Appendices for COVID-19 Living Evidence Profile #3

(Version 2: 18 June 2021)

Appendix 1: Methodological details

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

Identifying research evidence

For each LEP, we search our continually updated inventory of best evidence syntheses and guide to key COVID-19 evidence sources guidelines, which we define as providing recommendations or other normative statements derived from an explicit process for evidence synthesis.

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

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

Identifying experiences from other countries and from Canadian provinces and territories

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

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

Assessing relevance and quality of evidence

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

Two reviewers independently appraised the quality of the guidelines we identified as being highly relevant using AGREE II. We used three domains in the tool (stakeholder involvement, rigour of development and editorial independence) and classified guidelines as high quality if they were scored as 60% or higher across each of these domains.

Preparing the profile

Each included document is hyperlinked to its original source to facilitate easy retrieval. For all included guidelines, we prepare a small number of bullet points that provide a brief summary of the key findings, which are used to summarize key messages in the text. We then draft a brief summary that highlights the total number of guidelines identified, as well as their key findings, date last updated or published, and quality.

Appendix 2a: Key findings from <u>new</u> guidelines that address the question, sorted by relevance to the question and COVID-19

Type of document	Relevance to question	Key findings	Recency or status

Guidelines	• When should adjustments be made?
	  ○ Vaccination-related factors
	• Where should measures be changed?
	  ○ Post-secondary institutions
	• What measures should be changed?
	  ○ Operation of residences in post-secondary schools
	  ▪ Room occupancy
	  ▪ Access to and rules for common spaces for gatherings
	• Accompanying public-health measures
	  ○ Infection prevention
	  ▪ Washing hands
	  ▪ Wearing masks
	  ▪ Disinfecting surfaces and facilities
	  ▪ Physical distancing
	  ▪ Ventilation maximization
	  ○ Infection control
	  ▪ Screening
	  ▪ Quarantining of exposed or potentially exposed individuals
	  ▪ Testing
	  ▪ Isolation of suspected or confirmed cases
	  ▪ Contact tracing
		• The U.S. Centers for Disease Control and Prevention (CDC) released guidelines on preventing the spread of COVID-19 in higher education institutions
		• The CDC emphasized increasing vaccination rates among students, faculty and staff by providing on-site vaccinations, providing multiple vaccination locations and times, strengthening access to off-site vaccination locations, and providing flexibility surrounding student and staff absences
		• Promoting vaccinations through education campaigns, word-of-mouth and partnerships with trusted campus organizations was additionally suggested
		• The following recommendations were provided for higher education institutions with a fully vaccinated population:
		  ○ Continued mask wearing and physical distancing for people with weaker immune systems
		  ○ Continued hand hygiene, respiratory etiquette, contact tracing, cleaning, disinfecting and ventilation practices
		  ○ Daily health screens for students, faculty and staff
		• For institutions where not everyone is fully vaccinated, the CDC recommends offering and promoting vaccinations, consistent and correct mask use, continued physical distancing, contact tracing, testing, quarantine protocols and following specific housing protocols
		• Overall, the CDC recommends improving cleaning and maintenance protocols, improving
			Last updated 04 June 2021

Type of document	Relevance to question	Key findings	Recency or status
		ventilation, focusing on health equity, as well as supporting staff, student and employee mental health Source (U.S. Centers for Disease Control and Prevention; AGREE II Rating: Low-quality)	

	• Where should measures be changed?
	  ○ Grade schools
	  ▪ Kindergarten and elementary schools
	  ▪ High schools
	• Accompanying public-health measures
	  ○ Infection prevention
	  ▪ Washing hands
	  ▪ Wearing masks
	  ▪ Disinfecting surfaces and facilities
	  ▪ Physical distancing
	  ▪ Ventilation maximization
	  ○ Infection control
	  ▪ Screening
	  ▪ Quarantining of exposed or potentially exposed individuals
	  ▪ Testing
	  ▪ Isolation of suspected or confirmed cases
	  ▪ Contact tracing
		• The U.S. Centers for Disease Control and Prevention (CDC) released prevention strategies for K-12 school operations
		• As of 15 May 2021, the CDC suggests continued use of existing COVID-19 prevention strategies for the 2020-21 school year
		Source (U.S. Centers for Disease Control and Prevention; AGREE II Rating: Low-quality)
			Last updated 15 May 2021

