

Rapid Review Report

Review Title:	What is the evidence and rationale describing the key public health principles to consider for school re-openings and precautions regarding school closures during COVID-19?
Abbreviated Title:	School reopening and responses to outbreaks
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Key Findings

- A number of jurisdictions have re-opened schools successfully without a spike in COVID-19 cases, eg. Japan, Germany, France, Finland, Denmark, Austria, Norway
- Most school plans indicate that staff/students/visitors who are sick or have had exposure to COVID-19 in the past 14 days should not attend school, and those that become symptomatic at school should be isolated and removed from the premises as soon as possible, with thorough cleaning thereafter
- In Alberta, if two or more members of a cohort are found to be COVID-19

positive, schools should follow the outbreak procedures which are under review until September

- In Nova Scotia, one confirmed case of COVID-19 in a school would be considered an outbreak
- In Germany, classmates and teachers of an infected student are sent home for two weeks but other classes continue
- Taiwan (based on the H1N1 response) suspends the class which had a confirmed case identified, for 14 days. With two or more cases the whole school must close. When 1/3 of the schools in a district are closed, all schools in the district must close.
- In Israel, schools closed after a single case was identified, and following mass outbreaks in schools at least 355 schools had closed with over 2,026 students and staff testing positive and over 28,000 students in quarantine due to possible exposure

Limitations

- Search results only capture up to August 8, 2020
- Reviewed school reopening plans had limited detail on outbreak protocols, most stating generally that they will follow public health guidelines and work with public health agencies in the event of an outbreak
- In all locations reviewed, school re-opening coincided with a variety of other public health measures and restrictions eased, making it difficult to determine the attribution issue, and the generalizability of research evidence

GRADE of Evidence: Select - This field is mandatory Select - This field is mandatory

For more information about how this rating was determined, visit https://www.essentialevidenceplus.com/product/ebm_loe.cfm?show=grade

A formal assessment of the quality of the evidence has not been performed for this review. Users are advised to consider this additional limitation when considering the key findings.

Background/Context

With the fall-terms rapidly approaching, many jurisdictions are tackling school opening in the context of their current COVID-19 climate. The question of when and how to open schools is multi-faceted and highly dependent on external community factors such as current community transmission levels and other concurrent re-opening measures. To explore the various aspects to be considered for the re-opening of schools, our team conducted several rapid reviews to answer the broader question of when, and how schools should be re-opened. These include pediatric disease course [[EOC072102 RR](#)], pediatric transmission [[EOC070201 RR](#)], definitions of clusters and outbreaks [[EOC080701](#)], community transmission considerations for school opening [[EOC081201 RR](#)], considerations for targeted closures in response to positive cases [Number] and the use of pool testing [[EOC081301 RR](#)].

Purpose

To assess the considerations for the targeted closure of classrooms/cohorts/schools in response to COVID-19 cases or outbreaks.

Review Question(s)

- What is the evidence and rationale describing the key public health principles to consider for school re-openings and precautions regarding school closures during COVID-19?

Method

For each Rapid Review, the initial question is posed by a decision-maker in the health care system seeking the evidence base for a specific policy decision. According to the subject of the question, the Evidence Task Group Intake Committee allocates this question to the appropriate Working Group. Each Working Group comprises a librarian, researcher, 1-2 clinicians, 1-2 subject matter experts, and a group leader. The Working Group and the decision-maker first discuss the question to ensure it was articulated in a clear, searchable manner. The librarians assigned to your team then conduct a thorough search of the indexed literature, grey literature, news sources, or other sources as agreed upon. Some reference lists for especially pertinent articles are also reviewed. An Evidence Search Report is thereby created. See Appendix for more details on the search strategy. A Rapid Review of the identified literature is then performed by the researcher using the methods of a systematic review, but without a double review or meta-analysis and in a more rapid fashion. Relevant evidence is summarized in both tabular and narrative form, key findings and limitations articulated, and the quality of the body of evidence evaluated using the GRADE hierarchy. The draft Rapid Review is reviewed and edited by the Working Group clinicians, experts, and leader. Once revisions are complete, the Rapid Review is submitted to the requesting decision-maker and placed in the COVID-19 Repository. For certain topics with rapidly changing evidence, after a period of time an updated evidence search is performed, the review process repeated, and an updated Rapid Review released.

Summary of Evidence

With fall-term classes rapidly approaching throughout the world, many jurisdictions have developed plans and guidelines for the re-opening of schools. (For a summary of school plans across Canada, please see our previous review, Saskatchewan's school re-opening plan in comparison to other provincial plans and federal recommendations, August 14, 2020). All plans contain considerations for providing and promoting physical distancing throughout the domains of the school day, from bussing, entry, hallway flows, classrooms, common spaces and exit as well as guidelines for enhanced cleaning and hygiene for both staff and students. In addition, all plans emphasize that symptom screening should be performed by staff and parents/students each day prior to the school day, and those who show symptoms indicative of possible COVID-19 infection are not to attend school, with some further recommending 14 day quarantines and/or testing prior to the individual's return to school. Most plans have guidelines for immediate actions to be taken should an individual become symptomatic while at school, including isolation, supervision (with proper PPE) for students and removal from school property as soon as possible. However, where most plans fall short is what to do after an individual becomes symptomatic, or in the case of confirmed case(s). A few jurisdictions provide said guidance, and several indicate that cases/outbreaks are possible, and if they happen, they may close the classroom/school for a short time to ensure proper sanitation and that they will coordinate and cooperate with public health official recommendations regarding testing, contact tracing and subsequent closures if warranted.

