risks related to the activity and local COVID-19 prevalence and resource capacity. Students, staff, schools and districts should be prepared for periodic suspension of certain activities should recurrent outbreaks occur.

Feasibility of physical distancing, mask use, environmental cleaning and disinfection, and other measures will vary based on the individual extracurricular activity; as such, a risk assessment should be conducted, and risk-mitigation strategies identified for each activity. Extracurricular activities and clubs that can be conducted virtually should be encouraged to do so. Consider cancelling or modifying extracurricular activities if particular arrangements (e.g., adequate physical distancing for the specified activity, ability to support proper hand hygiene or mask use, etc.) are unable to be met.

Physical distancing and strict sanitation measures should be adhered to and monitored by all students and coaches/staff. Implement cohorting of small consistent groups as much as possible. Size of groups should be determined by local public health guidelines, size of facilities/practice area, whether the activity is being conducted indoor or outdoor, facility spacing arrangements, etc. Other interventions described in this document should be considered and implemented, where possible.

Return to sports and other extracurricular activities in K-12 schools that require contact or are difficult to execute while maintaining physical distancing requirements warrant a host of additional considerations. See below resources for more detailed recommendations and guidelines. NCAA Resocialization

Resources:

[CDC Considerations for Youth Sports](#)

[Nebraska Statewide Sports Reopening Guidelines](#)

[National Federation of State High School Associations: Guidance for Opening Up High School Activities](#)

[National Federation of State High School Associations: Guidance for Return to Marching Band](#)

[National Federation of State High School Associations: Fall 2020 Guidance for Music Education](#)

[Nebraska School Activities Association: COVID-19](#)

[NCAA Resocialization of Collegiate Sports \(includes risk assessment of different sports\)](#)

## [Additional General COVID-19 Resources](#)

[Launch Nebraska](#)

[CDC Activities and Initiatives Supporting the COVID-19 Response](#)

[CDC Schools Decision Tool](#)

[CDC Considerations for Schools](#)

[CDC K-12 Schools and Childcare Programs: FAQs for Administrators, Teachers, and Parents](#)

[CDC Interim Guidance for Businesses and Employers](#)

[CDC Basic Information on COVID-19](#)

[CDC Checklist for Teachers and Parents](#)

[National Association of School Nurses Coronavirus Disease Resources](#)

[OSHA Guidance for Prevention and Control](#)

# SUPPLEMENTAL MATERIAL

## Authors

**John Lowe, PhD**

UNMC Assistant Vice Chancellor for Health Security  
Global Center for Health Security & College of Public Health

**Jocelyn Herstein, PhD, MPH**

Director, Sub-Saharan Africa Region  
Global Center for Health Security

**Brandon Grimm, PhD, MPH**

Associate Dean, Public Health Practice  
UNMC College of Public Health

**Abdulla Munir, MPH**

Assistant to the Dean  
UNMC College of Public Health

**Kari Simonsen, MD**

Professor Pediatric Infectious Diseases  
UNMC College of Medicine  
Children's Hospital and Medical Center

**David Brett-Major, MD, MPH**

Professor Epidemiology  
UNMC College of Public Health

**Ali S. Khan, MD, MPH, MBA**

Dean  
UNMC College of Public Health

**James Lawler, MD, MPH**

Executive Director, International Programs and Innovation  
Global Center for Health Security

**Bob Rauner, MD, MPH**

President  
Partnership for a Healthy Lincoln

**Sara Donovan, MPH**

Graduate Research Assistant  
College of Public Health

**Michelle Schwedhelm, MSN, RN**

Executive Director, Emergency Management and Clinical Operations  
Global Center for Health Security

