

ENVIRONMENTAL SCAN

(ARCHIVED) COVID-19 Infection Prevention and Control Measures for In-Person Learning in Schools in Select Jurisdictions

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Key Findings

- Maintaining low levels of community transmission remains critical to reducing the risk of COVID-19 introduction and spread in schools, and continued efforts to support vaccine uptake among youth, families and community members will play a critical role in maintaining low transmission. Many children are not yet eligible for vaccination or may not yet be fully vaccinated, and ensuring children are vaccinated as soon as they are eligible will be crucial for avoiding school closures.
- The risk of COVID-19 transmission in schools has been found to be lower than, or at least no higher than, other community settings when infection prevention and control (IPAC) measures are implemented and adhered to.¹⁻³ Schools have not been found to meaningfully contribute to community transmission, and cases that do occur in school are typically acquired in the community not in school settings.¹⁻³
- Determining which layers of prevention to maintain in-person learning in K-12 schools in fall 2021 will need to balance benefits and harms. Implementing a combination of measures at each level of the hierarchy of hazard controls used to guide infection prevention and control (IPAC) can reduce the risk of COVID-19 transmission.⁴ Levels include public health measures, environmental measures, administrative measures, and personal measures.⁴
- The provinces of British Columbia (BC) and Quebec plan to scale back many administrative and personal IPAC measures for schools in fall 2021, such as no longer requiring masks, physical distancing, or cohorting, and allowing usual school-based extracurricular activities, events and gatherings.^{5,6} Daily screening for COVID-19 symptoms, recommending vaccination for ages 12 and up, supporting contact tracing, adequate ventilation, and regular hand hygiene will continue.^{5,6}

- Guidance for the 2021-22 school year in California, and from spring 2021 for the states of New York and Minnesota recommends maintaining public health and environmental measures, such as encouraging vaccination for ages 12 and up, daily screening for COVID-19 symptoms, supporting contact tracing, enhanced ventilation, routine cleaning, and use of outdoor space.⁷⁻¹⁰ Personal and administrative measures include masks being required for all staff and students, and continuing to emphasize hand hygiene.⁷⁻¹⁰ New York and Minnesota currently encourage physical distancing and cohorting as much as possible.⁷⁻⁹ California does not plan to require physical distancing or cohorting in the 2021-22 school year, distancing is only emphasized when masks cannot be worn (i.e., while eating).¹⁰
- Guidance from spring 2021 for England, Scotland, Wales, and Ireland includes encouraging vaccination for ages 18 and up, COVID-19 screening before attending school, supporting contact tracing, enhancing ventilation, continuing routine cleaning, and facilitating hand hygiene. Physical distancing and cohorting are encouraged where possible. Details related to mask requirements and allowances for school gatherings or school-based extracurricular activities vary across included European jurisdictions.¹¹⁻²⁰

Objectives and Scope

This document summarizes information from an environmental scan of planned or implemented IPAC measures to mitigate the impact of COVID-19 in schools. Public health, environmental, administrative, and personal measures have been implemented in jurisdictions that have reopened schools to in-person learning in spring 2021, and plans for fall 2021 include implementation of these measures.

Background

Many jurisdictions around the world experienced a resurgence of COVID-19 in late 2020. Around this time, jurisdictions also began to identify Variants of Concern (VOC), which led to increased COVID-19 incidence and the subsequent introduction of increasingly restrictive public health measures to control transmission, which in some jurisdictions included the closure of schools. Several jurisdictions have since reopened schools to in-person learning, with some jurisdictions prioritizing school reopening as the first step in their plan to exit lockdown.²¹ The jurisdictions included in this environmental scan have all either implemented plans for school operation in spring 2021, or have released plans for school operations in fall 2021.

Implementation of infection control measures is critically important to reducing COVID-19 transmission in schools.² Recent evidence demonstrates that COVID-19 transmission in schools is lower than, or at least no higher than other community settings when IPAC measures are in place and adhered to. Schools have not been found to meaningfully contribute to community transmission, and cases in schools are typically acquired in the community not in school settings.¹⁻³ The British Columbia Centre for Disease Control's (BCCDC) hierarchy for IPAC guidance for communicable disease in community-based allied health settings is a useful framework that organizes control measures to mitigate the impact of COVID-19.⁴ The implementation of these measures helps create a safe environment, with control measures at the top of the hierarchy more effective and protective than those at the bottom. The BCCDC's hierarchy of control measures for communities is as follows: public health measures (i.e., vaccination, screening, surveillance, contact tracing), environmental measures (i.e., cleaning/disinfection, ventilation, being outdoors), administrative measures (i.e., distancing, cohorting, gatherings and events, extra-curricular activities), and personal measures (i.e., personal protective equipment [PPE], masks, hand hygiene). By implementing a combination of measures at each level, the risk of COVID-19 is substantially reduced.⁴

School aged children and youth in Ontario have missed 26 weeks or more of in-person learning during the COVID-19 pandemic.²² There are known negative impacts of community-based public health measures, such as school closures, on the health and mental health of children and families.^{23,24} These negative impacts include lack of access to school nutrition and healthcare services, and unhealthy behaviours (e.g., low physical activity, excessive screen time).^{23,24} Recent guidance from organizations including the United States (US) Centres for Disease Control and Prevention (CDC), the European Centre for Disease Prevention and Control (ECDC), and the European Technical Advisory Group (TAG) agree that due to the considerable harms, closing schools to in-person learning should be considered only after restrictions have been implemented in other settings, and only as a last resort to control COVID-19 transmission.^{1,25,26} Understanding how jurisdictions have tried to implement measures to reduce the risk of in-person learning at school can help to inform the planning for return to in-person learning in Ontario.

Methods

A rapid environmental scan of the plans for return to in-person learning in select jurisdictions was conducted to document preventative measures implemented in schools open for in-person learning. We examined select Canadian provinces (British Columbia [BC], and Quebec), select jurisdictions from the US (New York, California, and Minnesota), select European jurisdictions (England, Wales, Scotland, and Ireland), and Israel.

Records were obtained through online searches conducted between June 25, 2021 and July 14, 2021 of recent policies, media articles, government websites, official press and reports. The documentation reviewed to identify measures addressed in school planning were examined according to the BCCDC's hierarchy of controls for community-based settings,⁴ and documented in table form to provide a comparison to Ontario's existing guidance for the 2020-21 school year, which is expected to be revised for fall 2021 (Table 1 found in **Appendix A**).

Results

The results are organized by the BCCDC hierarchy of controls, documenting the details from each jurisdiction on their inclusion of control measures in plans for in-person learning. The BCCDC hierarchy of control measures include public health measures, environmental measures, administrative measures, and personal measures; with public health measures at the top of the hierarchy (most effective) and personal measures at the bottom (least effective).

Of note, of the jurisdictions scanned, only BC, Quebec, and California have publicly available plans for the 2021-22 school year. Other jurisdictions have updated guidance for the 2020-21 school year in the spring and summer of 2021, but specific plans for the 2021-22 school year are not yet available. Comprehensive documentation of IPAC measures implemented during in-person learning in Israel were not found, and results are limited to few press releases and media articles. No included jurisdictions listed specific epidemiological or vaccination targets linked to the opening or closure of schools for in-person learning.

Results of the environmental scan are summarized below, and a more detailed summary of the environmental scan results in relation to Ontario's current IPAC guidance for schools can be found in **Appendix A**.

Public Health Measures

VACCINATION

- In Ontario, vaccination is recommended for those eligible (students, teachers, staff and family members ages 12 and older). Accelerated second doses are available for youth ages 12 to 17 beginning July 5, 2021.²⁷
- Jurisdictions in Canada, the US, and Israel recommend vaccination with both doses for all who are eligible, including adults and youth ages 12 to 17 (BC,⁶ Quebec,⁵ New York,^{8,28} California,¹⁰ Minnesota,⁹ Israel²⁹).
- In United Kingdom (UK) jurisdictions (England, Scotland, Wales), and Ireland, vaccination is recommended for all eligible adults, however eligibility is limited to adults over the age of 18 and has not yet been expanded to youth ages 12 to 17.^{11,12,30}
- It is anticipated that data from Pfizer-BioNTech vaccine trials in children ages 5 to 11 will be available in September 2021, and if emergency use is authorized this age group may be eligible for vaccination early in the 2021-22 school year.³¹
- No jurisdictions reported vaccine requirements for students or staff, or community vaccination targets in their school IPAC guidance.

SYMPTOM SCREENING

- Currently in Ontario, students and staff must screen for COVID-19 every day before going to school using the Ministry of Health screening tools.³² An answer of “Yes” to one or more symptoms on the screening tool means the individual must stay home, isolate for 14 days, and arrange for an assessment/COVID-19 test.³²
- England,¹³ Scotland,¹⁴ Wales,¹⁵ Ireland,^{16,17} and BC⁶ also require all students and staff to screen for COVID-19 using a screening tool before attending school, and to stay home and isolate if they fail any screening items. In England, Scotland and Wales, those with symptoms are expected to arrange to have a COVID-19 test.¹³⁻¹⁵ In Ireland, staff must receive a COVID-19 test before returning to work and complete a return to work form.^{16,17}
- Quebec plans to continue to evaluate children with symptoms and isolate if needed in fall 2021.⁵
- In California, any students or staff with symptoms of COVID-19 are directed not to attend school, and to get tested for COVID-19.¹⁰ They may not return to school until they have met all of the following criteria: at least 24 hours with no fever without the use of fever-reducing medications; other symptoms have resolved; and a negative COVID-19 test, or documentation from a healthcare provider that symptoms are typical of an underlying condition, or a healthcare provider has confirmed an alternate diagnosis, or at least 10 days have passed since symptom onset.¹⁰
- New York requires a temperature check and daily COVID-19 screening questionnaire for staff, students, and any other individual entering the school. Any individual who screens positive for COVID-19 symptoms or exposure, or who presents with a temperature greater than 100.0°F, must not be allowed to enter the school if screened outside, and must be immediately sent home with instructions to contact their health care provider for assessment and testing.⁸

- In Minnesota, all members of school communities (staff, students, families, visitors) should self-screen for COVID-19 symptoms. It is strongly recommended schools follow the COVID-19 Decision Tree provided by the Minnesota Department of Health to determine who must stay home or be sent home from school based on screening.^{9,33}
- Screening measures are not reported in the available school IPAC measures for Israel.

SURVEILLANCE

- In Ontario, surveillance is the responsibility of the local Public Health Unit.³⁴ This involves monitoring and assessing local epidemiology related to the burden of COVID-19 cases and transmission risks in the local community. It also involves entering cases, outbreaks, and school exposures in the provincial surveillance system, in accordance with data entry guidance provided by PHO.³⁴ Ontario school boards have the option to partner with public health and offer voluntary asymptomatic testing to students and school staff, [data](#) is published weekly.³⁵
- In California, the Department of Health will provide schools with multiple free testing resources depending on their needs and community transmission status in the 2021-22 school year.³⁶ Periodic testing of a portion of unvaccinated asymptomatic staff and students can help to understand school rates of COVID-19 when community transmission is low. Frequent testing of all unvaccinated students and staff may be used to prevent in-school transmission and outbreaks, especially when community transmission is higher. In the context of a school outbreak, testing of all unvaccinated close contacts aims to identify any asymptomatic cases who need to isolate at home. Testing students and staff with symptoms, and testing to modify quarantine for unvaccinated close contacts (described under Contact Tracing below), can help keep students in school and minimize time spent isolating at home. Finally, while universal testing of unvaccinated individuals prior to starting school only provides a snapshot, it is available and can provide an understanding of baseline rates and avoid introduction of COVID-19 at the beginning of the school year.³⁶
- Jurisdictions in the UK encourage all school staff and secondary school students to participate in the twice weekly asymptomatic testing programme (e.g., England, Scotland, Wales).^{14,15,18,19}
- In Scotland, several COVID-19 surveillance programs are in place.¹⁴ These include regular reporting on overall incidence and swab positivity in school-age children and school staff, clusters and outbreaks in educational settings, and asymptomatic transmission among older student and school staff.¹⁴
- Other jurisdiction (e.g., Ireland, Israel, BC, Quebec, New York, Minnesota) did not report surveillance measures in the available school IPAC measures.