Jurisdictions with explicit positive case/outbreak guidelines or outbreak related closures

- Saskatchewan¹
 - All of the province’s school board plans account for four potential “levels” of precautions. It did not detail what would prompt a school board to go from one level to another (i.e. thresholds of cases or outbreaks or community spread, pre-established)
 - “There is no real threshold ... It will really depend on a school-by-school basis.” (Education Minister Gord Wyant)²
- Alberta³
 - If two or more members of a cohort are found to be COVID-19 positive, schools should follow the outbreak procedures (under review until September). A cohort is defined as a group of students and staff who remain together in place and time. The size of the cohort will depend on the physical space of the classroom or learning setting
- Nunavut (currently has not had any COVID-19 cases)⁴
 - If they continue to have no cases, full re-opening planned without distancing protocols, but increased cleaning and a limit on group activities
 - If COVID-19 is present in the region, middle and high schools reduce time in class, group activities are cancelled and busing is staggered
 - If COVID-19 is present in the community, but isolated, schools will be open only 2-3 days a week, staggered for elementary and high-school, no group activities or physical contact
 - If there is community transmission of COVID-19, schools will be closed for a minimum of 14 days
- Ontario⁵
 - For elementary schools, students will be with one cohort for the full day, secondary school with class cohorts of approximately 15 students (from the Ontario plan, dated 30-July 2020); other parts of the plan, however, speak to students having 50 (for elementary) and 100 (for secondary) direct/indirect contacts in total.
 - If there is one case in a classroom, and the class is cohorted, test the whole class including teachers and staff
 - “If they were close contacts, a household, a close friend or people they were around a lot, we would be asking them to stay home, possible the whole class depending on how close the class is” (similar protocols if 2 in the same classroom) (Ontario Associate Medical Officer of Health Dr. Barbara Yaffe)⁶
 - If two cases are reported in different classrooms – investigate if linked to each other, key will be determining if they were infected in or out of the school
 - Schools must immediately report any suspected or confirmed cases of COVID-19 within the school to the local public health unit. Public health officials will determine any additional steps required, including but not limited to the declaration of an outbreak and closure of classes and/or schools.
 - Persons who test positive may not return to school until they are cleared according to public health guidance. Persons who retest negative (after an initial positive test) can return to school once they are symptom-free for 24 hours.
- Nova Scotia⁷
 - One confirmed case in a school would be considered an outbreak
 - Schools are expected to work with Public Health to ensure a prompt response to cases of COVID-19 that may have been exposed or may have attended a school setting
- Taiwan⁸
 - Based on lessons learned from the H1N1 pandemic

- With one confirmed case, the individual’s class is to be suspended for 14 days
- With two or more confirmed cases, the entire school must close
- If 1/3 of the schools in a district are closed, all schools in the district must close
- UK⁹
 - Attendance is mandatory at the beginning of autumn term, head teachers are to follow absences and issue sanctions or even fines in some cases
 - If a school has a suspected outbreak (2 or more students confirmed in 14 days, or an overall rise in COVID sickness absences) teachers will liaise with local heat teams
 - May use mobile testing
 - Large number of students may be asked to self-isolate at home, but whole school closure “will not generally be necessary”
- Germany⁸
 - Classmates and teachers of an infected student are sent home for 2 weeks, but other classes continue
- New York¹⁰
 - Schools allowed to open in parts of state where infection rates average 5% or less for two weeks
 - Students and teachers screened for illness, must wear face masks and keep 6’ apart when possible
- Hong Kong¹¹
 - Initially closed in January, re-opened at the end of May
 - June 13 – July 5, no local transmission in Hong Kong
 - Closed schools for summer break a week early due to 3rd wave
 - No confirmed infections associated with school
- Israel¹²
 - Daily cases dropped from more than 750 per day to double digits
 - Completely re-opened schools May 17, with students grade 4 and higher to wear masks, windows kept open, hands washed frequently and students kept 6’ whenever possible
 - Many schools did not have the capacity to provide adequate distancing, so chose to ignore guidelines or only open partially
 - Due to a heat wave, students were exempted from wearing masks for 4 days, and windows were closed to allow for air-conditioning
 - Country wide cases spiked to 800 a day by late June and more than 2,000 by late July
 - Concurrent opening of bars, restaurants, houses of worship, hotels, shopping malls, etc.