**Angela Hewlett, MD**

Associate Professor Infectious Diseases  
College of Medicine

# Appendix A: School Outbreak Reports and Investigations Supporting Children’s Ability to Transmit SARS-CoV-2

**Introduction:** As K-12 school leaders across the United States are finalizing their plans to welcome students, teachers, and staff in the fall, lessons can be learned from international schools that have reopened over the last several months. Local community transmission rates vary significantly across the US: some small, rural towns have evaded any cases of COVID-19 to date, while a rise in cases in urban areas in the South and Southeast U.S. have exceeded local hospital capacity since loosening directive health measures. As detailed in UNMC’s *COVID-19 Back to School Playbook: Guiding Principles to Keep Students, Teachers, and Staff Safe in K-12 Schools*<sup>8</sup>, it is safest for schools to reopen when controlled community transmission (<50 cases/million/day) is achieved, and even then, partial reopening with reduced students in schools and extensive additional precautions are recommended. The one successful exception to the above threshold was Singapore which was at 70-80/million/day, had a strong downward trend, and a well-defined source of community spread.

Local public health determination of controlled community transmission may vary based on key factors such as test availability, contact tracing capacity, percent positive test rates and other capacity measures. Schools should determine relevant thresholds with local public health that drive decisions. Keeping schools open while limiting increased cases among students, teachers, families, and communities will require layered interventions and coordination with public health.

Below are key factors influencing recommendations that the risk of community transmission must be low (containment) before considering reopening schools (for example, by random testing of the population). If schools reopen in regions with a low risk of community transmission, measures should still be taken to protect teachers and students as outlined in the *Back to School Playbook*.

Most children do not become seriously ill with COVID-19. However, they sometimes do suffer severe disease, and children like everyone else play a role in community transmission. Children may have more contacts than adults (particularly at school) which may offset any reduced tendency to transmit the virus in younger children, if that is the case. Some studies suggest children pose a lower risk than adults, or even that children are less likely to be infected but have important limitations including that schools were often closed at the time of the study. As more is learned about COVID-19, it is extremely important that public health use and learn from well characterized data and research in order to best inform decisions to protect communities.

---

<sup>8</sup> [https://www.unmc.edu/publichealth/news/UNMC\\_COPH\\_K-12\\_Playbookv1.pdf](https://www.unmc.edu/publichealth/news/UNMC_COPH_K-12_Playbookv1.pdf)

## **Schools and Care Center Outbreak Reports**

As expected, given the closure of schools around the world at the start of the pandemic, there is a shortage in the literature on transmission of SARS-CoV-2 in school settings.

Israel, May 2020. This study describes a COVID-19 cluster at a school in Israel encompassing 7<sup>th</sup> through 12<sup>th</sup> grades. It demonstrates a school outbreak that impacted its community. Among 151 staff and 1,161 students tested, over 260 people were infected within 10 days of reopening, 153 students (attack rate: 13%) and 25 staff (attack rate: 16%). Masks were mandated, but in the week prior to the outbreak, a heatwave occurred and masks were optional for 3 days. Classrooms were crowded, and social distancing was not possible. In the community, 87 cases were linked to the school cases during a period when before that community case rates were low.

<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.29.2001352> (Published July 2020)

Chile, March 2020. This study tested SARS-CoV-2 antibody prevalence in staff and students at a school spanning pre-school through high school, early in Chile's experience with the virus so easier to attribute the cases to the school and its nearby community. The attack rates were similar to the Israeli experience, 10% of students and 17% of staff tested positive. Of these, 40% of students and 18% of staff were asymptomatic. Importantly, the cases were distributed across all grades (even pre-school). (Published July 2020)

<https://academic.oup.com/cid/article/doi/10.1093/cid/cia955/5869860>

France, April 2020. A report on a cluster at a high school in Northern France. About 6 weeks after two cases of COVID-19 were detected in a high school early in that community's experience with COVID-19, SARS-CoV-2 antibody prevalence was tested in students and staff. Attack rates higher than the Israeli and Chile experiences were identified, 38% of students, 43% of teachers, and 59% of other school staff. Parents and siblings who joined the study had seroprevalences of 11% and 10%, respectively. All of these results were much higher than the community blood donor seroprevalence of 3%. (Pre-print, April 2020)

<https://t.co/0HkOeOhTzC?amp=1>

North Carolina, July 2020. A case report of a COVID-19 cluster that began with a family gathering and subsequently affected 41 people from 9 different families and 8 different workplaces. This investigation found transmission from a 9-year-old child to grandparents and subsequently to an elderly neighbor.

