

COVID-19 Rapid Evidence Profile #17 (18 August 2020)

Question

What evidence could support modelling scenarios related to the reopening, operation and monitoring of schools?

What we found

We included documents that examined, or could help to identify, indicators to monitor: 1) before reopening schools; 2) about how reopening is being implemented (both changes to the operation of schools and accompanying public-health measures); and 3) as reopening is being implemented. We distinguished, where possible, among three school levels: 1) daycare/preschool; 2) primary school; and 3) secondary school.

Organizing framework

- Indicators to monitor before reopening schools
 - Rate of community spread
 - Rate of community adherence to public-health measures
 - Other
- Changes to the operation of schools
 - Online instruction (whole or partial)
 - Student supports
 - Instructor supports
 - Staffing ratios
 - Classroom changes (e.g., limiting number of students; increasing distance between students)
 - Facility changes (e.g., expanding classroom size by using additional facilities; providing class outside)
 - Skill redevelopment programs
- Accompanying public-health measures
 - Infection prevention
 - Washing hands
 - Wearing masks
 - Disinfecting surfaces and facilities
 - Physical distancing (e.g., cohorting, limits to class size, desk spacing)
 - Temporal distancing (e.g., holiday staggering, time-of-day staggering)

Box 1: Our approach

We identified documents addressing the question by searching [the guide to key COVID-19 evidence sources](#) during the period of 12-17 August 2020.

We searched for guidelines that were developed using a robust process (e.g., GRADE), full systematic reviews (or review-derived products such as overviews of systematic reviews), rapid reviews, protocols for systematic reviews, and titles/questions for systematic reviews or rapid reviews. Single studies were only included if no relevant systematic reviews were identified.

We appraised the methodological quality of full systematic reviews and rapid reviews using AMSTAR. AMSTAR rates overall quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. It is important to note that: 1) the AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to systematic reviews pertaining to delivery, financial, or governance arrangements within health systems; and 2) quality-appraisal scores for rapid reviews are often lower because of the methodological shortcuts that need to be taken to accommodate compressed timeframes.

We identified experiences from select other countries and from Canadian provinces and territories by searching jurisdiction-specific websites (e.g., government ministries and webpages dedicated to COVID-19). Our scan of experiences from other countries focused on those other countries that have already reopened schools and our scan of experiences from Canadian provinces and territories focused on plans for reopening.

This rapid evidence profile was prepared in three days to inform next steps in evidence synthesis, guideline development and/or decision-making related to the question that was posed.

- Ventilation maximization
 - Public-focused behaviour change supports
- Infection control
 - Screening
 - Quarantining of exposed or potentially exposed individuals
 - Testing
 - Isolation of suspected or confirmed cases
 - Contact tracing
- Indicators to monitor as reopening is being implemented
 - School outbreaks
 - Transmission among students
 - Transmission between students and school employees
 - Transmission to families at home
 - Rate of community adherence to public-health measures
 - Rate of community spread
 - Reported challenges implementing any of the measures above

We identified 18 evidence documents that provide highly relevant evidence in relation to one or more of the above categories, which include:

- one guideline developed using a robust process (e.g., GRADE);
- one full systematic review;
- eight rapid reviews;
- four guidelines developed using some type of evidence synthesis and/or expert opinion; and
- four primary studies with additional insights.

We outline in Table 1 the key findings from the highly relevant evidence documents. Of the 18 highly relevant documents included:

- six provided recommendations and/or evidence about indicators to monitor before reopening schools;
- eight provided recommendations and/or evidence about changes to the operation of schools;
- 10 provided recommendations and/or evidence about accompanying public-health measures related to infection prevention (n=8) and/or infection control (n=8); and
- eight provided recommendations and/or evidence about indicators to monitor as reopening is being implemented.

We summarize below the key findings from these evidence documents, grouped by the part of the framework (or element of the question) being addressed.

Key findings from evidence documents about indicators to monitor before reopening schools

The three guidelines (including the one developed using a robust process), one full systematic review and two rapid reviews that included information about this part of the framework all emphasize the importance of basing decisions on the local situation and current COVID-19 epidemiology, with school re-opening being recommended to take place only when community transmission is low. The [guideline that was developed using a robust process](#) by the World Health Organization also emphasized the need to consider the potential harms due to school closure, such as the potential for widening disparity in educational attainment. One [guideline](#) from the Scottish government also noted the importance of taking into account other indicators such as COVID-19 incidence and swab positivity for the entire

population and specifically for school-age children, as well as the proportion of cases among school workers, outbreaks in specific regions and in educational settings, and antibody prevalence among children and school workers.

Key findings from evidence documents related to the operation of schools

The five guidelines (including the one developed using a robust process), one full systematic review and two rapid reviews that provided information about the operation of schools all emphasize (to some extent) the need to adopt remote-learning arrangements, but several also identified important limitations with remote learning. For example, [a low-quality rapid review](#) that was focused on the Australian context found that remote-learning arrangements have the potential to result in poorer educational outcomes for almost half of Australian primary and secondary students if used for an extended period of time, and that combinations of face-to-face and remote learning may be as effective as only classroom learning for some students. Moreover, it noted that most at risk for poorer outcomes are those of low socio-economic status, with English as a second language, with special learning needs, and those in rural and remote areas. It also highlighted that Indigenous peoples were more likely to face challenges with remote learning given lack of internet service and device availability, reduced opportunities for interaction with Indigenous teacher assistants, and challenges in incorporating culturally appropriate teaching approaches into online resources. In addition, [a guideline from the Department of Education in the United Kingdom](#) highlighted the importance of online education support, along with efforts to enhance staff recruitment, deployment and training. Lastly, [a guideline from the American Academy of Pediatrics](#) highlighted the need to utilize outdoor spaces, support students with disabilities, and address the mental health needs of students and staff as part of the school reopening process.

Key findings from evidence documents about accompanying public-health measures

Each of the infection-prevention and infection-control measures that are included in the organizing framework were emphasized by more than one of the five guidelines (including the one developed using a robust process), the one full systematic review, one rapid review and three single studies, which underscores the need for a multifaceted approach to preventing COVID-19. For Canada, [the recent guideline released by the Public Health Agency of Canada](#) for school reopening recommends a layered approach to reduce the risk of COVID-19 in school, with core risk-mitigation measures including decreasing interactions with others and increasing the safety of interactions (e.g., through the use and promotion of personal preventive practices such as requiring the use of masks for children 10 years of age and older, and increased ventilation). It should be noted that the findings from some of the included documents provide differing recommendations about how to implement such measures, including different ages to require masks (although the challenges for young children to wear masks was consistently acknowledged), and whether masks need to be worn at all times or just in common spaces.

In addition, several of the single studies provide important insights about the implications of not implementing robust infection-prevention and infection-control measures. For example [a recent modelling study conducted in the United Kingdom](#) examined six scenarios that included the combination of two school reopening strategies (a full-time and a part-time rotation system with 50% of students attending school on alternate weeks) and three testing approaches (68% contact tracing with no scale-up in testing, 68% contact tracing with sufficient testing to avoid a second COVID-19 wave, and 40% contact tracing with sufficient testing to avoid a second COVID-19 wave). Based on these scenarios it found that prevention of a second wave of COVID-19 infections following the relaxation of physical distancing and reopening of schools must be paired with large-scale, population-wide testing of symptomatic individuals and effective contact tracing, followed by isolation of diagnosed individuals.

Another [modelling study from France](#) found similar results (including the need for large-scale tracing and testing) and indicated that opening schools will result in an increase in COVID-19 cases. It also predicted that the burden on the health system is manageable by opening only pre-schools and primary schools, and that a second wave of COVID-19 would be triggered if full attendance in secondary school is pursued.

A [recent study reporting on an environmental assessment conducted on the outbreak of COVID-19 cases following school reopening in Israel](#) provides additional insight about how implementation can affect outcomes. Specifically, it found that distancing and other personal protective measures among students and teachers was not possible due to crowded classes and an extreme heatwave that involved exemption from facemasks and continuous air conditioning. In contrast, results of a [study of pediatric COVID-19 admissions in Sweden](#) during two months of its open-school policy during the pandemic point to low incidence of severe illness due to COVID-19 among Swedish children, despite day-care centres and primary schools being open, which suggests that the Swedish strategy did not worsen the course of the pandemic for children in Sweden. However, the study did not assess the impact of the open-school strategy on societal transmission of COVID-19.

Key findings from evidence documents about indicators to monitor as reopening is being implemented

The eight documents related to indicators to monitor as reopening is being implemented included one full systematic review and seven rapid reviews. The documents all focused on transmission of COVID-19 among children and were all in agreement that it is rare that children are found to be the index case in an outbreak, and that children do not appear to be a major source of transmission for COVID-19. One [rapid review](#) found a linear relationship between age and likelihood of contracting and transmitting COVID-19, which may mean that the risk of transmission is relatively low among early elementary school children, but increases in later elementary school and in secondary school. Despite the positive findings from the reviews related to the likelihood of transmission, it should be noted that many of the studies included in the full systematic review and rapid reviews were conducted prior to children returning to schools and while stay-at-home orders were still in place. Additional research is needed to understand the extent to which returning to school increases the potential for transmission.

Key findings from the jurisdictional scan

We examined experiences with reopening schools in 12 countries, namely Australia, Israel, five European countries (Belgium, Finland, France, Germany and Sweden), New Zealand, Singapore, South Korea, Taiwan and the United States (with a focus on California, Georgia, Indiana, Minnesota and New York), as well as in all provinces and territories in Canada. We focused specifically on the unique or particularly innovative approaches that we identified.

From the countries examined, all have already opened some or all of their schools, except California and New York, which have plans to reopen in the next two weeks. We found relatively little information on the indicators that triggered the reopening of schools. However, in the cases of both Australia and New Zealand, schools reopened based on pre-defined rates of community transmission. Though approaches varied to school reopening as well as in the accompanying public-health measures used, there were similar themes that emerged from across countries including the prioritization of younger grades, and those in need of particular credits to move forward with post-secondary education. In addition to these common approaches, there were a number of particularly innovative solutions that build on those planned for in Ontario. These include:

- developing additional guidance for schools where large populations come from another territory (e.g., where there may be a higher community transmission of COVID-19);
- continuation of daycare/preschool and early primary school for children of parents who are essential workers or students requiring additional supports throughout the pandemic and any next waves;
- creating adaptable plans for future waves that may include students attending school, but not full-time or during typical school hours;
- allocating discretionary funds to schools for purchasing of equipment to enhance safety measures (e.g., hand sanitizing stations, PPE) or contracting additional personnel where needed;
- establishing a COVID-19 program coordinator who will serve as the point of coordination for the school;
- adding flexibility to the school day to allow for cohorting of students and staff for drop-off and pick-up times, as well as for lunch breaks and recesses at school to avoid mixing with other students;
- eating outdoors (with staggered times) or in classrooms to avoid the use of cafeterias or lunch rooms;
- moving lessons indoors (where possible) or in spaces with enhanced ventilation, and investing in new ventilation systems to enable this change;
- establishing designated routes of entry and exit for specific groups of students to avoid mixing;
- providing a mix of home- and campus-based education to allow for smaller class sizes;
- creating social-distancing measures for the maximum capacity in a room;
- rotation between online and in-person schooling;
- enhancing online and remote learning through packages of supports that focus on increasing access to devices and the internet (e.g., ordering laptops and mobile devices), providing students with hard-copy learning materials, and using local television stations to broadcast educational material;
- implementing exam-style seating where students are seated individually, staggered from one another and using privacy boards or screens between desks; and
- supporting parents of children who are unable to attend school by ensuring flexible working arrangements are available.

In Canada, Quebec has been the only province or territory to have allowed children to go back to school, and the rest of the provinces and territories have developed plans for returning to school in September. Nunavut and Alberta have both specified triggers for reopening and closing schools, which are both dependent on community virus-transmission rates and school transmission and outbreaks. Particularly innovative approaches from Canadian provinces and territories include:

- assigning primary students to a fixed classroom to act as their primary learning environment;
- focus curricula on the teaching of core subjects to students to allow for greater flexibility with attendance and in-person teaching;
- cohorting middle-school and secondary-school students who take the same core extracurricular subjects;
- reducing elementary class sizes to create a ‘bubble’ of students who are assigned to stay together (however, no details were provided on the number of students in a given bubble);
- making additional mental health and student supports available for all grades;
- standardized entrance and exit doors and increased use of emergency exits to reduce crowding;
- altering transportation measures for school buses including increasing the number of school buses, requiring masks, using seating plans and putting in place physical barriers; and
- disinfecting high-touch areas twice within a 24-hour period.

Additional details for those who want to know more are in Table 1 (key findings by type of evidence document), Table 2 (the type and number of all documents that were identified), Table 3 (for experiences from other countries), and Table 4 (for experiences from Canadian provinces and territories). In addition, we provide a detailed summary of our methods in Appendix 1, the full list of included evidence documents (including those deemed of medium and low relevance) in Appendix 2, abstracts for highly relevant documents in Appendix 3, and hyperlinks for documents excluded at the final stage of reviewing in Appendix 4.

In addition, we found 10 systematic reviews related to clinical outcomes among children, which are listed in Appendix 5. In general, the reviews found that although children can get COVID-19, it is rare to see severe symptoms or require hospitalization. The reviews further suggest that younger children tend to be infected less than adolescents and adults, however there remains some debate about this, particularly given that their experiencing mild or no symptoms may result in fewer tests having been conducted.

Table 1: Overview of key findings from highly relevant evidence documents focused on indicators and measures that contribute to the successful operation and ongoing monitoring of schools

Type of document	Key findings from highly relevant evidence documents
Guidelines developed using a robust process (e.g., GRADE)	<ul style="list-style-type: none"> • The following aspects should be considered for opening schools: current understanding about COVID-19 transmission and severity in children; local situation and epidemiology of COVID-19; school ability to maintain prevention and control measures; and potential harms due to school closure (e.g., widening disparity in educational attainment). • Recommended measures for reopening schools include: hand and respiratory hygiene; mask use; environmental cleaning; distancing; limiting crowding; staggering recesses/breaks; increasing the number of teachers; ventilation maximization; extending space; adapting classrooms; reducing class sizes; tele-schooling and distance learning; protecting and training school personnel; and supporting parents and students. • Daily screening for body temperature and history of fever should be considered on entry into the building for all staff, students and visitors, and those with symptoms and their close contacts should self-quarantine at home. <p>Source (World Health Organization; last updated 10 May 2020)</p>
Full systematic reviews	<ul style="list-style-type: none"> • Opening secondary schools is more likely to contribute to the spread of COVID-19 than elementary schools and should only be considered when community transmission is low and additional safeguards including smaller class sizes and efforts to avoid student mixing are in place. <p>Source (3/9 AMSTAR rating; literature last searched date not provided)</p>
Rapid reviews	<ul style="list-style-type: none"> • Though children do not appear to be a major source of transmission for COVID-19 within schools and daycares, adults working in schools and daycares who were infected resulted in significant community transmission when minimal infection-control procedures were in place. • There is a linear relationship between age and likelihood of contracting and transmitting COVID-19, but more research is needed to understand why this is the case. • Implementation of infection-control measures appear to be important in reducing spread, (including reduction in class sizes, physical distancing, rapid testing, masks and handwashing), but these have been variably implemented across jurisdictions. <p>Source (6/10 AMSTAR rating; literature last searched 11 August 2020)</p>