	• Where should measures be changed?
	  ○ Grade schools
	  ▪ Kindergarten and elementary schools
	  ▪ High schools
	• What measures should be changed?
	  ○ Operation of schools
	• Accompanying public-health measures
	  ○ Infection prevention
	  ▪ Washing hands
	  ▪ Wearing masks
	  ▪ Disinfecting surfaces and facilities
	  ▪ Physical distancing
	  ▪ Ventilation maximization
		• The U.S. Centers for Disease Control and Prevention (CDC) provided extensive strategies to protect school staff in K-12 schools from COVID-19
		• The following recommendations were provided to prevent against the transmission of COVID-19:
		  ○ Creating hazard assessment plans for each school to protect staff, students and families
		  ○ Screening school staff for symptoms and testing all school employees
		  ○ Developing policies to manage sick staff and students, and implementing flexible leave policies
			Last updated 23 April 2021

Type of document	Relevance to question	Key findings	Recency or status
	○ Infection control ▪ Screening ▪ Quarantining of exposed or potentially exposed individuals ▪ Testing ▪ Isolation of suspected or confirmed cases ▪ Contact tracing	○ Increasing ventilation in schools and improving other engineering controls, such as water systems, changing building layouts and physical barriers ○ Implementing and improving cleaning and disinfecting protocols ○ Alternating schedules, reducing occupancy in buildings, posting signs and messages to promote prevention strategies ○ Encouraging physical distancing, adequate hand hygiene and mask wearing, as well as increasing access to personal protective equipment ○ Providing mental health supports for teachers and staff well-being Source (U.S. Centers for Disease Control and Prevention)	
	• Where should measures be changed? ○ Grade schools ▪ Kindergarten and elementary schools • Accompanying public-health measures ○ Infection prevention ▪ Washing hands ▪ Wearing masks ▪ Disinfecting surfaces and facilities ▪ Physical distancing ▪ Ventilation maximization ○ Infection control ▪ Screening ▪ Quarantining of exposed or potentially exposed individuals ▪ Testing ▪ Isolation of suspected or confirmed cases ▪ Contact tracing	• The U.S. Centers for Disease Control and Prevention (CDC) released guidance for operating childcare programs during COVID-19 (including school-age childcare programs) • As of 12 March 2021, the guidance was updated to include current information on the following: ○ What is known about COVID-19 and transmission in childcare settings ○ Infection-prevention measures (e.g., mask use, ventilation and water systems, cohorting and staggering strategies, use of communal spaces) ○ Infection-control measures (e.g., recognizing signs and symptoms and screening) ○ Protection of people at higher risk and children with special needs and disabilities Source (U.S. Centers for Disease Control and Prevention)	Last updated 7 May 2021

Appendix 2b: Key findings of from highly relevant guidelines identified in previous LEP versions that address the question, sorted by relevance to the question and COVID-19

