

## ENVIRONMENTAL SCAN

## COVID-19: Considerations for “Temporary” Individual School Closure

January 21, 2021

## Key Findings

- Based on publicly available information from the jurisdictions reviewed, approaches to decisions to close individual K-12 schools for in-person learning varied. In some jurisdictions, decisions are based on the result of a public health investigation considering the particular situation, whereas other jurisdictions set pre-defined thresholds for school closure (e.g., a specific number of COVID-19 cases in students or staff over a specific time period).
- Approaches to specific school closure criteria ranged from school closure for 14 days after a single case in a school or a community, to temporary closures for 24 or 72 hours to allow for contact tracing and cleaning of facilities, to schools remaining open during public health investigations, except for dismissed cohorts.
- This review did not identify any evaluations of the relative effectiveness or harms of specific approaches to school closure.
- Given the well documented harms of school closures, and the range of approaches that exist in the absence of evidence of effectiveness, clear communication to all stakeholders and to the public regarding individual school closures is needed, including the rationale and process for decision-making.

## Objectives and Scope

- This environmental scan summarizes elements to consider regarding when to close individual schools due to COVID-19 as implemented in the following jurisdictions: Australia, Canada (Alberta, British Columbia, Nunavut, and Quebec), France, Israel, New Zealand, South Korea, Taiwan, Thailand, United Kingdom (UK) and United States (US).
- Guidance for schools that have re-opened after initial lockdowns was included (i.e., guidance for individual school closures/whole school dismissals when, at the regional level, some/all K-12 schools are open to in-person learning). Considerations for regional reopening/closure of schools was not in scope.
- The aim of this scan is to identify information that may be relevant to consider for public health decision-making as to when individual schools in Ontario should be closed.

## Background

Ontario's COVID-19 response framework prioritizes keeping schools open, with a safe environment for classroom learning.<sup>1</sup> However, as part of public health restrictions implemented on December 26, 2020, in-person instruction in Ontario schools involves a [regional approach](#)<sup>2</sup> based on local epidemiology of COVID-19 in public health unit regions.<sup>1,2</sup> In some regions, as of January 21, 2021, schools are closed to most students for in-person instruction but continue to provide teacher led remote learning for students.

The Ministry of Health's [COVID-19 Guidance: School Outbreak Management](#)<sup>3</sup> provides guidance for PHUs investigating and managing cases, contacts and outbreaks associated with elementary or secondary (i.e., K-12) school settings, and outlines the roles and responsibilities of public health and education partners. This guidance (see Table 1) advises that whole school dismissal (i.e., temporary whole school closure for in-person learning, or school closure) should be considered if there is evidence of potential widespread transmission within the school (with consideration for whole school testing), but does not indicate a specific threshold of number of cases or extent of transmission to close a school. Guidance also recognizes that schools may also need to close due to operational considerations if multiple staff are required to self-isolate. This approach affords PHUs flexibility to make context-specific risk assessments to inform public health considerations for school closure. However, there is interest from public health and education stakeholders in the potential for more specific criterion for when to initiate school closure.

Other relevant considerations include the well documented<sup>4-7</sup> harms of school closures that have been cited as reasons to keep schools open on a regional level despite community restrictions in various jurisdictions.<sup>8-12</sup> These harms are likely to be experienced disproportionately by families subject to social inequities, and those with children with health conditions or special learning needs. Demonstrated harms in children include negative mental health impacts, decreased educational outcomes, and increased risk of child maltreatment and loss of connectedness with peers.

## Methods

A rapid environmental scan was performed to identify considerations from other comparable jurisdictions (outside Ontario) for individual school closures. This jurisdictional scan involved searching government websites, public health authorities (national/provincial/state/territorial/local) as well as Boards of Education between January 10<sup>th</sup>-21<sup>st</sup>, 2021. Online media reports for information on school closure and reopening during the COVID-19 pandemic were also identified opportunistically and included where information on government websites was scant. The following search string was used to initiate the grey literature search for each jurisdiction: (school OR Schools) AND (shutdown OR lockdown OR closure OR close OR closed) AND (COVID OR COVID-19) AND "jurisdiction". Additional manual searching of selected public health or government web sites was performed.