Conclusions

There are many considerations when planning when and how to re-open schools amid the COVID-19 pandemic, and even within the same jurisdiction, the context may differ from school to school. Experiences from jurisdictions from around the world clearly indicate that simply waiting for a decline in cases is not sufficient, and those jurisdictions that have been successful have done so by being diligent and having thorough plans in place to prevent school-related outbreaks. While prevention of outbreaks is key, having guidelines and contingency plans for confirmed cases or school outbreaks is equally as important, but often overlooked in school re-opening plans. Some jurisdictions choose a very proactive, aggressive approach with the threshold for an entire school closure being two cases, such as Taiwan, whereas other jurisdictions anticipate that while many students/staff may be asked to self-isolate, they do not anticipate that the closure of an entire school will be necessary (e.g. Ontario). Ultimately, the

decision of thresholds for classroom/cohort/school closure must be highly individualized to each context and community, even within jurisdictions.

Glossary

(Optional, but useful if there are clinical/statistical terms being referenced in the document.)

Table 1: Summary of Literature

Reference	Date	Context	Key Findings
https://time.com/5868098/schools-reopening-coronavirus-denmark-south-korea-israel/	July 20, 2020	Gives summary of school opening measures in Denmark, South Korea and Israel	<p>Denmark:</p> <ul style="list-style-type: none"> - locked down for 1 month - reopened schools April 15 (children 2-12) – at that time daily cases had dropped from 390 (April 7) to 193 (April 14) - measures taken <ul style="list-style-type: none"> - “micro groups” of 12 - Arrivals staggered - Lunch eaten separately - Wash hands every 2h, no masks - Desks 2m apart - Educational materials cleaned at least twice/day - Classes held outside when possible - No parents allowed on property - no increased cases - May 18 children 12-16 returned with similar protocols <p>South Korea:</p> <ul style="list-style-type: none"> - planned re-opening was delayed 5 times - phased reboot beginning with HS seniors May 20 - ~1.8M HS freshmen, middle school juniors and older elementary school kids scheduled to return June 3 - resurgence in Seoul where students found infected prompted hundreds of schools to delay or re-close days after returning - measures: <ul style="list-style-type: none"> - Temp checks at entrances and masks required - Social distance and frequent hand washing - Some schools alternating cohorts and some hybrid in person/online <p>Israel:</p> <ul style="list-style-type: none"> - initially used “bubble model” for May 3 return, but lifted

			<p>class size limitations two weeks later</p> <ul style="list-style-type: none"> - June 3 – closed down schools after 2,026 students, teachers and staff tested positive and 28,147 students in quarantine due to possible exposure - one school had more than 130 confirmed cases - nationwide daily cases went from ~50/day to over 1,500/day within a month of schools opening
<p>Closing schools, travel bans, wearing masks? This ranking shows which measures work. AlphaGalileo. https://www.alphagalileo.org/en-gb/Item-Display/ItemId/195123?returnurl=https://www.alphagalileo.org/en-gb/Item-Display/ItemId/195123</p>	July 14, 2020	<p>Article about study done by team in Vienna assessing effect of 4,579 non-pharmaceutical interventions in 76 territories on R_0</p>	<ul style="list-style-type: none"> -No single measure brings R below 1. -Best is combination of social distancing, small gathering cancellations, travel restrictions, promoting safety protocols and improving healthcare capacity. -School closure had the largest single impact on R but at most reduced it by 0.34 -mostly about timing – e.g. voluntary mask rules early on are more effective than mandatory mask orders later
<p>Does my child have to go back to school? <i>BBC News</i>. https://www.bbc.com/news/education-51643556.</p>	July 2, 2020	<p>Article to address frequent questions about UK back to school</p>	<ul style="list-style-type: none"> - attendance mandatory at the beginning of autumn term, head teachers to follow absences and issue sanctions or even fines in some cases - if a school has a suspected outbreak (2 or more students confirmed in 14 days, or an overall rise in COVID sickness absences) teachers will liaise with local health teams - may use mobile testing - large numbers of students may be asked to self-isolate at home but whole school closure “will not generally be necessary”
<p>Here’s what parents and students need to know about Nunavut’s final school reopening plan. CBC. https://www.cbc.ca/news/canada/north/nunavut-education-plan-covid-19-reopening-1.5660837</p>	July 23, 2020	<p>Nunavut re-opening plans – currently no cases</p>	<ul style="list-style-type: none"> - If continue to have no cases, full re-opening planned without distancing protocols - 4 stages dependent on presence of COVID 1. increased cleaning, limits on group activities. (no covid) 2. COVID in region – middle and high school reduce time in class, group activities cancelled and bussing staggered 3. COVID in community but isolated – schools only open 2-3