Type of document	Key findings from highly relevant evidence documents
	<ul style="list-style-type: none"> • Though research suggests that reopening of schools has had limited impact on the spread of COVID-19, outbreaks have been reported after schools and daycares reopen and should be taken into account as the evidence evolves and more jurisdictions begin to reopen . Source (0/11 AMSTAR rating; literature last searched 25 June 2020) • Children have rarely been found to be the index case in a household and appear to display a lower risk of being infected and lower attack rate, however additional evidence on transmission is quickly emerging. Source (5/9 AMSTAR rating; literature last searched 30 May 2020) • Studies of school transmission found that children were not a driver of COVID-19 transmission and that prevalence of COVID-19 antibodies in children younger than 15 years of age was lower than the general population in a Spanish study. Source (5/9 AMSTAR rating; literature last searched 28 May 2020) • The impact of schools reopening on COVID-19 transmission is not well understood, but the available recommendations emphasize enforcing social distancing (with age-appropriate adaptations), quarantining of exposed children, teaching children to adopt barrier gestures and ensuring that the preventive measures implemented in schools mirror those being asked of children in other settings (e.g., community and home) to avoid confusion and increase compliance. Source (3/11 AMSTAR rating; literature last searched 4 May 2020) • Remote-learning arrangements were found to have the potential to result in poorer educational outcomes for almost half of Australian primary and secondary students if continued for an extended period, but approaches that combine face-to-face and remote learning, may be as effective as classroom learning for many students. • Those most at risk for poorer learning outcomes include those of low socio-economic status, with English as a second language, with special learning needs and in rural and remote areas. • Access to digital technology and the internet, home-learning environment and the amount of family support available, and the readiness and capacity of teachers and students for online learning, can moderate these effects. • Indigenous peoples in Australia (Aboriginal and Torres Strait Islander students) were noted as being more likely to face challenges with remote learning due to lack of internet service and device availability, reduced opportunities for interaction with Indigenous teacher assistants, and because of challenges for incorporating culturally appropriate teaching approaches into online resources. Source (1/9 AMSTAR rating; literature last searched 1 May 2020) • Population and school-based studies found that children may be less frequently infected compared to adults, though there are some studies that show likely transmission by children, Source (4/11 AMSTAR rating; literature last search 30 April 2020) • Findings strongly suggest that children with COVID-19 experience milder symptoms than adults, but evidence across age groups is uncertain and deaths are rarely observed among children. • While children are known to be able to transmit COVID-19, there is no evidence that children are key drivers of transmission and, therefore, firm conclusions about the role that children play in transmission of COVID-19 can not be made. Source (4/9 AMSTAR rating; literature last searched 22 April)
Guidelines developed using some	<ul style="list-style-type: none"> • A layered approach to school reopening in Canada is recommended to reduce the risk of COVID-19 in school, with core risk-mitigation measures including decreasing interactions with others and increasing the safety of interactions (e.g., through the use and promotion of

Type of document	Key findings from highly relevant evidence documents
type of evidence synthesis and/or expert opinion	<p>personal preventive practices such as requiring the use of masks for children 10 years of age and older, and increased ventilation)</p> <ul style="list-style-type: none"> • The following eight groups of risk-mitigation strategies are provided, for which the use is recommended to be proportionate with the risk in the school and community: <ol style="list-style-type: none"> 1) prohibiting individuals who have symptoms of/or have had exposure (in last 14 days) to COVID-19 from entering the school; 2) promoting and facilitating personal preventive practices; 3) promoting physical distancing as much as possible (with the recognition that this is not always practical in child and youth settings); 4) creating physical barriers between children/youth, staff and volunteers; 5) increasing ventilation; 6) reducing risks from exposure to high-touch surfaces; 7) reducing risk for people at higher risk of severe illness; and 8) modifying practices to reduce how long people are in contact with each other and how many people come into contact with each other. <p>Source (Public Health Agency of Canada; last updated 10 August 2020)</p> <ul style="list-style-type: none"> • Reopening schools depends on several factors including decreased prevalence of COVID-19, low transmission rate among children and low risks to children of becoming severely ill. • Arrangements should be considered for reopening schools, including: online education support; staff recruitment, deployment and training; and support for students and staff. • Essential public-health measures for reopening schools include hand and respiratory hygiene, physical and temporal distancing, enhanced cleaning arrangements, and wearing appropriate personal protective equipment where necessary. • Students with symptoms or high exposure were recommended to quarantine at home and conduct the test (i.e., active engagement with NHS Test and Trace). <p>Source (Department for Education, UK; last updated 7 August 2020)</p> <ul style="list-style-type: none"> • Local authorities and schools should implement key public-health measures to minimize the risks of COVID-19 transmission and infection, including enhanced hygiene and cleaning, ensuring adequate levels of ventilation and increasing natural ventilation, and minimizing contact with others in the school. • Schools should also undertake contingency planning to determine the best and safest way to reopen while taking into consideration the rate of community transmission as well as indicators such as: overall incidence and swab positivity for Scotland; incidence and swab positivity for school-age children; number and proportion of all cases that are among school workers; hot spots by local authority area; number of clusters or outbreaks that are under investigation within educational settings; and, if feasible, antibody prevalence among children and school workers. <p>Source (Scottish Government; last updated 30 July 2020)</p> <ul style="list-style-type: none"> • Recommendations on school re-entry should include improving hand hygiene, wearing face coverings (for school staff and older students), physical distancing in time and space, changing classrooms, cleaning and disinfection, utilizing outdoor spaces, supporting students with disabilities, and addressing mental health needs of students and staff. • Temperature checks and symptom screening were recommended for reopening processes, and contact tracing was recommended for students or school staff with COVID-19 symptoms or known exposures. <p>Source (American Academy of Pediatrics; last updated 25 June 2020)</p>
Single studies that provide additional	<ul style="list-style-type: none"> • A modelling study was conducted in the United Kingdom, which describes contact networks stratified into household, school, workplace, and community layers along with demographic and epidemiological data.

Type of document	Key findings from highly relevant evidence documents
insight into how virtual care has been implemented during the COVID-19 pandemic	<ul style="list-style-type: none"> • Six scenarios were simulated that included the combination of two school reopening strategies (a full-time and a part-time rotation system with 50% of students attending school on alternate weeks) and three testing approaches (68% contact tracing with no scale-up in testing, 68% contact tracing with sufficient testing to avoid a second COVID-19 wave, and 40% contact tracing with sufficient testing to avoid a second COVID-19 wave). • Overall, the modelling found that prevention of a second wave of COVID-19 infections following the relaxation of physical distancing and reopening of schools must be paired with large-scale, population-wide testing of symptomatic individuals and effective contact tracing, followed by isolation of diagnosed individuals. <p>Source (published 3 August 2020)</p>
	<ul style="list-style-type: none"> • Following a major COVID-19 outbreak in a high school in Israel, an environmental inspection found that distancing and other personal protective measures among students and teachers was not possible due to: <ul style="list-style-type: none"> ○ crowded classes (35–38 students per class in spaces ranging from 39–49 square metres or 1.1–1.3 square metres per student, which is below the 1.5-square metre-standard); and ○ an extreme heatwave that involved exemption from facemasks and continuous air conditioning. <p>Source (published 23 July 2020)</p>
	<ul style="list-style-type: none"> • Results of a study of pediatric COVID-19 admissions in Sweden during two months of its open-school policy during the pandemic point to low incidence of severe illness due to COVID-19 among Swedish children despite daycare centres and primary schools being open, which suggests that the Swedish strategy did not worsen the course of the pandemic for children in Sweden. • However, the study did not assess the impact of the open-school strategy on societal transmission of COVID-19. <p>Source (published 21 June 2020)</p>
	<ul style="list-style-type: none"> • A modelling study from France found opening schools will result in an increase in COVID-19 cases, however it is predicted that the burden on the health system is manageable by opening only preschools and primary schools. • The study suggested that a second wave could be triggered if full attendance of adolescents in secondary school is pursued. • Reopening will require large-scale trace and testing in addition to moderate social distancing interventions. <p>Source (published 12 May2020)</p>

Table 2: Overview of type and number of documents that were identified

Type of document	Total	Indicators to monitor before reopening schools	Changes to the operation of schools	Accompanying public-health measures	Indicators to monitor as reopening is being implemented	Reported challenges implementing any of the measures
Guidelines developed using a robust process (e.g., GRADE)	3	1	2	3	0	
Full systematic reviews	7	3	1	3	1	2
Rapid reviews	15	4	2	4	5	2
Guidelines developed using some type of evidence synthesis and/or expert opinion	7	2	6	5	1	0
Protocols for reviews that are underway	2	1	0	1	0	0
Titles/questions for reviews that are being planned	0	0	0	0	0	0
Single studies in areas where no reviews were identified	16	0	4	6	8	0

Table 3: Experiences from other countries reopening schools

Country	Key findings related to reopening schools
Australia	<p>Education system</p> <ul style="list-style-type: none"> • Plans for the reopening of schools is specific to each of Australia’s territories (New South Wales; Queensland; South Australia; Tasmania; Victoria; Western Australia), with a range of different policies in place related to masking, physical distancing, and hygiene requirements. • Specific school precautions have been implemented for border schools and border students who cross a territory to attend school. • In April 2020, the Australian Health Protection Principle Committee issued advice on reducing the potential risk of COVID-19 transmission in schools which included principles related to physical distancing, hygiene, environmental cleaning, psychological well-being, and communication, including: <ul style="list-style-type: none"> ○ adapting activities that lead to mixing between classes and years by reducing after-school and inter-school activities; ○ add flexibility to the school day by staggering start and finish times, recesses and lunch breaks; ○ avoiding close proximity queuing by placing markers on the floor; ○ encouraging a 1.5-metre distance among all students; ○ where possible conduct lessons outdoors or in spaces with enhanced ventilation (e.g., some gymnasiums); ○ maintaining smaller classes; ○ providing a mix of home- and campus-based education and allowing for student work to be submitted electronically; ○ emphasizing enforcement of good handwashing with soap and water for 20 seconds or the use of hand sanitizer for younger grades for whom proper hand-washing may be more difficult to monitor; ○ no sharing of snacks or drinks; and ○ closing all communal water fountains. • The Government of Australia has also issued a number of preventive-tips documents for staying safe, including: <ul style="list-style-type: none"> ○ staying safe online during the COVID-19 pandemic; ○ keeping schools and learning safe online; and ○ online safety kit for parents and carers.
Israel	<p>Elementary school</p> <ul style="list-style-type: none"> • As of 9 July 2020, only children in kindergarten through the fourth grade will be able to attend schools. <p>Secondary school</p> <ul style="list-style-type: none"> • For children in grade five and above, the Minister of Health is required to make collaborative decisions with the Minister of Higher Education. <p>Education system</p> <ul style="list-style-type: none"> • Physical-distancing restrictions are in place to reduce interactions between groups of children.

	<p>Broader community</p> <ul style="list-style-type: none"> • Since the increases in COVID-19 cases, all students from classrooms related to outbreaks were screened and placed under quarantine when testing positive
Europe	
<ul style="list-style-type: none"> • Belgium 	<p>Daycare/preschool</p> <ul style="list-style-type: none"> • Daycare and preschools are back open and must adhere to local-cleaning protocols. • Though social distancing is difficult to enforce with young children, parents are asked to maintain distance when dropping off and picking up children. <p>Elementary school</p> <ul style="list-style-type: none"> • As of 18 May 2020, primary elementary schools are gradually reopening but are under the control of the relevant authorities (e.g., Flanders; Wallonia-Brussels Federation; and the German-speaking community). • School attendance is not mandatory for students of any grade. <p>Secondary school</p> <ul style="list-style-type: none"> • As of 18 May 2020, select secondary schools are reopening at the discretion of relevant authorities. <p>Education system</p> <ul style="list-style-type: none"> • All students over the age of 12 are obliged to wear a face mask or other fabric alternative in auditoriums and may only be removed for the time strictly necessary for the consumption of food and drink. • Strict distancing measures are in place at schools, however each federated entity is responsible for determining how this should be put into place. <p>Broader community</p> <ul style="list-style-type: none"> • Wearing of masks has been strongly recommended to cover the mouth and nose in public spaces where physical distancing is not possible, however it is compulsory on public transportation. • As of 29 of July individuals are only allowed to see five people outside of their household without a mask.
<ul style="list-style-type: none"> • Finland 	<p>Daycare/preschool</p> <ul style="list-style-type: none"> • Daycare and preschool facilities opened as of 14 May 2020, but are subject to indoor restrictions on gatherings. <p>Elementary school</p> <ul style="list-style-type: none"> • Classes for students in pre-primary and grades one to three continued throughout the pandemic for children of parents working in sectors critical to the functioning of society or pupils requiring additional supports. • Remainder of elementary schools opened as of May 14 but are subject to restrictions on gatherings. <p>Secondary school</p>

	<ul style="list-style-type: none"> • The government has recommended that secondary schools continue to use distance-teaching mechanisms. <p>Education system</p> <ul style="list-style-type: none"> • Physical distancing restrictions have been lifted on early childhood education and primary schools, however these restrictions are encouraged for staff of these institutions as well as parents during pick-up and drop-off. <p>Broader community</p> <ul style="list-style-type: none"> • The government has recommended the use of masks in high-risk situations such as public transport and other closed spaces, however it has not recommended their use for the general public. • Availability of hand sanitizer in public spaces (e.g., transportation hubs, parks) has been enhanced, which is accompanied with signs relaying information about hand hygiene and reminders of physical-distancing rules.
<ul style="list-style-type: none"> • France 	<p>Daycare/preschool</p> <ul style="list-style-type: none"> • Physical-distancing requirements (both indoor and outdoors) are not in place for students in the same cohort. • Students of different cohorts are to be physically distant and where possible avoid mixing. <p>Elementary school</p> <ul style="list-style-type: none"> • In the current third phase of deconfinement, which began on 22 June 2020, all students have been brought back to school. • Physical distancing of at least one metre is to be practised indoors whenever possible, and spaces are to be organized to maximize physical distancing. <ul style="list-style-type: none"> ○ To achieve this, alternative uses of space and outdoor teaching are being encouraged. • Students aged 11 and older must wear masks in the classroom. <p>Secondary school</p> <ul style="list-style-type: none"> • Physical distancing of at least one metre must be practised by all people in high school, both indoors and outdoors. <p>Education system</p> <ul style="list-style-type: none"> • The Ministry of National Education established an operational protocol for schools during the third phase of school opening which began on 22 June 2020, and key components of the protocol include: <ul style="list-style-type: none"> ○ handwashing; ○ mask wearing for staff and students (in some cases); ○ ventilation (frequently - at least every three hours and for at least 15 minutes at a time); ○ limiting mixing of student cohorts; ○ cleaning and disinfection; and ○ training, information, and communication. • The Ministry of National Education has established a pedagogical continuity plan in the case of a resurgence of cases. Two hypotheses are outlined and certain conditions to follow are outlined with suggestions for adaptation provided. The specific triggers for these scenarios were not identified.

	<ul style="list-style-type: none"> ○ The first hypothesis supposes localized active-virus circulation that would necessitate stricter health protocols (but not the closure of schools). In this case, students would still be required to attend school every week, but not necessarily full-time or during normal school hours. Tools and resources are identified to enable safer teaching and learning and to enable pedagogical continuity. ○ The second hypothesis supposes very active localized virus circulation that would necessitate the closure of schools. Tools and resources to support pedagogical continuity during distance learning are identified, as well as implementation considerations. ● During the second stage of deconfinement in May, when some schools and students returned to classrooms capped at 15 students, 70 cases of COVID-19 were linked to school reopenings within the first week and seven schools were closed because of cases. <p>Broader community</p> <ul style="list-style-type: none"> ● If a parent assumes guardianship of a child younger than 16 years of age, and the child's school is closed, the parent's employer must either allow teleworking or, if teleworking is impossible, the parent can obtain a leave.
<ul style="list-style-type: none"> ● Germany 	<p>Daycare/preschool</p> <ul style="list-style-type: none"> ● Daycares did not open at the same times as other schools, but emergency measures were put in place for the children of essential workers. <p>Secondary school</p> <ul style="list-style-type: none"> ● Students who are required to pass certain exams to proceed in their academic careers have been prioritized in the return to school. <p>Education system</p> <ul style="list-style-type: none"> ● German schools began reopening beginning 4 May 2020, initially prioritizing students leaving secondary schools and primary schools. <ul style="list-style-type: none"> ○ Daycares did not open at this time, but emergency childcare services were made available for those who had to go to work. ● Funds have been invested in digitization efforts to expand online learning options, support teachers, and mitigate against the loss of in-person learning. ● The specifics for reopening vary by state. Different combinations of physical-distancing requirements, mask-wearing requirements, extracurricular-activity policies, ventilation measures, cohorting, and other measures are in place across the country. ● In Hamburg, schools reopened on 28 July 2020 for full-day programs with requirements for cohorting, physical distancing (in some situations), face masks for students aged 10 at all times except for during instruction, and FFP-2 face masks (masks have a minimum of 94% filtration percentage and maximum 8% leakage to the inside) for teachers and staff. Furthermore, extracurricular activities were to be resumed with modification in place, and teachers, staff and students with health risks are exempted from attending in-person. Finally, school authorities ordered 39,000 laptops and mobile devices for home to facilitate distance learning.