## Results

Jurisdiction(s)	Criteria for individual school closure
<b>AUSTRALIA</b> <a href="#">South Australia</a> <sup>13</sup> <a href="#">Victoria</a> <sup>14</sup>	<p>If a <b>confirmed case</b> of COVID-19 is identified in a staff member, student or child at a site (school), <b>temporary closure occurs for a minimum of 24 hours</b>, to enable public health officials to identify and notify any close contacts and advise on treatment and self-isolation.</p>
<b>CANADA</b> <a href="#">Alberta</a> <sup>15</sup>	<p><b>No specific number of cases / threshold</b> that would require a school to close. Closures of specific classes, cohorts or schools may occur dependent on the outcome of an investigation by public health (Alberta Health Services).</p> <p>Decisions on the need for alternate instructional delivery plans or school closures are made by Government in conjunction with local officials.</p>
<b>CANADA</b> British Columbia (Link <a href="#">1</a> <a href="#">2</a> ) <sup>16,17</sup>	<p>The BC Centre for Disease Control indicates that if a school cluster occurs (i.e., multiple confirmed linked cases over a 14 day period), public health will investigate and determine if additional measures are required, under the direction of the school medical officer. Outbreaks would be expected to be declared rarely, when “exceptional measures” are needed.<sup>16</sup> Exceptional measures are not defined and there is <b>no explicit mention of school closure</b>, or any specific criteria for closure identified.<sup>16</sup></p> <p>Fraser Health has advised some schools with a COVID-19 outbreak to close for a <b>two-week period</b>, with the rationale that this is a precautionary measure to break any chains of COVID-19 transmission that may be present at the school.<sup>17</sup></p>
<b>CANADA</b> <a href="#">Nunavut</a> <sup>18</sup>	<p>Schools close if there is <b>an active case of COVID-19</b> in the community. School remains closed until there are no active cases in the community.</p>
<b>CANADA</b> <a href="#">Quebec</a> <sup>19</sup>	<p><b>No set threshold</b> for closing a school with multiple cases of COVID-19 in staff or students: “Intervention measures may be intensified (closing a classroom, closing a school, etc.) based on the public health authorities’ analysis of virus transmission in the school and on the epidemiological factors specific to the school or region.”</p>
<b>FRANCE</b>	<p>If there are 3 or more confirmed cases of COVID-19 in a school over a period of 7 days, all students and staff who are not high risk contacts are offered a COVID-19 antigen test.<sup>20</sup></p> <p>As per a media report, if a school reports <b>more than 3 COVID-19 cases</b> the school will temporarily shut.<sup>21</sup></p>
<b>ISRAEL</b>	<p>All schools currently closed.<sup>22</sup></p>

Jurisdiction(s)	Criteria for individual school closure
	Prior guidance from November 3, 2020 did not indicate a specific threshold for whole school closure. <sup>23</sup>
NEW ZEALAND	Schools with a <b>single probable case or confirmed case of COVID-19</b> will close for a <b>minimum of 72 hours</b> to allow time for contact tracing and a clean of the school/service to align with Ministry of Health guidelines. Health authorities could require closure for longer periods of time, up to 14 further days. <sup>24,25</sup>
SOUTH KOREA	<b>If a confirmed case occurs</b> , the school needs to request <b>all students, teachers, and staff members to go into self-quarantine</b> , replace all classes with online classes, and carry out measures to identify suspected cases in cooperation with health authorities. <sup>26</sup>
TAIWAN	If <b>two or more teachers or students</b> are confirmed to have COVID-19, all classes in the entire school will be suspended for 14 days. <sup>27</sup>
UNITED KINGDOM	<p>All schools currently closed.<sup>28</sup></p> <p>Prior <a href="#">UK guidance from January 2021</a><sup>29</sup> advised that if schools <b>have 2 or more confirmed cases of coronavirus (COVID-19) among pupils or staff within 14 days</b>, or see an increase in children or staff absence rates due to suspected or confirmed cases of coronavirus (COVID-19), they should contact their local health protection team.</p> <p>The local health protection team will advise what action is required. <b>Usually, closure will not be necessary, but some groups may need to self-isolate.</b></p>
UNITED STATES <a href="#">California</a> <sup>31</sup>	California schools are recommended to close when at least <b>5% of staff and students test positive for COVID-19 within a 14-day period</b> , or an outbreak has occurred in <b>25% or more of student cohorts</b> within a school. <sup>30</sup> Individual counties may have exceptions to these guidelines. <sup>31</sup>
UNITED STATES <a href="#">New York</a> <sup>32</sup>	<p>State reopening guidance indicated that local school districts (and private and charter schools, etc.) must have a plan for school closures, including triggers.<sup>32</sup></p> <p>Current context: Elementary schools are open for in-person instruction and for students whose parents agree to a weekly coronavirus testing regimen (excluding kindergarten students), aligning with designated COVID-19 zones. Individual school (building) closures are to align with New York State restrictions in <a href="#">designated COVID-19 zones</a>.<sup>33</sup></p> <p>In New York City (NYC), specific criteria for closing a school building and transitioning to online learning are<sup>32,34</sup>:</p> <ul style="list-style-type: none"> <li>• <b>Temporary school closure during public health investigation (no specified duration, can reopen after investigation): If at least two cases, not linked</b></li> </ul>

