



Legislative Office of Fiscal
Transparency

Rapid Response Evaluation: Oklahoma State Department of Health's Contact Tracing Program

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Legislative Office of Fiscal Transparency
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Key Objectives:

- Analyze metrics to determine the effectiveness of OSDH's contact tracing program in limiting the spread of COVID-19.
- Examine ongoing costs of the contact tracing program.
- Examine the policies, procedures, mandates, and statutes used, or which can be used, to better enhance project objectives and goals.
- Further examine OSDH's CARES Fund expenditures to ensure compliance and transparency.

Executive Summary

A few months into the COVID-19 pandemic, when the longevity of the situation became clear, state governments were encouraged to utilize contact tracing and case investigation as tools for developing policies to protect public health.

Contact tracing, and by extension, case investigation, has had success in managing the spread of disease since the time of Cholera, but in modern times, the practice has never been used at the scale of COVID-19.

Many states, including Oklahoma, struggled with implementing an effective contact tracing response that included three critical components for success: leadership, organization, and public trust. In conducting a comparative analysis, the Legislative Office of Fiscal Transparency (LOFT) found those states that did were able to implement a more strategic response regarding policies that affected businesses and public institutions.

As policymakers nationwide deliberated over actions that would enable economic and other activities while still protecting public health, data regarding exposure hot-spots and community behavior helped some states in developing targeted strategies or empowering communities to assess risks and adapt accordingly.

With this limited scope evaluation, LOFT sought to examine the effectiveness of the Oklahoma State Department of Health's (OSDH) contact tracing program and identify best practices for Oklahoma to adopt moving forward.

LOFT found the limitations of Oklahoma's contract tracing data and a lack of public buy-in were the greatest hindrances to implementing an effective contract tracing program. This was partly due to technological constraints, the evolving understanding of the disease, and changing guidance from the Centers for Disease Control (CDC).

LOFT's analysis is of OSDH's limited coordination of contact tracing and case investigation efforts into a centralized location from June 8 to December 31, 2020. Excluded from this analysis are efforts undertaken by Oklahoma or Tulsa Counties, as they are independent health departments, and Tribal members who utilized their nation's health departments. This report also did not examine the contact tracing efforts of the Oklahoma National Guard and others from March to June 2020, when the state was in an emergency response phase.

In addition to the limitations stated above, on December 31, 2020, OSDH changed their centralized approach to contact tracing to a regionalized approach.

Summary of Findings

Finding 1: Oklahoma State Department of Health (OSDH) Lacks Sufficient Contact Tracing Data to Measure the Impact on Limited Spread of COVID-19

LOFT found the State Department of Health's contact tracing program had no measurable impact on the pandemic. Data regarding transmissions were not timely or accessible to the public or sub-governmental entities. Further, there was minimal effort into establishing public buy-in through awareness campaigns.

The data provided by OSDH was limited in nature and did not lend itself to a full comparison of performance metrics as recommended by the CDC. Often, OSDH was tracking outputs instead of outcomes. The limited data can be attributed to many factors, such as IT limitations, funding issues, or simply failure to collect data.

The lack of data is a missed opportunity for the State, its citizens, and small businesses to make more informed decisions regarding policy and assessing risks within local communities and their economies.

Finding 2: OSDH's COVID-19 Reporting Fails to Align with Stakeholders' Needs to Make Data-Driven Policy Decisions

The OSDH "Alert Map" was originally communicated as being a tool to inform the public about the risk level of spread for COVID-19 in a specific county. LOFT later learned from OSDH the "Alert Map" was instead used as an internal tool to measure how the State could handle the pandemic as a whole. This disconnect led to separate State agencies creating different "Alert Maps" based on the same data to address the needs of their stakeholders. Other decision-makers, such as municipal leaders, lacked information they deemed critical for their response to curbing the spread of COVID-19 through their communities.

Finding 3: Communicable Disease Reporting System was a Known Vulnerability Prior to COVID-19

Oklahoma's communicable disease reporting system, commonly referred to as PHIDDO, was a known weakness and presented many technological challenges throughout the pandemic. LOFT inquired as to whether a comprehensive plan to replace PHIDDO was ever presented to OSDH Leadership or to the Legislature. OSDH stated they were not aware of any such plan and leadership changes create the potential for institutional loss of this type of information. LOFT further inquired as to why OSDH did not use Coronavirus Relief Funds to upgrade the system of need. LOFT was informed CARES funding had been requested and denied.



Summary of Policy Considerations

As part of the State's pandemic response plan, make available discretionary public health funds to investigate and control the spread of communicable diseases. As an example, Colorado proposed through legislation an emergency repurposing of select tobacco education program funds to investigate and control the spread of COVID, to include contact tracing.

To enhance public trust, enact protections for citizen privacy during disease testing, contact tracing and investigations for communicable diseases. Prohibit unlawful dissemination of contact tracing data and unlawful use of surveillance technology and require privacy measures be implemented in contact tracing applications.

Require the Oklahoma State Department of Health to include school and district-level data of communicable disease exposure and outbreaks in future reports, dashboards, and other publicly accessible platforms to inform the public about the level of risk within Oklahoma schools.

Summary of Agency Recommendations

The Oklahoma State Department of Health should adhere to the CDC's recommended process and outcome metrics for effective case investigation and contact tracing

The Oklahoma State Department of Health should collect and incorporate the CDC's performance metrics for case investigation and contact tracing into daily reporting.

The Oklahoma State Department of Health should work with surrounding regional states' respective health departments to learn best practices for collecting and publishing transparent and accessible data for the public.