CONTACT TRACING

- Existing Ontario guidance indicates schools are required to report any suspected or confirmed cases of COVID-19 within the school to the local public health unit and provide any materials (e.g., daily attendance and transportation records) to support case management and contact tracing.³⁴ Public health officials will determine any additional steps required, including but not limited to the declaration of an outbreak and dismissal of classes and/or schools for testing and quarantine.³⁴
- In BC, public health will continue to monitor cases of COVID-19 and determine if actions should be taken to prevent or control spread. Schools should continue to maintain accurate attendance

records and class and bus lists to assist with contact tracing.⁶ In the event of a COVID-19 cluster or outbreak, the Medical Health Officer determines any required measures to prevent further transmission, such as requiring testing of all potentially exposed individuals, or ordering closure of the school for a period of time.³⁷

- In Quebec, a COVID-19 procedure to follow in educational institutions is available, outlining directions for: if a student shows one or more symptoms while in class; if a student shows one or more symptom while at home; if a student in the same school tests positive for COVID-19; and when there are several cases of COVID-19 in the same class, or an outbreak involved several classes. When any student tests positive, all parents and staff of the school are notified, public health follows up with contact tracing and anyone considered moderate to high risk must be isolated and tested, and those who are low risk can continue attending school and monitor for symptoms. In the event of several cases or outbreaks, public health authorities will determine if additional measures need to be taken (e.g., classroom or school closure).³⁸
- In California, schools are required to report any COVID-19 cases to the local health department, and should have a dedicated staff liaison to assist the health department with contact tracing and investigation.¹⁰ In the event of a COVID-19 case in the school, detailed quarantine, modified 10-day quarantine, or isolation at home requirements depend on the vaccination status of close contacts to the case in the school setting, whether unvaccinated close contacts were wearing a mask at the time of potential exposure, and the adherence of close contacts to testing and masking requirements (please see Appendix A).¹⁰
- In New York, schools are required to notify the state and local health department immediately upon being informed of any positive COVID-19 test result by an individual in the school community, and develop and maintain plans to support local health departments in tracing all contacts of the individual.⁸
- The Minnesota Department of Health has produced recommendations for handling a confirmed case of COVID-19 in school settings.³⁹ Schools are strongly recommended: to complete daily documentation of student seating to support contact notification in the event of an exposure; to develop policies to manage case follow-up and notification of exposed people; to develop systems to allow staff and students/families to self-report COVID-19 symptoms, close contact, or positive test; and to designate a staff member to respond to any school COVID-19 concerns and coordinate with local health authorities.⁹ Anyone who tests positive for COVID-19 should stay home until all three of the following are true: they feel better; their cough, shortness of breath, or other symptoms are better and it has been 10 days since they first felt sick or tested positive; and, they have had no fever for at least 24 hours, without using medicine that lowers fever.³⁹
- Scotland uses the [Test and Protect](#)⁴⁰ strategy in the school environment led by their local Health Protection Team.¹⁴ Wales uses the [Test Trace Protect](#)⁴¹ strategy to manage confirmed cases of COVID-19 among the school community.¹⁵ In England, schools are encouraged to use the NHS [Test and Trace](#)⁴² process and records should be kept of all visitors with sufficient detail to support rapid contact tracing if required.¹³ Similarly, Ireland uses a detailed sign in/out record system where a log of staff and student contacts is maintained in order to promptly identify and isolate potentially infectious individuals.^{16,17}
- In Israel, if a child tests positive for the coronavirus, all students and teaching staff in that grade will be tested before returning to the classroom.⁴³

Environmental Measures

CLEANING AND DISINFECTION

- Ontario's existing guidance for schools recommends school boards should review their cleaning protocols and reinforce them if needed to meet current public health requirements.³⁴
- In Quebec, cleaning and disinfection of frequently touched surfaces will continue in the 2021-22 school year.⁵ In BC, since the risk of COVID-19 transmission from surfaces is low, it is anticipated that transitioning to sector-specific cleaning practices will be recommended for the 2021-22 school year.⁶
- In California, guidance for the 2021-22 school year indicates cleaning once per day is considered sufficient to remove potential viruses on surfaces, and disinfection may be used to further reduce spread of infection.¹⁰ If the school setting has had someone ill with COVID-19 in the last 24 hours, all areas occupied by that person should be cleaned and disinfected.¹⁰
- In New York, high-risk areas (e.g., health offices, classrooms, lunchrooms, bathrooms) and high-risk surfaces (e.g., lunch tables, desks and chairs, light switches, handrails, faucets) are cleaned and disinfected multiple times a day.⁸
- In Minnesota, it is recommended that schools develop a daily schedule for the routine cleaning and disinfection of high-touch surfaces in classrooms and common spaces, and to schedule routine environmental cleaning when students and staff are not occupying the space.⁹
- In England, Scotland, Wales and Ireland, schools maintain an enhanced cleaning schedule, including more frequent cleaning of shared spaces and items, frequently touched surfaces, and bathrooms. If possible, groups are allocated to dedicated spaces, bathrooms or items, and movement of people between rooms and sharing of items is minimized.¹³⁻¹⁷
- In Ireland, cleaning and disinfecting of rooms occurs where any person with suspected COVID-19 was present.^{16,17}
- Israel did report specific cleaning/disinfection measures in available IPAC school measures.

VENTILATION

- In Ontario, the heating, ventilation and air conditioning (HVAC) systems in schools are to be regularly maintained by the appropriate professional contractor, and windows and doors are to be kept open as much as possible to ventilate with outdoor air when there is no HVAC system.^{34,44} General considerations for ventilation and filtration (not specific to schools) include professional assessment, maintenance and optimization for mechanical ventilation systems and appropriate selection, sizing, placement and maintenance of portable air cleaning units, where used.^{45,46}
- Most jurisdictions (BC,^{6,37} Quebec,^{5,47} California,^{10,48} New York,⁸ Minnesota,⁴⁹ England,¹³ Scotland,¹⁴ Wales,¹⁵ Ireland^{16,17}) recommend the regular assessment and maintenance of ventilation/HVAC systems in schools to ensure adequate ventilation. Several jurisdictions (BC,³⁷ New York,⁸ Minnesota,⁴⁹ Scotland,¹⁴ Wales¹⁵) recommend that HVAC/ventilation professionals are contracted to at minimum assess, and potentially improve mechanical ventilation in schools.
- Most jurisdictions (BC,³⁷ Quebec,^{5,47} California,⁴⁸ New York,⁸ Minnesota,⁴⁹ England,¹³ Scotland,¹⁴ Wales,¹⁵ Ireland^{16,17}) recommend opening windows and doors to facilitate natural ventilation

with outdoor air when possible, or when mechanical ventilation is inadequate. In some cases it is noted that opening windows and doors can affect the operation of HVAC systems, emphasizing the importance of having HVAC professionals' assessments and advice.^{37,49}

- Minnesota guidance notes that ventilation with outdoor air should be balanced with potential safety risks to staff and students who may be sensitive to environmental allergens or at risk of asthma exacerbation.⁴⁹ Minnesota guidance also notes that HVAC maintenance and upgrades should take place when school is not in session, and at minimum one week before the building is occupied to ensure the system is operating correctly.⁴⁹ A media article reports in some jurisdictions across New York State, all classrooms will have two air purifiers for the 2021-22 school year.⁵⁰
- Ventilation guidance was not reported in available IPAC measures in Israel.

Administrative Measures

PHYSICAL DISTANCING

- In Ontario's existing guidance, distancing is promoted as much as possible among students and staff.³⁴ Implementation options include desks and chairs being distanced as much as possible and facing the same direction.⁴⁴ If individual desks are not used, space is maximized between groups and alternate seating is used, if possible. Visual cues, such as markings on the floor are used to promote physical distancing. Nutrition breaks and lunch times are staggered to facilitate distancing in staff break rooms and other shared spaces. There are limits on the number of staff at one time, and furniture is spaced apart to maintain physical distancing of two metres.⁴⁴
- In BC, recommendations for the 2020-21 school year included staff maintaining two metres distance from each other and from students, two metres distance between middle and secondary students, and two metres distance for elementary students interacting outside of their learning groups. However, it is anticipated that physical distancing will not be required for the 2021-22 school year.^{6,51} Quebec is planning for no distancing requirements in the 2021-22 school year, though distancing may be re-introduced in the event of a COVID-19 outbreak.⁵
- In California, plans for the 2021-22 school year indicate in-person instruction can occur safely without physical distancing requirements when other mitigation strategies (e.g., masking) are fully implemented.¹⁰ Physical distancing should be maximized when eating and therefore masks cannot be worn, this may involve using additional spaces outside of cafeterias and classrooms, or arranging for eating outdoors as much as is feasible.¹⁰
- In New York, physical distancing is maintained between students and staff while in school facilities and on school grounds, unless safety or the core activity requires a shorter distance, or individuals are of the same household (e.g., moving equipment, using an elevator). Physical distancing requirements may be reduced to a minimum of three feet between students in classroom settings, subject to adherence to other mitigation measures.^{7,8}
- In Minnesota, it is recommended schools evaluate classrooms and create as much space as possible between students, aiming for a minimum of three feet of distance, and up to six feet in areas of high community transmission in settings where cohorting is not possible.⁹ A distance of six feet should be maintained: between staff and students; between staff and other staff or visitors; when masks cannot be worn such as when eating; and during activities with increased exhalation such as singing, or during physical activity. Other distancing recommendations

include staggering arrival and dismissal times to minimize crowding, and maintaining distanced seating assignments for meal times.⁹

- In England, Scotland, Wales, and Ireland, staff are encouraged to maintain two metres of distance from each other and from students.¹³⁻¹⁷ Distancing between students should be facilitated and encouraged where possible, but is not required. Schools are encouraged to make adaptations to the classroom to support distancing where possible (e.g., seating students side by side and facing forwards, moving unnecessary furniture out of the classroom to create more space).
- Israel did not report distancing in available school IPAC measures.