Jurisdiction(s)	Criteria for individual school closure
	<p>to each other occur, but with exposure for each outside of school setting; affected classrooms remain closed for 10 days.</p> <ul style="list-style-type: none"> <li>• <b>10 day school closure: If a link is unable to be determined for any of the cases.</b></li> </ul>
<b>UNITED STATES</b> <a href="#">Pennsylvania</a> <sup>35</sup>	<p>For schools in counties with “substantial” transmission – a category that currently includes almost all of Pennsylvania – quantitative thresholds for closure and recommended closure duration depend on the number of students in a school building<sup>35</sup>:</p> <ul style="list-style-type: none"> <li>• &lt; 500 students: five or more COVID cases over 14 days: recommended to close for two weeks.</li> <li>• 500 to 900 students: 7 or more COVID cases over 14 days: recommended to close for two weeks</li> <li>• &gt; 900 students: 11 cases or more cases over 14 days: recommended to close for two weeks.</li> <li>• Fewer cases – two to four in a small school, six to 10 in a large school – warrant shorter, three- to seven-day closures.</li> </ul>
<b>THAILAND</b>	All schools currently closed. Only regional school closure approaches identified. <sup>36</sup>

<sup>1</sup> US States for which this scan did not identify individual school closure guidance: Connecticut, Florida, Georgia, Idaho, Iowa, Maine, Massachusetts, Michigan, Minnesota, Nebraska, Nevada, New Hampshire, New Mexico, New York, Oklahoma, Ohio, Oregon, South Carolina, Tennessee, Texas, Utah, Washington, Wisconsin, Wyoming.

## Discussion

This scan identified variable approaches to individual school closure across jurisdictions. Based on publicly available information from the jurisdictions reviewed, decisions to close individual K-12 schools for in-person learning varied. In some areas, decisions to initiate closures are based on the result of a public health investigation considering the particular situation, rather than pre-defined thresholds (e.g., a specific number of COVID-19 cases in students or staff over a specific time period). Operational considerations (e.g. staff shortage) were not typically identified in guidance documents as an indication for school closure.

Some jurisdictions took a conservative approach and would close schools following a single case. For example, schools temporarily close following a single case of COVID-19 in a student or staff for a minimum of 24 hours in Australia<sup>13</sup> or 72 hours in New Zealand<sup>24</sup>, to allow for a public health investigation including contact tracing and notification.

Other jurisdictions have specific thresholds for when to close a school following multiple cases of COVID-19, but these also vary. Over a given time period (e.g., 14 days), thresholds for school closure vary from two (Taiwan<sup>27</sup>) to three (France<sup>21</sup>) cases, to a set proportion of students or staff (or cohorts) testing positive (e.g., 5% of individuals or 25% of cohorts in a school in California<sup>30</sup>). Thresholds for school closure, and the duration of closure, also depend on the number of students in a building (i.e., <500, 500-900, >900) in Pennsylvania.<sup>35</sup> In NYC, two cases appear to trigger at least a temporary school closure to enable further investigation, with a 10 day closure if any an epidemiological link cannot be identified

for any cases.<sup>32</sup> Media reports suggest this has recently resulted in frequent and disruptive closures (of either 24 hours or 10 days) in the current epidemiological context in NYC.<sup>37</sup>