			<p>days/week, staggered for elementary and HS, no group activities or physical contact.</p> <p>4. community transmission of COVID – schools closed for a minimum of 14d</p>
<p>McDonald J. What Science Says About Children, COVID-19 and School Reopenings. FactCheck.org. https://www.factcheck.org/2020/07/what-science-says-about-children-covid-19-and-school-reopenings/</p>	July 24, 2020	Good lay summary of considerations for school reopening	<p>France:</p> <ul style="list-style-type: none"> - 3 probable infections before school closed – no secondary infections - 9 y/o who went skiing and visited 3 schools while infected didn't transmit <p>Australia:</p> <ul style="list-style-type: none"> - only 2 possible infections after tracing ~900 contacts of 18 positive students/staff <p>Openings without subsequent outbreaks in the following countries (* had less than 1 case/100,000 at time of reopening)</p> <ul style="list-style-type: none"> - Japan* - S. Korea* - Germany - Finland* - France* - Denmark - Austria - Norway <p>Israel – HS closure due to spike in cases, but also relaxed measures on large public gatherings at the same time</p>
<p>PHOTOS: How Hong Kong Reopened Schools — And Why It Closed Them Again. NPR.org. https://www.npr.org/sections/goatsandsoda/2020/07/10/889376184/photos-how-hong-kong-reopened-</p>	July 10, 2020	Closure of schools in Hong Kong	<ul style="list-style-type: none"> - Initially closed in January, re-opened end of May. - June 13 – July 5 no local transmission in Hong Kong - Closed schools a week early for summer break due to 3rd wave in community - No confirmed infections associated with school

schools-and-why-it-closed-them-again			
<p>Sweden’s health agency says open schools did not spur pandemic spread among children. <i>Reuters</i>. https://www.reuters.com/article/us-health-coronavirus-sweden-schools-idUSKCN24G2IS.</p>	<p>July 15, 2020</p>	<p>Comparison of pediatric COVID rates in Sweden vs. Finland</p>	<ul style="list-style-type: none"> - Sweden kept schools open - No higher rate of infection among school children than neighboring Finland who imposed a lockdown - Feb 24 – Jun 14 <ul style="list-style-type: none"> - Sweden: 1,124 school-aged COVID cases (0.05% of school age population) - Finland: 584 school-aged COVID cases (0.05% of school-aged population)
<p>Couzin-Frankel J, Vogel G, Weil M. School openings across globe suggest ways to keep coronavirus at bay, despite outbreaks. <i>Science</i> AAAS. https://www.sciencemag.org/news/2020/07/school-openings-across-globe-suggest-ways-keep-coronavirus-bay-despite-outbreaks</p>	<p>July 7, 2020</p>	<p>Quite a few examples from different countries *good section on what should schools do when someone tests positive?</p>	<p>Crépy-de-Valois case study</p> <ul style="list-style-type: none"> - 2 HS teachers sick when pandemic was unknown to be in France in early Feb - When one of their colleagues was hospitalized and confirmed in Paris, realized they had likely had COVID-19 - were in school at least 12 days while infectious - late March, antibody testing done at schools in region - in HS: 38% of students, 43% of teachers and 59% of staff had antibodies - testing in 6 elementary schools revealed only 3 children who had antibodies and presumable attended school while infectious - HS-age infections dropped rapidly during spring break, elementary-aged remain steady, assume that HS aged were spreading it in school, elementary age were likely infected in community/home <p>Jerusalem</p> <ul style="list-style-type: none"> - middle and HS: 153 students and 25 staff tested positive <p>New Zealand</p> <ul style="list-style-type: none"> - HS pre-shut down found 96 positive cases including students, teachers, staff and parents <p>Israel elementary</p>

			<p>- 33 students found to be positive and 5 staff in one school</p> <p>What to do if a student tests positive?</p> <p>“In Germany, for example, classmates and teachers of an infected student are sent home for 2 weeks, but other classes continue. Until summer break, Quebec generally did the same; at least 53 students and teachers tested positive after many schools reopened in May, according to news reports, but officials believed many of those infections were contracted in the community.</p> <p>Elsewhere, officials are more cautious. Taiwan, which has largely suppressed the virus, kept schools open after one case but said it would close them for two or more, a situation it hasn’t yet faced. In Israel, schools closed for a single case, and close contacts of every infected individual were tested and quarantined, Aflalo says. By mid-June, 503 students and 167 staff had been infected, and 355 schools had closed temporarily. (That number is a small fraction of the 5000 schools across Israel.)”</p> <p>Risks of schools opening to community:</p> <p>“Early data from European countries suggest the risk to the wider community is small. At least when local infection rates are low, opening schools with some precautions does not seem to cause a significant jump in infections elsewhere.</p> <p>It’s hard to be sure, because in most places, schools reopened in concert with other aspects of public life. But in Denmark, nationwide case numbers continued to decline after day care centers and elementary schools opened on 15 April, and middle and high schools followed in May. In the Netherlands, new cases stayed flat and then dropped after elementary schools opened part-time on 11 May and high</p>
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			schools opened on 2 June. In Finland, Belgium, and Austria, too, officials say they found no evidence of increased spread of the novel coronavirus after schools reopened.”
Is it Safe to Reopen Schools During the Pandemic? The Associated Press. Available from https://apnews.com/9acd2a3f7af12421a4f39572afe5baac	August 6, 2020		“In areas where the virus appears to be under control, experts say schools still need to make adjustments to minimize risk when reopening. A sustained decline in cases and a positive case rate of less than 2% are among the signs the virus is under control, some experts say”
School can safely reopen if they follow two important procedures, studies find. CTV News. Available from https://www.ctvnews.ca/health/coronavirus/school-can-safely-reopen-if-they-follow-two-important-procedures-studies-find-1.5049607	August 3, 2020	Modelling study from UK, real data study from Australia on contact tracing/testing impact	<p>UK modelling study:</p> <ul style="list-style-type: none"> - Assuming that children are as infectious as adults yields the same results as assuming they are 50% as infectious, assumed 30% of infections are asymptomatic - Assuming 68% of virus contacts could be traced, researchers reported that 75% of children with symptomatic infection would need to be diagnosed and isolated if schools return full-time in September. - 65% of infected would need to be diagnosed and isolated if schools resumed on a part-time basis - if only 40% of contacts could be traced, the figures would increase to 87% and 75%, respectively. - researchers noted that the study does not account for the behavior of young people who are not in school - Panovska-Griffiths J, Kerr CC, Suart RM, Mistry D, Klein DJ, Viner RM et al. Determining the optimal strategy for reopening schools, the impact of test and trace interventions, and the risk of occurrence of a second COVID-19 pandemic wave in the UK: a modelling study. The Lancet Child & Adolescent Health. Published online July 30, 2020. https://doi.org/10.1016/S2352-4642(20)30250-9 <p>Australia study:</p> <ul style="list-style-type: none"> - tracked COVID-19 spread in 25 schools and nurseries in Australia from January to April - found that the risk of children and staff transmitting the