<https://catawbacountync.gov/news/covid-19-in-catawba-county-a-case-study/>

Texas, July 2020. The Department of Health and Human Services reported at least 1,695 staff and children have tested positive from childcare facilities in the state as of July 6, a substantial increase from 950 reported cases by the end of June (<https://www.texastribune.org/2020/07/09/texas-day-care-coronavirus-risks/>).

These cases were spread across more than a 1,078 reporting centers, but only a fraction of them were open by the time the numbers were reported. The true case count likely is higher, and the impact on subsequent transmission remains to be evaluated. It adds to mounting evidence that on a population level, childhood COVID-19 is under-appreciated in all age groups.

**Community transmission and case investigations supporting children infected at similar rates as adults and have ability to transmit to others.**

South Korea contact tracing study. This study evaluated contacts of identified COVID-19 patients. When the patient (index case) was aged 10-19 years, almost 1 in 5 household contacts were COVID-19 positive, versus just over 1 in 10 for all age groups. Where younger children (0-9 years) were the index case, 5.3% of household contacts had COVID-19. Author's note: "Although the detection rate for contacts of preschool-aged children was lower, young children may show higher attack rates when the school closure ends, contributing to community transmission of COVID-19." (Published July 2020)

<https://t.co/cBa58DUGJa?amp=1>

Study from Chicago found that young children (<5 years old) with mild to moderate COVID-19 had similar levels of viral RNA in their upper respiratory track as older children and adults. This is one piece of evidence among a growing body of literature debunking the idea that a child with COVID-19 cannot contribute to SARS-CoV-2 as well as any other patient. (Published July 2020)

<https://jamanetwork.com/journals/jamapediatrics/fullarticle/2768952>

China review of 391 cases and 1286 contacts. Evidence that in at least some settings (households, in this instance), children are just as likely to be infected as adults. (Published online April 2020)

<https://t.co/1vRfa2pjis?amp=1>

China cluster investigation of 4 families shows no difference in the proportion of children and adults infected with the novel coronavirus during quarantine. (Published online April 2020)

<https://t.co/DoX9x4pqGl?amp=1>

China study found that children were less likely to be infected than adults in households. However, all household members were promptly quarantined immediately when index cases were confirmed for 14 days in special housing designated by the local governments and monitored everyday by the health service personnel, consequently, this data is difficult to apply to understanding whether there are differences or not in transmission by age groups. (Published April 2020)

<https://t.co/AdZvxiZUJv?amp=1>

Switzerland. Data from Switzerland showing no difference in the proportion of children and adults infected with the novel coronavirus. (Preprint, May 2020)

<https://t.co/xm4t1ayVrL?amp=1>

Switzerland. Study of 23 children with COVID-19. Infectious virus was successfully isolated from 12 (52%); though reduced quality of the samples were analyzed. The youngest child with shed virus was 7 days old. Viral load was similar to adults. This provides yet more evidence that an infected child is relevant for transmission. (June 2020)

[https://wwwnc.cdc.gov/eid/article/26/10/20-2403\\_article?deliveryName=USCDC\\_333-DM32083](https://wwwnc.cdc.gov/eid/article/26/10/20-2403_article?deliveryName=USCDC_333-DM32083)

Germany. This study by one of the most experienced coronavirus virology groups in the world found that shed SARS-CoV-2 viral loads were similar among children and adults with COVID-19. Age categories ranged from kindergarten through adult. Furthermore, when an estimate of threshold of transmissibility was applied, shed virus from nearly 1 in 3 children who were 6 years or less of age with COVID-19 surpassed it, and the fraction increased with older ages. (Preprint, June 2020)