	<ul style="list-style-type: none"> In Berlin, schools were set to open with mostly regular operation on 10 August 2020, including extracurricular and supplementary tutoring.
<ul style="list-style-type: none"> Sweden 	<p>Daycare/preschool</p> <ul style="list-style-type: none"> Daycares have been open throughout the pandemic. <p>Elementary school</p> <ul style="list-style-type: none"> Elementary schools have been open throughout the pandemic. <p>Secondary school</p> <ul style="list-style-type: none"> Secondary schools were initially urged to switch to distance learning at the beginning of the pandemic. On 14 June 2020 this recommendation was dropped, enabling a return to in-person learning. <p>Education system</p> <ul style="list-style-type: none"> At the beginning of the pandemic, high schools, vocational schools, and adult and higher educational institutions were urged to operate with distance learning. <p>Broader community</p> <ul style="list-style-type: none"> A study conducted by the Swedish Public Health Agency, comparing the experience in Sweden to Finland, found that schools remaining open did not contribute to increased infection rates in students or teachers.
New Zealand	<p>Secondary school</p> <ul style="list-style-type: none"> In the initial phases of recovery, distance learning remained in place longer for older students. <p>Education system</p> <ul style="list-style-type: none"> New Zealand linked educational delivery and operation to the country's COVID-19 alert level, which ranges from one (lower risk) to four (high risk). New Zealand closed schools at the outset of the pandemic (alert level four). A short exemption was made for the children of essential workers and learning was transitioned to being online. In mid-April as some restrictions were lifted (alert level three), daycares and schools up to year 10 reopened, but attendance was voluntary and distance learning was still encouraged. <ul style="list-style-type: none"> In schools that did reopen, cohorting and physical distancing were required. In mid-May more restrictions were lifted (alert level two) and all students and staff returned to schools (except those vulnerable to illness). Physical distancing was encouraged when possible, but not required. Some restrictions on gatherings and visitors were kept in place. When New Zealand returned to a level one alert, schools returned to normal operations with some increased hygiene measures. All students were required to attend except those needing to self-isolate. <ul style="list-style-type: none"> The government noted that attendance was slightly low even during alert level one and put certain supports in place to encourage attendance.

	<ul style="list-style-type: none"> To facilitate online learning, the government put in place a package of supports including increasing access to devices and internet, delivering hard-copy learning materials, funding two television stations to broadcast educational material, and online resources and supports for parents. <p>Broader community</p> <ul style="list-style-type: none"> The COVID-19 Response Legislation Bill passed in parliament gave the Minister of Education temporary powers over the opening, closure, operation, and management of all educational institutions in New Zealand.
Singapore	<p>Daycare/preschool</p> <ul style="list-style-type: none"> All preschool staff were tested once prior to preschools recommencing full services due to their close contact with students. The Early Childhood Development Agency implemented a COVID-safe preschools fund to support preschools in implementing and enhancing safety measures, such as installing hand sanitizing stations and purchasing personal protective equipment. <p>Education system</p> <ul style="list-style-type: none"> During the initial Circuit Breaker period, education shifted to home-based learning for all primary and secondary students, and daycares and preschools suspended their services. This period was scheduled from 8 April to 4 May 2020, but was extended to 1 June 2020. Supports were put in place for children of essential workers. From 2-26 June 2020 (phase one) students were on a weekly rotation, alternating between home-based learning and in-school learning. Students in graduating cohorts were given priority for the return to schools. Several safe management measures were implemented including physical distancing, daily temperature and visual screening, enhanced cleaning, mandatory mask wearing, and minimizing intermingling between classes. After 29 June 2020 (phase two), all students were welcomed back to school with several safe management measures in place. These measures include: daily temperature and visual screening of all staff and students; enhanced cleaning and hygiene; cohorting; safe distancing achieved through exam-style seating, spaced seating, and staggered movements; and mandatory mask wearing for staff and students (face shields are allowed if masks cannot be worn). Certain physical education and extracurricular activities are also allowed. If students or staff are in close contact with a confirmed case they are issued a 14-day leave of absence and schools are to be thoroughly cleaned. If there is a confirmed case in a school, in-person lessons are to be suspended for at least three days, and home-based learning can continue for around two weeks if a link between cases in a school is found.
South Korea	<p>Daycare/preschool</p> <ul style="list-style-type: none"> While elementary, middle, and secondary schools instituted online learning in early April, closure of kindergarten was extended without an online option. <p>Secondary school</p> <ul style="list-style-type: none"> High-school seniors were the first to return to classrooms. <p>Education system</p>

	<ul style="list-style-type: none"> • The normal spring break was extended several times due to the pandemic and learning eventually resumed with online classes beginning 9 April 2020. • In-person learning was gradually phased in starting on 20 May 2020 for secondary school seniors. All students were expected to be back in school by 8 June 2020. • Several safety measures were implemented for the return to in-person learning, including: <ul style="list-style-type: none"> ○ temperature checks; ○ plastic barriers between students; ○ mandatory mask wearing; and ○ using online surveys every morning to screen for symptoms. • The government stated they would close a school and switch to online learning if a student were to test positive for COVID-19. There was also an announcement that tests and epidemiological surveys would be conducted. <p>Broader community</p> <ul style="list-style-type: none"> • Several hundred schools were forced to close very soon after reopening due to outbreaks in the community that affected students. Furthermore, many schools postponed reopening due to community outbreaks.
Taiwan	<p>Education system</p> <ul style="list-style-type: none"> • In early February 2020, the start of the spring semester in Taiwan was delayed by two weeks, before there had been any community spread in Taiwan. • Upon the return to schools, parents were required to check their childrens' temperature(s) every morning and report it to the school. • Mandatory mask wearing was instituted at all times except when eating, when plastic barriers are used to separate students. • Students are also asked to disinfect their hands and shoes before entering school. <p>Broader community</p> <ul style="list-style-type: none"> • Restrictions and limits placed on buying face masks were modified to enable children returning to schools to have sufficient access to masks. • In March, when two students in a high school tested positive for COVID-19, the school was closed for a week. • In June, when 15 students in a class fell ill with certain symptoms associated with COVID-19, the whole class was initially suspended and disinfection was conducted in the school. When the results of four students' tests came back negative for COVID-19 the suspension was lifted.
United States	
California	<p>Daycare/preschool</p> <ul style="list-style-type: none"> • Children below the age of two are not required to wear face masks, but children older than two years of age are strongly recommended to wear masks. • Childcare workers are required to wear masks, gloves, and practice appropriate hand hygiene. • Childcare workers will also receive extensive training and PPEs to clean childcare facilities.

	<ul style="list-style-type: none"> • All staff and children are required to be screened for symptoms before entering childcare facilities. • Physical distancing during meal times and activities, as well as reducing group sizes is recommended to prevent transmission. <p>Elementary school</p> <ul style="list-style-type: none"> • Children between two years old and second grade are strongly encouraged to wear masks. • Children above grade two are required to wear masks. <p>Secondary school</p> <ul style="list-style-type: none"> • All secondary school students are required to wear masks in school, unless they are exempt due to medical needs. Schools are permitted to remove students from school property if they do not wear masks. <p>Education system</p> <ul style="list-style-type: none"> • Under the back-to-school guidelines published by the California Department of Public Health, schools are recommended to implement training for students/staff on how to wash hands, use PPE, identify symptoms of COVID-19 and follow other public-health orders. • All staff in schools are required to wear masks or, alternatively, face shields if working with children with specific developmental needs. Schools are responsible for providing telework options to staff who are immunocompromised or who are isolating. • Schools are recommended to implement daily symptom monitoring for staff and students upon arrival at schools. • Schools are also encouraged to upgrade air-ventilation systems and implement cleaning protocols for high-contact surfaces. Within the context of air ventilation, schools are recommended to leave windows open to enable greater air circulation. • Establishing designated routes of entry and exit, using outdoor spaces for classes, maximizing space between desks, using privacy boards or screens between desks, serving meals in classrooms rather than in cafeterias, and holding recess in separated areas are recommended strategies to maximize physical distancing.
Georgia	<p>Education system</p> <ul style="list-style-type: none"> • Georgia’s Department of Education and Department of Public Health have devised response protocols for three levels of response for the back-to-school season: temporary closure(s), enhanced mitigation measures, and preventive practices. School districts have been given the authority to close school buildings and transition to remote learning, as they see fit. • It is not mandatory for students and staff to wear masks, although, it is strongly recommended in settings where physical distancing is not possible. • School districts are encouraged to teach preventive practices to students and staff, such as handwashing and covering coughs. • Within the context of cleaning, it is recommended that staff clean the entire school before the start of the year and that high-contact surfaces be frequently disinfected throughout the year. • Ventilation systems must be updated and outdoor air circulation is encouraged. Water fountains are additionally recommended to be turned off and students are encouraged to bring their own bottles. • Physical-distancing practices, such as limiting large gatherings, restricting interactions between groups, distancing classroom desks, staggering pick-up/drop-offs, and controlling hallway traffic with signage, are recommended.

	<ul style="list-style-type: none"> • Students and staff are required to be screened with temperature checks before entering school buildings. • Students are given the option of attending school virtually or in person. Schools may also implement an alternating attendance schedule, where students rotate between online and in-person learning. • The State of Georgia has additionally published a District Decision Tree to help school and public-health leaders develop a response to cases of COVID-19 in schools. <p>Broader community</p> <ul style="list-style-type: none"> • On 11 August 2020, Cherokee County School District announced 59 positive COVID-19 cases among students and staff since the reopening of in-person classes. A total of 925 students and staff are currently under quarantine.
Indiana	<p>Daycare/preschool</p> <ul style="list-style-type: none"> • Guidance for daycares and preschools include: <ul style="list-style-type: none"> ○ Daily health assessments must be conducted for all employees and children before entering the premise. Screening methods include self-assessments, temperature checks, or completing screening questions upon arrival. ○ Childcare programs must stagger arrivals and pick-up times for families, as well as limit direct contact between parents and staff. Staggered timing for playgrounds and special activities are also recommended. ○ Childcare programs with young children are also recommended to create “units” of children and teachers who remain together for the entire day to limit exposure to COVID-19. ○ Classroom-based meal service, physical distancing during nap time, and maximization of space between desks are recommended to enable physical distancing. ○ Frequent cleaning of high-contact surfaces and items is required. <p>Elementary school</p> <ul style="list-style-type: none"> • Children above the age of eight are required to wear masks, unless they are exempt due to medical needs. Children below the age of eight are recommended to wear masks. <p>Education system</p> <ul style="list-style-type: none"> • Schools and school districts are given the authority to develop protocols for the back-to-school season in accordance with state guidelines. • Schools are encouraged to provide training for how to recognize the signs of COVID-19. Schools are recommended to implement self-screening protocols at a minimum. School-based screening may also be implemented, where students and staff undergo temperature checks and observational symptom screening. • It is recommended that all students and staff be required to wear face masks. • Schools are recommended to establish a designated COVID-19 space, where individuals who are feeling sick can wait for pick up. • Staggering class times, revising class sizes, developing groups of students and staff who stay together for the entire day, rearranging desks to maximize distance, limiting entry of visitors and restricting the sharing of items are recommended as strategies to decrease the transmission of COVID-19.

	<ul style="list-style-type: none"> • Schools are also required to develop special health plans for students or staff members with specific needs.
Minnesota	<p>Daycare/preschool</p> <ul style="list-style-type: none"> • Cohorting students and staff in childcare facilities is recommended to limit the risk of COVID-19 transmission. <p>Education system</p> <ul style="list-style-type: none"> • The Minnesota Department of Health recommends that schools develop back-to-school protocols for three scenarios: in-person learning for all students; a hybrid model with strict social distancing and capacity limits; and distance learning only. • Schools are required to establish a COVID-19 program coordinator who will serve as the point-of-coordination for the school. • Within the context of infection control, schools are required to provide floor and seat markings in all waiting and reception rooms. Students and staff are additionally required to maintain a physical distance of six feet. Non-essential staff, visitors and activities are also required to be cancelled. • Staff are required to monitor crowding and student flow through hallways. • Self-service and beverage distribution are also no longer allowed in school cafeterias. Students may only be given individually packaged food items or be served directly. • Schools are required to provide face masks to employees and students, although wearing face coverings remains optional for students (but strongly encouraged). Staff may also alternatively wear face shields to meet the needs of specific students. Individuals with medical needs or those below the age of five are exempt from wearing face coverings. • Schools are required to provide alternative learning arrangements or alternative work options for students and staff who identify as immunocompromised. Distance-learning options must also be offered to students who choose not to attend in-person classes. • Schools are required to include handwashing and sanitation breaks several times during the school day. Students and staff must be provided with the information and training to practise appropriate hygiene. School staff are additionally required to establish cleaning and disinfecting schedules, and to adhere to these strictly. • Schools are required to screen any individual entering the school for COVID-19 symptoms and to provide parents with information on how to monitor symptoms. Providing parents with text reminders to check for symptoms is a recommended avenue. • Within the context of transportation, students must maintain a distance of six feet and wear a face covering. All buses must be disinfected regularly. Buses must also limit occupancy to 50%. <p>Broader community</p> <ul style="list-style-type: none"> • Local school authorities are given the authority to decide whether to close down public school playgrounds.
New York	<p>Education system</p> <ul style="list-style-type: none"> • Schools and school boards are asked to develop back-to-school protocols in accordance with the New York State Education Department's recommendations. • Within the context of health and safety, schools are required to have daily screenings through temperature checks or questionnaires for students, bus drivers, school staff and visitors. Schools are additionally required to appoint a safety coordinator who is responsible for ensuring compliance to COVID-19 guidelines.

	<ul style="list-style-type: none">• Placing posters, signage and other information about COVID-19 in high-traffic public areas is recommended for schools to reinforce hygiene practices.• Distancing students by six feet in classrooms, staggering arrival/dismissal times, managing hallway traffic, restricting on-site staff to only those who are necessary, having lunch in classrooms, limiting large gatherings, and placing students in cohorts are recommended strategies for social distancing.• Students and staff are required to wear face masks when physical distancing is not possible. Students with specific medical needs or those below two years of age are not required to wear masks.• Within the context of contact tracing, schools are encouraged to keep accurate track of attendance and student schedules.• Schools are also required to develop frequent cleaning protocols for high-contact surfaces in schools and on school buses. It is suggested that the number of bathrooms available for students also be reduced in aims to ease frequent cleaning practices.• Schools are also recommended to improve existing ventilation and filtration systems, and keep windows open as much as possible to permit air flow. <p>Broader community</p> <ul style="list-style-type: none">• Schools are encouraged to reach out to the County or City Emergency Manager to secure PPEs for students and staff.
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Table 4: Canadian provinces' and territories' plans for reopening schools

Province/territory	Key findings related to reopening schools
British Columbia	<p>Elementary school</p> <ul style="list-style-type: none"> • Students will be assigned to a fixed classroom that will act as their primary learning environment. • A maximum of 60 students are permitted in a single learning group. <p>Middle school</p> <ul style="list-style-type: none"> • A maximum of 60 students are permitted in a single learning group. • Middle schools that typically operate under a one-classroom, one-teacher model will follow the elementary-school model. For middle schools in which students move between classes and are taught by different teachers, students and staff will be limited to learning groups. <p>Secondary school</p> <ul style="list-style-type: none"> • Students will be placed in “natural learning groups”, comprised of students who take the same core and extracurricular subjects. A maximum of 120 students are permitted in a single learning group. • Students may be required to complete coursework online if in-person learning is not possible. <p>Education system</p> <ul style="list-style-type: none"> • As per health and safety guidelines discussed under B.C.’s Back to School Plan for September 2020, students and staff are recommended to practise hand hygiene and wear masks, although masks remain optional. • Schools are encouraged to implement learning groups to limit transmission. Learning groups will be comprised of a single class of students or students with similar school schedules as well as a fixed set of teaching staff. • Students and staff are additionally recommended to maintain a distance of two metres from people outside their learning groups. Placing barriers between students, incorporating individual rather than group activities and staggering breaks/transition times are recommended strategies to facilitate physical distancing. Schools are additionally recommended to establish designated exits and entrances, as well as one-way hallways to manage the flow of traffic. • Within the context of cleaning, schools are mandated to disinfect high-contact surfaces two times during a 24-hour period. While students are discouraged from sharing personal items, schools are permitted to share books and other paper resources with students. • Caregivers and parents are encouraged to evaluate their child’s health for symptoms on a daily basis. School staff are also recommended to self-evaluate for symptoms daily. <p>Broader community</p> <p>Schools are exempt from Provincial Health Officer orders which restrict mass gatherings.</p>
Alberta	<p>Education system</p> <ul style="list-style-type: none"> • The Government of Alberta has designed three sets of guidelines for the 2020/2021 school year.