Type of document	Relevance to question	Key findings	Recency or status

Guidelines developed using a robust process	• When should adjustments be made?
	  ○ Case rates
	  ○ Community capacity
	• Where should measures be changed?
	  ○ Grade schools
	  ▪ Kindergarten and elementary schools
	  ▪ High schools
	• What measures should be changed?
	  ○ Operation of schools
	  ▪ Online instruction (whole or partial)
	  ○ Engagement in extracurricular activities
	  ▪ Intramural
	  ○ Accompanying public-health measures
	  ▪ Infection prevention
	  ○ Washing hands
	  ○ Wearing masks
	  ○ Physical distancing
	  ○ Temporal distancing
	  ○ Ventilation maximization
	  ▪ Infection control
	  ○ Screening
	  ○ Quarantining of exposed or potentially exposed individuals
	  ○ Testing
	  ○ Isolation of suspected or confirmed cases
	  ○ Contact tracing
		• The U.S. Centers for Disease Control and Prevention (CDC) released comprehensive guidance on the operational strategy for grade schools (kindergarten to Grade 12)
		• The CDC recommends the consistent use of prevention strategies (e.g., universal masking, physical distancing, testing and vaccination for eligible groups, handwashing and respiratory etiquette, cleaning and contact tracing with isolation and quarantine) through a layered approach
		• The guidance document described prevention strategies specific to level of community transmission for elementary, middle and high schools
		• Universal and correct use of masks and physical distancing should be prioritized
		  ○ Masks should be worn within the school, on school buses and by visitors (but may exclude groups such as individuals with disabilities who may not be able to wear a mask)
		  ○ Elementary students and middle- and high-school students with low transmission should be at least three feet apart, but students with high transmission should be at least six feet apart if cohorting is not possible
		  ○ Maintain six feet of distance between adults and between adults and students at all times
		  ○ Use cohorting where possible (especially when case rates are substantial or high)
		  ○ Move activities such as singing, band, sports and exercise outside
		  ○ Face desks in the same direction
		  ○ Eliminate non-essential interactions between adults (teachers and staff)
			Last updated 23 April 2021

Type of document	Relevance to question	Key findings	Recency or status
		○ Consider staggered scheduling and alternate schedules with fixed cohorts • School should be the last setting to close and the first to reopen • In-person instruction should be prioritized over extracurricular activities (including sports and school events) • Schools should only offer referrals for diagnostic testing if they are exhibiting symptoms at school, but screening tests may be useful especially in communities with moderate to high transmission Source (U.S. Centers for Disease Control and Prevention; AGREE II Rating: Low-quality)	
	• When should adjustments be made? ○ Case rates • Where should measures be changed? ○ Grade schools ▪ Kindergarten and elementary schools ▪ High schools • What measures should be changed? ○ Operation of schools ▪ Student supports ▪ Instructor supports ▪ Staffing ratios ▪ Classroom changes ▪ Facility changes ○ Accompanying public-health measures ▪ Infection prevention ○ Washing hands ○ Wearing masks ○ Disinfecting surfaces and facilities ○ Physical distancing ○ Ventilation maximization ○ Public-focused behaviour-change supports	• This guidance uses available evidence to inform local leadership in education and public health in creating policies for safe schools during the COVID-19 pandemic • The following recommendations are for each age group in the context of COVID-19: ○ For pre-kindergarten, the impact of physical distancing among children is likely small based on current evidence, and program planning should focus on effective risk-mitigation strategies which include mask wearing for adults and children over the age of 2 years, cohort classes, utilizing outdoor spaces, allowing air circulation by opening windows, and hand hygiene ○ For elementary schools, it is recommended to wear masks for both children and adults, cohort classes, physical distancing (i.e., a distance of six feet and a distance of at least three feet for desks), utilize outdoor spaces, allow air circulation, and hand hygiene ○ For secondary schools, it is recommended for universal use of masks for both adults and students, cohort classes, physical distancing, allow air	Last updated 25 March 2021