The Oklahoma State Department of Health should adhere to the recommendation of the National Governors Association and collect, report, and disseminate outbreaks of communicable diseases for the public.

The Oklahoma State Department of Health should include representation from the Oklahoma State Department of Education in formulating and recommending future risk levels, data thresholds, and health protocols in future public health emergencies

The Oklahoma State Department of Health should provide a plan to the Legislature to replace PHIDDO and transition to the CDC's NBS, or comparable system, to leverage available technologies and ensure the State has efficient technology for future public health emergencies.

Introduction

Contact tracing is essentially a process to gather and disseminate information about how diseases are transmitted from person to person.¹ Typically, this information is used to make decisions on how to distribute resources or prevent the spread of disease. While the process and tools have been refined over the 150-year history of contact tracing, that core principle has remained constant.

In response to the ongoing SARS-Cov-2 (COVID-19) Pandemic, countries like South Korea, Japan, and Taiwan leveraged technology for early success with contact tracing. Locally, numerous Oklahoma school districts and businesses have implemented strategies for contact tracing, allowing each to continue in-person operations during the pandemic. In Eastern Oklahoma, the Cherokee Nation was internationally recognized for establishing and implementing an effective contact tracing program using principle techniques provided by the World Health Organization (WHO).²

Whether global or local, every entity that successfully implemented a contact tracing program did so by gathering and providing data in a way which enabled their stakeholders to make informed decisions regarding their lives and livelihood while managing through the pandemic.

Contact tracing is not just the collection of information; for it to be effective the information must flow to the right people to use it to make decisions. An effective contact tracing program has three components: Leadership, Organization, and Public Trust.³



Leadership determines how resources are allocated or what other mitigation tools may be necessary.



Organization is how information flows from the areas of need to the leadership groups tasked with curbing the spread of a virus.



Public trust is establishing relationships with impacted communities and ensuring the public can trust the entity is being good stewards with the information collected. The WHO used these components to great effectiveness with the near eradication of smallpox in the 1980's.⁴


¹ Please refer to Appendix B for CDC Guidance on Contact Tracing.

² [McFarling, Usha Lee. 'They've been following the science': How the Covid-19 pandemic has been curtailed in Cherokee Nation. StatNews.com \(2020\)](#)

³ [DailyHistory Staff. What is the History of Contact Tracing. Dailyhistory.org \(n.d.\) and Public communication - Covid-19 Contact Tracing Playbook \(resolvetosavelives.org\)](#)

⁴ [DailyHistory Staff. What is the History of Contact Tracing. Dailyhistory.org \(n.d.\)](#)





In contrast, Liberian health officials, with support from WHO, experienced limited success with their ambitious contact tracing effort for Ebola due to local mistrust of healthcare workers.⁵ All three components, leadership, organization, and public trust, must be present and consistent to achieve the desired goals of contact tracing programs.

Contact tracing alone cannot stop the spread of any communicable disease. Contact tracing collects data about transmissions, but how that information is used determines the success of managing an outbreak.

COVID-19 appears to be on the path of becoming an endemic virus, continuing to spread, shift, and mutate, which would limit the effectiveness of any vaccine.⁶ Experts also warn of future, more severe pandemics.⁷ As the COVID-19 vaccine continues to be distributed, epidemiologists caution that vaccines do not guarantee long-term success, for this pandemic or the next. However, a strong contact tracing program can ensure stakeholders are well informed and equipped to make critical decisions necessary to protect public health.

⁵ [Swanson KC, Altare C, Wesseh CS, et al. \(2018\) Contact tracing performance during the Ebola epidemic in Liberia, 2014-2015. PLoS.Org](#)

⁶ [Davey, Melissa. WHO warns Covid-19 pandemic is 'not necessarily the big one.' TheGaurdian.com. \(2020\)](#)

⁷ Ibid.

Finding 1: Oklahoma State Department of Health (OSDH) Lacked Sufficient Contact Tracing Data to Measure the Impact on Limiting Spread of COVID-19

“As outlined in the National Governors Association’s Roadmap to Recovery, as states gradually reopen economic and social activities, they must build a robust public health infrastructure with the capacity to rapidly detect outbreaks, test and isolate individuals who may be exposed to COVID-19, and quickly trace and quarantine all contacts of positive cases. With the increased risk of transmission that comes from individuals and businesses beginning to resume normal activities, the ability to quickly identify and isolate individuals who may have been exposed to COVID-19 will be crucial to “Box In” the spread of disease.” – National Governors Association, June 2020⁸

Is Contact Tracing Working in Oklahoma?

In order to understand the impact of contract tracing in combating the COVID-19 pandemic in Oklahoma, LOFT sought to conduct a performance-based review of outcome metrics related to the mission of contact tracing, along with a review of the standards of operations and processes in place. LOFT examined the timeliness, accuracy and accessibility of information provided to enable government leaders, local healthcare workers, school districts, and Oklahoma families to make data-driven decisions in these rapidly changing times.

As previously noted, public buy-in and trust are crucial elements to the success of a contact tracing program. According to OSDH, four press releases regarding contact tracing were circulated on the subsequent dates: May 9, June 18, July 24, and August 7, all in 2020. The public notice efforts appear to have had minimal impact as it was documented in the CARES FORWARD September 18, 2020 Project Plan for Testing/Monitoring some “sites have shared that some areas are not encouraging testing in order to not be excluded from school, sports, work, etc.” Those four press releases represent the total efforts of OSDH’s Public Safety Announcements (PSA) or awareness campaign for contact tracing.