Several other jurisdictions positioned shorter school closures as an opportunity for cleaning and disinfection and/or further public health investigation.<sup>13,14,24-27</sup> An archived US Centers for Disease Control (CDC) document<sup>7</sup> had also suggested that short individual school building closures (2-5 days) in response to a case could be used to enable “decontamination” and contact tracing (i.e., further public health investigation). However, evidence on COVID-19 transmission has evolved, and suggests that fomite transmission, while possible, is not the primary route of transmission.<sup>38</sup>

## Limitations and Strengths

Identifying school closure guidance from the websites of governments and public health authorities at the national, provincial/state/territorial and local level, as well as from boards or departments of education was challenging due to variable approaches to posting guidelines between jurisdictions and limited publicly available information. As such, it is possible that the search did not identify relevant guidance documents or reports of specific school closures. Accuracy of various media reports may vary and it was not feasible to verify given the time and resource constraints. However, the question explored in this review is timely and the findings identify a range of potential approaches to individual school closures in the context of COVID-19.

## Conclusion

Various approaches to individual school closures exist, with no identified evaluation of the relative impact or harms of specific approaches. Some jurisdictions appeared to take a containment approach to COVID-19 in schools, closing schools after a single case in the context of low community COVID-19 activity, which may not be applicable to the current Ontario context.

It is unclear whether, in the Ontario epidemiological context, a lower, pre-established threshold for whole school closure would reduce the risk of transmission in schools or secondary transmission, compared to the current approach (i.e., dismissal of cohorts of a case while public health investigation continues, with discretion to public health units on when to initiate a school closure). A pre-established numerical threshold would be anticipated to result in frequent closures in areas with high community transmission, despite the expectation that cases and outbreaks in schools will increase as community transmission increases. It is also unclear whether shorter (e.g., 24- to 72-hour) closures for the purposes of enabling further public health investigation would be helpful to public health units in the current Ontario context, noting that in some areas timely dismissals of exposed cohorts are initiated by school principals prior to the start of public health investigations.

Although this scan did not identify specific criteria or actions related to potential harms of school closures, decisions to temporarily close individual schools due to COVID-19 should also consider the potential harms of school closures for children, youth and families, as well as equity-focused harm mitigation strategies.

Given the well documented harms of school closures, and the range of approaches to school closure that exist in the absence of evidence of effectiveness, clear communication to all stakeholders and to the public regarding individual school closures is needed, including the rationale and process for decision-making.