<https://www.medrxiv.org/content/10.1101/2020.06.08.20125484v1>

UK. Data from 27,000 cases shows no difference in the proportion of children and adults infected with the novel coronavirus. Authors note “It is also not possible to say with confidence that there are any differences in infection rates across age groups” (July 2020)

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/articles/coronaviruscovid19infectionsinthecommunityinengland/july2020>

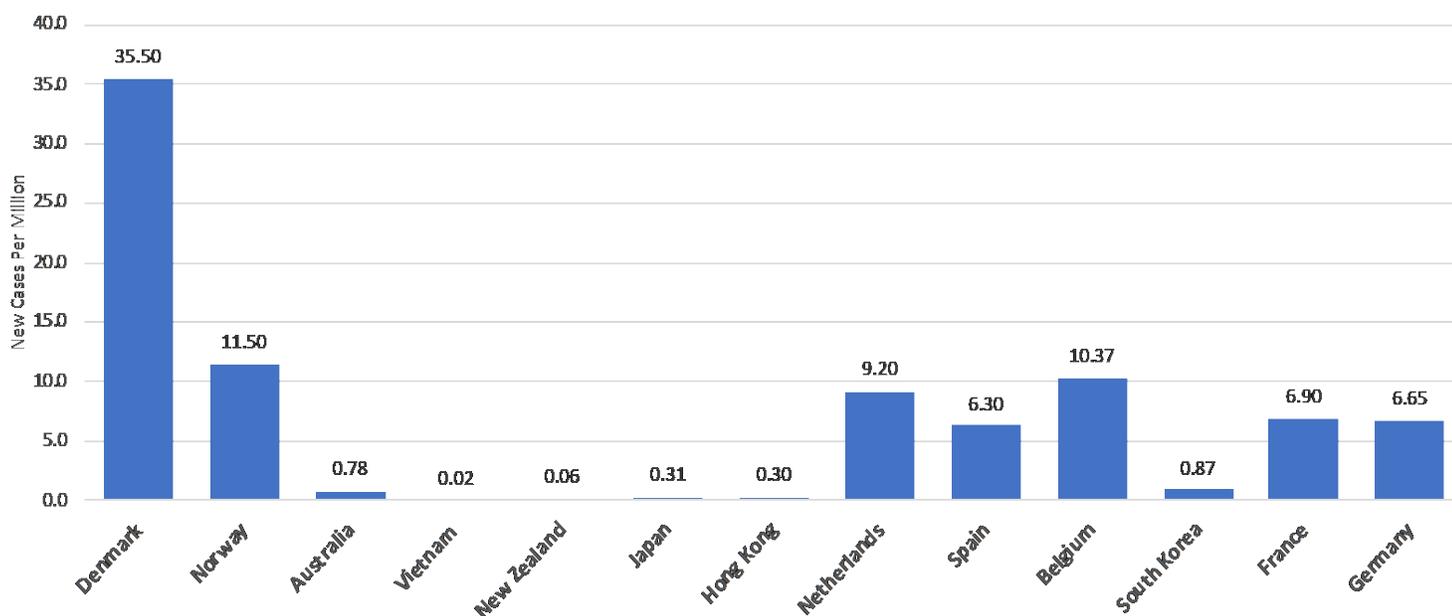
Georgia. Case report from an overnight camp in Georgia reported 290 cases of COVID-19 among 597 residents. The overall attack rate was 44% (260 of 597): 51% among those aged 6–10 years, 44% among those aged 11–17 years, and 33% among those aged 18–21 years. The study adds to the body of evidence that children of all ages are susceptible to SARS-CoV-2 and could play an important role in transmission. The camp reported having adopted most components of CDC recommendations for Youth and Summer Camps but did not implement mask requirements for campers or enhanced ventilation measures. (Published July 2020).

