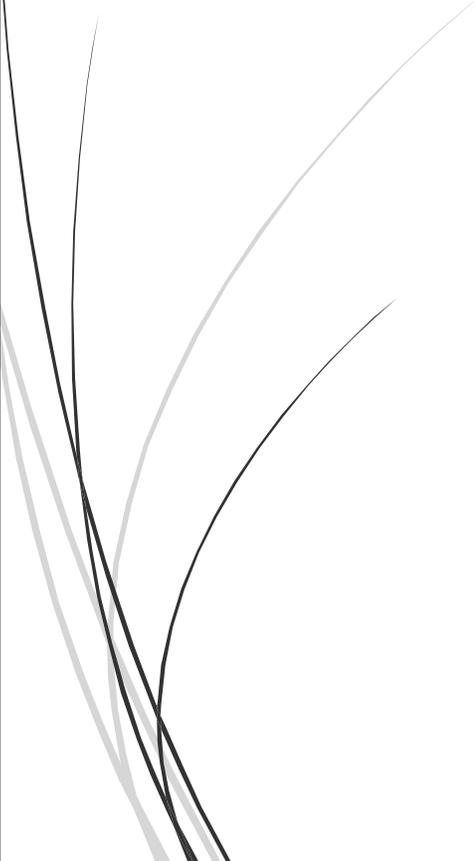


11/30/2020

# COVID-19 Literature Review Group

Prepared by The Ohio State University

## Place-based Outbreaks



### ODH Literature Review Group

THE OHIO STATE UNIVERSITY

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### Massachusetts Community Tracing Collaborative

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## COVID-19 Literature Review

Prepared by Elena McGoey, The Ohio State University

November 26, 2020

**Title:** Ohio COVID-19 outbreaks linked to at least 50 bars and restaurants, 11 childcare centers

**Source:** The Columbus Dispatch

**Publication:** August 6, 2020 (note date)

**Link:** <https://www.cincinnati.com/story/news/2020/08/06/ohio-covid-19-outbreaks-linked-least-50-bars-and-restaurants-11-child-care-centers/3308491001/>

**Study Period:** July 1, 2020-August 2020

**Study Location:** Ohio

**Sample Size:** N/A

**Summary:** Since July 1, COVID-19 outbreaks have occurred within Ohio in *at least* 50 bars and restaurants, 11 childcare facilities, 8 churches, and 4 schools or universities. This data was based on contact tracing information provided by local health departments and does not give an accurate report or detailing of all the outbreaks across the state. Specific details of outbreaks are unavailable due to the Ohio Disease Reporting System, which tracks individual cases rather than outbreaks, making it impossible to find details on outbreaks unless each individual case is manually reviewed.

**Key findings most relevant to Ohio's response:** Due to the date of this article publication, this data on outbreaks is likely very outdated but points to trends of outbreak sites that should be considered when deciding which establishments to shut down or limit. The state should reevaluate their system used to track COVID-19 cases, modifying the system to include outbreak cases rather than just individual cases and employing a search function within the system to more easily identify outbreaks.

**Title:** Data Overview: Child Care Centers, Camps, and Outbreaks

**Source:** Covid-Explained site (sources listed for all state data)

**Publication:** Last updated November 9, 2020

**Link:** <https://explaincovid.org/kids/data-overview-child-care-centers-camps-and-outbreaks/>

**Study Period:** N/A (updated with data frequently, with various start and 'end' data point periods)

**Study Location:** United States

**Sample Size:** N/A

**Summary:** This commentary provides crowdsourced and official state level data and information on media coverage of COVID-19 outbreaks in childcare, camp, and school settings. In a survey (using crowdsourced data) of 983 childcare centers open throughout the pandemic, the confirmed case rate of students (mostly young children) was 0.15% and the confirmed case rate of staff was 1.10%. Data from media coverage of outbreaks across states shows that media coverage focused on camp programs, which may indicate that outbreaks are more likely and result in more confirmed cases in camp settings rather than childcare or school settings. The survey data seems consistent from the state level data in that percentage of confirmed COVID-19 cases and deaths both for students and staff within childcare facilities is low overall, but each state included provides varying levels of childcare data, so consistency across the data categories is lacking.