The Center for Disease Control and Prevention (CDC) emphasizes examining data regularly and recommends local health jurisdictions provide data within evaluation reports. The proposed metrics for measuring the success of a

⁸ [ContactTracing_primer.pdf \(nga.org\)](https://www.nga.org/files/documents/11532/11532.pdf)

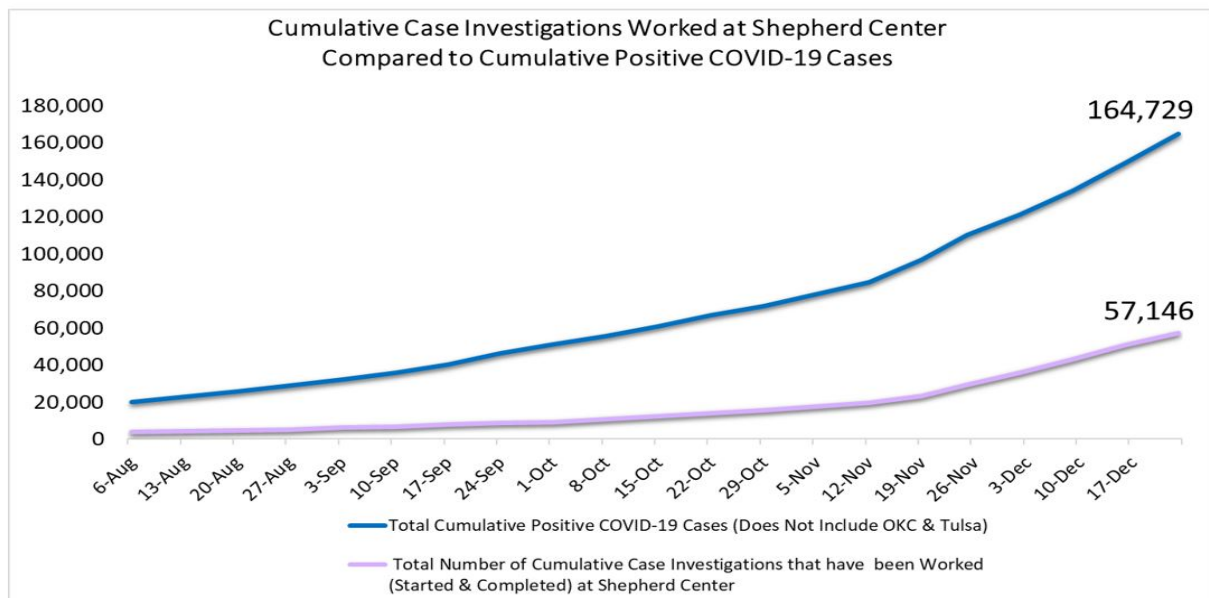


contact tracing program can be found in Appendix C.⁹ Contact tracing and case investigation work in tandem.¹⁰ Contact tracing and case investigation are two separate functions within one process to collect data and disseminate information regarding outbreaks. Before contact tracing begins, an incident must be defined and identified as a case and then assigned accordingly.¹¹

OSDH’s Data on Contact Tracing and Case Investigation is Limited and Insufficient

LOFT requested CDC-recommended longitudinal data and outcome or performance metrics for OSDH’s contact tracing efforts but were provided limited and insufficient data to conduct a performance-based evaluation. The data collected by OSDH and included in their weekly Call Center Performance Metrics Report (CCPM) contains no detailed, outcome-focused performance metrics related to curbing the spread of COVID-19.¹² Chart 01 illustrates an analysis of the data provided by the CCPM.

Chart 01: Cumulative Case Investigations Compared to Cumulative Positive Cases of COVID-19 (Line chart illustrating the number of cumulative case investigations administered by OSDH compared with the Cumulative Positive Cases of COVID-19. Cumulative Calls Approximately 35 percent of Cumulative Cases.)



Source. Legislative Office of Fiscal Transparency’s analysis based on data retrieved from OSDH.

Note. Despite multiple requests by LOFT, OSDH failed to provide additional data beyond December 23, 2020. COVID-19 cases from both Oklahoma and Tulsa are not included in analysis of cumulative cases.

⁹ Centers for Disease Control and Prevention. (2020, February 11). *Evaluating Case Investigation and Contact Tracing Success*. <https://www.cdc.gov/coronavirus/2019-ncov/php/contact-tracing/contact-tracing-plan/evaluating-success.html>

¹⁰ See Appendix R for side-by-side comparison of duties and process flow.