	<ul style="list-style-type: none"> • Under Scenario 1 guidelines, schools will resume in-person and with close-to-regular operations. • As per Scenario 1 guidelines, students in grades four through 12 are required to wear masks on buses and in areas of their school where physical distancing is not possible. Exemptions are made for students and staff with medical needs which do not permit them to wear masks. Students and staff are additionally mandated to sanitize their hands before entering schools or classrooms. • Students and staff are additionally recommended to be placed in ‘cohort’ groups which will remain together for the entirety of the day to reduce the risk of transmission. • Schools are also encouraged to reorganize classrooms such that all desks are placed two meters apart. • Staggering pick-up/drop-off times, creating one-way hallways, establishing designated exists/entrances, limited bathroom occupancy, removing seating in public areas, and staggering snack/lunch breaks are recommended ways to implement physical distancing in schools. • Self-serve or family-style meal service is restricted. Schools are instead permitted to provide students with pre-packaged food or food served by select staff. • Parents, students, visitors, and staff are mandated to self-screen on a daily basis using the Alberta Health Daily Checklist. • Scenario 2 guidelines are designed for the partial opening of schools, specifically for schools found to have positive cases during the school year. The plan involves the implementation of more stringent health measures in addition to those discussed in Scenario 1. • Scenario 3 guidelines are designed for online learning and the cancellation of in-person schooling.
Saskatchewan	<p>Education system</p> <ul style="list-style-type: none"> • Schools in Saskatchewan are mandated to create their own back-to-school plans and to have them reviewed by the Saskatchewan Education Response Planning Team. • All plans include safe transportation protocols which mandate assigned seating plans, physical distancing and advanced cleaning protocols on buses. • Plans additionally include protocols which control student movement through the school by establishing designated exists and entrances, staggering student breaks and class transition times, as well as placing direction signs and floor markings to control student traffic. • Schools are encouraged to hold classes outdoors, limit sharing of personal and school items between students, rearrange classrooms to enable physical distancing, and limit extracurricular activities (until Phase 4 of reopening). • Schools are mandated to provide alternative learning supports to immunocompromised students and to communicate this with their school district members.
Manitoba	<p>Education system</p> <ul style="list-style-type: none"> • While the Government of Manitoba aims to resume in-person classes in September 2020, independent schools and districts are recommended to develop plans for: 1) in-person classes with close-to-regular operations; 2) in-person classes with additional health measures; and 3) at-home learning with limited physical access to school grounds. • Schools are recommended to limit school visitors, manage hallway traffic, limit large school gatherings, and stagger students’ breaks, class times as well as pick-ups/drop-offs.

	<ul style="list-style-type: none"> • Schools are encouraged to place students and staff members into ‘cohorts’ that remain together for the entire day in order to limit exposure to COVID-19. • Under near-normal conditions, schools are expected to place a greater emphasis on required core subjects relative to electives. • Schools are encouraged to develop recovery learning plans to help students transition back into the classroom as well as to address knowledge gaps that may have arisen during school closures. • For school transportation, all students and bus drivers are expected to wear non-medical grade masks. Students are expected to follow a one student per seating rule (unless students belong to the same cohort).
Ontario	<p>Elementary schools</p> <ul style="list-style-type: none"> • Elementary and middle schools (grades seven and eight) will offer in-person educational delivery for all K-8 students. <ul style="list-style-type: none"> ○ This consists of in-person classes (five days per week), with a total of 300 minutes of instructional time each day. ○ Students will be placed in cohorts, such that they remain with their assigned classmates and teacher for the entire day. ○ Specialized teachers, however, will still be permitted to enter and teach curriculum-based material as needed (e.g. French teachers). ○ Additional support will be provided for students, though the restriction on student contacts will be approximately 50 individuals. ○ Grades three to six students will not have EQAO assessments. <p>Secondary schools</p> <ul style="list-style-type: none"> • Based on the designation of their respective school board, secondary schools will adopt one of two educational delivery models: 1) conventional in-person learning (non-designated); or 2) adapted in-person learning (designated). • Currently, 24 school boards in the province are scheduled to implement the adapted in-person learning model. <ul style="list-style-type: none"> ○ Designated schools will create groups of 15 students; cohorts attend in-person classes on staggering schedules and will have the remaining half of their learning delivered remotely. ○ Additional support for students with special education needs, such as specialized schools or programs with full-time in-person attendance will be considered and approved as needed. • Secondary schools are advised to create cohorted timetables that minimize student contacts: <ul style="list-style-type: none"> ○ Contacts are to be limited to 100 students over one-to-two weeks. ○ A student is restricted to either “cohorting” by grade or to two in-person cohorts. • Secondary schools may alter their operations by introducing a “quadmester model” or “study hall model”. <ul style="list-style-type: none"> ○ A “quadmester model” divides the school year into four, with students completing two credits in each of the four segments. ○ The “study hall model” allows for students to remain with a group of peers, while still partaking in a range of courses. <p>Education system</p> <ul style="list-style-type: none"> • On 13 August 2020, the Government of Ontario released a statement announcing that the province will be investing \$50 million to fund school ventilation, air quality, and HVAC systems. • On 30 July 2020, the Ministry of Education issued a document to help support the reopening of schools for the 2020-21 year.

	<ul style="list-style-type: none"> ○ Elementary and secondary school parents will be able to opt their child(ren) out of in-person classes, and re-integrate them at specific times in the year, as needed. ○ If opted out, all educational materials will be accessible digitally, alongside regular synchronous and asynchronous instruction from teachers. ● Numerous health and safety measures will be implemented during the school year, including: <ul style="list-style-type: none"> ○ mandatory self-screening for all staff and students; ○ requirements for face coverings in schools and buses for students in grades four through to 12, and recommended for kindergarten through grade three; ○ requirements for staff to wear masks (all personal protective equipment will be provided); ○ encouragement for physical distancing between all staff and students and modification of classrooms to maximize separation (i.e., reorganization or using other facilities); ○ a firm stay-at-home policy for those exhibiting COVID-19 symptoms; ○ increased record keeping, disinfecting, signage, respiratory etiquette, nurses, temporal distancing, physical guides, standardizing of entry and exit doors, and hand hygiene; and ○ provision and maintenance of an isolation room in the event of a suspected case. <p>Broader community</p> <ul style="list-style-type: none"> ● Residents are to practise physical distancing and are advised to wear face coverings amongst non-household members. ● Residents are encouraged to create social circles of up to 10 individuals (where no physical distancing is required).
Quebec	<p>Preschool, Elementary, and Secondary I, II, and III</p> <ul style="list-style-type: none"> ● Preschool, Elementary, and Secondary I, II and III students are all scheduled for in-class learning. <ul style="list-style-type: none"> ○ Students will be grouped through an established student-teacher ratio. Each cohort of students will remain in their respective classrooms for the entire instructional day. <p>Secondary IV and V</p> <ul style="list-style-type: none"> ● Secondary IV and V schools will be offering the following two educational delivery options. <ul style="list-style-type: none"> ○ Scenario 1: Students return to in-class learning in closed-cohort groups, similar to the primary level. ○ Scenario 2: If “cohorting” cannot be established, modifications will be made to accommodate for blended learning (mix of in-person and remote learning). <p>Education system</p> <ul style="list-style-type: none"> ● Physical-distancing measures (of two metres) between staff and students are to be maintained at all times. <ul style="list-style-type: none"> ○ An exception to this requirement is provided for preschool students and staff, where the school staff are only required to wear personal protective equipment. ● No physical distancing requirement between students in the same stable group, at all levels of education. <ul style="list-style-type: none"> ○ There is however, a one-metre distancing mandate between students of different stable groups as they navigate through the school.

	<ul style="list-style-type: none"> • Face coverings will not be mandatory for students from preschool up to and including grade four, however students are allowed to wear them in school and on transportation vehicles. • Grades five and six will be required to wear a face covering in common areas and in the presence of students from other stable groups, and when they use school transportation. • Increased monitoring of traffic flow in schools to minimize student contacts will be enforced. <p>Broader community</p> <ul style="list-style-type: none"> • Residents are to practise physical distancing (of two metres) and wear face coverings (aged 12 and above) in enclosed or partially enclosed public spaces. • Certain indoor and outdoor gatherings have been limited to 250 individuals.
New Brunswick	<p>Elementary and middle school</p> <ul style="list-style-type: none"> • Kindergarten to grade eight students will be attending full-time in-person school. • Kindergarten to grade eight students will be grouped into reduced class size “bubbles”. • Physical distancing is not mandatory between students of the same “bubble”. • Minimal interaction will occur between students of different “bubbles”. <p>Secondary school</p> <ul style="list-style-type: none"> • Students will engage in blended learning (in-person and remote instruction), with in-school attendance every second day. • Physical-distancing measures include one metre inside classrooms and two metres outside the classroom. • Additional facilities and outdoor spaces may be used to accommodate distancing measures as needed. <p>Education system</p> <ul style="list-style-type: none"> • On 13 August 2020, the Government of New Brunswick released their Return to School: Guide for Parents and the Public, outlining a detailed plan for the upcoming year. • The mandate for face coverings varies by grade level: <ul style="list-style-type: none"> ○ in common areas and school buses, masks are required for grades six to 12 students (classrooms are exempted); ○ masks are recommended to be worn by K-5 students in common areas of the school; ○ within classroom settings, face coverings for K-8 staff are optional, and ○ secondary-school staff are required to have a face mask when physical-distancing measures cannot be followed. • Alterations to school-bus operations: seating arrangements will be modified; physical barriers are to be implemented between bus staff and students; and face coverings to be worn by certain parties when physical-distancing measures cannot be followed. • Daily screenings and appropriate hand hygiene will be reinforced. • Enhanced cleaning measures will be in effect (e.g., increased sanitary stations and disinfecting of “high touch” areas). • Infection-control measures, such as contact tracing are in place to limit the spread of any potential outbreak. <p>Broader community</p>

	<ul style="list-style-type: none"> Residents must practise physical distancing (of two metres) between non-household or “non-social bubble” members. Residents must wear face coverings when distancing measures cannot be practised.
Nova Scotia	<p>Elementary and Secondary schools:</p> <ul style="list-style-type: none"> Three response plans have been developed to help guide school operations for the 2020-21 school year. <ul style="list-style-type: none"> Full reopening: Complete resumption of in-school learning for all students and students will be grouped into separate cohorts. Partial reopening: Primary to grade eight students will resume in-person learning with reduced class sizes, while grades nine through to 12 will receive both in-person and remote learning. Distance learning: Remote educational delivery for all students through synchronous and asynchronous means. Additional support for students will continue to be provided in all recovery plans (e.g., SchoolsPlus, well-being check-ins, laptops, counsellors, psychologists, speech pathologists, and addition of specialized teachers). Classrooms may be modified or reorganized to help implement the accompanying public-health measures. Confirmed COVID-19 cases within schools will serve as an indicator for Public Health to initiate any contingency plans (e.g., closing of schools, if needed). <p>Education system</p> <ul style="list-style-type: none"> Secondary school students must adhere to the physical distancing regulation (of two metres). Students at all education levels will be grouped into cohorts to minimize student contacts. Increased signage and staggering of breaks will be implemented to manage traffic flow. Daily screenings, hand hygiene, and respiratory etiquette must be practised by all staff and students. All school-bus staff and students must wear face coverings. Large school gatherings will not be permitted. Enhanced cleaning and disinfection protocols will be in effect, with an emphasis placed on disinfecting high-touch areas. Face coverings are to be worn when physical distancing cannot be practised (e.g., in common areas of schools). <p>Broader community</p> <ul style="list-style-type: none"> Physical distancing measures of (two metres) must be maintained with non-household or non-social circle members. Indoor and outdoor gatherings are limited to 50 individuals. Face coverings are mandatory in the majority of public places in the province.
Prince Edward Island	<p>Education system</p> <ul style="list-style-type: none"> The province has requested school boards to prepare individualized operational plans based on the guidelines provided. School plans will aim to accommodate for: 1) in-class learning with appropriate health measures; 2) in-class learning with additional health measures; 3) remote learning with limited access to schools; and 4) remote learning with no access to schools. Modification to classroom configurations are advised to facilitate distancing of students. Student Well-Being Teams will be offered in all schools to help support and assist students, while additional resources will continue to be provided as needed (e.g., education assistants).

	<ul style="list-style-type: none"> • The following additional safety measures are to be implemented in all school facilities: <ul style="list-style-type: none"> ○ enhanced cleaning and disinfecting of “high touch” surfaces; ○ cohorting of students to minimize student contacts; ○ daily screening for all staff and students; ○ managing traffic flow with increased signage; and ○ stay-at-home policy when COVID-19 symptoms are present. • Face coverings are optional for students in K-6, and strongly recommended for all levels of staff and grades seven to 12 students when physical distancing cannot be followed. • Infection-control measures, such as temporal distancing and contact tracing, will be enforced. • Appropriate hand hygiene must be performed by all parties. <p>Broader community</p> <ul style="list-style-type: none"> • Residents are to practice physical distancing and wear face coverings when distancing cannot be achieved.
Newfoundland and Labrador	<p>Education system</p> <ul style="list-style-type: none"> • On 6 July 2020, the Government of Newfoundland and Labrador issued their K-12 Education Re-entry Plan, which outlines the province’s approach to reopening schools. • Scenario 1 consists of conventional, in-person classes for all students, though virtual learning must still be in place for those unable to attend; this stage is based on low community transmission of the virus. • Scenario 2 consists of a combination of remote and in-person learning; this stage is based on low to moderate risk of virus transmission. <ul style="list-style-type: none"> ○ In-person classes for primary-school students and students with special-education needs will be prioritized. ○ School boards may group students into cohorts that attend in-person classes on staggering schedules. • Scenario 3 consists of remote learning for all levels, and this stage is initiated when moderate to high risk of transmission is present in the community. • Additional mental health support and student services will be made available for all parties. • On 6 July 2020, the Government of Newfoundland and Labrador announced a \$20 million investment for the purchasing and distribution of devices (e.g., laptops and Chromebooks) for all staff and students in in the education system. • Reorganization of classrooms for maximum separation is recommended when physical distancing cannot be accommodated for. <ul style="list-style-type: none"> ○ Physical distancing measures are to be enforced if there is a reported spike of COVID-19 cases in the community. • Cohorting of students will be implemented to: 1) support contact tracing; and 2) limit student and staff contacts. <ul style="list-style-type: none"> ○ If possible, it is encouraged that students are grouped by class. • Students must adhere to appropriate hand hygiene and respiratory etiquette practice. • If physical distancing measures are respected, masks are not required for school staff and students. • Daily screenings for COVID-19 symptoms and exposure must be completed by all staff, students and guardians. <ul style="list-style-type: none"> ○ Stay-at-home policy for those exhibiting COVID-19 symptoms will be in effect.

	<ul style="list-style-type: none"> ● All school facilities will adopt enhanced cleaning and disinfecting procedures, alongside physical guides to manage traffic flow in common school areas. ● Several transportation measures will be considered, such as increased record keeping, seating plans, and physical barriers between bus staff and students. ● Infection-control measures, such as contact tracing, and isolating of suspected or confirmed cases, will be enforced. <p>Broader community</p> <ul style="list-style-type: none"> ● The province is currently in the “Alert Level 2” stage for public-health measures, which includes increasing the gathering capacity to 50 people (with physical distancing measures). ● Public-health measures for all alert levels include physical distancing among non-household and non-social bubble members, and using face coverings when physical distancing is not possible.
Yukon	<p>Education system</p> <ul style="list-style-type: none"> ● For the 2020-21 school year, the following students are to return to the conventional full-time (five days per week) in-class learning: <ul style="list-style-type: none"> ○ all students in rural communities; and ○ all students up to grade nine in the Whitehorse district. ● Students in grades 10-12 will be scheduled to return to schools offering a combination of in-class (half-day) and remote learning (half-day), on a full-time basis, five days per week. ● Kindergarten to grade three students will receive direct, in-person learning and instruction from teachers, while students in grades four to nine will learn through both teacher instruction and in-class technology-based activities. ● Digital tools to be utilized amongst staff and students include: 1) Moodle; 2) Microsoft 365 programs (e.g., MS Teams); 3) Google Classroom; and 4) FreshGrade. ● Supplemental resource programs will continue to be offered to students requiring additional support. ● All precautionary health and safety measures implemented in schools must adhere to the Guidelines for K-12 school settings. <ul style="list-style-type: none"> ○ Stay-at-home policy for those staff and students exhibiting COVID-19 symptoms. ○ Face coverings (i.e., masks) are not mandatory for staff and students in schools. ○ All parties must practise appropriate hand hygiene and respiratory etiquette. ○ Enhanced cleaning in all facilities will be in effect with an emphasis on disinfecting high-touch areas, such as washrooms, desks and computers. ○ Staff and students are to physically distance in schools, which may be facilitated by the reorganization of classrooms, grouping of students, and supervision of common areas. ○ Some exceptions to physical distancing may be approved (e.g, working with students with special needs, students from within the same household, etc.). ○ Additional safety measures are to be implemented in school buses, which may include limiting the number of students per seat, altering loading and off-loading protocols and a two-metre distance between students and bus drivers.