**Key findings most relevant to Ohio's response:** Each state provides differing amounts of data, but California's system may be the most useful for Ohio to model if Ohio wishes to implement a more comprehensive data reporting system. The California Department of Social Services Child Care Program Office collects data on positive COVID-19 cases for childcare facilities across the state, reporting the number of centers and number of positive cases (in children, parents, and staff) by each county. California's system for reporting thus provides the most accurate data on COVID-19 outbreaks related to childcare facilities out of any state, helping to eliminate the serious limitation (found in most state reports) of not providing total staff or child enrollment numbers. All data found on this site likely understates COVID-19 cases found in childcare centers, since children who are asymptomatic are not reported. If Ohio wants accurate data on childcare outbreaks (or outbreaks related to any specific type of facility) that is as unbiased as possible, universal or random sampling of centers and/or random testing of children and staff at childcare centers would be most beneficial.

**COVID 19 Literature Review**  
**Prepared by Amanda Seifferth, The Ohio State University**  
**November 27, 2020**

**Title:** 18 Coronavirus Cases Linked to Hair Salon in North Carolina, Officials Say

**Source:** The Charlotte Observer

**Publication Date:** 9/24/2020

**Link:** <https://www.charlotteobserver.com/news/coronavirus/article245948865.html>

**Study Period:** September 2020

**Study Location:** Haywood County, North Carolina

**Sample Size:** 18

**Summary:** Enchanting Hair Fashions, a hair salon in Haywood County, NC, has been linked to a minimum of 18 coronavirus cases, including 5 workers and 6 clients. The other 7 cases were close contacts of the cluster. Following the identification of the cluster, the salon closed. Public health officials from Haywood County emphasize the importance of identifying and publicly reporting clusters for transparency purposes. They also point out the importance of wearing masks in such establishments, as one employee from the salon did not consistently wear a face-covering. A hair salon in Missouri was also responsible for an outbreak. Moreover, merely two infected employees worked with a total of 140 customers. In this scenario, all employees did consistently wear masks, yet transmission still occurred.

**Key Findings Relevant to Ohio's Response:** These findings show that establishments, such as hair salons, where a relatively high volume of individuals gather present suitable conditions for Covid-19 transmission. Furthermore, employees often neglect proper health and safety guidelines. Even when followed, such policies are not always effective in preventing outbreaks.

**Title:** How Policies on Restaurants, Bars, Nightclubs, Masks, Schools, and Travel Influenced Swiss Covid-19 Reproduction Ratios

**Source:** MedRxiv

**Publication Date:** 10/14/2020

**Link:** <https://doi.org/10.1101/2020.10.11.20210641>

**Study Period:** 3/9/2020-9/13/2020

**Study Location:** Switzerland

**Sample Size:** N/A

**Summary:** Researchers investigated the effectiveness of non-pharmaceutical intervention measures (NPIs) implemented to combat the spread of Covid-19. Furthermore, they analyzed the relationship between the extent of NPI implementation in Switzerland and the resultant reproduction ratios. In May, Switzerland's daily incidence of cases was below 100. Since then, cases have slowly climbed back up despite strong contact tracing. To analyze the effectiveness of NPIs in Switzerland, researchers defined an ideal reproduction ratio as below 1. The impact of post-lockdown policies in bars, restaurants, nightclubs, travel, tourism, and mask requirements was investigated. After analyses, researchers concluded that increasing restaurant/bar reopening and capacity levels corresponded with an increasing reproduction ratio. Moreover, the contribution to the reproduction ratio from restaurants with a capacity of 50 occupants was .0517, whereas the contribution from restaurants with unrestricted capacity but social distancing measures was .0528. The reopening of bars was found to contribute .03 to the reproduction ratio. The reopening of road and air travel into the nation was found to contribute .177 to the reproduction ratio. The permissance of tourism in the nation was deduced to add .179 to the reproduction ratio. Lastly, researchers found that a mask requirement in public transport resulted in a reduction of the reproduction ratio by .0139. However, an additional mask mandate in shops did not reduce it further. In contrast, requiring masks in schools did additionally decrease the reproduction ratio. When coupled with a mask requirement in public transport, school-wide mask mandates resulted in a reduction of .025.