			<p>novel coronavirus in these educational settings was “very low” when contact tracing and other control measures are in place</p> <ul style="list-style-type: none"> - reported that 27 people (12 children and 15 teachers) attended school while infected at 15 schools and 10 nurseries which all temporarily closed for thorough cleaning after an infection was reported. - close contacts were monitored with regular phone calls and were asked to take test - of the 1,448 close contacts identified, the study reported that only an additional 18 people in 3 schools and one nursery later became infected. - Nursery outbreak was one of the largest, involving transmission from one adult to six adults and seven children – a number of the children were likely asymptomatic - Noted that this outbreak occurred early on during the pandemic when testing criteria had not yet been expanded - children in NSW were encouraged by government and health officials to stay home and do remote learning the last few weeks of March – school attendance dropped from 90% to 5% - Of the total 1.8M children in NSW only 98 children were infected between Jan-April (3.2% of country’s total infections) - Macartney K, Quinn HE, Pillsbury AJ, Epi A, Koirala A, Deng L, Winkler N et al. Transmission of SARS-CoV-2 in Australian educational settings: a prospective cohort study. The Lancet Child & Adolescent Health. Published online August 3, 2020. https://doi.org/10.1016/S2352-4642(20)30249-2
<p>When Covid Subsided, Israel Reopened Its Schools. It Didn’t Go Well. New York Times. Published August 4, 2020. Accessed August 6, 2020. Available from https://www.nytimes.com/2020/08/04/world/middleeast/coronavirus-israel-</p>	<p>August 4, 2020</p>	<p>Commentary of Israel’s case</p>	<ul style="list-style-type: none"> - Israel’s daily cases dropped from more than 750/d to double digits. - completely reopened schools May 17 - shopping malls, outdoor markets and gyms were already open, and soon after, houses of worship, restaurants, bars,

schools-reopen.html			<p>hotels and wedding halls – new Prime Minister told people to “go out and have a good time”</p> <ul style="list-style-type: none"> - students were to gr 4 and higher were to wear masks, windows were to be kept open, hands washed frequently and students kept 6’ apart whenever possible - unable to comply with the rules (many schools where up to 38 children in a 500 sq classroom) some authorities ignored rules or decided to not open at full capacity - heat wave – students exempted from wearing masks for 4d and all windows closed (for AC) - Ultimately 154 students and 26 staff infected (about 60% of students were asymptomatic) - closed more than 240 schools and quarantined more than 22,520 teachers and students - when school year ended in late June, 977 teachers and pupils had contracted COVID-19 - country wide cases spiked to 800 a day by late June and more than 2,000 by late July
<p>U.S. debates school reopening, WHO warns 'no return to normal'. CTV News. Published July 13, 2020. Accessed August 6, 2020. Available from https://www.ctvnews.ca/health/corona-virus/u-s-debates-school-reopening-who-warns-no-return-to-normal-1.5021704</p>	<p>July 13, 2020</p>	<p>Commentary on US current cases</p>	<ul style="list-style-type: none"> - in NY schools allowed to open in parts of state where infection rates average 5% or less for two weeks. Students and teachers screened for illness, must wear face masks and keep 6’ apart when possible
<p>Ontario health officials explain how schools will handle potential COVID-19 outbreaks. CP 24. Published July 31, 2020. Accessed August 6, 2020. Available from https://www.cp24.com/news/ontario-health-officials-explain-how-schools-will-handle-potential-covid-19-</p>	<p>July 31, 2020</p>	<p>Ontario plans for dealing with school outbreak</p>	<ul style="list-style-type: none"> - For elementary schools, students will be with one cohort for the full day, secondary school with class cohorts of approx. 15 students - if there is one case in a classroom, and the class is cohorted test the whole class including teachers and staff -if they were close contacts, a household, a close friend, or people they were around a lot, we would be asking them to