	<p>Broader community</p> <ul style="list-style-type: none"> • As of 1 August 2020, Yukon entered Phase 3 of their recovery plan; <ul style="list-style-type: none"> ○ Social bubbles (with no physical distancing measures) have been expanded to include up to 15 individuals. ○ Social gatherings (with physical distancing) are permitted for up to 50 people outdoors and 10 people indoors. ○ Planned, seated event gatherings (with physical-distancing measures) are permitted for up to 50 people indoors and 100 people outdoors. ○ Face coverings must be worn in all airport facilities, and residents may be asked to wear masks upon entering certain businesses or healthcare facilities.
Northwest Territories	<p>Elementary school:</p> <ul style="list-style-type: none"> • Kindergarten to grade six students are scheduled to return to traditional in-class learning on a full-time basis. <p>Middle school:</p> <ul style="list-style-type: none"> • Students in grades seven, eight and nine will return to full-time in-class learning, or blended learning when needed. <p>Secondary school:</p> <ul style="list-style-type: none"> • Students in grades 10-12 will return to full-time in-class learning, or blended learning when needed. <p>Education system</p> <ul style="list-style-type: none"> • Delivery of education for the 2020-21 school year will vary between schools and communities, and each school will need their operational plan approved by the Office of the Chief Public Health Officer. <ul style="list-style-type: none"> ○ Certain schools may require alternative learning spaces or cohorting of students to accommodate for accompanying public-health measures. ○ Blended learning consists of a mix of in-school and remote learning (at home or on land outside), each of which will be completed on a part-time basis. ○ Additional support will be offered to students (e.g., supplemental communication and instruction for those unable to attend in-person classes, as well as counselling and mental health programs). • In the case of an outbreak, where educational facilities must be closed, full-time distance learning will be implemented through: 1) remote learning; 2) follow-up via asynchronous communication; and 3) paper-based learning packages. • The extent to which physical-distancing measures are implemented vary by grade. <ul style="list-style-type: none"> ○ Kindergarten to grade six students are not mandated to physically distance in the classroom. However, students will be expected to maintain at least one to two metres of separation in common areas within the school. ○ Students in grades seven, eight and nine must maintain a one-metre separation among fellow peers, and a two-metre distance with staff. ○ Students in grades 10-12 must adhere to the two-metre physical-distancing guideline between all staff and students. • Modifications will be made at all levels to monitor gatherings, classroom configurations, traffic flow (i.e., staggering of breaks), and school facilities (e.g., implementing standardized entrance and exit doors, sanitation stations, signage, markings, and barriers). • Enhanced hand hygiene and cleaning of all school facilities will be enforced.

	<ul style="list-style-type: none"> • Face coverings are to be worn where appropriate physical-distancing measures cannot be followed (e.g., in hallways and on buses). • Several infection control measures are set to be implemented in schools (e.g., daily screening of all parties, contact tracing, and immediate isolation of any confirmed cases). <p>Broader community</p> <ul style="list-style-type: none"> • As of 12 June 2020, the province has been in the “Relaxing Phase 2” stage; some measures include: <ul style="list-style-type: none"> ○ limiting household visits to five additional guests (some exceptions may apply); and ○ where appropriate, hand hygiene and physical distancing of two metres are implemented, and indoor gatherings of up to 25 and outdoor events of up to 50 people are permitted.
Nunavut	<p>Education system</p> <ul style="list-style-type: none"> • On 24 July 2020, the Government of Nunavut released their 2020-21 Opening Plan for Nunavut Schools: Health and Safety, which includes a four-stage approach to help manage school operations in each community. • Depending on the stage, schools will operate accordingly. <ul style="list-style-type: none"> ○ Stage 1: Occurs when there are no confirmed cases or exposure to the virus, and all students will attend in-person classes on a full-time basis (five days per week). ○ Stage 2: Occurs when there are no confirmed cases, but there is potential exposure to community members, and all elementary students will attend in-person classes five days per week, while middle- and secondary-school students will receive a combination of in-person (two-to-three days per week) and remote learning. ○ Stage 3: Occurs when the community is in recovery and virus transmission is no longer reported, and all schools will operate on a part-time basis, with supplemental remote learning (i.e., elementary schools will remain open three days per week, while middle and secondary schools are to be open only twice a week). ○ Stage 4: Occurs when active cases are present in the community, and students at all levels will engage in remote learning. ○ All staff are to regularly check-in with students and provide supplemental learning packages as needed during blended learning. • As per the territory’s guide, several health and safety measures are to be implemented upon the reopening of schools, which will include all educational facilities reinforcing enhanced cleaning and disinfection measures, and in: <ul style="list-style-type: none"> ○ stage 1, physical contact between staff and students is to be minimized as much as possible (e.g., limiting activities and gatherings); and ○ stages 2-3, physical-distancing regulations are to be mandated, and contact tracing will help ensure any identified contacts stay isolated. • Face coverings are not expected to be worn by students 13 years of age or younger, though masks for students over 13 may be mandatory under specific situations. Note that some exceptions may apply. • If staff are unable to appropriately distance themselves, they may wear masks as needed. <p>Broader community</p> <ul style="list-style-type: none"> • Residents are expected to adhere to public health guidelines including:

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| | <ul style="list-style-type: none">○ practising physical distancing with non-household members and using face coverings when distancing may not be possible;○ performing appropriate hand hygiene and respiratory etiquette; and○ enforcing a stay-at-home policy if experiencing COVID-19 symptoms. <ul style="list-style-type: none">● Capacity limit on gatherings is 10 for indoor events and 50 for outdoor events. |
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Wilson MG, Waddell K, Moat KA, Wang Q, Ahmad A, Alam S, Bhuiya A, Sharma K, Lavis JN. COVID-19 rapid evidence profile #17: What evidence could support modelling scenarios related to the reopening, operation and monitoring of schools? Hamilton: McMaster Health Forum, 17 August 2020.

The McMaster Health Forum is one of the three co-leads of RISE, which is supported by a grant from the Ontario Ministry of Health to the McMaster Health Forum. To help Ontario Health Team partners and other health- and social-system leaders as they respond to unprecedented challenges related to the COVID-19 pandemic, the Forum is preparing rapid evidence responses like this one. The opinions, results, and conclusions are those of the McMaster Health Forum and are independent of the ministry. No endorsement by the ministry is intended or should be inferred.

The authors declare that they have no professional or commercial interests relevant to the rapid evidence profile. The funders played no role in the identification, selection, assessment, synthesis, or presentation of the research evidence or experiences profiled in the rapid evidence profile.

Appendix 1: Methodological details

We use a standard protocol for preparing each rapid evidence profile (REP) to ensure that our approach to identifying research evidence, as well as experiences from other countries and from Canadian provinces and territories, are as systematic and transparent as possible in the time we were given to prepare the profile.

Identifying research evidence

For each REP, we search our continually updated [guide to key COVID-19 evidence sources](#) for:

- 1) guidelines developed using a robust process (e.g., GRADE);
- 2) full systematic reviews;
- 3) rapid reviews;
- 4) guidelines developed using some type of evidence synthesis and/or expert opinion;
- 5) protocols for reviews or rapid reviews that are underway;
- 6) titles/questions for reviews that are being planned; and
- 7) single studies (when no guidelines, systematic reviews or rapid reviews are identified).

Each source for these documents is assigned to one team member who conducts hand searches (when a source contains a smaller number of documents) or keyword searches to identify potentially relevant documents. A final inclusion assessment is performed both by the person who did the initial screening and the lead author of the rapid evidence profile, with disagreements resolved by consensus or with the input of a third reviewer on the team. The team uses a dedicated virtual channel to discuss and iteratively refine inclusion/exclusion criteria throughout the process, which provides a running list of considerations that all members can consult during the first stages of assessment.

During this process we include published, pre-print and grey literature. We do not exclude documents based on the language of a document. However, we are not able to extract key findings from documents that are written in languages other than Chinese, English, French and Spanish. We provide any documents that do not have content available in these languages in an appendix containing documents excluded at the final stages of reviewing.

Identifying experiences from other countries and from Canadian provinces and territories

For each rapid evidence profile we collectively decide on what countries to examine based on the question posed. For other countries we search relevant sources included in our continually updated guide to key COVID-19 evidence sources. These sources include government-response trackers that document national responses to the pandemic. In addition, we conduct searches of relevant government and ministry websites. In Canada, we search websites from relevant federal and provincial governments, ministries and agencies (e.g., Public Health Agency of Canada).

While we do not exclude countries based on language, where information is not available through the government-response trackers, we are unable to extract information about countries that do not use English, Chinese, French or Spanish as an official language.

Assessing relevance and quality of evidence

We assess the relevance of each included evidence document as being of high, moderate or low relevance to the question and to COVID-19. We then use a colour gradient to reflect high (darkest blue) to low (lightest blue) relevance.

Two reviewers independently appraise the methodological quality of systematic reviews and rapid reviews that are deemed to be highly relevant. Disagreements are resolved by consensus with a third reviewer if needed. AMSTAR rates overall methodological quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. High-quality reviews are those with scores of eight or higher out of a possible 11, medium-quality reviews are those with scores between four and seven, and low-quality reviews are those with scores less than four. It is important to note that the AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to systematic reviews pertaining to health-system arrangements or to economic and social responses to COVID-19. Where the denominator is not 11, an aspect of the tool was considered not relevant by the raters. In comparing ratings, it is therefore important to keep both parts of the score (i.e., the numerator and denominator) in mind. For example, a review that scores 8/8 is generally of comparable quality to a review scoring 11/11; both ratings are considered 'high scores.' A high score signals that readers of the review can have a high level of confidence in its findings. A low score, on the other hand, does not mean that the review should be discarded, merely that less confidence can be placed in its findings and that the review needs to be examined closely to identify its limitations. (Lewin S, Oxman AD, Lavis JN, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP): 8. Deciding how much confidence to place in a systematic review. *Health Research Policy and Systems* 2009; 7 (Suppl1):S8.

Preparing the profile

Each included document is hyperlinked to its original source to facilitate easy retrieval. For all included guidelines, systematic reviews, rapid reviews and single studies (when included), we prepare declarative headings that provide a brief summary of the key findings and act as the text in the hyperlink. Protocols and titles/questions have their titles hyperlinked given that findings are not yet available. We then draft a brief summary that highlights the total number of different types of highly relevant documents identified (organized by document), as well as their key findings, date of last search (or date last updated or published), and methodological quality.

Appendix 2: Evidence documents that address the question, organized by document type and sorted by relevance to the question and COVID-19

Type of document	Relevance to question	Focus	Recency or status
Guidelines developed using a robust process (e.g., GRADE)	<ul style="list-style-type: none"> • Indicators to monitor before reopening schools <ul style="list-style-type: none"> ○ Rate of community spread ○ Other • Changes to the operation of schools <ul style="list-style-type: none"> ○ Online instruction (whole or partial) ○ Student supports ○ Instructor supports ○ Staffing ratios ○ Classroom changes (e.g., limiting number of students; increasing distance between students) ○ Facility changes (e.g., expanding classroom size by using additional facilities; providing class outside) • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Washing hands ▪ Wearing masks ▪ Disinfecting surfaces and facilities ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) ▪ Temporal distancing (e.g., holiday staggering, time-of-day staggering) ▪ Ventilation maximization ○ Infection control <ul style="list-style-type: none"> ▪ Screening ▪ Quarantining of exposed or potentially exposed individuals ▪ Isolation of suspected or confirmed cases 	<ul style="list-style-type: none"> • The following aspects should be considered for opening schools: current understanding about COVID-19 transmission and severity in children; local situation and epidemiology of COVID-19; school ability to maintain prevention and control measures; and potential harms due to school closure (e.g., widening disparity in educational attainment). • Recommended measures for reopening schools include: hand and respiratory hygiene; mask use; environmental cleaning; distancing; limiting crowding; staggering recesses/breaks; increasing the number of teachers; ventilation maximization; extending space; adapting classrooms; reducing class sizes; tele-schooling and distance learning; protecting and training school personnel; and supporting parents and students. • Daily screening for body temperature and history of fever should be considered on entry into the building for all staff, students and visitors, and those with symptoms and their close contacts should self-quarantine at home. Source (World Health Organization) 	Last updated 10 May 2020
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school 	<ul style="list-style-type: none"> • Recommendations for schools should include hand hygiene, environmental cleaning, physical and temporal distancing, increasing ventilation, 	Last updated 10 March 2020

	<ul style="list-style-type: none"> ○ Secondary school ● Changes to the operation of schools <ul style="list-style-type: none"> ○ Online instruction (whole or partial) ○ Student supports ○ Instructor supports ● Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Washing hands ▪ Disinfecting surfaces and facilities ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) ▪ Temporal distancing (e.g., holiday staggering, time of day staggering) ▪ Ventilation maximization 	<p>implementing online education, addressing mental health or psychosocial support needs for students and staff, supporting vulnerable populations (e.g., children with disabilities), promoting information sharing, and developing school contingency plans.</p> <p>Source (United Nations Children's Fund, International Federation of the Red Cross and Red Crescent Societies, World Health Organization)</p>	
	<ul style="list-style-type: none"> ● Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection control <ul style="list-style-type: none"> ▪ Testing 	<ul style="list-style-type: none"> ● Serologic tests should not be used to make decisions about the grouping of persons residing in or being admitted to congregate settings (e.g., schools, dormitories), <p>Source (National Institutes of Health, United States)</p>	Last updated 17 July 2020
Full systematic reviews	<ul style="list-style-type: none"> ● School level <ul style="list-style-type: none"> ○ Elementary schools ○ Secondary schools ● Indicators to monitor before reopening schools <ul style="list-style-type: none"> ○ Rate of community spread ● Changes to the operation of schools <ul style="list-style-type: none"> ○ Classroom changes (e.g., limiting the number of students; increasing distance between students) ● Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) 	<ul style="list-style-type: none"> ● Opening secondary schools is more likely to contribute to the spread of COVID-19 than elementary schools, and should only be considered when community transmission is low and additional safeguards including smaller class sizes and efforts to avoid student mixing are in place. <p>Source (3/9 AMSTAR rating)</p>	Published 17 July 2020
	<ul style="list-style-type: none"> ● Indicators to monitor before reopening schools <ul style="list-style-type: none"> ○ Rate of community spread ○ Other 	<ul style="list-style-type: none"> ● Preliminary evidence has found that children have lower susceptibility to COVID-19, but weaker evidence suggest that they play a lesser role in transmission at a population level. 	16 May 2020