## References

1. Ontario. Ministry of Health. COVID-19 response framework: keeping Ontario safe and open -- lockdown measures [Internet]. Toronto, ON: Queen's Printer for Ontario; 2020 [cited 2021 Jan 21]. Available from: <https://files.ontario.ca/moh-covid-19-response-framework-keeping-ontario-safe-and-open-en-2020-11-24.pdf>
2. Government of Ontario. COVID-19 public health measures and restrictions [Internet]. Toronto, ON: Queen's Printer for Ontario; 2020 [cited 2021 Jan 21]. Available from: <https://covid-19.ontario.ca/zones-and-restrictions>
3. Ontario. Ministry of Health. COVID-19 guidance: school outbreak management [Internet]. Toronto, ON: Queen's Printer for Ontario; 2020 [cited 2021 Jan 21]. Available from: [http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/COVID-19\\_school\\_outbreak\\_guidance.pdf](http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/COVID-19_school_outbreak_guidance.pdf)
4. Victoria State Government. Operations guide: Victorian Government schools from 7 August 2020 [Internet]. Melbourne: State of Victoria (Department of Education and Training); 2020 [cited 2021 Jan 21]. Available from: <https://is.vic.edu.au/wp-content/uploads/2020/03/School-Operations-Guide-Term-3-3.pdf>
5. Dove N, Wong J, Gustafson R, Corneil T; BC Centre for Disease Control. Impact of school closures on learning, child and family well-being during the COVID-19 pandemic [Internet]. Vancouver, BC: Provincial Health Services Authority; 2020 [cited 2021 Jan 21]. Available from: [http://www.bccdc.ca/Health-Info-Site/Documents/Public\\_health\\_COVID-19\\_reports/Impact\\_School\\_Closures\\_COVID-19.pdf](http://www.bccdc.ca/Health-Info-Site/Documents/Public_health_COVID-19_reports/Impact_School_Closures_COVID-19.pdf)
6. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Rapid review: negative impacts of community-based public health measures on children, adolescents and families during the COVID-19 pandemic: update [Internet]. Toronto, ON: Queen's Printer for Ontario; 2020 [cited 2021 Jan 21]. Available from: <https://www.publichealthontario.ca/-/media/documents/ncov/he/2021/01/rapid-review-neg-impacts-children-youth-families.pdf?la=en>
7. Centers for Disease Control and Prevention. Considerations for school closure [Internet]. Atlanta, GA: Centers for Disease Control and Prevention; 2020 [cited 2021 Jan 21]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/downloads/considerations-for-school-closure.pdf>
8. Gilligan M. Alberta's K-12 students return to in-person learning Monday. Global News [Internet], 2021 Jan 11 [cited 2021 Jan 21]; Canada. Available from: <https://globalnews.ca/news/7567832/alberta-in-person-learning-covid-19/>
9. Laframboise K. As Quebec kids head back to school, Legault calls reopening 'a calculated risk'. Global News [Internet], 2021 Jan 11 [cited 2021 Jan 21]; Education. Available from: <https://globalnews.ca/news/7567883/quebec-elementary-schools-reopen-january-11-2021/>
10. Government of British Columbia. Five stages framework for K-12 education [Internet]. Victoria, BC: Province of British Columbia; 2020 [modified 2020 Jul 29; cited 2021 Jan 21]. Available from: <https://www2.gov.bc.ca/gov/content/education-training/k-12/covid-19-return-to-school/five-stages-framework#framework>
11. McAuley J. Students in France return to schools, even as covid-19 cases soar. Washington Post [Internet], 2020 Sep 01 [cited 2021 Jan 21]; Europe. Available from:

[https://www.washingtonpost.com/world/europe/covid-schools-reopen-france/2020/08/31/21afbd94-e93e-11ea-bf44-0d31c85838a5\\_story.html](https://www.washingtonpost.com/world/europe/covid-schools-reopen-france/2020/08/31/21afbd94-e93e-11ea-bf44-0d31c85838a5_story.html)