Type of document	Relevance to question	Key findings	Recency or status
	▪ Infection control o Screening o Testing o Isolation of suspected or confirmed cases	circulation, education for students and families on the importance of mitigation measures when not in the school building o For special education, each child and adolescent's individualized education program should be reviewed with the student and family, and attempts for mitigation measures should meet the needs of the individual child and/or adolescent • School health staff should be provided with appropriate medical personal protective equipment (PPE), including universal N95 masks, surgical masks, gloves, disposable gowns, and face shields • Schools should have policies regarding symptom screening for teachers and staff upon reopening, and a rapid response plan for students, teachers or staff members. In addition, the Centers for Disease Control and Prevention (CDC) recommends weekly screening of teachers and school staff, and screening of students at certain levels of community spread. • Students or staff members who have had a known exposure to COVID-19 should self-quarantine for 14 days, and school districts should partner with their local health officials to facilitate contact tracing in their schools Source (American Academy of Pediatrics; AGREE II Rating: High-quality)	
	• Where should measures be changed? o Grade schools ▪ Kindergarten and elementary schools ▪ High schools • What measures should be changed? o Operation of schools ▪ Online instruction (whole or partial) o Engagement in extracurricular activities ▪ Intramural o Accompanying public-health measures	• The Public Health Agency of Canada provided detailed considerations for jurisdictions in relation to COVID-19 prevention measures to schools from kindergarten to Grade 12 o Consider a layered approach when physical distancing is not possible o Consider in-person school attendance, virtual or at-home learning, or a hybrid of the two (with progressive introduction of in-person attendance	Last updated 21 February 2021

Type of document	Relevance to question	Key findings	Recency or status
	▪ Infection prevention o Washing hands o Wearing masks o Physical distancing o Temporal distancing o Ventilation maximization ▪ Infection control o Screening o Quarantining of exposed or potentially exposed individuals o Testing o Isolation of suspected or confirmed cases o Contact tracing	based on grade level, with primary schools preceding secondary schools) o Use the risk-mitigation tool to determine which measures are applicable and relevant to grade level (e.g., hygiene protocols for younger and older children) o Prohibit students who have symptoms and/or exposure to COVID-19 from entering the school o Promote infection control (e.g., hand hygiene, avoid face touching, signage, how to wash hands, implement schedule for frequent hand hygiene) o Promote physical distancing (e.g., two-metre distance, restrict or manage flow of people in common areas, visual cues to encourage physical distancing, limit visitors, play stations with limited number of children, recommend one parent do drop-offs/pick-ups) o Postpone assemblies, team sports, field trips, or extracurricular activities where physical distancing cannot be maintained o Increase ventilation (e.g., move activities outdoors, ensure ventilation system operates properly, increase air exchanges by adjusting HVAC systems, open windows) o Reduce exposure to high-touch surfaces o Modify how long students are in contact with each other (e.g., modify delivery of program, divide or cohort classes, stagger break times and schedules, staff travel between classes instead of children • Additional considerations are provided for cafeteria use, music bands and choirs, libraries, physical education, use of non-medical cloth masks, reporting absences, food insecurity, students with disabilities, transportation, and psychosocial needs Source (Public Health Agency of Canada; AGREE II Rating: Low-quality)	