		Source	
	<ul style="list-style-type: none"> • Indicators to monitor before reopening schools <ul style="list-style-type: none"> ○ Rate of community spread ○ Other 	<ul style="list-style-type: none"> • Household transmission studies showed that children are rarely the index case and seldom the cause of outbreaks. 	Literature last searched 11 May 2020
	<ul style="list-style-type: none"> • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection control <ul style="list-style-type: none"> ▪ Quarantining of exposed or potentially exposed individuals ▪ Isolation of suspected or confirmed cases • Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ Reported challenges implementing any of the measures above 	<ul style="list-style-type: none"> • Studies conducted prior to COVID-19 suggest that quarantine can result in children experiencing isolation, social exclusion, stigma and fear. • Three studies conducted during COVID-19 reported restlessness, irritability, anxiety, clinginess and inattention with increased screen time from children in isolation. 	Published July 2020
	<ul style="list-style-type: none"> • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Physical distancing 	<ul style="list-style-type: none"> • Evidence from COVID-19 on the impact of school closures is limited, however policymakers should consider options to ensure social-distancing measures. 	Literature last searched 19 March 2020
	<ul style="list-style-type: none"> • Accompanying public healthmeasures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Ventilation maximization 	<ul style="list-style-type: none"> • Studies conducted prior to COVID-19 found that ensuring proper ventilation in schools can help to reduce illness transmission. 	Literature last searched 2007
	<ul style="list-style-type: none"> • Indicators to monitor throughout reopening schools <ul style="list-style-type: none"> ○ Rate of community spread 	<ul style="list-style-type: none"> • A review of clinical and transmission characteristics in China included studies with 406 children and found that as compared to adults, children have more asymptomatic COVID-19 infections, milder symptoms, faster recovery, and a better prognosis. 	Literature last searched 23 April 2020
Rapid reviews	<ul style="list-style-type: none"> • Indicators to monitor before reopening schools <ul style="list-style-type: none"> ○ Rate of community spread ○ Other 	<ul style="list-style-type: none"> • Children have rarely been found to be the index case in a household and appear to display a lower risk of being infected and lower attack rate, however additional evidence on transmission is quickly emerging. 	Literature last searched 30 May 2020

<ul style="list-style-type: none"> • Indicators to monitor before reopening schools <ul style="list-style-type: none"> ○ Rate of community spread ○ Other 	<ul style="list-style-type: none"> • Population and school-based studies found that children may be less frequently infected compared to adults, though there are some studies that show likely transmission by children. Source (4/9 AMSTAR rating) 	<p>Literature last searched 30 April 2020</p>
<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school • Changes to the operation of schools <ul style="list-style-type: none"> ○ Classroom changes (e.g., limiting number of students; increasing distance between students) • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Washing hands ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) ▪ Public-focused behaviour change supports ○ Infection control <ul style="list-style-type: none"> ▪ Quarantining of exposed or potentially exposed individuals • Indicators to monitor throughout reopening schools <ul style="list-style-type: none"> ○ Reported challenges implementing any of the measures above 	<ul style="list-style-type: none"> • The impact of schools reopening on COVID-19 transmission is not well understood, but the available recommendations emphasize enforcing social distancing (with age-appropriate adaptations), quarantining of exposed children, teaching children to adopt barrier gestures, and ensuring that the preventive measures implemented in schools mirror those being asked of children in other settings (e.g., community and home) to avoid confusion and increase compliance. Source (3/11 AMSTAR rating) 	<p>Literature last searched 4 May 2020</p>
<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Primary school ○ Secondary school • Changes to the operation of schools <ul style="list-style-type: none"> ○ Online instruction (whole or partial) 	<ul style="list-style-type: none"> • Remote learning arrangements were found to have the potential to result in poorer educational outcomes for almost half of Australian primary and secondary students if continued for an extended period, but approaches that combine face-to-face and remote learning, may be as effective as classroom learning for many students. • Those most at-risk for poorer learning outcomes include those of low socio-economic status, with English as a second language, with special learning needs and in rural and remote areas. 	<p>Literature last searched 1 May 2020</p>

		<ul style="list-style-type: none"> • Access to digital technology and the internet, home-learning environment and the amount of family support available, and the readiness and capacity of teachers and students for online learning can moderate these effects. • Indigenous peoples in Australia (Aboriginal and Torres Strait Islander students) were noted as being more likely to face challenges with remote learning due to lack of internet service and device availability, reduced opportunities for interaction with Indigenous teacher assistants, and because of challenges for incorporating culturally appropriate teaching approaches into online resources. <p>Source (1/9 AMSTAR rating)</p>	
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school ○ Secondary school • Indicators to monitor throughout school opening <ul style="list-style-type: none"> ○ School outbreaks <ul style="list-style-type: none"> ▪ Transmission among students ▪ Transmission between students and school employees ▪ Transmission to families at home 	<ul style="list-style-type: none"> • Though children do not appear to be a major source of transmission for COVID-19 within schools and daycares, adults working in schools and daycares who were infected resulted in significant community transmission when minimal infection-control procedures were in place. • There is a linear relationship between age and likelihood of contracting and transmitting COVID-19, but more research is needed to understand why this is the case. • Implementation of infection-control measures appear to be important in reducing spread (including reduction in class sizes, physical distancing, rapid testing, masks and handwashing), but these have been variably implemented across jurisdictions (6/10 AMSTAR rating) <p>Source</p>	Last updated 11 August 2020
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Elementary 	<ul style="list-style-type: none"> • Though research suggests that reopening of schools has had limited impact on the spread of COVID-19, outbreaks have been reported after schools and daycares reopen, and should be taken 	Published 25 June 2020

<ul style="list-style-type: none"> • Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ School outbreaks <ul style="list-style-type: none"> ▪ Transmission between students ▪ Transmission between students and school employees 	<p>into account as the evidence evolves and more jurisdictions begin to reopen. Source (0/11 AMSTAR rating)</p>	
<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school ○ Secondary school • Indicators to monitor throughout school opening <ul style="list-style-type: none"> ○ School outbreaks <ul style="list-style-type: none"> ▪ Transmission among students ▪ Transmission between students and school employees ▪ Transmission to families at home 	<ul style="list-style-type: none"> • Studies of school transmission found that children were not a driver of COVID-19 transmission and that prevalence of COVID-19 antibodies in children younger than 15 years of age was lower than the general population in a Spanish study. Source (5/9 AMSTAR rating) 	<p>Literature last searched 28 May 2020</p>
<ul style="list-style-type: none"> • Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ Rate of community spread 	<ul style="list-style-type: none"> • Findings strongly suggest that children with COVID-19 experience milder symptoms than adults, but evidence across age groups is uncertain and deaths are rarely observed among children. • While children are known to be able to transmit COVID-19, there is no evidence that children are key drivers of transmission and, therefore, firm conclusions about the role that children play in transmission of COVID-19 can not be made. Source (4/9 AMSTAR rating) 	<p>Literature last searched 22 April 2020</p>
<ul style="list-style-type: none"> • Indicators to monitor before reopening schools <ul style="list-style-type: none"> ○ Rate of community spread ○ Other 	<ul style="list-style-type: none"> • The evidence is limited, but to date, children do not appear to be driving household transmission of COVID-19, and transmission in schools based on existing evidence appears low, though relatively few schools were open when the review was conducted. Source 	<p>Literature last searched 13 May 2020</p>
<ul style="list-style-type: none"> • Indicators to monitor before reopening schools <ul style="list-style-type: none"> ○ Rate of community spread ○ Other 	<ul style="list-style-type: none"> • The evidence around the role of children in the transmission of COVID-19 is changing quickly, but low-quality evidence indicates that the 	<p>Published 4 May 2020</p>

		dynamics of transmission to and by children are different than adults. Source	
	<ul style="list-style-type: none"> • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection control <ul style="list-style-type: none"> ▪ Quarantining of exposed or potentially exposed individuals ▪ Isolation of suspected or confirmed cases • Indicators to monitor throughout reopening schools <ul style="list-style-type: none"> ○ Reported challenges implementing any of the measures above 	<ul style="list-style-type: none"> • Children and adolescents are more likely to experience high rates of depression and anxiety during and after forced isolation, and preventive supports should be made available. Source 	Literature last searched 29 March 2020
	<ul style="list-style-type: none"> • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) ○ Infection control <ul style="list-style-type: none"> ▪ Isolation of suspected or confirmed cases ▪ Contact tracing 	<ul style="list-style-type: none"> • School reopening should be accompanied by preventive measures to limit community transmission, including avoidance of symptomatic children or contacts, contact tracing, adaptation of "barrier" and social-distancing measures to the age of the children accommodated, and implementation of specific environmental measures. Source 	Last updated 19 May 2020
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school ○ Secondary school • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention ○ Physical distancing (e.g., cohorting, limits to class size, desk spacing) 	<ul style="list-style-type: none"> • Physical-distancing recommendations were common in education and childcare settings, which might be more challenging for young children, but physical contact should be minimized where possible. Source 	Last updated 26 June 2020
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school ○ Secondary school 	<ul style="list-style-type: none"> • Countries vary considerably in their plans to reopen schools, and some countries have published detailed plans for a phased reopening of schools for different classes/age groups. Source 	Last updated 15 July 2020
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool 	<ul style="list-style-type: none"> • Transmission from child-to-child or child-to-adult in daycare or school settings appears limited with 	26 June 2020

	<ul style="list-style-type: none"> ○ Elementary school ● Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ School outbreaks ○ Transmission among students 	<p>any infection clusters being traced back to community and home settings rather than daycare or schools, but the quality of the evidence appears limited.</p> <p>Source</p>	
<p>Guidelines developed using some type of evidence synthesis and/or expert opinion</p>	<ul style="list-style-type: none"> ● School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school ○ Secondary school ● Changes to the operation of schools <ul style="list-style-type: none"> ○ Online instruction (whole or partial) ○ Student supports ○ Instructor supports ○ Staffing ratios ○ Classroom changes (e.g., limiting number of students; increasing distance between students) ○ Facility changes (e.g., expanding classroom size by using additional facilities; providing class outside) ● Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Washing hands ▪ Wearing masks ▪ Disinfecting surfaces and facilities ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) ▪ Temporal distancing (e.g., holiday staggering, time-of-day staggering) ▪ Public-focused behaviour change supports ▪ Ventilation maximization ○ Infection control <ul style="list-style-type: none"> ▪ Screening ▪ Quarantining of exposed or potentially exposed individuals ▪ Testing 	<ul style="list-style-type: none"> ● A layered approach to school reopening in Canada is recommended to reduce the risk of COVID-19 in school, with core risk-mitigation measures including decreasing interactions with others and increasing the safety of interactions (e.g., through the use and promotion of personal preventive practices such as requiring the use of masks for children 10 years of age and older, and increased ventilation). ● The following eight groups of risk-mitigation strategies are provided, for which the use is recommended to be proportionate with the risk in the school and community: <ol style="list-style-type: none"> 1) prohibiting individuals who have symptoms of/or have had exposure (in last 14 days) to COVID-19 from entering the school; 2) promoting and facilitating personal preventive practices; 3) promoting physical distancing as much as possible (with the recognition that this is not always practical in child and youth settings); 4) creating physical barriers between children/youth, staff and volunteers; 5) increasing ventilation; 6) reducing risks from exposure to high-touch surfaces; 7) reducing risk for people at higher risk of severe illness; and 8) modifying practices to reduce how long people are in contact with each other and how many people come into contact with each other. <p>Source (Public Health Agency of Canada)</p>	<p>Published 10 August 2020</p>

	<ul style="list-style-type: none"> ▪ Isolation of suspected or confirmed cases ▪ Contact tracing <ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school ○ Secondary school • Changes to the operation of schools <ul style="list-style-type: none"> ○ Student supports ○ Instructor supports ○ Classroom changes (e.g., limiting number of students; increasing distance between students) ○ Facility changes (e.g., expanding classroom size by using additional facilities; providing class outside) • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Washing hands ▪ Wearing masks ▪ Disinfecting surfaces and facilities ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) ▪ Temporal distancing (e.g., holiday staggering, time of day staggering) ○ Infection control <ul style="list-style-type: none"> ▪ Screening ▪ Contact tracing 	<ul style="list-style-type: none"> • Recommendations on school re-entry should include improving hand hygiene, wearing face coverings (for school staff and older students), physical distancing in time and space, changing classrooms, cleaning and disinfection, utilizing outdoor spaces, supporting students with disabilities, and addressing mental health needs of students and staff. • Temperature checks and symptom screening were recommended for reopening processes, and contact tracing was recommended for students or school staff with COVID-19 symptoms or known exposures. Source (American Academy of Pediatrics) 	Last updated 25 June 2020
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school ○ Secondary school • Indicators to monitor before reopening schools <ul style="list-style-type: none"> ○ Rate of community spread ○ Other • Changes to the operation of the education system <ul style="list-style-type: none"> ○ Online instruction (whole or partial) ○ Student supports 	<ul style="list-style-type: none"> • Reopening schools depends on several factors including decreased prevalence of COVID-19, low transmission rate among children and low risks to children of becoming severely ill. • Arrangements should be considered for reopening schools, including: online education support; staff recruitment, deployment and training; and support for students and staff. • Essential public-health measures for reopening schools include hand and respiratory hygiene, 	Last updated 7 August 2020

<ul style="list-style-type: none"> ○ Instructor supports ○ Staffing ratios ● Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Washing hands ▪ Wearing masks ▪ Disinfecting surfaces and facilities ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) ▪ Temporal distancing (e.g., holiday staggering, time-of-day staggering) ○ Infection control <ul style="list-style-type: none"> ▪ Quarantining of exposed or potentially exposed individuals ▪ Testing ▪ Isolation of suspected or confirmed cases ▪ Contact tracing 	<p>physical and temporal distancing, enhanced cleaning arrangements, and wearing appropriate personal protective equipment where necessary.</p> <ul style="list-style-type: none"> ● Students with symptoms or high exposure were recommended to quarantine at home and conduct the test (i.e., active engagement with NHS Test and Trace). <p>Source (Department for Education, UK)</p>	
<ul style="list-style-type: none"> ● School level <ul style="list-style-type: none"> ○ Primary school ○ Secondary school ● Indicators to monitor before reopening schools <ul style="list-style-type: none"> ○ Rate of community spread ● Changes to the operation of schools <ul style="list-style-type: none"> ○ Online instruction (whole or partial) ○ Student supports ○ Instructor supports ○ Staffing ratios ○ Classroom changes (e.g., limiting number of students; increasing distance between students) ○ Facility changes (e.g., expanding classroom size by using additional facilities; providing class outside) ○ Skill re-development programs ● Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Washing hands 	<ul style="list-style-type: none"> ● Local authorities and schools should implement key public-health measures to minimize the risks of COVID-19 transmission and infection, including enhanced hygiene and cleaning, ensuring adequate levels of ventilation and increasing natural ventilation, and minimizing contact with others in the school. ● Schools should also undertake contingency planning to determine the best and safest way to reopen while taking into consideration the rate of community transmission as well as indicators such as: overall incidence and swab positivity for Scotland; incidence and swab positivity for school-age children; number and proportion of all cases that are among school workers; hot spots by local authority area; number of clusters or outbreaks that are under investigation within educational settings; and, if feasible, antibody prevalence among children and school workers. <p>Source (Scottish Government)</p>	<p>Last updated 30 July 2020</p>

	<ul style="list-style-type: none"> ▪ Wearing masks ▪ Disinfecting surfaces and facilities ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) ▪ Temporal distancing (e.g., holiday staggering, time-of-day staggering) ▪ Public-focused behaviour change supports ○ Infection control <ul style="list-style-type: none"> ▪ Quarantining of exposed or potentially exposed individuals ▪ Testing ▪ Isolation of suspected or confirmed cases ▪ Contact tracing ▪ Ventilation maximization • Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ School outbreaks <ul style="list-style-type: none"> ▪ Transmission among students ▪ Transmission between students and school employees ▪ Transmission to families at home ○ Rate of community spread 		
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school ○ Secondary school • Changes to the operation of schools <ul style="list-style-type: none"> ○ Online instruction (whole or partial) ○ Student supports ○ Staffing ratios 	<ul style="list-style-type: none"> • Supporting learning for vulnerable children and young people may include: <ul style="list-style-type: none"> ○ home education (e.g., providing laptops and tablets); ○ on-site education (e.g., adjusting curriculum, supporting the education of high-needs groups, supporting pupils approaching transitions and examinations); and ○ providing additional support and early help around anxiety, mental health, behaviour, social care, or changes to mobility. • Recommendations on staffing, transport and logistics, include: 	<p>Last updated 15 May 2020 (this guidance applied during the period of partial school closure up to 31 July 2020 and was withdrawn on 4 August 2020)</p>