COHORTING

- Existing Ontario guidance indicates elementary school students in K-8 are to remain in one cohort for the full day, including recess and lunch.³⁴ Cohorted classes stay together and with one teacher, where possible. Secondary schools are encouraged to adopt timetabling methods that emphasize cohorting of students as much as possible.³⁴ Secondary school boards developed timetables that over a one-to-two-week period: limit indirect and direct student contacts to approximately 100 students in the school and encourage keeping secondary school students in a maximum of two in-person class cohorts. For subjects taught by a teacher or staff member other than the regular homeroom teacher, the student cohort remains in the same classroom and the teacher(s) move from classroom to classroom, where feasible.³⁴
- In both BC and Quebec, cohorts will not be recommended in the 2021-22 school year. Cohorting or assigned seating may be re-introduced in the event of a COVID-19 outbreak in Quebec.^{5,6}
- California guidance for the 2021-22 school year does not include any cohorting requirements.¹⁰
- In New York, schools are required to enact measures to prevent intermingling across cohorts, to the greatest extent possible (e.g., separation by appropriate physical distancing, particularly if there are multiple cohorts in one area). Staff should make reasonable efforts to ensure that cohorts are fixed. Faculty may instruct more than one cohort so long as appropriate physical distancing is maintained.⁸
- In Minnesota, students and staff should remain in small cohorts which stay together as much as possible through the day, especially among younger students who are not yet eligible for vaccination. Cohorts should maintain six feet of distance from each other, and mixing between cohorts should be avoided as much as possible (e.g., during meals, arrival and dismissal, recess).⁹
- In England 'bubbles' of an appropriate size are encouraged to achieve the greatest reduction in contact and mixing, as long as it does not affect the quality and breadth of teaching or access for support and specialist staff and therapists.¹³ Staff can operate across different classes and groups, and where staff need to move between groups they should try and keep their distance from students and other staff as much as they can, ideally two metres from other adults.¹³ Similarly in Scotland both primary and secondary settings, wherever possible, efforts should be made to keep children and young people within the same groups for the duration of the school day.¹⁴ In Wales students should be grouped together in as small a group as possible and avoid mixing between separate contact groups, including during arrival at school, break/lunch times and leaving school. Staff responsible for younger learners should remain with set contact groups. Only under exceptional circumstances should they interchange between different groups.¹⁵
- In Ireland primary school students and teaching staff should consistently be in the same 'Class Bubbles' (although this will not be possible at all times).^{16,17} This includes having separate breaks and meal times. Secondary school students are to be assigned to a main class cohort which would remain in the classroom for most subjects, with teachers moving between rooms.
- In Israel, as of April 18, 2021, there were no restrictions on teachers or teacher assistants' ability to move between classes and schools, and students were no longer required to study in socially distanced cohorts.^{43,52}

OUTDOOR SPACE

- Currently in Ontario, it is recommended that physical education takes place outdoors as much as possible.³⁴ Lunch and nutrition breaks can be taken outside, provided physical distancing is maintained (weather permitting and where feasible).^{34,44} Other options include using school outdoor areas and/or nearby park space for learning and recess/breaks.⁴⁴ Physical distancing should be maintained between cohorts, and, where possible/practical, within cohorts. Masks should be worn by students outdoors when physical distancing cannot be maintained.^{34,44}
- In BC, California, New York, Minnesota, Scotland, and Wales, IPAC measures include recommendations to utilize outdoor space for instruction, meals, physical activity, and for general student well-being wherever possible, and considering safety (i.e., air quality, allergies, temperature).^{7-9,14,15,53,54}
- Some jurisdiction such as England, Ireland, Israel and Quebec did not report general use of outdoor space in available school IPAC measures.

MUSIC

- Current Ontario school guidance indicates music instruction has a variety of delivery options, including fully distanced learning, in-person teaching and instruction with lower-risk creative performance opportunities (e.g., large space, restrictions on type of instruments in a group setting), and in-person teaching instruction with no live performance.³⁴
- Existing IPAC guidance in Quebec does not include specific measures for music.⁵ However, a series of [recommendations](#) to safely teach music in schools produced by the Laval University is available, and may provide options to consider for the 2021-22 school year.⁵⁵
- In California, previous guidance from spring 2021 indicated outdoor singing and band practice were permitted, provided precautions such as physical distancing and mask wearing were implemented to the maximum extent possible. Playing of wind instruments was strongly discouraged.⁵³ Updated guidance for the 2021-22 school year does not include IPAC measures specific to music.¹⁰
- In New York, individuals participating in activities that require projecting the voice (e.g., singing) or playing a wind instrument must be six feet apart and there must be six feet of distance between the performers and the audience during performances and concerts.^{7,8}
- In Minnesota, general recommendations to reduce risk during musical activities include wearing masks, reviewing ventilation, and using outdoor spaces when possible. Guidance notes that music produced by singing, woodwind or brass instruments, and mixing of vaccinated and unvaccinated individuals can lead to higher risk for COVID-19 spread, and recommend extra precautions are considered for these activities. Extra precautions include: avoid shared equipment and/or ensuring thorough cleaning after each use; encourage physical distancing between all participants; reduce the number of musicians in ensembles; and utilize face and instrument coverings designed to reduce droplet spread while playing.⁵⁶
- In England, teachers can continue teaching music, dance and drama as part of school curriculum. Singing, wind and brass instrument playing can be undertaken in line with this and other guidance, including guidance on working safely during COVID-19 in the performing arts. Resources that are shared between classes or bubbles, such as sports, arts, and science equipment should be cleaned frequently.¹³

- In Scotland, specific guidelines have been produced covering art, design, photography, music (including singing), dance, and drama. These documents set out the hierarchy of risk in terms of the different types of activities and the different kinds of mitigations which can be put in place.¹⁴
- In Wales, activities run for the development and well-being of children and young people, such as sports clubs and drama classes, are allowed.¹⁵ There is no limit on the number of children and young children that can attend these activities, but organizers should be mindful of the space available.¹⁵
- In Ireland, choir practices/performances and music practices/performances involving wind instruments are stated to potentially pose a higher level of risk and are to be given special consideration in how they are held ensuring that the room is well-ventilated and the distance between performers is maintained.^{16,17}
- In Israel, BC, and New York no specific school IPAC recommendations related to music are reported.

PHYSICAL EDUCATION AND SPORTS

- Currently in Ontario, health and physical education classes should be held outdoors whenever feasible, if held indoors physical distancing must be maintained. The use of shared equipment should be limited, and equipment should be cleaned and disinfected after use by each cohort.³⁴
- In California, guidance from spring 2021 cites specific Outdoor and Indoor Youth and Adult Recreational Guidance, emphasizes outdoor activity over indoors, and notes transmission risk increases with increased exertion.⁵³ Updated guidance for the 2021-22 school year does not include IPAC measures specific to physical activity or sports.¹⁰
- Minnesota guidance recommends schools review the CDC resources [Considerations for Youth Sports](#),⁵⁷ and [Sports Program FAQs](#).⁹ Currently, these CDC resources emphasize that close contact or indoor sports should be avoided due to increased risk of COVID-19 spread, and if participating in these activities risk can be reduced by being vaccinated, wearing a mask, playing outside, maintaining six feet of distance from others, and avoiding crowds.^{57,58}
- In England and Wales, outdoor physical activity is preferred, and distancing between students and adequate ventilation is emphasized if held indoors.^{13,15} Guidance from England, Wales, and Ireland note equipment sharing should be minimized and shared equipment needs frequent cleaning.^{13,15-17} In Scotland, class sports are allowed but school-wide sports events are not permitted.¹⁴
- In Israel, BC, Quebec, and New York specific school IPAC recommendations related to physical education are not reported.

GATHERINGS AND EVENTS

- Existing guidance in Ontario indicates large in-person gatherings such as assemblies, concerts, dances or large in-person staff meetings are not planned and instead are offered virtually.^{34,44}
- BC and Quebec anticipate resuming all usual school activities including gatherings and events, in the 2021-22 school year, as permitted by local public health restrictions.^{5,6}
- In England, Scotland and Wales, large gatherings with more than one group are to be avoided.¹³⁻¹⁵
- In Ireland, Israel, California, New York, and Minnesota, recommendations related to gatherings and events were not reported in available school IPAC measures.

SCHOOL-BASED EXTRACURRICULAR ACTIVITIES

- In Ontario, current guidance indicates that field trips and activities requiring group transportation are not planned, and extracurricular clubs and sports must align with current provincial and local public health restrictions. If offered, physical distancing must be maintained, equipment sharing should be limited and any shared items must be cleaned and disinfected after each use.^{34,44}
- BC and Quebec plan to resume all usual extracurricular activities in the 2021-22 school year.^{5,6}
- In California, guidance for the 2021-22 school year does not include IPAC measures or restrictions related to school-based extracurricular activities.¹⁰
- In New York, any extracurricular activities must consider the risk of COVID-19 transmission, physical distancing, PPE/mask requirements, and the need for cleaning or disinfection.^{7,8} Maintaining students in cohorts for extracurricular activities is encouraged if possible.^{7,8} Minnesota guidance does not include recommendations for extra-curricular activities beyond those described for music and physical education above.
- England and Wales are allowing extracurricular activities, and recommend mixing between different groups of students be avoided where possible and organizers be mindful of the activity space.^{13,15} Indoor and outdoor competitions between schools are permitted in England.¹³ In Scotland specific restrictions related to physical education and expressive arts are determined by the local restriction level.¹⁴
- In Israel, specific school IPAC recommendations related to extracurricular activities are not reported.

Personal Measures

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- In existing Ontario guidance, school staff are required to wear a medical mask indoors at all times (except when eating or if alone in a private space), and when outdoors if physical distancing cannot be consistently maintained, unless exempt.^{34,44} Staff are recommended to wear eye protection and a medical mask if two metres of distance cannot be consistently maintained. School-based staff may be designated as leads for COVID-19 related activities, and receive training on appropriate PPE to use when interacting with or caring for an ill student or staff member.^{34,44}

- In Minnesota, PPE is strongly recommended for staff providing direct student support involving close, physical, or prolonged contact.⁹
- In England, Scotland, Wales, and Ireland, it is recommended for the majority of school staff PPE is not required or necessary in their daily work routine. PPE should be worn if interacting with or providing care to an individual who has developed COVID-19 symptoms and distancing cannot be maintained.¹³⁻¹⁷
- In Israel, BC, Quebec, California, and New York, guidance specific to PPE was not reported in available school IPAC measures.

MASKS (MEDICAL OR NON-MEDICAL)

- In Ontario's existing guidance, students in kindergarten are strongly encouraged, and students in grades 1 to 12 are required to wear a mask in school indoor spaces and on school buses, unless exempt.^{34,44}
- In BC, masks are required for all staff and students in grades 4 to 12 in indoor settings. Masks are encouraged but not required for students in grades K to 3.⁵⁴ Note, this is per the 2020-21 school guidance, an update related to masks for the 2021-22 school year is not yet available.
- In Quebec, the plan is for no mask requirements in the 2021-22 school year, though requirements may be re-introduced in the event of a COVID-19 outbreak.⁵
- In California, all staff and K-12 students are required to wear masks while at school.¹⁰ Schools must develop protocols to provide masks to anyone who inadvertently fails to bring one to school. A strong emphasis on universal masking in schools allows the removal of physical distancing requirements. It also helps to avoid potential negative impacts of masking requirements based on vaccination status, such as stigma, bullying, or isolation depending on the culture, attitudes, and beliefs in the school and the surrounding community. Masks are optional when outdoors.¹⁰
- In New York, masks are required at all times in indoor school facilities, except for meals. Face masks are not required to be worn outdoors on school grounds, including during outdoor school sports.^{7,8}
- In Minnesota, masks are strongly recommended for every person over the age of two present in school buildings. Schools are encouraged to maintain a supply of masks for students and staff.⁹
- In England, masks are no longer recommended for students in classrooms or communal areas in all schools, and no longer recommended for staff in classrooms. Masks should be worn by staff and visitors in situations outside of classrooms where social distancing is not possible.¹³
- In Scotland, masks should be worn by adults, staff and secondary school students at all times in classrooms, in communal areas and when moving about inside the school. Primary school students are not expected to wear masks.^{14,20}
- In Wales, masks should be worn by staff at all times, and by secondary school students when physical distancing cannot be maintained. Masks should not be worn during physical activity.¹⁵
- In Ireland, masks should be worn by staff and secondary school students when physical distancing cannot be maintained. Primary school students are not required to wear masks.^{16,17}

- In Israel, as of June 25, 2021 after reports of several school outbreaks, masking is required by all in schools, except outdoors.^{59,60}