<https://www.cdc.gov/mmwr/volumes/69/wr/mm6931e1.htm>

## Appendix B: Reopening Thresholds and Best Practices for Schools That Have Reopened Successfully

**Strategies Successful Countries Have Implemented in Reopening:** Countries that have successfully reopened schools have, with few exceptions, done so when community transmission rates were below 10 cases/million/day and well past the highest number of daily recorded cases (see Figures 1 and 2). Most countries have emphasized physical distancing of students greater than 3-6 feet; restricted building access to essential personnel only; enhanced cleaning/disinfection procedures; increased frequency of handwashing; and required teachers and/or students to use face coverings. Many countries have also reduced class sizes, adopted a hybrid approach to reduce the density of students in school buildings at one time, and implemented cohorting of students in small, consistent groups to reduce the number of interactions and contacts of each individual. Best practices, epidemic curves, and community transmission rates at the time of school reopening of countries that have successfully reopened schools with minimal school-related cases are detailed below.

**Figure 1. Reopening Thresholds for Schools by Selected Countries. Average = 6.83 cases/M/D**



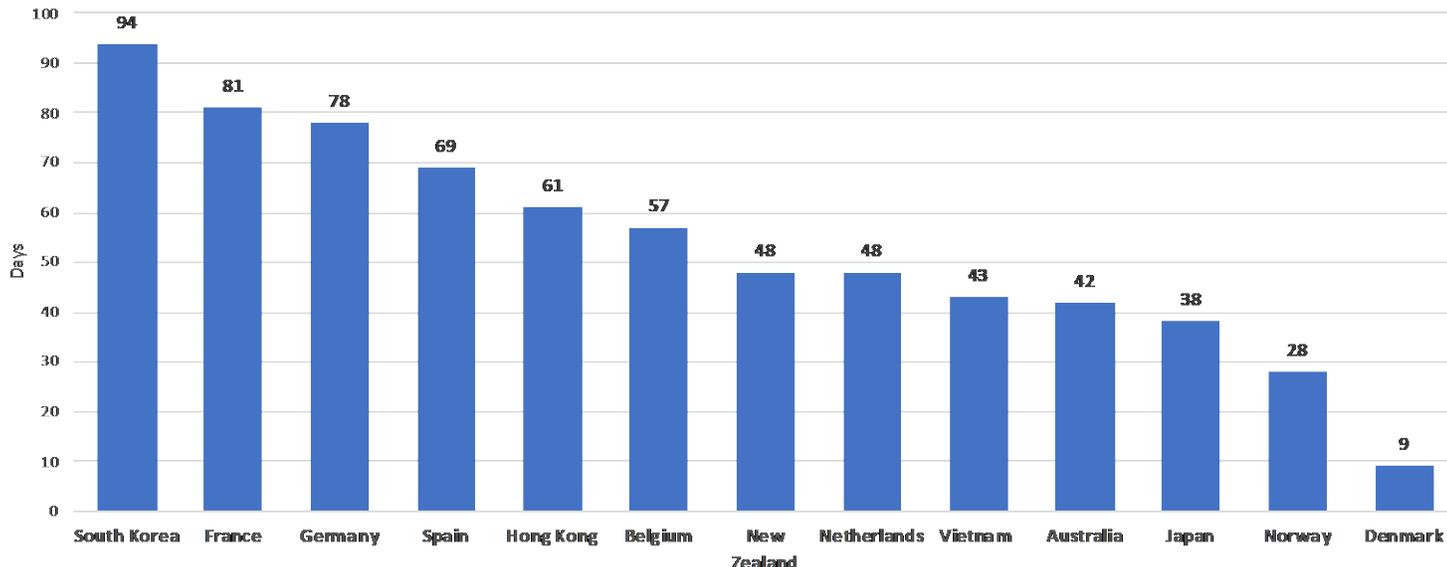
\*Included countries: Australia, New Zealand, Denmark, Norway, France, Germany, Belgium, Spain, Netherlands, Hong Kong, Vietnam, Japan, Singapore and South Korea.

\*Singapore, which re-opened school at 81.3/million cases, excluded because cases confined to migrant camps.