		<ul style="list-style-type: none"> ○ ensuring there are enough staff (teachers, support staff or other workers) in educational settings and safe ratios for staff and students; ○ minimizing children and young people's use of public transport to get to and from school at peak times; and ○ encouraging staff and students to walk or cycle to educational settings where possible. <p>Source (Department for Education, United Kingdom)</p>	
	<ul style="list-style-type: none"> ● School level <ul style="list-style-type: none"> ○ Daycare/preschool ● Changes to the operation of schools <ul style="list-style-type: none"> ○ Classroom changes (e.g., limiting number of students; increasing distance between students) ● Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) 	<ul style="list-style-type: none"> ● Organizing children into small groups or "protective bubbles" with consistent membership was recommended in preschool-education settings, not needing to implement social distancing between the children within a group, but maintaining distancing between different groups and among adults. <p>Source (Department of Education, Northern Ireland)</p>	Last updated 23 June 2020
Protocols for reviews that are underway	<ul style="list-style-type: none"> ● School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school ○ Secondary school ● Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) 	Best practices to promote social distancing at schools during the COVID-19 pandemic	Anticipated completion date 31 May 2020
	<ul style="list-style-type: none"> ● School level <ul style="list-style-type: none"> ○ Primary school ○ Secondary school ● Indicators to monitor before reopening schools <ul style="list-style-type: none"> ○ Rate of community spread 	Overview of reviews on the impact of school closure on outbreak control of COVID-19	Anticipated completion date 31 July 2020
Titles/questions for reviews that are being planned	None identified		

<p>Single studies in areas where no reviews were identified</p>	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Primary school ○ Secondary school • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection control <ul style="list-style-type: none"> ▪ Screening ▪ Quarantining of exposed or potentially exposed individuals ▪ Testing ▪ Isolation of suspected or confirmed cases ▪ Contact tracing 	<ul style="list-style-type: none"> • A modelling study was conducted in the United Kingdom, which describes contact networks stratified into household, school, workplace, and community layers along with demographic and epidemiological data. • Six scenarios were simulated that included the combination of two school reopening strategies (a full-time and a part-time rotation system with 50% of students attending school on alternate weeks) and three testing approaches (68% contact tracing with no scale-up in testing, 68% contact tracing with sufficient testing to avoid a second COVID-19 wave, and 40% contact tracing with sufficient testing to avoid a second COVID-19 wave). • Overall, the modelling found that prevention of a second wave of COVID-19 infections following the relaxation of physical distancing and reopening of schools must be paired with large-scale, population-wide testing of symptomatic individuals and effective contact tracing, followed by isolation of diagnosed individuals. <p>Source (published 3 August 2020)</p>	<p>Published 3 August 2020</p>
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Secondary school • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Wearing masks ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) ▪ Ventilation maximization • Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ School outbreaks <ul style="list-style-type: none"> ▪ Transmission among students ▪ Transmission between students and school employees 	<ul style="list-style-type: none"> • Following a major COVID-19 outbreak in a high school in Israel, an environmental inspection found that distancing and other personal protective measures among students and teachers was not possible due to: <ul style="list-style-type: none"> ○ crowded classes (35–38 students per class in spaces ranging from 39–49 square metres or 1.1–1.3 square metres per student which is below the 1.5-square-metre standard); and ○ an extreme heatwave that involved exemption from facemasks and continuous air conditioning. <p>Source (published 23 July 2020)</p>	<p>Published 23 July 2020</p>

	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school ○ Secondary school • Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ School outbreaks <ul style="list-style-type: none"> ▪ Transmission among students ▪ Transmission between students and school employees ▪ Transmission to families at home ○ Rate of community spread 	<ul style="list-style-type: none"> • Results of a study of pediatric COVID-19 admissions in Sweden during two months of its open-school policy during the pandemic found low incidence of severe illness due to COVID19 among Swedish children despite daycare centres and primary schools being open, which suggests that the Swedish strategy did not worsen the course of the pandemic for children in Sweden. • However, the study did not assess the impact of the open-school strategy on societal transmission of COVID-19. <p>Source</p>	<p>Published 21 June 2020</p>
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/ preschool ○ Primary school ○ Secondary school • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) ○ Infection control <ul style="list-style-type: none"> ▪ Testing ▪ Contact tracing 	<ul style="list-style-type: none"> • A modelling study from France found opening schools will result in an increase in COVID-19 cases, however it is predicted that the burden on the health system is manageable by opening only preschools and primary schools. • The study suggested that a second wave could be triggered if full attendance of adolescents in secondary school is pursued. • Reopening will require large-scale trace and testing in addition to moderate social-distancing interventions. <p>Source</p>	<p>Published 12 May 2020</p>
	<ul style="list-style-type: none"> • Changes to the operation of schools <ul style="list-style-type: none"> ○ Online instruction (whole or partial) ○ Student supports ○ Instructor supports ○ Staffing ratios ○ Classroom changes (e.g., limiting number of students; increasing distance between students) ○ Facility changes (e.g., expanding classroom size by using additional facilities; providing class outside) ○ Skill re-development programs 	<ul style="list-style-type: none"> • Families with children with special educational needs and disabilities identified implementing routines and targeted mental health support as useful strategies for returning to school. <p>Source</p>	<p>Last updated 11 June 2020 (pre-print)</p>

	<ul style="list-style-type: none"> • Changes to the operation of schools <ul style="list-style-type: none"> ○ Online instruction (whole or partial) ○ Instructor supports 	<ul style="list-style-type: none"> • Predictors of reduced work stress among school teachers and counsellors included high self-efficacy related to the use of technology, positive attitudes towards online education, and strong supervisor support. • Based on these findings, the authors suggest improving teacher training on technology and paying attention to mental health support for school teachers and counsellors. <p>Source</p>	<p>Last updated 10 June 2020 (pre-print)</p>
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Secondary school • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Washing hands ▪ Wearing masks ▪ Physical distancing (e.g., cohorting, limits to class size, desk spacing) • Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ Rate of community adherence to public-health measures 	<ul style="list-style-type: none"> • An assessment of compliance among 12,686 adolescent secondary-school students with infection-control rules in Oslo, Norway found that the majority reported that they always, or to a large extent, complied with the rules for hand washing (84%), refrained from shaking hands/hugging (74%) and avoided large groups (73%), but fewer reported maintaining physical distance (50%), and the highest compliance was found among girls, adolescents from immigrant backgrounds, those with a high level of trust in the authorities and people in general, and those who showed acceptance of the infection-control rules. <p>Source</p>	<p>Published 29 June 2020</p>
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Primary school ○ Secondary school • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection control <ul style="list-style-type: none"> ▪ Quarantining of exposed or potentially exposed individuals ▪ Contact tracing • Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ School outbreaks 	<ul style="list-style-type: none"> • As a result of effective case-contact testing and epidemic management strategies, and associated small numbers of infected students and staff, children and teachers were found not to significantly contribute to COVID-19 transmission through attendance in educational settings in New South Wales, Australia. <p>Source</p>	<p>Published 3 August 2020</p>

	<ul style="list-style-type: none"> ▪ Transmission among students ▪ Transmission between students and school employees ▪ Transmission to families at home 		
	<ul style="list-style-type: none"> • Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ School outbreaks <ul style="list-style-type: none"> ▪ Transmission among students ▪ Transmission between students and school employees ▪ Transmission to families at home 	<ul style="list-style-type: none"> • Two cases of school outbreaks in Helsinki found that transmission from children to adults is limited when children are the index case, however, when the index case is a staff member of the school, significant community spread was found. Source 	Published 30 July 2020
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school ○ Secondary school • Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ School outbreaks <ul style="list-style-type: none"> ▪ Transmission among students ▪ Transmission between students and school employees ▪ Transmission to families at home 	<ul style="list-style-type: none"> • The magnitude and role of students and staff in a COVID-19 outbreak in a large school community in Santiago, Chile was assessed using self-administered antibody detection test and survey. • Teachers were found to be more affected during the outbreak and younger children were at higher infection risk, which was attributed to the index caess being teachers and/or parents. Source 	Published 10 July 2020
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Daycare/preschool ○ Primary school ○ Secondary school • Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ School outbreaks <ul style="list-style-type: none"> ▪ Transmission among students ▪ Transmission between students and school employees ▪ Transmission to families at home 	<ul style="list-style-type: none"> • Comprehensive surveillance and screening of symptomatic student contacts after exposure to a student with COVID-19 in a secondary school and a preschool in Singapore found no evidence of disease transmission. • Screening for symptomatic and asymptomatic children exposed to a major COVID-19 cluster of adult staff members in a different preschool setting in Singapore also did not detect COVID-19 infections. Source 	Published 25 June 2020
	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Primary school ○ Secondary school 	<ul style="list-style-type: none"> • An analysis of three Irish pediatric cases of COVID-19 attending school during the pre-symptomatic and symptomatic periods of 	Published 28 May 2020

<ul style="list-style-type: none"> • Indicators to monitor as reopening is being implemented <ul style="list-style-type: none"> ○ School outbreaks <ul style="list-style-type: none"> ▪ Transmission among students ▪ Transmission between students and school employees ▪ Transmission to families at home 	<p>infection found that there were no cases of forward transmission to other children or adults within the school and in a variety of other settings (including high-risk activities such as music lessons and choir practice), as well as no forward transmission from three identified adult cases to children.</p> <ul style="list-style-type: none"> • One documented transmission in the cohort occurred between adults in a work setting outside of school. • Of the 1,025 child and adult contacts from the six COVID-19 cases in the school setting, no confirmed cases of COVID-19 were identified during the follow-up period (at least one 14-day incubation period from contact with a case). <p>Source</p>	
<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Primary school • Accompanying public-health measures <ul style="list-style-type: none"> ○ Infection prevention <ul style="list-style-type: none"> ▪ Washing hands ▪ Wearing masks 	<ul style="list-style-type: none"> • Factors affecting hand-washing and mask-wearing behaviours among primary-school students in Wuhan, China found that only 42% of students showed excellent hand-washing behaviour and 51% showed good mask-wearing behaviour. <p>Source</p>	Published 5 April 2020
<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Primary school ○ Secondary school • Changes to the operation of schools 	<ul style="list-style-type: none"> • A dataset of Vietnamese students' learning habits during COVID-19 is provided with 420 responses that includes: <ul style="list-style-type: none"> ○ individual demographics, including family socio-economic status, school type, and occupational aspirations; ○ students' learning habits, including hours of learning before and during the period of school suspension, with and without other people's support; and ○ students' perceptions of their self-learning during the school closures. <p>Source</p>	Published 8 May 2020

	<ul style="list-style-type: none"> • School level <ul style="list-style-type: none"> ○ Primary school ○ Secondary school • Changes to the operation of schools 	<ul style="list-style-type: none"> • A dataset of Vietnamese teachers' perspectives and perceived support during the COVID-19 pandemic dataset is provided, which includes: <ul style="list-style-type: none"> ○ demographics of participants; ○ teachers' perspectives regarding the operation of teaching activities during the pandemic; ○ teachers' received support from their schools, government bodies, other stakeholders such as teacher unions, and parents' associations; and ○ teachers' evaluation of school readiness toward digital transformation. <p>Source</p>	<p>Published 29 May 2020</p>
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Appendix 3: Abstracts for highly relevant documents

Type of document	Abstract
Guidelines developed using a robust process (e.g., GRADE)	Not applicable
Full systematic reviews	<p data-bbox="550 402 1692 428">On the effect of age on the transmission fo SARS-CoV-2 in households, schools and the community</p> <p data-bbox="550 472 659 498">Abstract</p> <p data-bbox="550 505 1894 630"><i>Background:</i> There is limited information on the effect of age on the transmission of SARS-CoV-2 infection in different settings, including primary, secondary and high schools, households, and the whole community. We undertook a literature review of published studies/data on detection of SARS- CoV-2 infection in contacts of COVID-19 cases, as well as serological studies, and studies of infections in the school setting to examine those issues.</p> <p data-bbox="550 636 1894 924"><i>Results:</i> Our literature review presents evidence for significantly lower susceptibility to infection for children aged under 10 years compared to adults given the same exposure, for elevated susceptibility to infection in adults aged over 60y compared to younger/middle aged adults, and for the risk of SARS-CoV-2 infection associated with sleeping close to an infected individual. Published serological studies also suggest that younger adults (particularly those aged under 35y) often have high cumulative rates of SARS-CoV-2 infection in the community. Additionally, there is some evidence of robust spread of SARS-CoV-2 in secondary/high schools, and there appears to be more limited spread in primary schools. Some countries with relatively large class sizes in primary schools (e.g. Chile and Israel) reported sizeable outbreaks in some of those schools, though routes of transmission of infection to both students and staff are not clear from current reports.</p> <p data-bbox="550 930 1894 1157"><i>Conclusions:</i> Opening secondary/high schools is likely to contribute to the spread of SARS-CoV-2, and, if implemented, it should require both lower levels of community transmission and greater safeguards to reduce transmission. Compared to secondary/high schools, opening primary schools and daycare facilities may have a more limited effect on the spread of SARS-CoV-2 in the community, particularly under smaller class sizes and in the presence of mitigation measures. Efforts to avoid crowding in the classroom and other mitigation measures should be implemented, to the extent possible, when opening primary schools. Efforts should be undertaken to diminish the mixing in younger adults to mitigate the spread of the epidemic in the whole community.</p>
Rapid reviews	<p data-bbox="550 1164 1129 1190">COVID-19 infectivity and transmission in children</p> <p data-bbox="550 1229 659 1255">Abstract</p> <ul data-bbox="550 1261 1860 1359" style="list-style-type: none"> <li data-bbox="550 1261 1541 1287">• Publications have generally found a lower attack rate in children compared to adults. <li data-bbox="550 1300 1860 1359">• Prevalence of COVID-19 infection is reported to be lower in children than in adults, however prevalence can be difficult to determine in children as most present with mild or no apparent symptoms.

Type of document	Abstract
	<ul style="list-style-type: none"> • There is preliminary evidence that children and young people have lower susceptibility to COVID-19, with a 56% lower odds of being an infected contact compared with adults. • To date, children are rarely the index case in reports of household clusters in the literature. • There is weak evidence that children and young people play a lesser role in transmission of COVID-19 at a population level. • A systematic review of the impact of school closures on the transmission of COVID-19 found no data on the relative contribution of school closures to transmission control. Data from the SARS outbreak suggested that school closures did not contribute to the control of the epidemic. <p data-bbox="550 509 1329 537">The role of children in transmission of SARS-CoV-2: A rapid review</p> <p data-bbox="550 574 659 602">Abstract</p> <ul style="list-style-type: none"> • Background: Understanding the role of children in the transmission of SARS-CoV-2 is urgently required given its policy implications in relation to the reopening of schools and intergenerational contacts. • Methods: We conducted a rapid review of studies that investigated the role of children in the transmission of SARS-CoV-2. We synthesized evidence for four categories: 1) studies reporting documented cases of SARS-CoV-2 transmission by infected children; 2) studies presenting indirect evidence on the potential of SARS-CoV-2 transmission by (both symptomatic and asymptomatic) children; 3) studies reporting cluster outbreaks of COVID-19 in schools; 4) studies estimating the proportions of children infected by SARS-CoV-2, and reported results narratively. • Results: A total of 16 unique studies were included for narrative synthesis. There is limited evidence detailing transmission of SARS-CoV-2 from infected children. We found two studies that reported a 3-month-old whose parents developed symptomatic COVID-19 seven days after caring for the infant and two children who may have contracted COVID-19 from the initial cases at a school in New South Wales. In addition, we identified six studies presenting indirect evidence on the potential for SARS-CoV-2 transmission by children, three of which found prolonged virus shedding in stools. There is little data on the transmission of SARS-CoV-2 in schools. We identified only two studies reporting outbreaks of COVID-19 in school settings and one case report of a child attending classes but not infecting any other pupils or staff. Lastly, we identified six studies estimating the proportion of children infected; data from population-based studies in Iceland, Italy, South Korea, Netherlands, California and a hospital-based study in the UK suggest children may be less likely to be infected. • Conclusions: Preliminary results from population-based and school-based studies suggest that children may be less frequently infected or infect others, however current evidence is limited. Prolonged faecal shedding observed in studies highlights the potentially increased risk of faeco-oral transmission in children. Further seroprevalence studies (powered adequately for the paediatric population) are urgently required to establish whether children are in fact less likely to be infected compared to adults. <p data-bbox="550 1382 1178 1409">Learning outcomes for online versus in-class education</p>