HAND HYGIENE

- Currently in Ontario, staff and students should be provided with targeted, age-appropriate education in proper hand hygiene and respiratory etiquette, and have easily accessible supplies to conduct appropriate hand hygiene and respiratory etiquette.³⁴ Alcohol Based Hand Rub (ABHR) with a minimum 60% alcohol concentration (60-90% recommended in community settings) and/or plain liquid soap in dispensers, sinks and paper towels in dispensers should be available throughout the school and ideally at the entry point to each classroom. Hand hygiene should be conducted by anyone entering the school and incorporated into the daily schedule at regular intervals during the day, above and beyond what is usually recommended (for example, before eating food, after using the washroom).³⁴
- In BC and Quebec, hand hygiene will continue to be regularly practiced in the 2021-22 school year.^{5,6}
- In California and New York, hand washing stations and hand sanitizer are available, and their safe and appropriate use are promoted and incorporated into routines for staff and students. Respiratory etiquette is taught and reinforced. Schools must ensure that adequate supplies to support healthy hygiene behaviors are available including: soap, tissues, no-touch trashcans, masks, and hand sanitizers with at least 60 percent ethyl alcohol.^{7,8,10}
- In Minnesota, schools must ensure the availability of appropriate hygiene supplies and strategically place in areas where they can be frequently used. Regular hand hygiene should be incorporated and reinforced in the daily schedule for all students and staff, including but not limited to: arrival and dismissal; before during, and after preparing or eating food; after using the bathroom; after coughing or sneezing or using a tissue; and after touching shared objects.⁹
- In England, Scotland, Wales and Ireland, schools must ensure that staff and students clean their hands regularly: upon arrival at school, returning from breaks, when changing rooms, before and after eating, and before and after using the toilet. Respiratory etiquette is encouraged and reinforced. Adequate facilities should be available for hand hygiene.¹³⁻¹⁷
- In Israel, no school hand hygiene measures were reported in available IPAC measures.

Equity Considerations

- In Ontario, while schools have been closed for in-person learning for long periods of time during winter and spring of 2021, the option to continue in-person learning has been available for students with special education needs who cannot be accommodated through remote learning.⁶¹ The Ontario government has made funding available to support school boards to implement equitable school reopening plans, including focused funding for initiatives supporting Black, racialized, and Indigenous students, and students with special needs.³⁴
- Guidance in multiple jurisdictions highlight that IPAC measures need to be balanced with effective learning and the wellbeing of students. For example, students with complex needs may have difficulty communicating, and transparent masks should be made available to avoid impeding communication.^{13-15,53} Guidance from Scotland notes that the return to school may prompt very different reactions from different students, some may be anxious, some may have

experienced increased distress and trauma while at home and welcome the return to school, and school authorities should consider arrangements to support vulnerable students.¹⁴

- In BC, school authorities have been asked to address learning impacts and additional needs by providing appropriate supports and services, with a focus on students who may have been disproportionately impacted by the pandemic (e.g., students from Indigenous communities, students with disabilities and diverse abilities and students from low-income families).⁶ School boards and authorities are encouraged to apply a compassionate and trauma-informed leadership lens in their recovery planning.⁶²

- The California Department of Public Health (CDPH) is launching a campaign this summer to build confidence with parents and students about the safety of returning to school full-time in fall 2021.⁶³ The campaign will: reach out to parents in areas hardest hit by the pandemic, especially Latinx, African American, Asian American and Pacific Islander parents of school-aged children; build on-the-ground local collaborations between local public health department and county offices of education; and provide ongoing statewide technical assistance and encourage two-way communication through enhanced technology.⁶³
- In New York, guidance states to ensure equity in education, efforts to return all students to in-person instruction should be prioritized.⁸ Prioritizing in-person instruction for students with disabilities who require special education and related services directly provided in school environments, as well as student populations that are at greater risk for learning loss may need to be considered. Also, policies should be implemented regarding vulnerable populations to allow them to safely participate in educational activities and accommodate their specific circumstances. Accommodations may include: remote learning, remote work, modified educational or work settings, or providing additional PPE to individuals with underlying health conditions.⁸
- In Minnesota, while not specifically related to school settings, the Department of Health provides general information about health equity and COVID-19, and vaccine equity considerations.^{64,65} In addition, the Minnesota Department of Health reports they have partnered with approximately 120 diverse media vendors and community organizations as part of the public health response to COVID-19, including communities of colour, American Indians, LGBTQ+ residents, and residents with limited English proficiency.⁶⁶ The aim is to ensure all communities have access to culturally relevant resources, and the opportunity to be fully informed with culturally relevant, language-appropriate, accurate, and timely messages related to COVID-19.⁶⁶
- In England, a template letter is provided to all parents of children asked to self-isolate which allows parents who have a low income and unable to work from home to apply for financial support under the Test and Trace Support Payment scheme.¹³
- In Wales, funding is available to extend the free school meal program to eligible students who are self-isolating at home, and in schools with in-person learning but catering facilities are not operational, eligible students receive alternate provisions via vouchers, food parcels, or payments. Free breakfast clubs are required to continue at primary schools.¹⁵
- In Ireland, The Continuum of Support framework supports a whole-school approach to planning for the return to school and helps to ensure that staff, students and parents feel welcome, safe and secure.⁶⁷ It recognizes that some students will require more tailored interventions and planning to help them reconnect with their school community and re-engage with learning. Five key principles include promoting a sense of safety, sense of calm, sense of belonging and connectedness, sense of self-efficacy and community-efficacy, and sense of hope.⁶⁷

Discussion

- It is important to note that many jurisdictions reviewed have not yet made recommendations publicly available for the 2021-22 school year, and measures reported are limited to those available in spring 2021 guidance, which are likely under review and expected to be updated before fall 2021. This scan may not have identified all relevant guidance documents from the jurisdictions reviewed about some measures, including management of exposed contacts in schools, and this requires further consideration, as it will impact schools', students' and families' ability to plan for potential disruptions related to exposures to cases in schools. Finally, increases in the B.1.617.2 (Delta) VOC may impact jurisdictional or local school and other community IPAC measures not reflected in available school guidance.⁶⁸
- For each jurisdiction included in this environmental scan, a combination of IPAC measures have been implemented or planned which align with multiple levels of the BCCDC hierarchy of control measures for community settings: public health measures (i.e., vaccination, screening, surveillance, contact tracing), environmental measures (i.e., cleaning/disinfection, ventilation, being outdoors), administrative measures (i.e., distancing, cohorting, gatherings and events, extra-curricular activities), and personal measures (i.e., PPE, masks, hand hygiene).
- Ongoing screening, encouraging vaccination for those eligible, supporting local public health organizations to conduct contact tracing, assessing and/or enhancing ventilation, and facilitating regular hand hygiene are reported in every jurisdiction for which comprehensive school IPAC measures were available (i.e., excluding Israel).
- Nearly all jurisdictions also highlight the need to provide equitable supports to all members of school communities, for example by reaching out to families who have been disproportionately impacted by the pandemic (e.g., Black and Indigenous communities, students with disabilities and diverse abilities, students from low-income families, and students in vulnerable positions or at risk of trauma) and ensuring students receive adequate and compassionate supports.
- Of the Canadian jurisdictions which have announced less stringent IPAC measures in fall 2021, (i.e., BC and Quebec), the majority of restrictions being lifted align with the lower levels of the hierarchy of control measures: administrative and personal measures. For example, both jurisdictions plan to no longer require masks, physical distancing or cohorting, and will begin to allow gatherings, events, and extracurricular activities without restrictions. Routine cleaning will be continued. Most measures aligning with public health and administrative measures will be maintained: encouraging vaccination for ages 12 and up, screening, ongoing contact tracing, and enhanced ventilation.
- California has also made IPAC recommendations for the 2021-22 school year available. The key restrictions being lifted are at the administrative level: physical distancing and cohorting will no longer be required. IPAC guidance for schools in California continues to heavily emphasize public health measures by encouraging all who are eligible to get vaccinated, and facilitating a robust screening, surveillance, and contact tracing system to minimize COVID-19 introduction or transmission in schools. Environmental and personal IPAC measures include recommending daily cleaning, disinfecting when needed, ensuring ventilation is optimized, continuing to require all students and staff to wear masks at all times indoors, and promoting routine hand hygiene.
- The US jurisdictions of New York and Minnesota overall report similar IPAC guidance from the spring to early summer of 2021. Similar to the included Canadian jurisdictions, public health and environmental measures are strongly emphasized. Different from the Canadian jurisdictions,

New York and Minnesota also maintain many administrative and personal measures in their current IPAC measures. For example, masks are required for all staff and students, physical distancing and cohorting is encouraged as much as possible, and limiting or highlighting IPAC considerations for events and school-related extracurricular activities.

- Overall, the included European jurisdictions (i.e., England, Scotland, Wales, and Ireland) also maintain many administrative and personal IPAC measures on top of emphasizing public health and environmental measures. Available guidance for these jurisdictions is from the spring of 2021. Of note, in contrast to all other included jurisdictions, youth ages 12 to 17 are not yet eligible for vaccination in England, Scotland, Wales, or Ireland. Guidance around masks varies across these four jurisdictions, but all consistently require adults wear masks when physical distancing cannot be maintained, and most also encourage this for secondary school students. Physical distancing and cohorting are generally not mandated, but schools are encouraged to facilitate these measures as much as is feasible without interfering with student's learning and wellbeing. Allowances for gatherings, events, and extracurricular activities vary across these jurisdictions.
- Limited information was available to report school IPAC measures for Israel. Public health measures include encouraging vaccination for all who are eligible, including youth ages 12 to 17, and if a student tests positive for COVID-19, all classmates and the teacher must also be tested before returning to class. Details of environmental measures were not available. A spring 2021 press release indicates cohorting is no longer required, no further administrative measures were found. Finally, the requirement for masks indoors for all students and staff had been lifted, but was recently re-implemented on June 25, 2021, in the context of school outbreaks in Israel.

Implications for Practice

- A return to in-person learning in Ontario in September 2021, after almost 26 weeks of remote learning during the pandemic, requires significant planning to ensure safety measures are commensurate with infection risk, which will then support the well-being of students, staff and the community. Vaccination has been the key turning point of the pandemic, and achieving highest possible rates of vaccination in the community (among all eligible age groups, which currently excludes children under 12 years of age) is a priority ahead of the 2021-22 school year.
- In addition to vaccination, and because vaccination is not available to a significant proportion of the school community, the maintenance of public health, environmental, administrative and personal measures is still likely required. Some relaxation of select measures may be considered if there is low community transmission, and considering the potential impact on more vulnerable individuals. For example, while masking is lower in the IPAC hierarchy as a personal measure, it has been adopted by most as a relative norm through the pandemic, and may remain a crucial measure in schools due to the anticipated mix of vaccinated and unvaccinated individuals at schools. Some measures that require advanced planning (e.g., ventilation upgrades, cohort scheduling) should also be prioritized ahead of the return to school. Planning should also account for how vaccination could be rapidly delivered to younger age cohorts as soon as they are approved for use by Health Canada, which is anticipated in the fall/winter of 2021-22.
- Current and emerging variants with increased transmissibility and potential for vaccine escape pose uncertainty to the future epidemiological state of COVID-19 in Ontario in the fall of 2021. Recognizing the need to consider both benefits and harms of prevention measures in schools,

cautious application of more levels of measures at the start of the school year with progressive relaxation of levels while closely monitoring school and broader community epidemiology and health system impacts (i.e., acute care and local public health capacity), may be preferred over having to re-implement more restrictive measures in the context of worsening epidemiology. Some measures that require significant lead-time planning may be more difficult to re-implement quickly in response to worsening epidemiological context (e.g., should rapid spread occur in unvaccinated/under-vaccinated groups, as has been observed in recent B.1.617.2 [Delta] variant outbreaks in Ontario and in schools in other jurisdictions).