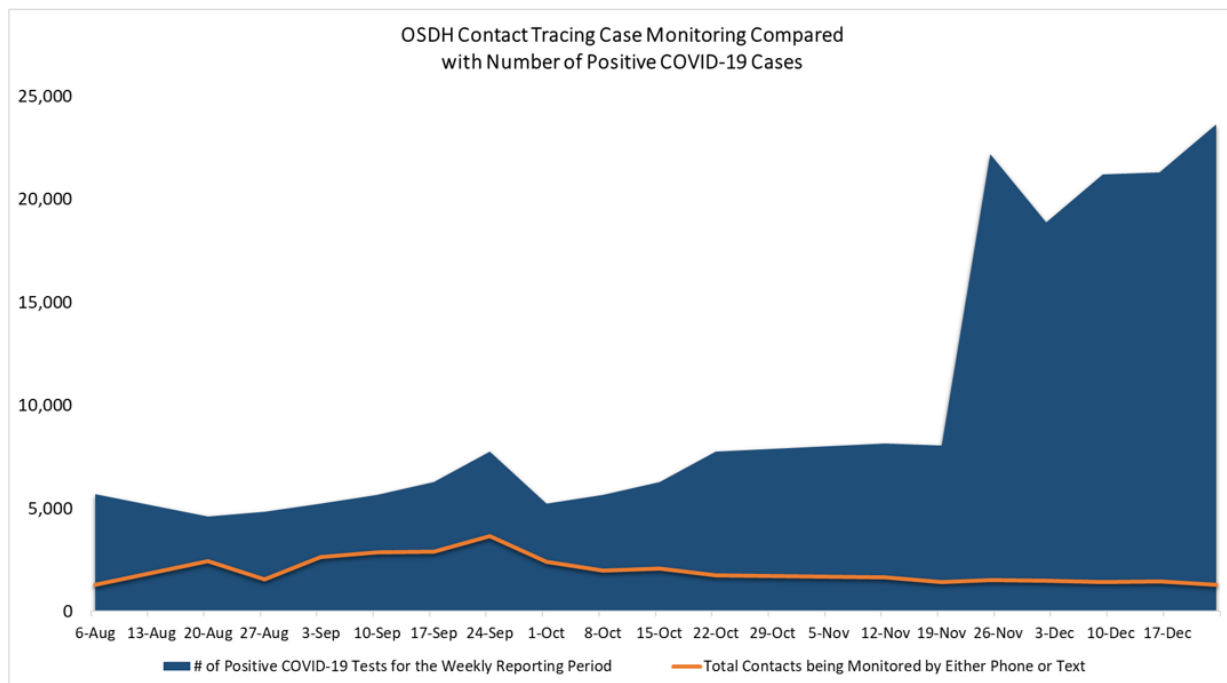
¹¹ Appendix B Centers for Disease Control and Preventions “Investigating a COVID-19 Case” [Investigating a COVID-19 Case | CDC](#) and Contact Tracing COVID-19 [Contact Tracing for COVID-19 | CDC](#)

¹² Please refer to Appendix D to see an example of a OSDH Call Center Reporting Metrics.

As shown in Chart 02, OSDH contact tracing efforts failed to keep pace with the growing spread and exposure of COVID-19. From September 24th to December 23rd, contacts being monitored by OSDH decreased by 65% while number of positive COVID-19 cases increased by 205% during the same period.

The number of contacts being monitored by OSDH contact tracers was also in rapid decline; by December 23rd, only 860 contacts were actively being monitored by text messages.¹³ Despite the decline in text messaging usage, in December the OSDH spent \$900,000 to develop and utilize a contract tracing app known as Healthy Together. The execution of the Healthy Together contract coincided with the disbandment of a centrally located contact tracing effort by OSDH in Shepherd’s Center. LOFT did not analyze any data after December of 2020 due to the lack of availability and OSDH’s decision to decentralize contact tracing efforts.

Chart 02: Contacts being Monitored by OSDH Contact Tracers Compared with Positive COVID-19 Tests. (Chart illustrates the number of contacts being monitored by OSDH Contact Tracers was insufficient in relation to the number of COVID-19 cases.)



Source. Legislative Office of Fiscal Transparency’s analysis based on data from OSDH.

Peer State Comparison

“Data about the settings where COVID-19 infection occurs are critically important to understanding disease spread and informing policy decisions that promote public safety.”

– National Governors Association, January 2021¹⁴

¹³ Please refer to Appendix E for trends of contacts being monitored by OSDH contact tracers.

¹⁴ National Governors Association. (2021, January). *COVID-19 Outbreaks: State Reporting By Setting*. https://www.nga.org/wp-content/uploads/2021/01/NGA_Covid-19-Outbreaks_State-Reporting.pdf

According to the National Governors Association (NGA), 18 states utilize contact tracing data to discover where citizens are becoming exposed and contracting COVID-19 and publicly report setting-specific outbreak data on their websites.

On April 16, 2020, former Interim Commissioner of Health Gary Cox announced the launch of Oklahoma’s COVID-19 Data Dashboard reporting the dashboard would equate to “getting testing information into the hands of people...”¹⁵ As of the date of this report, contact tracing data is still not publicly available on any state published COVID-19 report or dashboard. According to leaders from the OSDH, the department was collecting contact tracing data and was in the process of creating a separate dashboard in the fall of 2020. However, as stated by OSDH in January 2021, those plans were abandoned by OSDH due to the focus on vaccine distribution.

OSDH has stated “history will not look kindly upon contact tracing” and the “old-fashioned public health and epidemiology stuff”¹⁶ do not work. However, as observed by comparing Oklahoma to peer states, contact tracing can be highly effective when properly implemented. According to the National Governors Association (NGA), 18 states utilize contact tracing data to discover where citizens are becoming exposed and contracting COVID-19 and publicly report setting-specific outbreak data on their websites.¹⁷ Two of Oklahoma’s regional neighbors, Colorado and Kansas, have been nationally recognized for their innovative approaches with contact tracing data to address COVID-19.

The Oklahoma State Department of Health did not release a similar level of detail due to concerns that doing so would conflict with state statutes. However, the Oklahoma Attorney General advised OSDH that releasing epidemiological data about COVID-19 infections for statistical purposes does not violate state or federal law, as long as individuals are not identifiable.^{18 19}

¹⁵ Oklahoma State Department of Health. (2020b, April 16). *OSDH Releases COVID-19 Symptom Tracker, Data on Positive Cases by City*. <https://oklahoma.gov/covid19/newsroom/2020/april/osdh-releases-covid-19-symptom-tracker-data-positive-cases-city.html>

¹⁶ Denhoed, Andrea. (2020, December 3). *Okla. contact tracing needs operations 'needs to be redesigned'*. [Weatherford Daily News](#).

¹⁷ See Appendix F for 18 states providing setting-specific outbreak data.

¹⁸ The [Catastrophic Health Emergency Powers Act \(CHEPA\)](#) expired on May 30, 2020.