\*Denmark gradually re-opened schools at 35.5 cases/m/7-day average (started K-5 with a dozen pupils per pod)

\*Data source: <https://ourworldindata.org/coronavirus>

**Figure 2. Number of days from peak onset of COVID-19 to schools re-opening by selected countries. Average = 53.5 days.**



\*Included countries: Australia, New Zealand, Denmark, Norway, France, Germany, Belgium, Spain, Netherlands, Hong Kong, Vietnam, Japan, Singapore and South Korea.

\*Singapore which re-opened school at 81.3/million cases excluded because cases confined to migrant camps.

\*Denmark gradually re-opened schools at 35.5 cases/m/7-day average (started K-5 with a dozen pupils per pod)

\*Data source: <https://ourworldindata.org/coronavirus>

**Table 1. Country Comparisons of Reopening Thresholds and Strategies for Reopening**

	Daily Cases Per Million at Reopening	Strategies to Reopening*
<b>Austria</b>	9	Prioritized graduating classes before bringing back other students. <ul style="list-style-type: none"> <li>• Staggered schedules (one group Mon-Wed, another group Thur-Fri)</li> <li>• In some schools, gymnasiums used instead of classrooms for distancing</li> <li>• Masks initially required but no longer required for students</li> <li>• Signage on hygiene policies and one-way movement posted</li> </ul>
<b>Belgium</b>	10.4	Prioritized nursery and primary school students returning first. <ul style="list-style-type: none"> <li>• Some classes have met in other buildings (e.g., churches) to spread out</li> <li>• Students remain in small, consistent cohorts</li> <li>• One cohort per time at recess</li> <li>• Hybrid approach for larger classes (each cohort attend two days per week)</li> <li>• Students bring their own lunch and eat in classrooms</li> <li>• Separate entrances for each class</li> <li>• Masks required for students, teachers, and staff</li> </ul>

<b>Denmark</b>	35	<p>Brought back primary grades first, with older students about one month later.</p> <ul style="list-style-type: none"> <li>• Hybrid approach to reduce density</li> <li>• Class sizes reduced to enable 6-feet of distancing (~ 10/class)</li> <li>• Consistent, self-contained small cohorts</li> <li>• Outside play limited to small groups with homeroom</li> <li>• To reduce density, Denmark asked families to keep their children at home if at least one parent does not work</li> <li>• Use alternative spaces, including gyms and outdoor spaces</li> <li>• Reserved public parks and buildings (e.g., museums, libraries)</li> <li>• Teachers (rather than students) rotate classrooms in secondary schools</li> <li>• Specialists (e.g., art) done via video chat</li> <li>• Lunch at desks in classrooms</li> <li>• Buses: half capacity, one student per row</li> <li>• Temperature checks on arrival</li> <li>• Students handwash every 2 hours</li> </ul>
<b>Finland</b>	9	<p>Prioritized return of students from daycares and Grades 1-9 first</p> <ul style="list-style-type: none"> <li>• Normal class sizes but classes cohorted and do not mix</li> <li>• Staggered start times (15 minutes between grades)</li> <li>• Staggered break times</li> <li>• Some classes moved to larger rooms (e.g., gyms), others split into two classrooms</li> <li>• Teacher assigned to classes</li> <li>• Handwashing required on entrance to school</li> </ul>
<b>France</b>	6.9	<p>Prioritized bringing back preschool, primary school and junior high students. After first week of in-person learning, approximately 70 COVID-19 cases had been linked to schools.</p> <ul style="list-style-type: none"> <li>• Physical distancing initially required, but now considered only highly recommended for preschool and primary school students</li> <li>• Masks required when physical distancing cannot be achieved</li> </ul>
<b>Germany</b>	6.65	<p>Prioritized graduating seniors to prepare for college entrance exams. Two-week trial with open high schools did not increase cases, prompting further reopening.</p> <ul style="list-style-type: none"> <li>• Hybrid approach to increase onsite spacing</li> <li>• Focus on math and grammar for in-person instruction</li> <li>• Reduced class sizes by half (~15 students)</li> <li>• One-way hallways to limit crossover</li> <li>• Opened windows and doors for circulation</li> <li>• Masks required for teachers; student requirements vary by state</li> <li>• High-risk older teachers out of school</li> </ul>
<b>Japan</b>	0.31	<ul style="list-style-type: none"> <li>• Parents are expected to take and log child's temperature each morning</li> <li>• Students attend on alternate days</li> <li>• All students, teachers, and staff are required to wear masks</li> <li>• Visual cues indicate appropriate distancing in areas where lines are formed</li> <li>• Students are required to wash hands upon entering the building</li> <li>• Lunch is eaten at desks in classrooms</li> </ul>
<b>Netherlands</b>	9.20	<p>Prioritized bringing primary school students back.</p> <ul style="list-style-type: none"> <li>▪ Reduced class sizes by half (~15 students)</li> <li>▪ Hybrid approach (half in school, half do remote learning and switch days)</li> <li>▪ Physical distancing between students and teachers and between adults, but no physical distancing required between younger students</li> </ul>
<b>New Zealand</b>	0.06	<p>All grades returned at the same time.</p> <ul style="list-style-type: none"> <li>• Designated drop-off zones and parents not allowed to enter school grounds</li> <li>• Parents provided continued at-home learning option</li> </ul>