12. Centers for Disease Control and Prevention. Indicators for dynamic school decision-making [Internet]. Atlanta, GA: Centers for Disease Control and Prevention; 2020 [modified 2020 Sep 15; cited 2021 Jan 21 2021]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/indicators.html>
13. South Australia. Department for Education. Protocol for temporary site closure due to COVID-19 [Internet]. Adelaide: Government of South Australia; 2021 [modified 2021 Jan 07; cited 2021 Jan 21]. Available from: <https://www.education.sa.gov.au/supporting-students/health-e-safety-and-wellbeing/covid-19-coronavirus/school-and-preschool-temporary-closures-and-reopenings/protocol-temporary-site-closure-due-covid-19>
14. Victoria State Government. Steps for schools – positive coronavirus (COVID-19) case reported to school [Internet]. Melbourne: State of Victoria (Department of Education and Training); 2021 [cited 2021 Jan 21]. Available from: [https://www.coronavirus.vic.gov.au/sites/default/files/2020-10/Infographic\\_Positive\\_Coronavirus\\_case.pdf](https://www.coronavirus.vic.gov.au/sites/default/files/2020-10/Infographic_Positive_Coronavirus_case.pdf)
15. Government of Alberta. COVID-19 information: COVID-19 in school (K-12) settings: a resource guide for schools before, during, and after a COVID-19 outbreak [Internet]. Edmonton, AB: Government of Alberta; 2020 [cited 2021 Jan 21]. Available from: <https://open.alberta.ca/dataset/f3b954c8-7ec4-42ea-a6f5-0a10d08cbbac/resource/49512d1b-a192-46ac-ba05-12ffadebef4/download/covid-19-resource-guide-for-covid-19-in-school.pdf>
16. BC Centre for Disease Control; British Columbia Ministry of Health. COVID-19 public health guidance for K-12 school settings [Internet]. Vancouver, BC: Provincial Health Services Authority; 2020 [cited 2021 Jan 21]. Available from: [http://www.bccdc.ca/Health-Info-Site/Documents/COVID\\_public\\_guidance/Guidance-k-12-schools.pdf](http://www.bccdc.ca/Health-Info-Site/Documents/COVID_public_guidance/Guidance-k-12-schools.pdf)
17. Fraser Health Authority. Fraser Health declares COVID-19 outbreak at Newton Elementary School [Internet]. Surrey, BC: Fraser Health Authority; 2020 [cited 2021 Jan 21]. Available from: <https://www.fraserhealth.ca/news/2020/Nov/fh-declares-covid19-outbreak-at-newton-elementary-school#.YAeaKZA1tPZ>
18. Government of Nunavut. 2020-21 Opening plan for Nunavut schools: health and safety [Internet]. Iqaluit, NU: Government of Nunavut; 2020 [cited 2021 Jan 21]. Available from: [https://gov.nu.ca/sites/default/files/files/2020-21\\_opening\\_plan\\_for\\_nunavut\\_schools\\_-\\_eng.pdf](https://gov.nu.ca/sites/default/files/files/2020-21_opening_plan_for_nunavut_schools_-_eng.pdf)
19. Gouvernement du Québec. Questions and answers on education and families during the COVID-19 pandemic [Internet]. Québec City, QC: Gouvernement du Québec; 2021 [cited 2021 Jan 21]. Available from: <https://www.quebec.ca/en/health/health-issues/a-z/2019-coronavirus/answers-questions-coronavirus-covid19/questions-answers-education-families-covid-19/>
20. France. Ministry of National Education. Coronavirus covid-19: the answers to your questions [Internet]. Paris: Ministry of National Education; 2021 [cited 2021 Jan 21]. Available from: <https://www.education.gouv.fr/coronavirus-covid-19-les-reponses-vos-questions-306136>
21. France 24. Days after reopening, France shuts 22 schools after Covid-19 outbreaks. France 24 [Internet], 2021 Sep 04 [cited 2021 Jan 21]. Available from: <https://www.france24.com/en/20200904-france-shuts-22-schools-after-covid-19-outbreaks>