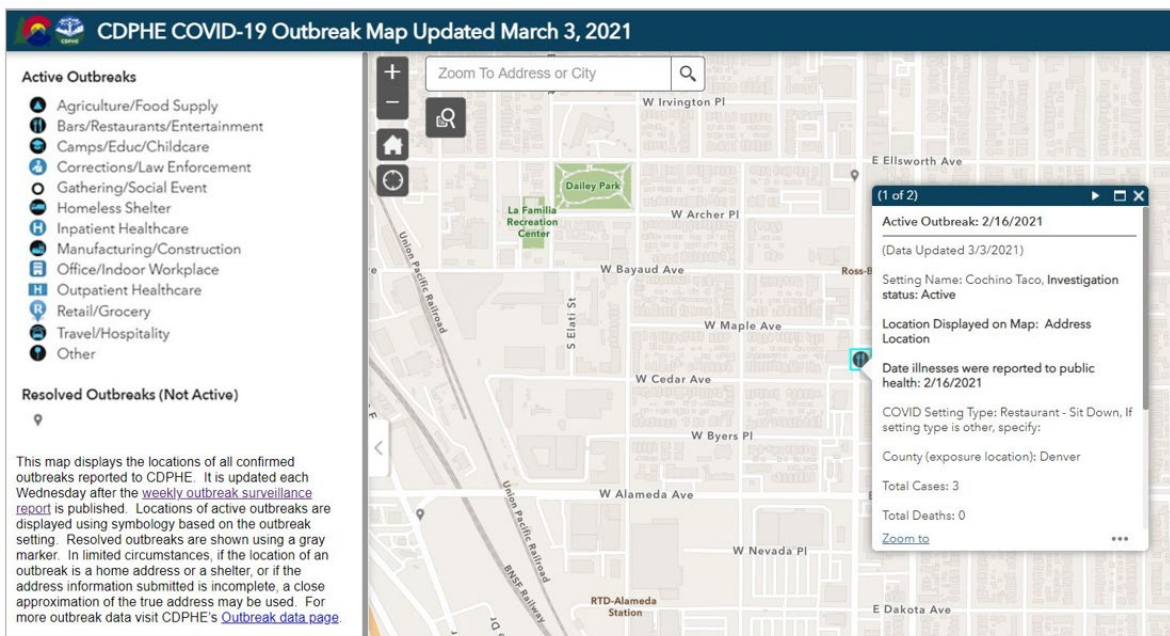
¹⁹ Please refer to Appendix G for [Attorney General Hunter Advises Health Department to Release Data | Oklahoma Attorney General](#)

Colorado

For their use of evidence and data to drive policy decisions during the state’s response to the COVID-19 pandemic, Colorado was nationally recognized by both Results for America and the National Governors Association.²⁰ Colorado specifically uses exposure and outbreak data from contact tracing to enable state and local public health agencies to identify the greatest risk areas and then deploy investigation and mitigation resources to those areas. The Colorado Department of Public Health and Environment (CDPHE) states the agency “posts outbreaks online for transparency and to allow people to make evidence-based decisions.”²¹

As Figure 01 shows, the CDPHE provides a live outbreak map to inform the public about identified outbreaks within communities. This evidence-based approach has enabled government leaders to allocate resources to specific high-risk communities instead of relying on blanket business restrictions, closures, or lockdowns to prevent the spread of COVID-19.

Figure 01: Colorado CDPHE COVID-19 Outbreak Map (Live screen shot of Colorado’s CDPHE COVID-19 Outbreak Map pinpoints geographical data on COVID-19 outbreaks to provide transparency and better inform stakeholders and the public on COVID-19).



Source. Colorado Department of Public Health and Environment.