- Measures that reduce the risk of introduction of cases and the need for classroom/school dismissals as a result of COVID-19 case exposures/outbreaks should be prioritized to maintain as much in-person learning as possible due to the many known harms for children and youth not attending in-person learning at school.

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Appendix A: COVID-19 Infection Prevention and Control Measures for In-Person Learning in Schools

The British Columbia Centre for Disease Control's (BCCDC) hierarchy for infection prevention and control guidance for communicable disease in community-based allied health settings documents practices to mitigate the impact of COVID-19.⁴ The BCCDC's hierarchy of control measures is as follows: public health measures (i.e., vaccination, screening, surveillance testing, contact tracing), environmental measures (i.e., cleaning/disinfection, ventilation), administrative measures (i.e., distancing, cohorting, gatherings and events, extra-curricular activities), and personal measures (i.e., PPE, masks, hand hygiene).⁴ The implementation of control measures helps create a safe environment, and the control measures at the top of the hierarchy are more effective and protective than those at the bottom. By implementing a combination of measures at each level, the risk of COVID-19 is substantially reduced.

Table 1 summarizes information from an environmental scan of planned or implemented IPAC practices to mitigate the impact of COVID-19 in schools. Public health, environmental, administrative, and personal measures have been implemented in jurisdictions that have reopened schools to in-person learning in spring 2021, and guidance for fall 2021 also plan for the implementation of these measures. Table 1 includes Ontario's current school IPAC measures as a Reference. Ontario IPAC measures are informed by Ontario Ministry of Health and Public Health Ontario (PHO) resources. Key results of the scan of select Canadian provinces (British Columbia [BC], Quebec), select jurisdictions from the US (New York, California, Minnesota), select European jurisdictions (England, Wales, Scotland, Wales, Ireland), and Israel are presented alongside Ontario's existing IPAC measures for comparison.

Important to note, existing guidance for Ontario, New York, Minnesota, all European jurisdictions, and Israel are from spring 2021 and are expected to be reviewed and updated before the 2021-22 school year. BC, Quebec, and California have available guidance for fall 2021.

Table 1. School COVID-19 IPAC measures in Ontario and select jurisdictions

Hierarchy of IPAC Measures ⁴	Current Ontario IPAC Measures	IPAC Measures Implemented or Planned in Select Jurisdictions
Public Health Measures: Vaccination	<p>Recommend vaccination for all who are eligible (ages 12+; students, staff, teachers, families). Accelerated second doses are available for youth ages 12 to 17 beginning July 5, 2021.²⁷</p> <p>It is anticipated that data from Pfizer-BioNTech vaccine trials in children ages 5 to 11 will be available in September 2021, and if emergency use is authorized this age group may also be eligible for vaccination early in the 2021-22 school year.³¹</p>	<p>BC,⁶ Quebec,⁵ New York,^{8,28} California,¹⁰ Minnesota,⁹ Israel:²⁹ Recommend vaccination with both doses for all those who are eligible, including those aged 12 to 17.</p> <p>England, Scotland, Wales: As per the National Health Service (NHS) in the UK, adults over the age of 18 are eligible for the COVID-19 vaccine.¹¹ The Joint Committee on Vaccination and Immunisation (JCVI) in the UK has not yet expanded vaccine eligibility to youth ages 12 to 17.³⁰</p>

Hierarchy of IPAC Measures ⁴	Current Ontario IPAC Measures	IPAC Measures Implemented or Planned in Select Jurisdictions
Public Health Measures: Symptom screening	<p>Students and staff must screen for COVID-19 every day before going to school using the Ministry of Health screening tools.³² An answer of “Yes” to one or more symptoms or questions on the screening tool means the individual must stay home, isolate for 14 days, and arrange for an assessment/COVID-19 test.³²</p> <p>Schools will conduct daily on-site confirmation of self-screening for secondary students, staff and visitors before entering school or at the start of the school day.³⁴</p> <p>Always refer to provincial screening requirements and local requirements, which may vary.⁴⁴ If active on-site symptom screening for COVID-19 is being implemented a process must be in place to manage a student, staff, or visitor who screens positive for symptoms (i.e., separated from others until next steps determined), in a supportive and non-stigmatizing way.⁴⁴</p>	<p>Ireland:¹² Current vaccine eligibility is limited to adults age 18 and older.</p> <p>BC:⁶ All students and staff must complete a daily COVID-19 screening health check (available as a website and app) and stay home when sick.</p> <p>Quebec:⁵ Plans include to continue to evaluate children with symptoms and isolate them, if necessary.</p> <p>California:¹⁰ Any students or staff with symptoms of COVID-19 are directed not to attend school, and to get tested for COVID-19. They may not return to school until they have met all of the following criteria: at least 24 hours with no fever without the use of fever-reducing medications; other symptoms have resolved; and a negative COVID-19 test, or documentation from a healthcare provider that symptoms are typical of an underlying condition, or a healthcare provider confirmed an alternate diagnosis, or at least 10 days have passed since symptom onset.</p> <p>New York:⁸ Requires a temperature check and daily COVID-19 screening questionnaire for staff, students, and any other individual entering the school. The questionnaire should determine whether the individual has: been a contact in the last 14 days, tested positive in the last 14 days, experienced symptoms in the last 14 days, or travelled in the past 14 days (according to the state’s travel advisories). Any individual who screens positive for COVID-19 exposure or symptoms, or who presents with a temperature greater than 100.0°F, must not be allowed to enter the school if screened outside, and must be immediately sent home with instructions to contact their health care provider for assessment and testing.</p> <p>Minnesota:^{9,33} All members of schools communities (staff, students, families, visitors) should monitor for COVID-19 symptoms. It is strongly recommended schools follow the COVID-19 Decision Tree provided by the Minnesota Department of Health</p>

Hierarchy of IPAC Measures ⁴	Current Ontario IPAC Measures	IPAC Measures Implemented or Planned in Select Jurisdictions
		<p>to determine who must stay home or be sent home from school based on screening. Schools should develop policies to prevent the spread of disease, including: staff and students staying home if they have tested positive for COVID-19, have symptoms of COVID-19, or are ill and waiting for a COVID-19 test result; and staff and students staying home when they have had recent close contact with a person with COVID-19.</p> <p>England,¹³ Scotland,¹⁴ Wales:¹⁵ Routinely taking the temperature of students is not recommended as this is an unreliable method to identify COVID-19. Students, staff and other adults must screen for COVID-19 every day before going to school, and must not come into the school (and not attend for at least 10 days) if they fail any screening questions (any COVID-19 symptom, member of the household with symptoms, have had a positive COVID-19 test, close contact with COVID-19 case, or required to isolate due to travel or public health direction). Those with symptoms are expected to arrange to have a COVID-19 test. All school staff and secondary school students are encouraged to participate in the twice weekly asymptomatic testing programme.</p> <p>Ireland:^{16,17} All students and staff must screen for COVID-19 every day before going to school and must stay home if they fail any screening questions (any symptom of COVID-19, close contact or household member of confirmed COVID-19 case, travelled outside of Ireland, isolating per public health direction). Staff must receive a COVID-19 test before returning to work and complete a return to work form.</p> <p>Israel: Screening not reported in available school IPAC measures.</p> <p>California:³⁶ Robust funding has been provided for the Department of Health to provide schools with multiple resources depending on their needs and community transmission status in the 2021-22 school year, including subject matter experts, and free testing resources to support screening testing (e.g., software, test kits, shipping, testing, etc.). Testing options include:</p>
Public Health Measures: Surveillance	<p>Surveillance is the responsibility of the local Public Health Unit, who:^{34,69}</p> <ul style="list-style-type: none"> • Monitor and assess local epidemiology related to the burden of COVID-19 cases, transmission risks in the local community, and absenteeism in schools. 	

Hierarchy of IPAC Measures ⁴	Current Ontario IPAC Measures	IPAC Measures Implemented or Planned in Select Jurisdictions
	<ul style="list-style-type: none"> • Enter cases, outbreaks, and school exposures in the provincial surveillance system, in accordance with data entry guidance provided by PHO. <p>Ontario school boards have the option to partner with public health and offer voluntary asymptomatic testing to students and school staff, data is published weekly.³⁵</p>	<ul style="list-style-type: none"> • Periodic testing of a portion of unvaccinated asymptomatic staff and students to understand school rates of COVID-19 when community transmission is low. • Frequent testing of all unvaccinated students and staff to prevent in-school transmission and outbreaks, especially when community transmission is higher. • In the context of a school outbreak, testing of all unvaccinated close contacts aims to identify any asymptomatic cases who need to isolate at home. • Testing students and staff with symptoms, and testing to modify quarantine for unvaccinated close contacts (described under Contact Tracing below), to help keep students in school and minimize time spent isolating at home. • Universal testing of unvaccinated individuals prior to starting school only provides a snapshot, but may provide an understanding of baseline rates and avoid introduction of COVID-19 at the beginning of the school year. <p>Scotland:¹⁴ Several public health COVID-19 surveillance programs are in place which allow regular reporting on overall incidence and swab positivity in Scotland, in school-age children and school staff, clusters and outbreaks in educational settings, and asymptomatic transmission among older student and school staff.</p> <p>Ireland, Israel, BC, Quebec, New York, Minnesota: Surveillance not reported in available school IPAC measures.</p>
Public Health Measures: Contact Tracing	<p>Schools must immediately report any suspected or confirmed cases of COVID-19 within the school to the local public health unit and provide any materials (e.g., daily attendance and transportation records) to public health officials to support case management and contact tracing and other activities in accordance with all applicable legislation.³⁴ Public health officials will determine any additional steps required, including but not limited to the declaration of an outbreak and closure of classes and/or schools.³⁴</p>	<p>BC:^{6, 29} Public health will continue to monitor cases of COVID-19 and determine if actions should be taken to prevent or control spread. Schools should continue to maintain accurate attendance records and class and bus lists to assist with contact tracing. In the event of a COVID-19 cluster or outbreak, the Medical Health Officer determines any required measures to prevent further transmission, such as requiring testing of all potentially exposed individuals, or ordering closure of the school for a period of time.</p>

Hierarchy of IPAC Measures ⁴	Current Ontario IPAC Measures	IPAC Measures Implemented or Planned in Select Jurisdictions
	<p><u>Guidance</u> for local public health units on how to investigate COVID-19 cases, outbreaks and suspected outbreaks in elementary and secondary schools.³⁴</p>	<p>Quebec:³⁸ A COVID-19 procedure to follow in educational institutions is available, outlining directions for: if a student shows one or more symptoms while in class; if a student shows one or more symptom while at home; if a student in the same school tests positive for COVID-19; and when there are several cases of COVID-19 in the same class or an outbreak involved several classes. When any student tests positive, all parents and staff of the school are notified, public health follows up with contact tracing and anyone considered moderate to high risk must be isolated and tested, and those who are low risk can continue attending school and monitor for symptoms. In the event of several cases or outbreaks, public health authorities will determine if additional measures need to be taken (e.g., classroom or school closure).</p> <p>California:¹⁰ Schools are required to report COVID-19 cases to the local public health department, and schools should have a COVID-19 liaison to assist the local health department with contact tracing and investigation. Quarantine recommendations for unvaccinated students exposed when both parties were wearing a mask in an indoor classroom setting: Unvaccinated students who are close contacts (more than 15 minutes over a 24-hour period within 0-6 feet indoors) may undergo a modified 10-day quarantine. They may continue to attend school in-person if they:</p> <ul style="list-style-type: none"> • Are asymptomatic; • Continue to appropriately mask, as required; • Undergo at least twice weekly testing during the 10-day quarantine; and • Continue to quarantine for all extracurricular activities at school, including sports, and activities within the community setting. <p>Quarantine recommendations for unvaccinated close contacts who were not wearing masks or for whom the infected individual was not wearing a mask during the indoor exposure; or unvaccinated students as described above. For those who remain</p>