<b>Norway</b>	11.5	<p>Prioritized bringing back preschool and primary school students.</p> <ul style="list-style-type: none"> <li>• Small cohorts (primary classes capped at 15 students, 20 for middle schools)</li> <li>• Use outdoor spaces as much as possible</li> <li>• Outdoor space is divided, and use staggered between groups</li> <li>• Play limited to homeroom small groups</li> <li>• Lunch at desks in classrooms</li> <li>• If cafeterias used, homeroom groups enter in shifts and eat together</li> <li>• Buses: one student per row</li> <li>• Temperature checks on arrival</li> <li>• Students clean/disinfect materials daily</li> </ul>
<b>Singapore</b>	81.3* *High community transmission rates were primarily a result of outbreaks among migrant workers.	<p>Began by bringing back graduating cohorts of primary and secondary schools. All other students alternated between online and in-person classes on a weekly basis.</p> <ul style="list-style-type: none"> <li>• Hybrid approach for most students</li> <li>• No maximum class size when classroom space large enough to accommodate 6-foot physical distancing</li> <li>• Staggered arrival/dismissal times</li> <li>• Assigned seating in cafeteria with physical distancing</li> <li>• Masks required for students &amp; teachers</li> <li>• Interschool sports suspended</li> </ul>
<b>South Korea</b>	0.87	<p>Brought back high school seniors first to prepare for college entrance exams. Delayed reopening several times due to spikes in community cases.</p> <ul style="list-style-type: none"> <li>• Many schools have implemented hybrid schedule with alternating in-person and distance learning every other day</li> <li>• Staggered start times</li> <li>• Reduced class sizes</li> <li>• Online training on hygiene and health policies one week before school began</li> <li>• Masks required for students &amp; teachers</li> <li>• Temperature checks 2X day</li> </ul>
<b>Spain</b>	6.3	<p>Different age groups have returned at different times, varying by region</p> <ul style="list-style-type: none"> <li>• Prioritize outdoor spaces for classes</li> <li>• Small cohorts for children in primary schools (up to 20)</li> <li>• Physical distancing for older students</li> <li>• Masks required for older students when not in classrooms</li> </ul>
<b>Vietnam</b>	0.02	<p>Older students returned first, followed by primary school students one week later</p> <ul style="list-style-type: none"> <li>• Mandatory temperature checks upon entering school building</li> <li>• Students, staff, and teachers required to wear masks</li> <li>• Strict physical distancing is enforced in school buildings</li> </ul>

\*Strategies do not necessarily apply to all schools, but are examples of widely adopted country strategies