outbreaks-1.5046658			<p>stay home, possible the whole class depending on how close the class is – similar protocols if 2 in same classroom</p> <ul style="list-style-type: none"> - if two cases are reported in different classrooms – investigate if linked to each other, key will be determining if they were infected in or out of the school - if they infected each other at school, looking at two classrooms and following them up. It would be extremely rare, in consultation with public health, that a whole school would need to be closed
<p>No mandatory masks or reduced class sizes planned when Sask. students return to schools in Sept. CBC News. Published August 5, 2020. Accessed August 6, 2020. Available from https://www.cbc.ca/news/canada/saskatoon/saskatchewan-back-to-school-plan-1.5673597</p>	August 5, 2020	Clarification quote on triggers for different levels in SK plan	<p>All of the province’s school board plans account for four potential “levels” of precautions, the province said in a release. It did not detail what would prompt a school board to go from one level to another. “There is no real threshold,” “It will really depend on a school-by-school basis”</p>
<p>Review of COVID-19 spread by kids offers comfort about schools reopening, prof says. CBC News. Published August 2, 2020. Accessed August 6, 2020. Available from https://www.cbc.ca/news/canada/new-brunswick/nb-covid-19-research-1.5670945</p>	August 2, 2020	Review of transmission patterns in schools/daycares	<ul style="list-style-type: none"> - References Canadian study – review of 33 studies from around the world to understand role of daycares and schools in COVID transmission – found that children under 10 are not driving outbreaks. - when clusters of outbreaks are seen in schools and daycare settings, most transmission is tracked back to adults within those settings or adults in the household transmitting to children rather than children transmitting to each other.
<p>Five big questions about when and how to open schools amid COVID-19. Science News. Published August 4, 2020. Accessed August 6, 2020. Available from https://www.sciencenews.org/article/covid-19-coronavirus-kids-schools-opening-when-how-risks</p>	August 4, 2020	Threshold of community rates of COVID to consider for school reopening	<ul style="list-style-type: none"> - “Unfortunately there is no threshold level of COVID-19 spread in a community that guarantees the safety of sending kids back to school” - WHO recommends a rate of positive COVID-19 test results of less than 5% the previous two weeks
<p>Armann JP, Unrath M, Kirsten C, et al. Anti-SARS-CoV-2 IgG antibodies in adolescent students and their teachers</p>		Seroprevalence students grade 8-11 and teachers in 13	<ul style="list-style-type: none"> -1,538 gr 8-11 students and 507 of their teachers were tested for seroprevalence - lockdown March 13, samples collected May 25 – June 30

<p>in Saxony, Germany (SchoolCoviDD19): very low seroprevalence and transmission rates. medRxiv. 2020:2020.07.16.20155143. DOI: 10.1101/2020.07.16.20155143</p>		<p>secondary schools in Saxony Germany</p>	<p>- seroprevalence was 0.6% - even in schools with reported COVID-19 cases before lockdown no clusters could be identified 23/24 participants with a household history of COVID-19 were seronegative By using a combination of 3 different immunoassays we could exclude 16 participants with positive/equivocal results</p>
<p>https://www.ajc.com/news/atlanta-news/woodstock-high-school-closes-after-14-confirmed-covid-19-cases/K2T4EJPJ4RAYZKXFBCSE7LUU5Y/</p>	<p>August 12, 2020</p>	<p>2 High school closure in Georgia following 14 confirmed cases in each.</p>	<p>14 confirmed cases, 289 students and staff under quarantine after (at one school) and 14 confirmed cases, 15 pending and 294 students/staff under quarantine at a second. School went back August 3, now closed until August 31. Middle school on the same campus not affected, athletics continuing as usual.</p>
<p>https://sanangelolive.com/news/education/2020-08-12/san-angelo-isd-prepared-intermittent-closures-classes-begin</p>	<p>August 12, 2020</p>	<p>San Angelo planning for intermittent school closures</p>	<p>“Intermittent closures (the temporary closing of a classroom, grade level, or campus) may occur for students and/or staff at a specific school if a recommendation for temporary physical closure is determined by public health authorities or by SAISD.”</p>

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11. PHOTOS: How Hong Kong Reopened Schools — And Why It Closed Them Again. NPR.org. <https://www.npr.org/sections/goatsandsoda/2020/07/10/889376184/photos-how-hong-kong-reopened-schools-and-why-it-closed-them-again>
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Appendix: Evidence Search Details