Hierarchy of IPAC Measures ⁴	Current Ontario IPAC Measures	IPAC Measures Implemented or Planned in Select Jurisdictions
		<p>asymptomatic may discontinue self-quarantine under the following conditions:</p> <ul style="list-style-type: none"> • Quarantine can end after Day 10 from the date of last exposure without testing; OR • Quarantine can end after Day 7 if a diagnostic specimen is collected after Day 5 from the date of last exposure and tests negative. <p>To discontinue quarantine before 14 days following last known exposure, asymptomatic close contacts must:</p> <ul style="list-style-type: none"> • Continue daily self-monitoring for symptoms through Day 14 from last known exposure; AND • Follow all recommended non-pharmaceutical interventions (e.g., wearing a mask when around others, hand washing, avoiding crowds) through Day 14 from last known exposure. • If any symptoms develop during this 14-day period, the exposed person must immediately isolate, get tested and contact their healthcare provider with any questions regarding their care. <p>New York:⁸ Notify the state and local health department immediately upon being informed of any positive COVID-19 diagnostic test result by an individual within school facilities; develop and maintain plans to support local health departments in tracing all contacts of the individual. School must continue to make reports to the New York State Department of Health COVID-19 School Report Card Dashboard every day that school is in session, regardless of whether any new tests have been reported or whether the school was completely remote on that day.</p> <p>Minnesota:^{9,39} The Department of Health has produced recommendations for handling a confirmed case of COVID-19 in school settings. Schools are strongly recommended: to complete daily documentation of student seating to support contact notification in the event of an exposures; to develop policies to manage case follow-up and notification of exposed people; develop systems to allow staff and students/families to self-report COVID-19 symptoms, close contact, or positive test; and to</p>

Hierarchy of IPAC Measures ⁴	Current Ontario IPAC Measures	IPAC Measures Implemented or Planned in Select Jurisdictions
		<p>designate a staff member to respond to any school COVID-19 concerns and coordinate with local health authorities. Anyone who tests positive for COVID-19 should stay home until all three of the following are true: they feel better; their cough, shortness of breath, or other symptoms are better and it has been 10 days since they first felt sick or tested positive; and, they have had no fever for at least 24 hours, without using medicine that lowers fever. To identify close contacts, gather and review the student's or staff member's activity. This review should look back two days prior to the date symptoms started, or two days prior to the date of the positive test if there are no symptoms.</p> <p>England:¹³ Schools should promote and engage with the NHS Test and Trace⁴² process. A record should be kept of all visitors with sufficient detail to support rapid contact tracing if required.</p> <p>Scotland:¹⁴ Schools must effectively apply Test and Protect⁴⁰ in the school environment, led by their local Health Protection Team. Schools are defined as complex settings for contact tracing purposes, meaning any positive case who has spent time in a school during the infectious period will be escalated to the local Health Protection Team.</p> <p>Wales:¹⁵ Schools must engage with the Test Trace Protect⁴¹ strategy to manage confirmed cases of COVID-19 among the school community and contain any outbreak by following local health protection team advice.</p> <p>Ireland:^{16,17} Detailed sign in/out records must be maintained, and a log of staff and student contacts in order to promptly identify and isolate potentially infectious individuals.</p> <p>Israel:⁴³ If a child tests positive for the coronavirus, all students and teaching staff in that grade will be tested before returning to the classroom.</p>

Hierarchy of IPAC Measures ⁴	Current Ontario IPAC Measures	IPAC Measures Implemented or Planned in Select Jurisdictions
Environmental Measures: Cleaning/ disinfection	<p>Ontario's existing guidance for schools recommends school boards should review their cleaning protocols and reinforce them if needed to meet current public health requirements.³⁴ It is anticipated new guidance will be updated for fall 2021.</p> <p>Recommendation and options have been developed outlining the timing and frequency (i.e., at least twice daily and more frequently if needed) for cleaning and disinfecting washrooms, eating areas, and other high-touch surfaces, as well as shared objects between uses.⁴⁴</p> <p>Items that are difficult to clean or cannot be adequately cleaned and disinfected (e.g., toys, stuffed animals, sand, water (if not single use/dedicated per student)) have been removed from classrooms and/or other commonly shared spaces. If items are used they should be quarantined for a minimum of three days.⁴⁴</p>	<p>BC:⁶ Since the risk of COVID-19 transmission from surfaces is low, it is anticipated that transitioning to sector-specific cleaning practices will be recommended for the 2022-21 school year.</p> <p>Quebec:⁵ Continue with cleaning and disinfection measures, particularly with regard to frequently touched surfaces in the 2021-22 school year.</p> <p>California:¹⁰ In general, cleaning once a day is usually enough to sufficiently remove potential virus that may be on surfaces. Disinfecting removes any remaining germs on surfaces, which further reduces any risk of spreading infection. If a person with COVID-19 has been present in a school building within the last 24 hours, clean AND disinfect the spaces occupied by that person during that time. Additional resources are available to schools: Cleaning and Disinfecting Your Facility.⁷⁰</p> <p>New York:⁸ Two scenarios that require cleaning and disinfecting multiple times per day:</p> <ul style="list-style-type: none"> • High risk areas including health offices, classrooms, lunchrooms/dining rooms, athletic rooms, bathrooms, and high traffic areas. Responsible parties must establish procedures for surfaces that must be sanitized after use, such as gym mats, health office cots, and lunch/dining tables. • High touch surfaces including lunch tables, desks and chairs, light switches, handrails, door handles/push plates, faucets, equipment handles and buttons, shared equipment and electronics, bus seats, and handrails. <p>Minnesota:⁹ It is recommended that school develop a daily schedule for routine cleaning and disinfection of high-touch surfaces in classrooms and common spaces, and to schedule routine environmental cleaning when students and staff are not occupying the space. Additional detailed guidance recommended for review: CDC,⁷¹ EPA.⁷²</p>

Hierarchy of IPAC Measures ⁴	Current Ontario IPAC Measures	IPAC Measures Implemented or Planned in Select Jurisdictions
Environmental Measures: Ventilation	<p>The heating, ventilation and air conditioning (HVAC) system is regularly maintained (e.g., by the HVAC contractor).⁴⁴</p> <p>Weather permitting, windows and doors are kept open if this can be done safely (ventilation with outdoor air is preferred).</p> <p>Where possible, air from portable fans or air conditioners is not blowing at typical breathing height (i.e., at head level); e.g., airflow directed upwards.⁴⁴</p> <p>General considerations for ventilation and filtration (not specific to schools) include professional assessment, maintenance and optimization for mechanical ventilation systems and appropriate selection, sizing, placement and maintenance of portable air cleaning units where used.^{45,46}</p>	<p>England,¹³ Scotland,¹⁴ Wales,¹⁵ Ireland:^{16,17} Maintain an enhanced cleaning schedule, including more frequent cleaning of shared spaces and items, frequently touched surfaces, and bathrooms. If possible, allocate groups to dedicated spaces, bathrooms or items, and minimize movement of people between rooms and sharing of items.</p> <p>Ireland:^{16,17} Clean and disinfect rooms where any person with suspected COVID-19 was present.</p> <p>Israel: Cleaning/disinfection not reported in available school IPAC measures.</p> <p>BC:^{6,37} Continue to ensure all mechanical heating, ventilation and air conditioning (HVAC) systems are working properly. Open windows when the weather permits.</p> <p>Quebec:^{5,47} An expert in industrial ventilation from the Ministère-network technical committee will guide the Ministère to implement enhance ventilation in schools. Ventilation is one of the measures to be applied among a series of complementary measures to control the transmission of SARS-CoV-2 in indoor areas.</p> <p>California: For indoor spaces, ventilation should be optimized, which can be done by following CDPH Guidance.^{10,48} <i>Outdoor air ventilation:</i> The system should provide at least the code-required minimum ventilation rate. In classrooms with no ventilation and no filtration, the risk of long-range airborne infection would be over six times as high as that for classrooms with code-required ventilation and a MERV 8 filter. <i>Filtration:</i> Ventilation system filters should be MERV-rated at MERV 13 or better. They should also be properly installed (i.e., no gaps that would allow air to bypass the filter) and properly maintained (i.e., replaced as often as recommended). MERV-rated filters can provide substantial protection from long-range airborne infection, especially if ventilation is poor.</p>

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		<p><i>In-room (portable) air cleaners:</i> Air cleaners used to reduce the risk of long-range airborne transmission should provide high-efficiency filtration and a sufficient “clean air delivery rate” (CADR) (i.e., at least 2/3 of the floor area). Such air cleaners can provide substantial additional protection, especially in naturally ventilated classrooms (in which air is supplied only through open windows or doors) or in classrooms with non-functioning or poorly functioning ventilation systems. Multiple devices per classroom may be necessary for sufficient total air cleaning.</p> <p>New York:^{7,8,50} Instead of physical barriers for mitigation (where physical distancing cannot be maintained) the CDC’s current preferred approach is enhanced ventilation and air filtration. The selection, installation, and maintenance of portable filtration devices should be made in consultation with an indoor air quality professional. The use of portable filtration devices does not decrease the need for mask wearing, physical distancing, sanitation practices, or adequate ventilation. In some jurisdictions across New York State, all classrooms will have two air purifiers for the 2021/22 school year.</p> <p>Minnesota:⁴⁹ Buildings with complex HVAC systems typically work with HVAC professionals to evaluate and improve ventilation. HVAC maintenance and upgrades should take place when school is not in session, and at minimum one week before the building is occupied to ensure the system is operating correctly. Opening windows may help facilitate natural ventilation, though effectiveness and feasibility depends on temperature, and pressure differences between indoor and outdoor air. Open windows can also affect HVAC systems, therefore consultation with an HVAC profession is recommended to change natural ventilation. Pollen, pollution, and other factors can affect people with asthma, and air filtration can help relieve these issues.</p> <p>England:¹³ Mechanical ventilation systems should be adjusted to increase the ventilation rate wherever possible and checked to</p>

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Administrative Measures: Distancing		<p>confirm that normal operation meets current guidance and that only fresh outside air is circulated. Opening window and doors can also assist with ventilation.</p> <p>Scotland:¹⁴ Improved ventilation is being viewed as an increasingly important IPAC measure in schools. Emphasis should be placed on ventilation by keeping windows open as much as possible, and doors open when feasible and safe to do so. The Scottish Government have also published ventilation guidance⁷³ (intended primarily for relevant local authority teams – it is not expected that school staff should have the expertise to apply it independently).</p> <p>Wales:¹⁵ Local authorities have a legal duty to provide adequate ventilation to schools, updated advice is available to help employers provide adequate ventilation during the pandemic. Maximizing fresh air can be achieved through natural or mechanical ventilation, or a combination.</p> <p>Ireland:^{16,17} Windows should be open as fully as possible when classrooms are not in use (e.g. during break-times or lunch-times and also at the end of each school day) and partially open when classrooms are in use. The guidance provides that good ventilation can be achieved in classrooms without causing discomfort, particularly during cold weather.</p> <p>Israel: Ventilation not reported in available school IPAC measures.</p>
	<p>As much distancing as possible between students, between students and staff and between staff members should always be promoted.³⁴</p> <p>Desks and/or chairs are spaced as far apart as possible and face the same direction, if possible.⁴⁴ If individual desks are not used (e.g., tables for younger students), maximize space between groups and use alternate seats, if possible. Visual cues, such as markings on the floor or markings to indicate areas that should</p>	<p>BC:^{6,51} It is anticipated that physical distancing of two metres will not be required for the 2021-22 school year. Recommendations for the 2020-21 school year included staff maintaining two metres distance from each other and from students, two metres distance between middle and secondary students, and two metres distance for elementary students interacting outside of their learning groups.</p>