**Key Findings Relevant to Ohio's Response:** Findings from this study demonstrate the effectiveness of NPIs, such as limited restaurant/bar capacity, travel restrictions, tourism restrictions, and mask mandates. However, authors also note the implications these measures have for the economic success of individuals as well as their sense of liberty. All of these factors must be weighed prior to the implementation of new policies in Ohio.

**COVID-19 Literature Review**  
**Prepared by Anjali Prabhakaran, The Ohio State University**  
**November 27, 2020**

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|---|--|
| <b>Title</b>                                    | <b>Strengthening Policy Coding Methodologies to Improve COVID-19 Disease Modeling and Policy Responses: A Proposed Coding Framework and Recommendations</b>  |
| <b>Source</b>                                   | Med Rx iV  |
| <b>Publication Date</b>                         | 08/12/2020 (Preprint)  |
| <b>Link</b>                                     | <a href="https://www.medrxiv.org/content/10.1101/2020.08.12.20173740v1">https://www.medrxiv.org/content/10.1101/2020.08.12.20173740v1</a>  |
| <b>Study Period</b>                             | n/a  |
| <b>Study Location</b>                           | n/a  |
| <b>Sample Size</b>                              | 12 states  |
| <b>Summary</b>                                  | The goal of this study was to develop a non-binary coding framework to characterize COVID-19 social distancing policy responses. The authors developed a social distancing intensity framework with 16 domains and intensity scales of 0-5 for each domain from a policy review of 12 states. The states with the highest average daily intensity from the sample were Pennsylvania, Washington, Colorado, California, and New Jersey, while Georgia, Florida, Massachusetts, and Texas had the lowest. From these findings, the authors also presented recommendations to improve COVID-19 comparative policy coding. |
| <b>Key Findings Relevant to Ohio's Response</b> | After implementing policies to curb the spread of COVID-19, it is important for policy makers to have the proper tools to assess the effectiveness of such regulations. The findings from this article will help policymakers determine how best to examine the outcome of various COVID-19 policies, and adjust such policies as necessary based on the resulting data.   |

| Reviewed 11/20/20       |                        |                   |                |              |             |                      |                  |   |
|-------------------------|------------------------|-------------------|----------------|--------------|-------------|----------------------|------------------|---|
| Name of Gym             | Location               | Date              | # of index ca  | Index case t | Total cases | Mistakes             | Precautions      | News Link   |
| Spinco                  | Hamilton, Canada       | 9/28/20 to 10/4   | 44             | n/a          | 61          | Masks not worn on    | six-foot radius  | IwAR3YIxZGPxxIWoZOIyo5  |
| Orange Theory           | Elmhurst               | n/a (article publ | n/a            | n/a          | 18          | Closed environmen    | Temperature c    | <a href="https://abc7chicago.com/elmh">https://abc7chicago.com/elmh</a>   |
| Platinum Athletic Club  | Surrey, UK             | 10/21/20 to 11/   | n/a            | Patrons      | 42          | (could not find info | Working with     | <a href="https://globalnews.ca/news/74">https://globalnews.ca/news/74</a> |
| Equinox (4 locations)   | West Hollywood, New    | 06/20/20-06/22    | 1 (at each loc | Employees    | n/a         | did not require mas  | Routine disnfe   | <a href="https://www.nbclosangeles.com">https://www.nbclosangeles.com</a> |
| Oahu Gyms (2 locations) | Oahu                   | 7/10/20           | 1 (each locati | Patrons      | n/a         | Poor ventilation, fa | (couldn't find i | <a href="https://www.khon2.com/coron">https://www.khon2.com/coron</a>     |
| Reviewed 11/27/20       |                        |                   |                |              |             |                      |                  |   |
| Name of Facility        | Location               | Date              | # of index ca  | Index case t | Total cases | Mistakes             | Precautions      | News Link   |
| Grocery stores          | Riverside County, Cali | July-September    | 48 outbreaks   | Employees    | n/a         |                      |                  |   |