Search Strategies

Embase <1974 to 2020 August 05>

#	Searches	Results
1	*student/ or elementary student/ or high school student/ or middle school student/	36074
2	*school/ or high school/ or kindergarten/ or middle school/ or nursery school/ or primary school/	51907
3	(student? or school? or schoolhouse? or seminary or kindergar?en* or education* institut* or academic* or class or classes or inclass or classroom* or gradeschool* or preschool* or pre-school*).ti,kw. or (student? or school? or schoolhouse? or seminary or kindergar?en* or education* institut* or academic* or class or classes or inclass or classroom* or gradeschool* or preschool* or pre-school*).ab. /freq=2	644755
4	*teacher/ or school teacher/ or teaching assistant/	9574
5	(universit* or college?).ti. or (universit* or college?).ab. /freq=2	184447
6	(teacher? or schoolteacher or instructor? or education* worker? or education personnel or education assistant? or educator?).tw,kw.	94158
7	or/1-6	842714
8	*epidemic/ or exp *disease transmission/ or *communicable disease/	95811
9	(outbreak? or pandemic? or epidemic? or surge or re-surge or re-infect* or ((disease? or infect*) adj2 (transmit* or transmission? or communicat*)) or infect* or contagious or communicable).tw,kw.	2384500
10	8 or 9	2414420
11	exp coronavirinae/	17170
12	((corona* or corono*) adj1 (virus* or viral* or virinae*)) or (coronavirus* or coronavirus* or coronavirinae* or CoV)).ti,ab,kw.	35309
13	("2019-nCoV" or 2019nCoV or nCoV2019 or "nCoV-2019" or "COVID-19" or COVID19 or "CORVID-19" or CORVID19 or "WN-CoV" or WNCov or "HCoV-19" or HCoV19 or "2019 novel*" or Ncov or "n-cov" or "SARS-CoV-2" or "SARSCoV-2" or "SARSCoV2" or "SARS-CoV2" or SARSCov19 or "SARS-Cov19" or "SARSCov-19" or "SARS-Cov-19" or Ncover or Ncorona* or Ncorono* or NcovWuhan* or NcovHubei* or NcovChina* or NcovChinese* or SARS2 or "SARS-2" or SARScoronavirus2 or "SARS-coronavirus-2" or "SARScoronavirus 2" or "SARS coronavirus2" or SARScoronavirus2 or "SARS-coronavirus-2" or "SARScoronavirus 2" or "SARS coronavirus2").ti,ab,kw.	37197
14	((respiratory* adj2 (symptom* or disease* or illness* or condition*) adj10 (Wuhan* or Hubei* or China* or Chinese* or Huanan*)) or (("seafood market*" or "food market*" or pneumonia*) adj10 (Wuhan* or Hubei* or China* or Chinese* or Huanan*)) or ((outbreak* or wildlife* or pandemic* or epidemic*) adj1 (Wuhan* or Hubei* or China* or Chinese* or Huanan*))).ti,ab,kw.	2353
15	"severe acute respiratory syndrome*".ti,ab,kw.	9313
16	or/11-15	61834
17	(reopen* or resume? or resumption? or return* or post-lockdown or after lockdown or post-closure? or re-open* or restart* or re-start*).ti. or (reopen* or resume? or resumption? or return* or post-lockdown or after lockdown or post-	78976

	closure? or re-open* or restart* or re-start*).ab. /freq=2	
18	7 and 10 and 16 and 17	23
19	7 and 10 and 17	306
20	18 or 19	306
21	limit 20 to dd=20200701-20200807	14
22	from 21 keep 1-5, 7, 12, 14	8