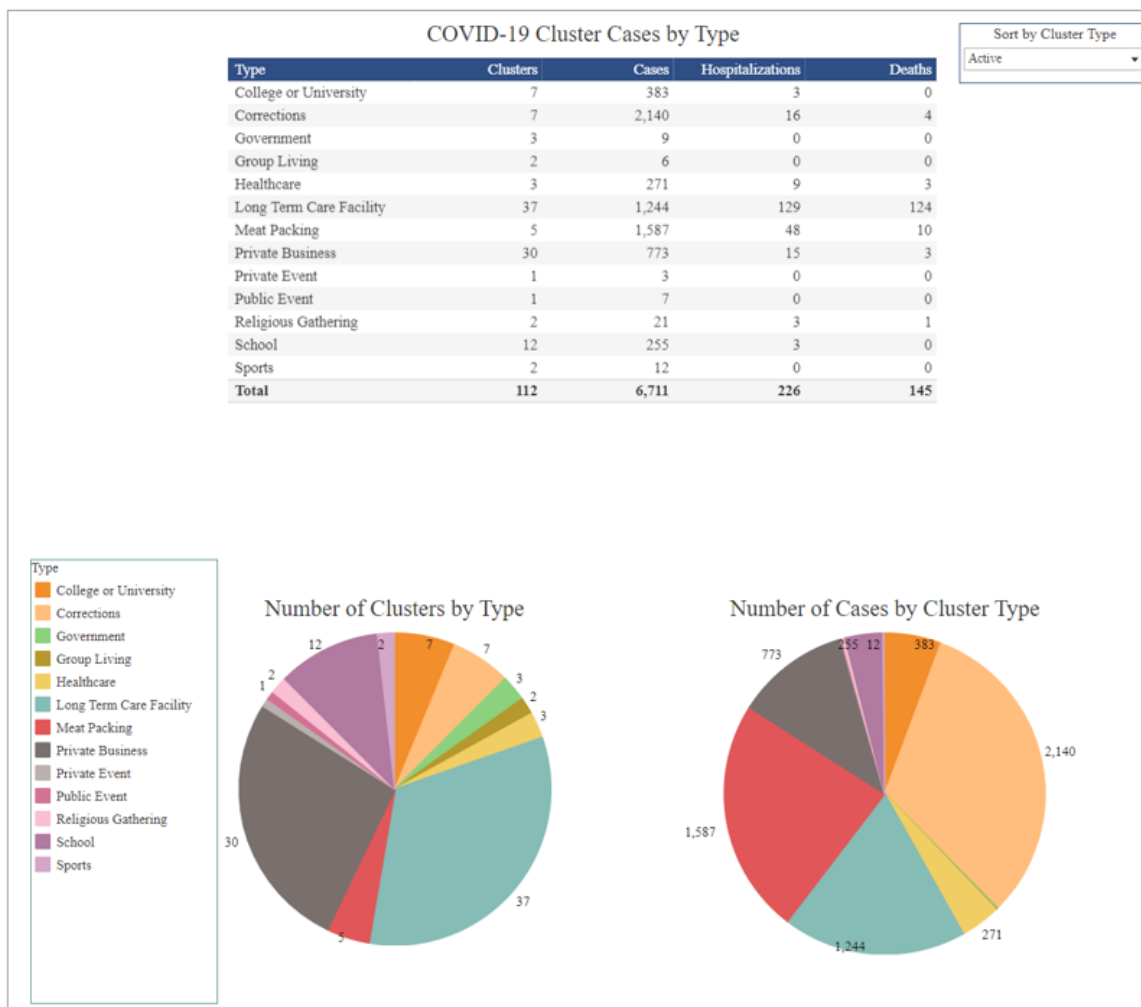
²⁰ Severance, R. P. C. (2020, August 16). *Colorado recognized nationally for its use of data in policy-making*. The Pueblo Chieftain. <https://eu.chieftain.com/story/news/politics/state/2020/08/16/colorado-recognized-nationally-for-its-use-of-data-in-policy-making/113410382/>

²¹ Colorado Department of Public Health and Environment. (n.d.). *Outbreak data | Colorado COVID-19 Updates*. <https://covid19.colorado.gov/covid19-outbreak-data>

Kansas

The National Governors Association (NGA) recognized Kansas for its clear presentation of COVID-19 outbreak data. As of September 21, 2020, the Kansas Department of Health and Environment (KDHE) established a COVID-19 Exposure Location Identification policy publishing the name of settings with five or more individuals who tested positive for COVID-19 in the last 14 days and, through case investigation interviews, were likely exposed to the disease at the location. Kansas also maintains publicly accessible tables and pie charts of cumulative clusters by setting type and cases by cluster type, which gives the public a sense for which settings may be higher risk and how clusters translate into the number of persons affected.²²

Figure 02: Kansas COVID-19 Dashboard. (Figure illustrates data collected by Kansas to inform government leaders and local health care authorities on COVID-19 outbreaks by setting.)



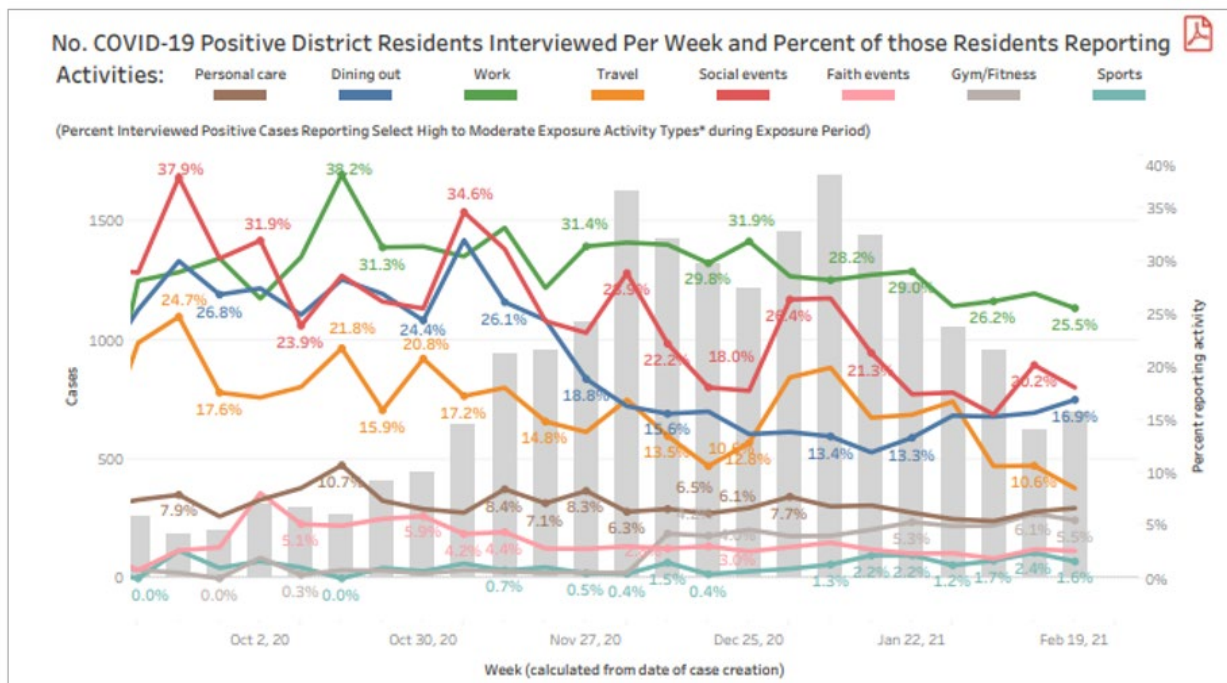
Source: Kansas Department of Health and Environment. (2020). *Kansas COVID-19: Cluster summary* Retrieved March 5, 2021, from <https://www.coronavirus.kdheks.gov/160/COVID-19-in-Kansas>