Type of document	Abstract
	<p>Abstract</p> <ul style="list-style-type: none"> • The current remote learning arrangements have the potential to result in poorer educational outcomes for almost half of Australian primary and secondary students if continued for an extended period. Students at particular risk of poorer learning outcomes include those from low socioeconomic backgrounds, those with English as a second language, those with special learning needs and those in rural and remote areas. • Factors that moderate the effectiveness of remote learning include: a) access to digital technology and the internet; b) home learning environment and family support; c) teacher and student readiness and capability. • There is evidence to suggest that ‘blended learning’, combining face-to-face and remote learning, may be as effective as classroom learning for many students. • Aboriginal and Torres Strait Islander students are likely to face particular challenges with remote learning related to lack of internet service and device availability, reduced opportunities for interaction with Indigenous teacher assistants, and the challenge of incorporating culturally appropriate pedagogies into online resources. <p>Role of children in the transmission of the COVID-19 pandemic: a rapid scoping review</p> <p>Abstract</p> <ul style="list-style-type: none"> • Background: As a response to the COVID-19 pandemic, most countries have adopted measures of social distance, with the childhood population being one of the main focus of attention in these measures. • Methods: A rapid scoping review was carried out by searching PubMed to know if children are more contagious than adults, and the proportion of asymptomatic cases in children. Google Scholar and MedRxiv/bioRxiv were also searched. The time period was restricted from 1 December 2019 until 28 May 2020. Only studies published in English, Italian, French or Spanish were included. • Results: Fourteen out of 1099 identified articles were finally included. Studies included cases from China (n=9 to 2143), China and Taiwan (n=536), Korea (n=1), Vietnam (n=1), Australia (n=9), Geneva (n=40), the Netherlands (n=116), Ireland (n=3) and Spain (population-based study of IgG, n=8243). Although no complete data were available, between 15% and 55%–60% were asymptomatic, and 75%–100% of cases were from family transmission. Studies analysing school transmission showed children as not a driver of transmission. Prevalence of COVID-19 IgG antibody in children <15 years was lower than the general population in the Spanish study. • Conclusions: Children are not transmitters to a greater extent than adults. There is a need to improve the validity of epidemiological surveillance to solve current uncertainties, and to take into account social determinants and child health inequalities during and after the current pandemic.
Guidelines developed using some type of evidence	<p>COVID-19 guidance for schools kindergarten to Grade 12</p> <p>Abstract</p>

Type of document	Abstract
synthesis and/or expert opinion	<ul style="list-style-type: none"> This guidance provides information for both public and private institutions providing K-12 education programs in the classroom setting. It takes into consideration the diverse needs of population groups based on vulnerability, ethnicity/culture, disability, developmental status, and other socioeconomic and demographic factors. This guidance uses the term children/youth interchangeably with the term student(s) to align with all associated guidance and web content. Other K-12 school-based activities that may be impacted by the advice in this guidance include sports, school based nutrition programs, music classes/programs and field trips, child care provided outside of regular school hours (for example, before and after child care), professional development/activity days and school break day camps.
	<p>COVID-19 planning considerations: Guidance for school re-entry</p> <p>Abstract</p> <ul style="list-style-type: none"> The purpose of this guidance is to support education, public health, local leadership, and pediatricians collaborating with schools in creating policies for school re-entry that foster the overall health of children, adolescents, staff, and communities and are based on available evidence. Schools are fundamental to child and adolescent development and well-being and provide our children and adolescents with academic instruction, social and emotional skills, safety, reliable nutrition, physical/speech and mental health therapy, and opportunities for physical activity, among other benefits. Beyond supporting the educational development of children and adolescents, schools play a critical role in addressing racial and social inequity. As such, it is critical to reflect on the differential impact SARS-CoV-2 and the associated school closures have had on different races, ethnic and vulnerable populations. These recommendations are provided acknowledging that our understanding of the SARS-CoV-2 pandemic is changing rapidly.
	<p>Guidance for full opening: schools</p> <p>Abstract</p> <ul style="list-style-type: none"> This guidance is intended to support schools, both mainstream and alternative provision, to prepare for this. It applies to primary, secondary (including sixth forms), infant, junior, middle, upper, school-based nurseries and boarding schools. We expect independent schools to follow the control measures set out in this document in the same way as state-funded schools. The guidance also covers expectations for children with special educational needs and disability (SEND), including those with education, health and care plans, in mainstream schools. This guidance is in 5 sections. The first section sets out the actions school leaders should take to minimise the risk of transmission of coronavirus (COVID-19) in their school. This is public health advice, endorsed by Public Health England (PHE). The rest of the guidance is focused on how the Department for Education (DfE) expects schools to operate in this new context. This includes: <ul style="list-style-type: none"> school operations

Type of document	Abstract
	<ul style="list-style-type: none"> ○ curriculum, behaviour and pastoral support ○ assessment and accountability ○ contingency planning to provide continuity of education in the case of a local outbreak <p data-bbox="548 326 1713 358">Coronavirus (COVID-19): Guidance on preparing for the start of the new school term in August 2020</p> <p data-bbox="548 394 659 427">Abstract</p> <ul style="list-style-type: none"> ● This guidance has been developed to support a safe return to school for all children, young people and staff taking full account of progress made in suppressing COVID-19 in Scotland, the scientific advice received and the advice of the Education Recovery Group and other key stakeholders. ● In Scotland, as at 19 July 2020, 152 (0.8%) of a total 18,452 positive cases of COVID-19 were among people aged under 15. This is a rate of less than 20 per 100,000 of the population in that age group. There have been no deaths among people under 20 years of age. These data are regularly updated. ● In the light of this greatly improved situation with regard to suppression of the virus, and in the context of the vital importance of school to a child’s development, wellbeing and right to education, the balance of risk is now strongly in favour of children and young people returning to school full-time. This is a positive development that will help address the wider impacts of the virus on the health and wellbeing, educational progress and attainment of our children and young people. ● It is the Scottish Government’s intention that all children and young people, in all year groups, will return to school full-time from the autumn term in August so as to benefit once again from all that school brings to their lives. There is increasing concern around the negative impact of school closures on children and young people’s wellbeing. The wellbeing of all children, young people and staff should be the central focus when preparing for the reopening of schools. ● This updated planning assumption reflects the latest scientific evidence and advice and the significant progress that Scotland has made in suppressing the virus. It remains contingent, however, on continuing success in this regard and prevailing public health guidance. The Scottish Government has agreed with partners in the Education Recovery Group that schools will reopen on 11 August. The Scottish Government welcomes local authority decisions which enable children and young people to return to school full-time as quickly and safely as possible, and expects all pupils to be in school full-time by 18 August at the very latest. The Scottish Government will bring forward an Educational Continuity Direction to that effect. ● The scientific advice that has informed this decision and the development of this guidance was published on 16 July. This updates and builds on an initial summary of key scientific and public health advice published on 26 May 2020. ● We do not however expect the return to school in August to be a return to normality. We must remain vigilant and continue to manage the risks of COVID-19. This guidance has been designed to help our local authorities and schools to do so, and ensure the safety of children, young people and staff.

Type of document	Abstract
	<ul style="list-style-type: none"> • The guidance applies to all local authorities and schools (primary/secondary/special/school hostels/residential) under their management. Local authorities should ensure that any external organisations involved in delivering services in schools (e.g. contracted facilities management services) are required to follow this guidance. It should also be used by grant-aided schools and independent schools to support their recovery efforts. Please read the supplementary guidance for residential boarding/hostel accommodation in educational facilities, developed in partnership with relevant stakeholders. COVID-19 guidance for colleges may also be relevant to some. • Recognising its specific context, separate guidance for the Early Learning and Childcare (ELC) and childcare sector has been developed. There is also specific guidance for childminders and for “Out of school care”. Guidance for youth work and the Community Learning and Development Sector is also available. • Nothing in this guidance affects the legal obligations of local authorities with regard to health and safety, public health and their responsibilities under the Equality Act 2010. Local authorities must continue to adhere to all such duties when implementing this guidance. Under the Coronavirus Act 2020, they must have regard to the advice relating to coronavirus from the Chief Medical Officer for Scotland. • Local authorities and schools should exercise their judgement when implementing this guidance, to ensure the safety and wellbeing of their children, young people and staff taking into account local circumstances. Where this guidance states that local authorities and schools: <ul style="list-style-type: none"> ○ “should” do something, there is a clear expectation, agreed by all key partners, that it should be done. ○ “may” or “may wish” to do something, the relevant sections have been included as examples of relevant practice that can be considered if appropriate. Local variations are likely. • Changes in incidence of COVID-19, and the impact of implementation of this guidance in schools, will be closely monitored at the national and local level. The guidance will be kept under review and updated when necessary. Local authorities and schools will also need to be able to adapt to local issues, e.g. outbreaks or local increases in cases of COVID-19, and follow any locally-determined advice and guidance.
Single studies in areas where no reviews were identified	<p>Determining the optimal strategy for reopening schools, the impact of test and trace interventions, and the risk of occurrence of a second COVID-19 epidemic wave in the UK: a modelling study</p> <p>Abstract</p> <ul style="list-style-type: none"> • Background: As lockdown measures to slow the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection begin to ease in the UK, it is important to assess the impact of any changes in policy, including school reopening and broader relaxation of physical distancing measures. We aimed to use an individual-based model to predict the impact of two possible strategies for reopening schools to all students in the UK from September, 2020, in combination with different assumptions about relaxation of physical distancing measures and the scale-up of testing. • Methods: In this modelling study, we used Covasim, a stochastic individual-based model for transmission of SARS-CoV-2, calibrated to the UK epidemic. The model describes individuals' contact networks stratified into

Type of document	Abstract
	<p>household, school, workplace, and community layers, and uses demographic and epidemiological data from the UK. We simulated six different scenarios, representing the combination of two school reopening strategies (full time and a part-time rota system with 50% of students attending school on alternate weeks) and three testing scenarios (68% contact tracing with no scale-up in testing, 68% contact tracing with sufficient testing to avoid a second COVID-19 wave, and 40% contact tracing with sufficient testing to avoid a second COVID-19 wave). We estimated the number of new infections, cases, and deaths, as well as the effective reproduction number (R) under different strategies. In a sensitivity analysis to account for uncertainties within the stochastic simulation, we also simulated infectiousness of children and young adults aged younger than 20 years at 50% relative to older ages (20 years and older).</p> <ul style="list-style-type: none"> • Findings: With increased levels of testing (between 59% and 87% of symptomatic people tested at some point during an active SARS-CoV-2 infection, depending on the scenario), and effective contact tracing and isolation, an epidemic rebound might be prevented. Assuming 68% of contacts could be traced, we estimate that 75% of individuals with symptomatic infection would need to be tested and positive cases isolated if schools return full-time in September, or 65% if a part-time rota system were used. If only 40% of contacts could be traced, these figures would increase to 87% and 75%, respectively. However, without these levels of testing and contact tracing, reopening of schools together with gradual relaxing of the lockdown measures are likely to induce a second wave that would peak in December, 2020, if schools open full-time in September, and in February, 2021, if a part-time rota system were adopted. In either case, the second wave would result in R rising above 1 and a resulting second wave of infections 2.0–2.3 times the size of the original COVID-19 wave. When infectiousness of children and young adults was varied from 100% to 50% of that of older ages, we still found that a comprehensive and effective test–trace–isolate strategy would be required to avoid a second COVID-19 wave. • Interpretation: To prevent a second COVID-19 wave, relaxation of physical distancing, including reopening of schools, in the UK must be accompanied by large-scale, population-wide testing of symptomatic individuals and effective tracing of their contacts, followed by isolation of diagnosed individuals.
	<p>A large COVID-19 outbreak in a high school 10 days after schools' reopening, Israel, May 2020</p> <p>Abstract</p> <ul style="list-style-type: none"> • On 13 March 2020, Israel's government declared closure of all schools. Schools fully reopened on 17 May 2020. Ten days later, a major outbreak of coronavirus disease (COVID-19) occurred in a high school. The first case was registered on 26 May, the second on 27 May. They were not epidemiologically linked. Testing of the complete school community revealed 153 students (attack rate: 13.2%) and 25 staff members (attack rate: 16.6%) who were COVID-19 positive.
	<p>Expected impact of reopening schools after lockdown on COVID-19 epidemic in Ile-de-France</p> <p>Abstract</p>

Type of document	Abstract
	<ul style="list-style-type: none"> As several countries around the world are planning exit strategies to progressively lift the rigid social restrictions implemented with lockdown, different options are being chosen regarding the closure or reopening of schools. We evaluate the expected impact of reopening schools in Île-de-France region after the withdrawal of lockdown currently scheduled for May 11, 2020. We explore several scenarios of partial, progressive, or full school reopening, coupled with moderate social distancing interventions and large-scale tracing, testing, and isolation. Accounting for current uncertainty on the role of children in COVID-19 epidemic, we test different hypotheses on children's transmissibility distinguishing between younger children (pre-school and primary school age) and adolescents (middle and high school age). Reopening schools after lifting lockdown will likely lead to an increase in the number of COVID-19 cases in the following 2 months, even with lower transmissibility of children, yet protocols exist that would allow maintaining the epidemic under control without saturating the healthcare system. With pre-schools and primary schools in session starting May 11, ICU occupation would reach at most 72% [55,83]% (95% probability ranges) of a 1,500-bed capacity (here foreseen as the routine capacity restored in the region post-first wave) if no other school level reopens before summer or if middle and high schools reopen one month later through a progressive protocol (increasing attendance week by week). Full attendance of adolescents at school starting in June would overwhelm the ICU system (138% [118,159]% occupation). Reopening all schools on May 11 would likely lead to a second wave similar to the one recently experienced, except if maximum attendance is limited to 50% for both younger children and adolescents. Based on the estimated situation on May 11, no substantial difference in the epidemic risk is predicted between progressive and prompt reopening of pre-schools and primary schools, thus allowing full attendance of younger children mostly in need of resuming learning and development. Reopening would require however large-scale trace and testing to promptly isolate cases, in addition to moderate social distancing interventions. Full attendance in middle and high schools is instead not recommended. Findings are consistent across different assumptions on the relative transmissibility of younger children and for small increase of the reproductive number possibly due to decreasing compliance to lockdown.

Appendix 4: Documents excluded at the final stages of reviewing

Type of document	Focus
Guidelines developed using a robust process (e.g., GRADE)	COVID-19 rapid guideline: Children and young people who are immunocompromised
Full systematic reviews	Clinical features and outcome of SARS-CoV-2 infection in children: A systematic review and meta-analysis
	COVID-19 in 7780 pediatric patients: A systematic review
	Coronavirus disease 2019 in children: Vulnerable or spared? A systematic review
	SARS-CoV-2 (COVID-19): What do we know about children? A systematic review
	COVID-19 in hospitalized children and adolescents: A systematic review on published case series and first data from Germany
	Systematic review of COVID-19 in children shows milder cases and a better prognosis than adults
	What we know so far about Coronavirus disease 2019 in children: A meta-analysis of 551 laboratory – confirmed cases
	SARS-CoV-2 infection in children and newborns: A systematic review
	Pediatric COVID-19: Systematic review of the literature
	COVID-19 infection in children: Estimating pediatric morbidity and mortality
Rapid reviews	School closures and influenza: Systematic review of epidemiological studies
	School closure and management practices during coronavirus outbreaks including COVID-19: A rapid systematic review The impact of unplanned school closure on children’s social contact: Rapid evidence review
Guidelines developed using some type of evidence synthesis and/or expert opinion	Not applicable
Protocols for reviews that are underway	Not applicable
Titles/questions for reviews that are being planned	Not applicable
Single studies in areas where no reviews were identified	School opening delay effect on transmission dynamics of Coronavirus disease 2019 in Korea: Based on mathematical modeling and simulation study
	Association between statewide school closure and COVID-19 incidence and mortality in the US
	Childhood COVID-19: A multicentre retrospective study
	Effectiveness of isolation, testing, contact tracing, and physical distancing on reducing transmission of SARS-CoV-2 in different settings: A mathematical modelling study
	Impact of school closures for COVID-19 on the US health-care workforce and net mortality: A modelling study

	<u>Initial COVID-19 closure strategies adopted by a convenience sample of U.S. school districts: Directions for future research</u>
	<u>Novel coronavirus, novel faculty development programs: Rapid transition to eLearning during the pandemic</u>
	<u>Simulating the effect of school closure during COVID-19 outbreaks in Ontario, Canada</u>
	<u>Was school closure effective in mitigating coronavirus disease 2019 (COVID-19)? Time series analysis using Bayesian inference</u>
	<u>What are the underlying transmission patterns of COVID-19 outbreak? An age-specific social contact characterization</u>