## Massachusetts Community Tracing Collaborative

### SARS CoV-2 Transmission Research and Transmission Information | *Effect of Re-Opened Schools on Covid-19 Epidemics*

1. **MedRxiv:** The potential impact of School Closure Relative to Community-based Non-pharmaceutical Interventions on COVID-19 Cases in Ontario, Canada
2. **ResearchGate (preprint):** What is the Evidence for Transmission of COVID-19 by Children in Schools? A Living Systematic Review

### Reopening and Reopening Challenges | *Returning College Students*

1. **Wall Street Journal:** Many College Students Head Home for Thanksgiving Lacking Covid-19 Tests
2. **Washington Post:** College students hit the road after an eerie pandemic semester. Will the virus go home with them?

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### SARS CoV-2 Transmission Research and Transmission Information | *Effect of Re-Opened Schools on Covid-19 Epidemics*

#### **MedRxiv: [The potential impact of School Closure Relative to Community-based Non-pharmaceutical Interventions on COVID-19 Cases in Ontario, Canada](#) (11/21/2020)**

An agent-based model found that school closures have a much smaller effect on community transmission than other non-pharmaceutical interventions (NPIs). The authors modeled a population of 1 million based on the attributes of Ontario, Canada. This synthetic population was constructed to be representative of Ontario's actual population, with each individual assigned in the model to a simulated household, neighborhood or region, and school or workplace. Using an agent-based model, researchers simulated the spread of the virus through this synthetic population from September 1 to October 31, comparing the results under different scenarios to evaluate the impact of school closures. Overall, the authors found that the incidence of COVID-29 infection among students and teachers would be low: about 5%. If schools had remained closed and basic NPIs kept in place, there would have been 714 new cases on October 31; had schools been left open, there would have been 780. The authors found that non-school NPIs had a much more significant effect on daily cases than school closure. As such, the authors recommend public health authorities prioritize non-school-related NPIs before closing schools.

**ResearchGate (preprint): [What is the Evidence for Transmission of COVID-19 by Children in Schools? A Living Systematic Review](#) (11/2020)**

A meta-analysis of cohort and cross-sectional studies found that in-school transmission to students is unlikely. However, current research is insufficient to determine the exact role schools play in transmission. The authors evaluated eleven studies that estimated in-school transmission events. The five cohort studies collectively included 22 staff index cases, 21 student index cases, and 3,345 contacts. In total, there were 18 transmissions, representing an attack rate of 0.08%. The attack rate for staff, 0.70%, was markedly higher than the attack rate for students, 0.15%. This finding is broadly in line with preliminary research suggesting that children are less susceptible to infection. The cross-sectional studies included 6,682 participants, 639 of whom tested positive for SARS CoV-2. Again, infection rates were significantly higher for school staff. Although these data suggest that children are not as likely to be infected as adults, the authors believe insufficient research exists to quantify how conducive schools are to transmission. The authors plan to update the meta-analysis with further research as schools reopen and more studies become available.