²² National Governors Association. (2021, January). *COVID-19 Outbreaks: State Reporting By Setting*. https://www.nga.org/wp-content/uploads/2021/01/NGA_Covid-19-Outbreaks_State-Reporting.pdf

District of Columbia

The District of Columbia’s contact tracing program collected real-time data of the settings where outbreaks and exposures were happening across the state, and how many cases developed from these locations. This data provides local health care authorities with specific information related to exposures and is used by government leaders to implement targeted restrictions, capacity limits, and other mitigation efforts to slow the spread of COVID-19.

Figure 03: District of Columbia COVID-19 Exposure Data. (Figure illustrates data collected by the District of Columbia to inform government leaders and local health care authorities on COVID-19 outbreaks by setting.)



Source. Reprinted from DC Health. Data is reflected as of February 23, 2021.

Instead of imposing broad restrictions and lockdowns on social gatherings and small businesses, this level of detail is used to initiate targeted restrictions on settings or businesses that, through contact tracing data, are known to be high-risk settings. While states have communicated strategies around “community spread,” many states including Colorado, Kansas, Louisiana, and others are using data from their respective contact tracing programs to precisely identify locations that are contributing to surges in COVID-19 cases.

“the evidence relied upon by the Defendants, namely the data from Google Analytics, lacks proper foundation or authentication, and is therefore, inadmissible as a matter of law...”

Oklahoma

To demonstrate the role data can play in public policy decisions during a pandemic, LOFT examined the outcome of the executive orders issued in November and December of 2020 for restaurants and bars to close by 11p.m.²³ In response to the executive orders, business owners from across the state filed a temporary injunction challenging the legal authority of the executive orders.²⁴

On January 8, 2021, members of the Health and Economic Pandemic Response Teams testified in an evidentiary hearing in Oklahoma County District Court.²⁵

Health official testified,

“The Task Force came to this conclusion by relying upon information provided by Google analytics...”

Health official further testified,

“The Task Force was unaware where Google collected the data, how it was collected or by whom it was collected; and that casinos, which operate 24 hours a day, were not factored into the equation because they are governed by different sovereignties outside the jurisdiction of the State of Oklahoma.”

CARES FORWARD member testified,

“The Task Force did not have the analytic data because it was owned by and belonged to Google.”

After hearing evidence for the executive orders, Oklahoma County District Judge ruled,

“the evidence relied upon by the Defendants, namely the data from Google Analytics, lacks proper foundation or authentication, and is therefore, inadmissible as a matter of law...there has been little, if any, discovery in this case, and it is imperative that the Court have additional credible evidence to determine what impact bars, in comparison to other establishments that remain open after 11:00pm., have on the spread of COVID-19, before determining whether permanent injunctive relief is warranted in this matter.”²⁶

²³ Seventh Amended Executive Order 2020-20, issued on November 16, 2020 and the Eighth Amended Executive Order 2020-20, issued on December 14, 2020

²⁴ RNYC CORP. STATMAX LLC DOUG'S WATERIN' HOLE LLC DAVIS MANAGEMENT LLC PJ'S PUB & GRILL LLC VENOM 64 INC V. KEVIN STITT ALCOHOLIC BEVERAGE LAWS ENFORCEMENT COMMISSION, (2020).

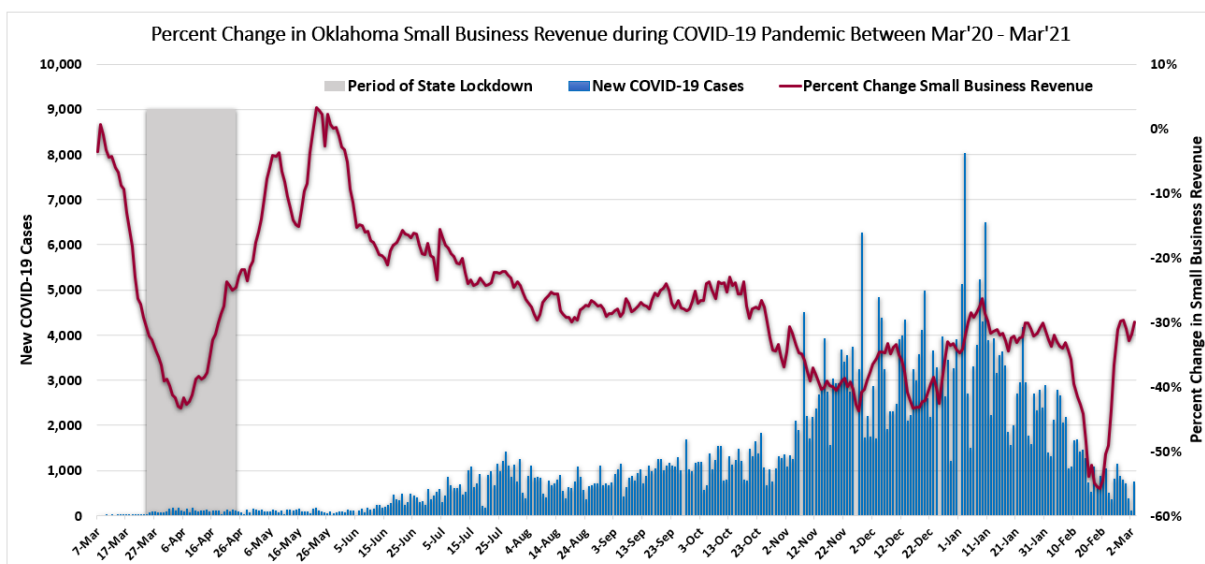
²⁵ Ibid

²⁶ Ibid.