Ovid MEDLINE(R) ALL <1946 to August 04, 2020>

#	Searches	Results
1	exp *Students/ or exp *Schools/	133230
2	(student? or school? or schoolhouse? or seminary or kindergar?en* or education* institut* or academic* or class or classes or inclass or classroom* or gradeschool* or preschool* or pre-school*).ti,kw. or (student? or school? or schoolhouse? or seminary or kindergar?en* or education* institut* or academic* or class or classes or inclass or classroom* or gradeschool* or preschool* or pre-school*).ab. /freq=2	533588
3	(universit* or college?).ti. or (universit* or college?).ab. /freq=2	139469
4	1 or 2 [schools/students]	567823
5	*School Teachers/	985
6	(teacher? or schoolteacher or instructor? or education* worker? or education personnel or education assistant? or educator?).tw,kf.	78432
7	5 or 6 [school teachers]	78494
8	4 or 7 [school OR teachers]	607864
9	exp *Disease Outbreaks/ or exp *Disease Transmission, Infectious/	107783
10	(outbreak? or pandemic? or epidemic? or surge or re-surge or re-infect* or ((disease? or infect*) adj2 (transmit* or transmission? or communicat*)) or infect* or contagious or communicable).tw,kf.	1948049
11	9 or 10 [outbreaks]	1978571
12	exp coronavirus/ or exp coronavirus infections/	30647
13	((corona* or corono*) adj1 (virus* or viral* or virinae*)) or (coronavirus* or coronavirus* or coronavirinae* or CoV)).ti,ab,kw,kf.	33975
14	("2019-nCoV" or 2019nCoV or nCoV2019 or "nCoV-2019" or "COVID-19" or COVID19 or "CORVID-19" or CORVID19 or "WN-CoV" or WnCoV or "HCoV-19" or HCoV19 or "2019 novel*" or Ncov or "n-cov" or "SARS-CoV-2" or "SARSCoV-2" or "SARSCoV2" or "SARS-CoV2" or SARSCov19 or "SARS-Cov19" or "SARSCov-19" or "SARS-Cov-19" or Ncovor or Ncorona* or Ncorono* or NcovWuhan* or NcovHubei* or NcovChina* or NcovChinese* or SARS2 or "SARS-2" or SARScoronavirus2 or "SARS-coronavirus-2" or "SARScoronavirus 2" or "SARS coronavirus2" or SARScoronavirus2 or "SARS-coronavirus-2" or "SARScoronavirus 2" or "SARS coronavirus2").ti,ab,kw,kf.	38242
15	((respiratory* adj2 (symptom* or disease* or illness* or condition*) adj10 (Wuhan* or Hubei* or China* or Chinese* or Huanan*)) or (("seafood market*" or "food market*" or pneumonia*) adj10 (Wuhan* or Hubei* or China* or Chinese* or Huanan*))).ti,ab,kw,kf. or ((outbreak* or wildlife* or pandemic* or epidemic*) adj1 (Wuhan* or Hubei* or China* or Chinese* or Huanan*)).ti,ab,kw.	2177
16	"severe acute respiratory syndrome*".ti,ab,kw,kf.	9142
17	or/12-16 [covid-19 hedge]	62222
18	(reopen* or resume? or resumption? or return* or post-lockdown or after	60188

	lockdown or post-closure? or re-open* or restart* or re-start*).ti. or (reopen* or resume? or resumption? or return* or post-lockdown or after lockdown or post-closure? or re-open* or restart* or re-start*).ab. /freq=2	
19	4 and 11 and 17 and 18	28
20	4 and 11 and 17	844
21	4 and 11 and 18	139
22	19 or 20 or 21	955
23	limit 22 to dt=20200701-20200807	232
24	from 23 keep 2-3, 5-7, 9-10, 13, 15-16, 18-19...	50

CINAHL Plus Full Text

Thursday, August 06, 2020 3:22:59 PM

#	Query	Limiters/Expanders	Results
S1	(MM "Schools") OR (MH "Schools, Elementary") OR (MH "Schools, Middle") OR (MH "Schools, Secondary")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	16,292
S2	(MM "Students") OR (MH "Students, High School") OR (MH "Students, Middle School")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	21,841
S3	(MM "Teachers")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	5,859
S4	TI ((student* or school* or schoolhouse* or seminary or kindergar?en* or education* institut* or class or classes or inclass or classroom* or gradeschool* or preschool* or pre-school*)) OR MW ((student* or school* or schoolhouse* or seminary or kindergar?en* or education* institut* or class or classes or inclass or classroom* or gradeschool* or preschool* or pre-school*))	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	475,241
S5	TI ((teacher* or schoolteacher* or instructor* or education* worker? or education personnel or education assistant* or educator*) OR MW ((teacher* or schoolteacher* or instructor* or education* worker? or education personnel or education assistant* or educator*)	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	27,720
S6	S1 OR S2 OR S3 OR S4 OR S5	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	490,898
S7	(MM "Disease Outbreaks+") OR (MM "Disease Transmission+")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	28,050
S8	TI ((outbreak* or pandemic* or epidemic* or surge or re-surge or re-infect* or ((disease* or infect*) N2 (transmit* or	Expanders - Apply equivalent subjects	343,985

	transmission* or communicat*)) or infect* or contagious or communicable)) OR MW ((outbreak* or pandemic* or epidemic* or surge or re-surge or re-infect* or ((disease* or infect*) N2 (transmit* or transmission* or communicat*)) or infect* or contagious or communicable))	Search modes - Boolean/Phrase	
S9	S7 OR S8	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	344,467
S10	TI (reopen* or resume* or resumption* or return* or post-lockdown or after lockdown or post-closure* or re-open* or restart* or re-start*) OR MW (reopen* or resume* or resumption* or return* or post-lockdown or after lockdown or post-closure* or re-open* or restart* or re-start*)	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	11,921
S11	S6 AND S9 AND S10	Limiters - Published Date: 20200101-20200831 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	6

Google Scholar

(covid-19|corona|covid|coronavirus) AND

Search terms for other resources used in various combinations:

(Schools | Universities | Colleges | Education | Classes)

(Reopen | Resume | Resumption | Return | Post-Closure | Post-Lockdown | Post Closure | Post-Closure)

(Pandemic | Epidemic | COVID-19 | Corona | COVID | Coronavirus)

Public Health

School Boards

Sources

- Grey literature was searched for this report
- Refer to the evidence search report for extensive sources



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