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	<p>not be used (e.g., seats), are placed where needed to promote physical distancing.⁴⁴</p> <p>Nutrition breaks and lunch times are staggered to facilitate physical distancing in staff break rooms and/or other commonly shared spaces.⁴⁴ Limit the number of staff permitted entry at one time as needed to enable physical distancing. Furniture is spaced apart to maintain physical distancing of two metres.⁴⁴</p>	<p>Quebec:⁵ Planning for no distancing requirements in the 2021-22 school year. Physical distancing measures to be re-introduced if required (i.e., in case of school outbreak).</p> <p>California:¹⁰ Plans for the 2021-22 school year indicate in-person instruction can occur safely without physical distancing requirements when other mitigation strategies (e.g., masking) are fully implemented. Physical distancing should be maximized when eating and therefore masks cannot be worn, this may involve using additional spaces outside of cafeterias and classrooms. Arrange for eating outdoors as much as is feasible.</p> <p>New York:^{7,8} Ensure that appropriate physical distancing is maintained between individuals while in school facilities and on school grounds, inclusive of students, faculty, and staff, unless safety or the core activity (e.g., instruction, moving equipment, using an elevator, traveling in common areas) requires a shorter distance or individuals are of the same household. Physical distancing requirements may be reduced to a minimum of three feet between students in classroom settings, subject to adherence to other mitigation measures.</p> <p>Minnesota:¹⁷ It is recommended schools evaluate classrooms and create as much space as possible between students, aiming for a minimum of three feet of distance, and up to six feet in areas of high community transmission in settings where cohorting is not possible. A distance of six feet should be maintained: between staff and students; between staff and other staff or visitors; when masks cannot be worn such as when eating; and during activities with increased exhalation such as singing, or during physical activity. Other distancing recommendations include staggering arrival and dismissal times to minimize crowding, and maintaining distanced seating assignments for meal times.</p> <p>England,¹³ Scotland,¹⁴ Wales,¹⁵ Ireland,^{16,17} Staff should maintain two metre distance from each other and from students. Distancing</p>

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Administrative Measures: Cohorting	<p>All available strategies (including use of all available spaces in the school and outdoor learning spaces) can be used to enable physical distancing wherever feasible and limit the number of potentially exposed individuals in a cohort as much as possible.⁴⁴</p> <p>Elementary school students in K-8 remain in one cohort for the full day, including recess and lunch. Cohorted classes will stay together and with one teacher, where possible.³⁴</p> <p>Secondary schools were encouraged to adopt timetabling methods that emphasize cohorting of students as much as possible, to limit the number of student-to-student contacts.³⁴ In order to reduce risk of transmission and to support contact tracing, school boards developed timetables that over a one-to-two-week period:</p> <ul style="list-style-type: none"> • limit indirect and direct student contacts to approximately 100 students in the school • encourage keeping secondary school students in a maximum of two in-person class cohorts. <p>For subjects taught by a teacher other than the regular/homeroom teacher, the student cohort remains in the same classroom and the teacher(s) move from classroom to classroom, where feasible/ practical.^{34,44}</p>	<p>between students should be facilitated and encouraged where possible, but not required (e.g., discourage any physical contact, avoid congregation points, stagger breaks, drop-offs, and pick-ups). Schools should make adaptations to the classroom to support distancing where possible. That should include seating pupils side by side and facing forwards, rather than face-to-face or side-on. It might also include moving unnecessary furniture out of the classroom to make more space.</p> <p>Israel: Distancing not reported in available school IPAC measures.</p> <p>BC:⁶ Cohorts will not be recommended in the 2021-22 school year. It is anticipated that physical distancing will not be recommended; however, schools will continue to be encouraged to spread people out within available space and to prevent crowding in indoor common spaces (e.g. entrances, hallways, etc.) as practical.</p> <p>Quebec:⁵ Plan for normal school organization, without restrictions requiring stable class groups in the 2021-22 school year. In case of outbreak, cohorting and assigned bus seating may be re-introduced.</p> <p>California:¹⁰ There are no cohorting requirements in California's guidance for the 2021-22 school year.</p> <p>New York:⁸ Enact measures to prevent intermingling across cohorts, to the greatest extent possible (e.g., separation by appropriate physical distancing, particular if there are multiple cohorts in one area). Staff should make reasonable efforts to ensure that cohorts are fixed – meaning contain the same students – for the duration of the school year. Faculty may instruct more than one cohort so long as appropriate physical distancing is maintained.</p> <p>Minnesota:¹⁷ Students and staff should be kept in small cohort groups which stay together as much as possible through the day, and from day to day, especially among younger students who are</p>

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	<p>The use of shared objects and storage (e.g., art supplies, sports equipment, computers, lockers/cubbies, etc.) can be limited where possible.⁴⁴ If shared, objects are kept within the same cohort where possible, cleaned and disinfected between each use and students are advised to perform hand hygiene before and after use.⁴⁴</p>	<p>not eligible for vaccination. Cohorts should maintain six feet of distance between them, and mixing between cohorts should be avoided, for example during meal breaks or recess.</p> <p>England:¹³ Try to implement ‘bubbles’ of an appropriate size to achieve the greatest reduction in contact and mixing. Make sure this will not affect the quality and breadth of teaching or access for support and specialist staff and therapists. All teachers and other staff can operate across different classes and year groups, and where staff need to move between groups, they should try and keep their distance from pupils and other staff as much as they can, ideally two metres from other adults.</p> <p>Scotland:¹⁴ In both primary and secondary settings, wherever possible, efforts should be made to keep children and young people within the same groups for the duration of the school day. The practical and timetabling challenges of these approaches, particularly in secondary schools, are recognised, as are the variations in size, context and physical structure across schools. If groups cannot reasonably be maintained, or if groups require to be larger in size with some mixing permitted, the application of other risk mitigation measures becomes even more important.</p> <p>Wales:¹⁵ Students should be grouped together in as small a group as possible. Avoid mixing between separate contact groups, including during arrival at school, break/lunch times and leaving school. Staff responsible for younger learners should remain with set contact groups. Only under exceptional circumstances should they interchange between different groups.</p> <p>Ireland: ^{16,17} Primary school students and teaching staff should consistently be in the same Class Bubbles although this will not be possible at all times. Different Class Bubbles should where possible have separate breaks and meal times or separate areas at break or meal times. Secondary school students to be assigned to a main</p>

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		<p>class cohort which would remain in the classroom for most subjects, with teachers moving between rooms.</p> <p>Israel:^{43,52} In Israel, as of April 18, 2021, there were no restrictions on teachers or teacher assistants' ability to move between classes and schools, and students were no longer required to study in socially distanced cohorts.</p> <p>Scotland,¹⁴ Wales,¹⁵ BC,⁵⁴ New York,^{7,8} Minnesota:¹⁷ IPAC measures include recommendations to utilize outdoor space for instruction, meals, physical activity, and for general student well-being wherever possible, and considering safety (i.e., air quality, allergies, temperature).</p> <p>California:¹⁰ Consider using outdoor space for meals is feasible, to maximize physical distancing while eating and masks cannot be worn.</p> <p>England, Ireland, Israel, Quebec: General use of outdoor space not reported in available school IPAC measures.</p>
Administrative Measures: Outdoor space	<p>In Ontario, it is recommended that physical education takes place outdoors as much as possible.³⁴ Lunch and nutrition breaks can be taken outside, provided physical distancing is maintained (weather permitting and where feasible).^{34,44} Other options include using school outdoor areas and/or nearby park space for learning and recess/breaks.⁴⁴ Physical distancing should be maintained between cohorts, and, where possible/practical, within cohorts. Masks should be worn by students outdoors when physical distancing cannot be maintained.^{34,44}</p>	<p>California:^{10,53} Outdoor singing and band practice are permitted, provided that precautions such as physical distancing and mask wearing are implemented to the maximum extent possible. Playing of wind instruments (any instrument played by the mouth, such as a trumpet or clarinet) is strongly discouraged. School officials, staff, parents, and students should be aware of the increased likelihood for transmission from exhaled aerosols during singing and band practice, and physical distancing beyond six feet is strongly recommended for any of these activities. Updated guidance for the 2021-22 school year does not include IPAC measures specific to music.¹⁰</p> <p>New York:^{7,8} Individuals participating in activities that require projecting the voice (e.g., singing) or playing a wind instrument must be six feet apart and there must be six feet of distance between the performers and the audience during performances and concerts.</p>
Administrative Measures: Music	<p>Current Ontario school guidance indicates music instruction has a variety of delivery options, including fully distanced learning, in-person teaching and instruction with lower-risk creative performance opportunities (e.g., large space, restrictions on type of instruments in a group setting), and in-person teaching instruction with no live performance.²²</p>	

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		<p>Minnesota:⁵⁶ General recommendations to reduce risk during musical activities include wearing masks, reviewing ventilation, and using outdoor spaces when possible. Guidance notes that music produced by singing, woodwind or brass instruments, and mixing of vaccinated and unvaccinated individuals can lead to higher risk for COVID-19 spread, and recommend extra precautions are considered for these activities. Extra precautions include: avoiding shared equipment and/or ensuring thorough cleaning after each use; encourage physical distancing between all participants; reduce the number of musicians in ensembles; and utilize face and instrument coverings designed to reduce droplet spread while playing.</p> <p>England:¹³ Continue teaching music, dance and drama as part of school curriculum. Singing, wind and brass instrument playing can be undertaken in line with this and other guidance, including guidance on working safely during COVID-19 in the performing arts.⁷⁴ Resources that are shared between classes or bubbles, such as sports, arts, and science equipment should be cleaned frequently.</p> <p>Scotland:¹⁴ Education Scotland has produced specific guidelines⁷⁵ covering art and design and photography, music (including singing), dance, and drama. These documents set out the hierarchy of risk in terms of the different types of activities and the different kinds of mitigations which can be put in place, providing schools with guidance on how to facilitate these important learning elements as fully as they can while remaining safe within the confines of public health advice.</p> <p>Wales:¹⁵ Activities run for the development and well-being of children and young people, such as sports clubs and drama classes, are allowed. This applies to children under 18 (or persons who were aged under 18 on 31 August 2020). There is no limit on</p>

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		<p>the number of children and young children that can attend these activities, but organizers should be mindful of the space available.</p> <p>Ireland:^{16,17} Choir practices/performances and music practices/performances involving wind instruments may pose a higher level of risk and special consideration should be given to how they are held ensuring that the room is well-ventilated and the distance between performers is maintained.</p> <p>Israel, BC, Quebec, New York: Specific recommendations related to music not reported in available school IPAC measures.</p>
Administrative Measures: Physical education and sports	<p>Health and physical education classes are held outdoors when feasible and adapted to support current public health recommendations.^{34,44}</p> <p>Health and physical education classes should be held indoors only if physical distancing can be maintained and shared use of equipment is limited with cleaning and disinfecting after use by each cohort.^{34,44}</p>	<p>California:⁵³ School athletic activities and sports should follow the CDPH Outdoor and Indoor Youth and Adult Recreational Guidance. Note that risk of infection transmission increases for indoor activities; indoor sports are higher risk than outdoor sports due to reduced ventilation. And transmission risk increases with greater exertion levels. Updated guidance for the 2021-22 school year does not include IPAC measures specific to physical activity or sports.¹⁰</p> <p>Minnesota:^{9,57,58} Guidance recommends schools review the CDC resources Considerations for Youth Sports, and Sports Program FAQs. Currently, these CDC resources emphasize that close contact or indoor sports should be avoided due to increased risk of COVID-19 spread, and if participating in these activities risk can be reduced by being vaccinated, wearing a mask, playing outside, maintaining six feet of distance from others, and avoiding crowds. Overall, assessing the risk of COVID-19 during sports should consider current community levels of COVID-19, the physical closeness of players and whether this can be modified, the level of intensity of the activity, the setting (i.e., indoors, outdoors), the amount of necessary shared equipment, the size of the team, whether nonessential visitors or spectators are permitted, among others.</p>