**Related Articles | Please find annotations for all related articles on the main resource hub, linked [here](#)**

**MassLive: [COVID cases at Massachusetts schools dip slightly to 276 students, 206 staffers in past week](#) (11 /25/2020)**

*Over the past week Massachusetts schools reported a total of 482 COVID-19 cases in schools, 206 of whom are school staff. This represents a decline from 652 cases in the previous week.*

**The Hill: [Other public venues should be closed 'long before we close schools,' says former FDA commissioner](#) (11/20/2020)**

*Former FDA commissioner Scott Gottlieb suggests that authorities should close facilities such as restaurants and gyms before schools, citing the importance of in-person education. Gottlieb says that districts should focus on keeping elementary schools open as they are less likely to contribute to infections than high schools.*

**NPR: [Are The Risks Of Reopening Schools Exaggerated?](#) (10/21/2020)**

*Major international research suggests that schools do not accelerate COVID-19 epidemics, especially with sufficient precautions. Although US data are spotty, they also indicate that schools are unlikely to drive transmission.*

**University of Illinois, Springfield: [Effect of K-12 instruction types on reported COVID-19 cases and deaths in Illinois counties](#) (9/27/2020)**

*An analysis of case data in Illinois found that counties with primarily online instruction in schools had 29% to 45% fewer cases than otherwise-similar counties with mostly in-person school instruction; counties with hybrid schools were associated with an 18% to 30% reduction in transmission compared to counties featuring in-person education.*

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**Reopening and Reopening Challenges | [Returning College Students](#)**

**Wall Street Journal: [Many College Students Head Home for Thanksgiving Lacking Covid-19 Tests](#) (11/21/2020)**

Although some universities mandate exit testing for their student body, about two-thirds of colleges have not required any tests for departing students. For instance, the University of Michigan made tests available through November 20th. Yet, only slightly more than half the student body was tested. As more than 50 million Americans are expected to travel for Thanksgiving, experts fear college students, part of the demographic that has been driving much of recent COVID-19 transmission, could spread the virus into their hometowns. When universities reopened in the fall, they contributed an estimated 3,200 new cases a day. Experts suggest a similar surge could occur as unknowingly-infected college students return home. Moreover, such an outbreak would happen all over the country, rather than in college towns. Several state governments have strongly urged universities to conduct exit testing. Nonetheless, even the most sensitive tests could still allow infected students to return home and spread SARS CoV-2 at family gatherings.

**The Washington Post: [College students hit the road after an eerie pandemic semester. Will the virus go home with them?](#) (11/22/2020)**

Public health experts fear that college students will spread COVID-19 as they return home for Thanksgiving and other holidays. Colleges and universities have taken steps to prevent students from taking the virus home with them, although health officials worry that college students going home for family gatherings still present a significant risk. Many schools have accelerated already-robust testing programs in the weeks leading up to Thanksgiving and scaled back in-person classes leading into the break. However, even among schools with extensive testing programs, many do not conduct large-scale exit testing for homebound students and, for those that do, these tests remain optional. Numerous outbreaks have been associated with college students this fall, and any number of students returning for the holidays may significantly accelerate the risk of already dangerous family gatherings. Public health officials recommend that families should treat college students as “overnight guests” when they first return home, taking the same precautions that are appropriate with any outside visitor who may be carrying the virus. Nevertheless, many health experts fear that families may not heed this guidance.

**Related Articles | Please find annotations for all related articles on the main resource hub, linked [here](#)**

**The Hill: [US colleges urge students to get tested before returning home for Thanksgiving](#) (11/20/2020)**

*Numerous universities have mounted costly efforts to test students before returning home for Thanksgiving, but many institutions are not mandating tests, leading to concerns about rampant outbreaks over Thanksgiving.*

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*Please visit the Massachusetts CTC Contact Tracing and COVID-19 Research Hub for more annotated resources on COVID-19 or to find annotations for all the related resources: <https://docs.google.com/document/d/1rTXsqHqmoXlqqPtVkqMZCFzHFkI4f9cclsMuqChs7xY/edit?usp=sharing>*