22. Israel. Ministry of Health. Covid-19 guidance: restrictions to take effect [Internet]. Jerusalem: Government of Israel; 2020 [cited 2021 Jan 21]. Available from: <https://www.gov.il/en/Departments/Guides/ramzor-cites-guidelines?chapterIndex=2>
23. Israel. Ministry of Health. Treatment procedure in the event of a diagnosis of a student or staff member with the new Corona virus (19-COVID) in an educational institution [Internet]. Jerusalem: Government of Israel; 2020 [cited 2021 Jan 21]. Available from: [https://www.gov.il/BlobFolder/policy/phs-420137720/he/files\\_circulars\\_phs\\_phs-420137720.pdf](https://www.gov.il/BlobFolder/policy/phs-420137720/he/files_circulars_phs_phs-420137720.pdf)
24. New Zealand. Ministry of Education. Advice for schools/kura [Internet]. Wellington: Government of New Zealand; 2021 [cited 2021 Jan 21]. Available from: <https://www.education.govt.nz/covid-19/advice-for-schoolskura/>
25. New Zealand. Ministry of Education. COVID-19 in your school or early learning service [Internet]. Wellington: Government of New Zealand; 2020 [cited 2021 Jan 21]. Available from: <https://www.education.govt.nz/assets/Documents/COVID19-files/if-you-have-a-probable-or-confirmed-case.docx>
26. Government of the Republic of Korea. All about Korea's response to COVID-19 [Internet]. Seoul: Government of the Republic of Korea; 2021 [cited 2021 Jan 21]. Available from: <http://www.moe.go.kr/en/board/endownload.do?boardSeq=173818>
27. Cheng S-Y, Wang CJ, Shen AC-T, Chang S-C. How to safely reopen colleges and universities during COVID-19: experiences from Taiwan. *Ann Intern Med*. 2020;173(8):638-41. Available from: <https://doi.org/10.7326/m20-2927>
28. United Kingdom. Cabinet Office. National lockdown: stay at home [Internet]. London: Crown Copyright; 2021 [modified 2021 Jan 14; cited 2021 Jan 21]. Available from: <https://www.gov.uk/guidance/national-lockdown-stay-at-home#going-to-school-or-college>
29. United Kingdom. Department for Education. What parents and carers need to know about early years providers, schools and colleges [Internet]. London: Crown Copyright; 2020 [modified 2021 Jan 21; cited 2021 Jan 21]. Available from: <https://www.gov.uk/government/publications/what-parents-and-carers-need-to-know-about-early-years-providers-schools-and-colleges-during-the-coronavirus-covid-19-outbreak/what-parents-and-carers-need-to-know-about-early-years-providers-schools-and-colleges-in-the-autumn-term>
30. California Department of Public Health. COVID-19 and reopening in-person instruction framework & public health guidance for K-12 schools in California, 2020-2021 school year [Internet]. Sacramento, CA: California Department of Public Health; 2021 [cited 2021 Jan 21]. Available from: [https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/COVID-19/Consolidated\\_Schools\\_Guidance.pdf](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/COVID-19/Consolidated_Schools_Guidance.pdf)
31. County of Los Angeles Department of Public Health. Reopening protocols for K-12 schools: appendix T1 [Internet]. Los Angeles, CA: County of Los Angeles Department of Public Health; 2020 [modified 2020 Dec 28; cited 2021 Jan 21]. Available from: [http://www.publichealth.lacounty.gov/media/Coronavirus/docs/protocols/Reopening\\_K12Schools.pdf](http://www.publichealth.lacounty.gov/media/Coronavirus/docs/protocols/Reopening_K12Schools.pdf)
32. New York State Department of Health. Interim guidance for in-person instruction at Pre-K to grade 12 schools during the covid-19 public health emergency [Internet]. New York, NY: New York State Department of Health; 2020 [cited 2021 Jan 21]. Available from: [https://www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/Pre-K\\_to\\_Grade\\_12\\_Schools\\_MasterGuidance.pdf](https://www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/Pre-K_to_Grade_12_Schools_MasterGuidance.pdf)

33. New York State. Cluster action initiative [Internet]. New York, NY: New York State; 2021 [cited 2021 Jan 21]. Available from: <https://forward.ny.gov/cluster-action-initiative>
34. New York City Department of Education. Daily COVID case map [Internet]. New York, NY: New York City Department of Education; 2021 [cited 2021 Jan 21]. Available from: <https://www.schools.nyc.gov/school-year-20-21/return-to-school-2020/health-and-safety/daily-covid-case-map>
35. Pennsylvania. Department of Education. Recommendations for Pre-K to 12 schools following identification of a case(s) of COVID-19 [Internet]. Harrisburg, PA: Commonwealth of Pennsylvania; 2021 [cited 2021 Jan 21]. Available from: <https://www.education.pa.gov/Schools/safeschools/emergencyplanning/COVID-19/SchoolReopeningGuidance/ReopeningPreKto12/PublicHealthGuidance/Pages/SchoolClosureRecommendations.aspx>
36. Thailand. Government Public Relations Department. Closure of all public and private educational institutions to prevent COVID-19 [Internet]. Bangkok: Government of Thailand; 2021 [cited 2021 Jan 21]. Available from: [https://thailand.prd.go.th/mobile\\_detail.php?cid=4&nid=10579](https://thailand.prd.go.th/mobile_detail.php?cid=4&nid=10579)
37. Gould J. "Better safe than sorry": number of NYC public elementary schools closed for COVID-19 keeps rising. Gothamist [Internet], 2021 Jan 20 [cited 2021 Jan 21]. Available from: <https://gothamist.com/news/better-safe-sorry-number-nyc-public-elementary-schools-closed-covid-19-keeps-rising>
38. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Frequently asked questions: schools and COVID-19 [Internet]. Toronto, ON: Queen's Printer for Ontario; 2020 [cited 2021 Jan 21]. Available from: <https://www.publichealthontario.ca/-/media/documents/ncov/sch/2020/12/covid-19-faq-schools.pdf?la=en>

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## Public Health Ontario

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