Type of document	Relevance to question	Key findings	Recency or status

	• When should adjustments be made?
	  ○ Case rates
	  ○ Community capacity
	• Where should measures be changed?
	  ○ Post-secondary institutions
	• What measures should be changed?
	  ○ Operation of schools
	  ▪ Online instruction (whole or partial)
	  ○ Engagement in extracurricular activities
	  ▪ Intramural
	  ○ Accompanying public-health measures
	  ▪ Infection prevention
	  ○ Washing hands
	  ○ Wearing masks
	  ○ Physical distancing
	  ○ Temporal distancing
	  ○ Ventilation maximization
	  ▪ Infection control
	  ○ Screening
	  ○ Quarantining of exposed or potentially exposed individuals
	  ○ Testing
	  ○ Isolation of suspected or confirmed cases
	  ○ Contact tracing
		• The Public Health Agency of Canada released detailed guidance and considerations for post-secondary institutions during the COVID-19 pandemic, including personal prevention measures, domestic and international travel, on-campus assessments and mitigation strategies, academic institutions, experiential learning and research activities, on-campus housing, supporting community gatherings and student life, and off-campus activities
		• The guidance document also described planning for COVID-19 case management and outbreak response (e.g., monitoring, screening and testing, contact tracing, quarantine), responding and recovering from a COVID-19 outbreak, and psychosocial and mental health needs
		• In terms of extracurricular activities, the guidance document encouraged institutions to use a risk-based approach when considering if and how these types of activities could proceed on- and off-campus (e.g., postponing sports events/activities and limiting/prohibiting spectators) with further guidance available related to COVID-19 Return to High Performance Sport Framework
		• The guidance document described 10 epidemiological indicators to guide increasing restrictions or lifting of restrictions
		• Additional guidance is provided for quarantine and isolation policies, and described the importance of working with public-health authorities to reduce the transmission of COVID-19 (e.g., allowing students living in residence to self-isolate in their dorm room or designated on-campus rooms/residences, off-campus accommodations, cohorting students positive with COVID-19, and appropriate care and support such as meals)
			Last updated 21 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		• In terms of physical distancing, the guidance developers provided examples of mitigation strategies such as seating students at least two metres apart, offering virtual lectures, online exams, and offering activities outdoors • In terms of screening, they encourage institutions to provide basic information on how to recognize and monitor symptoms, and provide appropriate instructions on seeking medical care Source (Public Health Agency of Canada; AGREE II Rating: Low-quality)	

	• Where should measures be changed?
	  ○ Grade schools
	  ▪ Kindergarten and elementary schools
	  ▪ High schools
	  ○ Accompanying public-health measures
	  ▪ Infection prevention
	  ○ Washing hands
	  ○ Wearing masks
	  ○ Physical distancing
	  ▪ Infection control
	  ○ Screening
	  ○ Quarantining of exposed or potentially exposed individuals
	  ○ Testing
	  ○ Isolation of suspected or confirmed cases
	  ○ Contact tracing
		• The French Pediatric Society released guidelines related to school re-entry and recommended the following:
		  ○ Soap or hand sanitizer distribution stations at the entrances of school classrooms and education about regular use
		  ○ Mandatory masks for all adult staff at all times
		  ○ Masks for middle- and high-school students unless physical distancing is possible in the classrooms
		  ○ A child exposed to a COVID-19 positive individual at home must be tested before returning to the school
		  ○ A symptomatic child (of at least 6 years old) must be screened unless another diagnosis is made
		  ○ Screening of an entire class only warranted if one teacher or at least two students are symptomatic and COVID-19 positive
		  ○ Students positive with COVID-19 must remain home for at least seven days
		  ○ Class closure is justified if at least three children are infected from the same class
		Source (The French Pediatric Society; AGREE II Rating: Low-quality)
			Published 27 October 2020

Appendix 3: Documents excluded at the final stages of reviewing

Type of document	Hyperlinked title
Guidance developed using some type of evidence synthesis and/or expert opinion	Cleaning, disinfection, and hand hygiene in schools – A toolkit for school administrators Guidance for operating youth camps Young people and COVID-19: Behavioural considerations for promoting safe behaviours
Rapid reviews	None identified

Bain T, Bhuiya A, Al-Khateeb S, Wang Q, Mansilla C, DeMaio P, Rintjema J, Abeer A, Gauvin FP, Matthews M, Lavis JN, Wilson MG. COVID-19 living evidence profile #3 (version 3.2): What is known about how schools (K-12) and post-secondary institutions (colleges and universities) adjust COVID-19 transmission-mitigation measures as infection rates change and vaccination rates increase? Hamilton: McMaster Health Forum, 18 June 2021.

To help health- and social-system leaders as they respond to unprecedented challenges related to the COVID-19 pandemic, the McMaster Health Forum is preparing rapid evidence profiles like this one. This rapid evidence profile is funded by the Public Health Agency of Canada. The opinions, results, and conclusions are those of the McMaster Health Forum and are independent of the funder. No endorsement by the Public Health Agency of Canada is intended or should be inferred.