## Resources:

- Brookings Institute. Reopening the World: How to Save Lives and Livelihoods. Allen JR and West DM, Editors. (2020). Retrieved from <https://www.brookings.edu/wp-content/uploads/2020/06/Brookings-Reopening-the-World-FINAL.pdf>
- Burke M & Xie Y. How schools across the globe are reopening amid the coronavirus pandemic. EdSource. Retrieved from <https://edsource.org/2020/how-schools-across-the-globe-are-reopening-amid-the-coronavirus-pandemic/634739>
- Couzin-Frankel J, Vogel G, Weiland M. School openings across globe suggest ways to keep coronavirus at bay, despite outbreaks. Science Magazine. (2020, July 7). Retrieved from <https://www.sciencemag.org/news/2020/07/school-openings-across-globe-suggest-ways-keep-coronavirus-bay-despite-outbreaks>
- Davie S. Schools reopen on June 2, but not all will go back to classrooms daily. The Straits Times. (20 May 2020). Retrieved from <https://www.straitstimes.com/singapore/education/schools-reopen-on-june-2-but-not-all-will-go-back-to-classrooms-daily>
- Davies P. French schools reopen as more COVID-19 restrictions lifted. euronews. (22 June 2020). Retrieved from <https://www.euronews.com/2020/06/22/french-schools-reopen-as-more-covid-19-restrictions-lifted>
- Denyer S. In a Tokyo school, temperature checks and silent lunches as Japan restarts classes. Washington Post. (7 June 2020). Retrieved from [https://www.washingtonpost.com/world/asia\\_pacific/japan-coronavirus-schools-reopen/2020/06/06/9047be8c-a645-11ea-8681-7d471bf20207\\_story.html](https://www.washingtonpost.com/world/asia_pacific/japan-coronavirus-schools-reopen/2020/06/06/9047be8c-a645-11ea-8681-7d471bf20207_story.html)
- Fouche G & Klesty V. Norway to reopen high schools, bars and most of society by mid-June. Reuters. (7 May 2020) Retrieved from <https://www.reuters.com/article/us-health-coronavirus-norway-idUSKBN22J2O4>
- Hyun-ju O. Start of school put back again. The Korea Herald. (17 March 2020). Retrieved from <http://www.koreaherald.com/view.php?ud=20200317000814>
- Melnick H, Darling-Hammond L, Leung M, et al. Reopening schools in the context of COVID-19: Health and safety guidelines from other countries. Learning Policy Institute. (15 May 2020). Retrieved from <https://learningpolicyinstitute.org/product/reopening-schools-covid-19-brief>
- Mortensen A & Skydsgaard N. Reopening schools in Denmark did not worsen outbreak, data shows. Reuters. (28 May 2020). Retrieved from <https://www.reuters.com/article/us-health-coronavirus-denmark-reopening-idUSKBN2341N7>.
- Murphy F. Austria will reopen schools with split classes next month. Reuters. (24 April 2020) Retrieved from <https://www.reuters.com/article/us-health-coronavirus-austria-education-idUSKCN2261LS>
- Pancevski B & Dandanell N. Is it safe to reopen schools? These countries say yes. The Wall Street Journal. (31 May 2020). Retrieved from <https://www.wsj.com/articles/is-it-safe-to-reopen-schools-these-countries-say-yes-11590928949>
- Pleasant C. Children return to school in New Zealand with parents dropping them off in “kiss and go” zones as classes begin to reopen around the world. DailyMail. (18 May 2020) Retrieved from <https://www.dailymail.co.uk/news/article-8329905/Kiss-Back-school-New-Zealand-kids.html>
- The Associated Press. 70 cases of COVID-19 at French schools days after reopening. NBC News. (18 May 2020) Retrieved from <https://www.nbcnews.com/health/health-news/70-cases-covid-19-french-schools-days-after-re-opening-n1209591>
- Xinhua. Reopening schools cause no spike in COVID-19 infections in Finland. XINHUANET. (18 June 2020). Retrieved from [http://www.xinhuanet.com/english/2020-06/18/c\\_139147063.htm](http://www.xinhuanet.com/english/2020-06/18/c_139147063.htm)
- Kinetic West analysis – Best practices for opening Washington schools
- European CDC – Situation Update Worldwide