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		<p>England,¹³ Wales:¹⁵ Outdoor sports should be prioritised where possible, and large indoor spaces used where it is not, maximising natural ventilation flows (through opening windows and doors or using air conditioning systems wherever possible), distancing between pupils, and paying scrupulous attention to cleaning and hygiene. Sports equipment shared between groups should be cleaned frequently.</p> <p>Scotland:¹⁴ Class sports days are allowed, whole school events are not. As it should not be necessary for any parental supervision, parents as spectators are not allowed.</p> <p>Ireland:^{16,17} Minimize equipment sharing and clean shared equipment between uses by different people.</p> <p>Israel, BC, Quebec, New York: Specific recommendations related to physical education and sports not reported in available school IPAC measures.</p>
Administrative Measures: Gatherings/ events	In-person large gatherings such as assemblies, concerts, dances or large in-person staff meetings are not planned and instead are offered virtually. ^{34,44}	<p>BC,⁶ Quebec:⁵ In the 2021-22 school year it is anticipated that most gatherings, events, and usual full education services will be able to take place by school start. Types and sizes of gatherings and events should align with those permitted as per related public health recommendations and Orders.</p> <p>England,¹³ Wales,¹⁵, Scotland:¹⁴ Avoid large gatherings such as assemblies or collective worship with more than one group (2020-21 school guidance).</p> <p>Ireland, Israel, California, New York, Minnesota: Recommendations related to gatherings and events not reported in available school IPAC measures.</p>
Administrative Measures: School-based extra-curricular activities	Field trips and/or activities requiring group transportation are not planned (excludes use of walkable local parks, subject to local school or board of education requirements). ^{34,44}	BC: ⁶ In the 2021-22 school year it is anticipated all extracurricular activities and schools trips, including inter-school sports, arts events and special-interest activities (e.g. overnight trips) will be able to take place by school start.

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	<p>Clubs and/or organized sports are only offered in accordance with current provincial and local public health recommendations, as well as local board of education decisions. If offered, physical distancing should be maintained and use of shared equipment and/or spaces is limited. Such equipment and/or spaces are cleaned and disinfected after each use.^{34,44}</p>	<p>Quebec:⁵ Plan to resume all extracurricular activities.</p> <p>California:¹⁰ Updated guidance for the 2021-22 school year does not include IPAC measures or restrictions related to school-based extracurricular activities.¹⁰</p> <p>New York:^{7,8} Policies regarding extracurricular programs and which activities will be allowed need to consider physical distancing, PPE, and cleaning and disinfection, as well as risk of COVID-19 transmission. Policies should consider how to maintain cohorts during these programs/activities, if applicable, or members of the same household.</p> <p>Minnesota:¹⁷ No extracurricular guidance beyond that for music and physical activity.</p> <p>England:¹³ From May 17, 2021 (in line with the commencement of Step 3 of the roadmap for reopening), where wraparound and other extra-curricular activities for children are taking place indoors, they will be able to take place in groups of any number. However, it remains important to continue to minimize mixing between children, where possible. Indoor and outdoor competition between different schools can now take place. You can work with external coaches, clubs and organizations for curricular and extra-curricular activities.</p> <p>Scotland:¹⁴ As of May 17, 2021, additional restrictions around physical education and expressive arts are determined by the local restriction level.</p> <p>Wales:¹⁵ Schools should only consider team sports where the relevant national governing body has developed guidance for their safe operation in respect of coronavirus, and schools and settings should consider this guidance in delivering lessons containing such sports. Activities run for the development and well-being of children and young people, such as sports clubs and drama</p>

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Personal Measures: Personal Protective Equipment (PPE)	<p>School staff and any visitors are required to wear a medical mask indoors at all times (except when eating or if alone in a private space), and when outdoors if physical distancing cannot be consistently maintained, unless exempt.^{34,44} Staff are strongly recommended to wear eye protection (e.g., face shield, goggles), in addition to a medical mask, in situations where physical distancing of at least two metres cannot be adequately and consistently maintained.^{34,44}</p> <p>Teachers and other school-based staff who have been designated to act as a lead for COVID-19 related activities in the school, which may include caring for an ill student or staff member, have received education and training on the selection and use of appropriate personal protective equipment.⁴⁴</p>	<p>classes, are allowed. This applies to children under 18. There is no limit on the number of children and young children that can attend these activities, but organizers should be mindful of the space available.</p>
Personal Measures: Masks (medical or non-medical)	<p>Students in kindergarten are strongly encouraged, and students in grades 1 to 12 are required to wear a mask (medical or nonmedical) or mask in indoor spaces (including in hallways and during classes) and on school buses, unless exempt. A mask or mask should also be worn outdoors if physical distancing of two metres cannot be maintained. Some schools and boards of education may require masking for kindergarten students.⁴⁴</p>	<p>Ireland:^{16,17} Music and physical education detailed listed above.</p> <p>Israel: Recommendations related to extracurricular activities not reported in available school IPAC measures.</p> <p>England,¹³ Scotland,¹⁴ Wales,¹⁵ Ireland:^{16,17} For the majority of staff in schools, PPE is not required or necessary. If a student becomes unwell with symptoms of COVID-19, needs assistance, and a 2m distance cannot be maintained, then staff are to don appropriate PPE. Appropriate PPE should also be worn if assisting any student with close personal care.</p> <p>Minnesota:¹⁷ PPE is strongly recommended for staff providing direct student support services to reduce the risk of COVID-19 transmission in situations that involve close, physical, or prolonged contact.</p> <p>Israel, BC, Quebec, California, New York: PPE not reported in available school IPAC measures.</p> <p>BC:⁵⁴ During the 2020-21 school year, masks are required for all staff and student in grades 4 to 12 in indoor settings. Masks are encouraged but not required for students in grades K to 3. No update for the 2021-22 school year.</p> <p>Quebec:⁵ Plan for the 2021-22 school years is to not require masks for any students or staff. Mask requirements may be re-introduced in the event of an outbreak.</p> <p>California:¹⁰ All staff and K-12 students are required to wear masks while at school. School must develop protocols to provide masks to anyone who inadvertently fails to bring one to school. A strong emphasis on universal masking in schools allows the removal of</p>

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		<p>physical distancing requirements. It also helps to avoid potential negative impacts of masking requirements based on vaccination status, such as potential stigma, bullying, or isolation, depending on the culture, attitudes, and beliefs in the school and the surrounding community. Masks are optional when outdoors. Those exempted from wearing a mask due to a medical condition must wear a non-restrictive alternative, such as a face shield with a drape on the bottom edge, as long as their condition permits it.</p> <p>New York: ^{7,8} Masks are required at all times in indoor school facilities, except for meals. Effective June 7, 2021, face masks are not required to be worn outdoors on school grounds, including during outdoor school sports.</p> <p>Minnesota:¹⁷ It is strongly recommended all people entering school buildings (students, staff, visitors, parents) wear a mask. Those who are unable to tolerate wearing a face covering because of a medical condition, mental health condition, or disability, and children under age 2, are not required to wear masks. Schools are encouraged to maintain a supply of masks for students and staff who forget them.</p> <p>England:¹³ Masks no longer recommended for pupils in classrooms or communal areas in all schools, and no longer recommended for staff in classrooms. Masks should be worn by staff and visitors in situations outside of classrooms where social distancing is not possible.</p> <p>Scotland:^{14,20} Masks should be worn by adults, staff and secondary school students at all times in classrooms, in communal areas and when moving about the school. Primary school students are not expected to wear masks.</p> <p>Wales:¹⁵ Masks should be worn by staff at all times. Masks should be worn by secondary school students when physical distancing</p>

Hierarchy of IPAC Measures ⁴	Current Ontario IPAC Measures	IPAC Measures Implemented or Planned in Select Jurisdictions
Personal Measures: Hand hygiene	<p>Staff and students should be provided with targeted, age-appropriate education in proper hand hygiene and respiratory etiquette, and have easily accessible supplies to conduct appropriate hand hygiene and respiratory etiquette.³⁴</p> <p>Resources:</p> <ul style="list-style-type: none"> • How to Wash Your Hands⁷⁶ • How to Hand Wash⁷⁷ • How to Hand Rub⁷⁸ <p>Alcohol-based hand rub (ABHR) with a concentration of 60%-90% is should be available: ^{34,44}</p> <ul style="list-style-type: none"> • At all school entrances/exits • In each classroom • In other commonly shared spaces (e.g., gym, library, etc.) • Near high-touch surfaces (e.g., water fountains/dispensers, outside of washrooms) • In staff break rooms and other spaces commonly shared by staff • In the space designated for isolating symptomatic students, teacher, staff, or visitors <p>Resource: Hard-surface disinfectants and hand sanitizers (COVID-19): List of hand sanitizers authorized by Health Canada.⁷⁹</p>	<p>cannot be maintained. Masks should not be worn during physical activity.</p> <p>Ireland:^{16,17} Requirement for masks to be worn by staff members and secondary school students when physical distancing cannot be maintained. Primary school students are not required to wear masks.</p> <p>Israel:^{59,60} Effective June 25, 2021 masking is required anywhere except the outdoors, which includes schools. This comes after reports of outbreaks in schools across Israel.</p> <p>BC,⁶ Quebec:⁵ Continue to practice regular hand hygiene in the 2021-22 schools year.</p> <p>California,¹⁰ New York:^{7,8} Hand-washing stations and hand sanitizer are available, and their safe and appropriate use are promoted and incorporated into routines for staff and students. Respiratory etiquette is taught and reinforced. Ensure adequate supplies to support healthy hygiene behaviors, including soap, tissues, no-touch trashcans, masks, and hand sanitizers with at least 60 percent ethyl alcohol for staff and children who can safely use hand sanitizer.</p> <p>Minnesota:¹⁷ Schools must ensure the availability of appropriate hygiene supplies and strategically place in areas where they can be frequently used. Regular hand hygiene should be incorporated and reinforced in the daily schedule for all students and staff, including but not limited to arrival and dismissal; before during, and after preparing or eating food; after using the bathroom; after coughing or sneezing or using a tissue; and after touching shared objects.</p> <p>England,¹³ Scotland,¹⁴ Wales,¹⁵ Ireland:^{16,17} Schools must ensure that staff and students clean their hands regularly: upon arrival at school, returning from breaks, when changing rooms, before and after eating, and before and after using the toilet. Respiratory</p>

Hierarchy of IPAC Measures ⁴	Current Ontario IPAC Measures	IPAC Measures Implemented or Planned in Select Jurisdictions
	Signage may be posted throughout the school reinforcing the importance of hand hygiene and respiratory etiquette. ⁴⁴	<p>etiquette is encouraged. Adequate facilities should be available for hand hygiene.</p> <p>Israel: Hand hygiene not reported in available school IPAC measures.</p>

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