Not only was the evidence presented in defense of the executive order ruled “inadmissible,” but the data was outsourced from a private entity. LOFT confirmed OSDH had plans to collect data identifying high-risk settings through their COVID-19 Positive Case Questionnaire, a copy of which was obtained during fieldwork at the Shepherd’s Call Center.²⁷ However, this lack of presentable data leaves unanswered questions as to whether the State had the capacity and confidence to rely on their own COVID-19 metrics, or if the information was collected at all.

The accessibility of this data could have empowered Oklahomans to make data-driven decisions regarding how to interact within their communities and local economies while providing additional information to leadership about the necessity of any mandate within any given timeframe.

Chart 03: Correlation Between Increasing COVID-19 Cases and Impact on Small Business Revenues.²⁸




Source: Legislative Office of Fiscal Transparency

As observed in Chart 03, there is a correlation between the spread of COVID-19 and its impact on small business revenue. LOFT determined the rise in positive cases, hospitalizations, deaths, and unemployment data explains 47% of the impact on small business revenue. Contact tracing, when utilized effectively, is a highly valuable resource and tool for providing government leaders with the real-time metrics and information they need to address evolving health emergencies. As recommended by the NGA, “Even with the rollout of COVID-19 vaccines, it will be important for states not already reporting on outbreaks by setting to consider doing so, and for those who are, to maintain their regular reporting of information about where outbreaks of infection are occurring.”²⁹

²⁷ Please refer to Appendix H for OSDH Contact Tracing Questionnaire.

²⁸ “The Economic Impacts of COVID-19: Evidence from a New Public Database Built Using Private Sector Data”, by Raj Chetty, John Friedman, Nathaniel Hendren, Michael Stepner, and the Opportunity Insights Team. November 2020. Available at: https://opportunityinsights.org/wp-content/uploads/2020/05/tracker_paper.pdf

²⁹ National Governors Association. (2021, January). *COVID-19 Outbreaks: State Reporting By Setting*. https://www.nga.org/wp-content/uploads/2021/01/NGA_Covid-19-Outbreaks_State-Reporting.pdf



The data shows it is paramount to establish an effective contact tracing program with public facing data to build informed policies for any communicable disease. As new variants continue to emerge, and until the vaccine proves to provide the needed protection against COVID-19, ensuring the stakeholders' data information needs are satisfied is critical to the State's ongoing success in managing both public health and the economy.

Policy Considerations

The Legislature may consider the following policy considerations:

- To enhance public trust, enact protections for citizen privacy during disease testing, contact tracing and investigations for communicable diseases. Prohibit unlawful dissemination of contact tracing data and unlawful use of surveillance technology and require privacy measures be implemented in contact tracing applications.
- As part of the state's pandemic response plan, make available discretionary public health funds to investigate and control the spread of communicable diseases. As an example, Colorado authorized emergency repurposing of select tobacco education program funds to investigate and control the spread of COVID, to include contact tracing.³⁰

Agency Recommendations

- The Oklahoma State Department of Health should adhere to the CDC's recommended process and outcome metrics for effective case investigation and contact tracing.
- The Oklahoma State Department of Health should collect and incorporate the CDC's performance metrics for case investigation and contact tracing into daily reporting.
- The Oklahoma State Department of Health should work with surrounding regional states' respective health departments to learn best practices for collecting and publishing transparent and accessible data for the public.
- The Oklahoma State Department of Health should adhere to the recommendation of the National Governors Association and collect, report, and disseminate outbreaks of communicable diseases for the public.

³⁰ The Colorado Legislature introduced HB1373 to use select tobacco revenues in state fiscal emergency for COVID-19 health-related purposes.

Finding 2: OSDH’s COVID-19 Reporting Fails to Align with Stakeholders’ Needs to Make Data-Driven Policy Decisions.

Oklahoma’s Executive asserted the State would have a data-driven response to COVID-19.³¹ The Executive’s statement aligns with the National Governor’s Association’s (NGA) vision for states’ responses.³² However, based on interviews, discussions, and surveys with various stakeholders, the data provided by the State was either lacking in substance, withheld³³, misaligned, or never developed for public consumption. This misalignment is observed in OSDH’s reporting metrics as compared to what stakeholders used or developed themselves. As noted in OSDH’s strategic plan for IT, “Citizens should have public health information easily available.”³⁴

While some state publications tout Oklahoma’s use of data in managing the pandemic, LOFT’s research concluded limited usefulness of the available data. For example, the data dashboard referenced in the Governor’s Office End-of-Year Report 2020 details available inventory of medical supplies, but provides no information about the spread of disease or contact tracing metrics³⁵.

In response to a LOFT survey, several municipal leaders reported the information provided by OSDH was not sufficient to guide local decision-making. LOFT acknowledges the results should be considered carefully due to the modest response rate and small sample size. However, the statements by local municipal leaders warrant inclusion in this report as they represent important stakeholders’ perspective. According to one anonymous respondent,

“Better, more specific information on the spread of COVID based on contract tracing would allow us to make better decisions about how to respond locally.” – Anonymous Oklahoma Municipal Leader from LOFT Survey

“The state delivered the nation’s best data dashboard to keep local leaders, businesses and citizens informed... Oklahoma’s commitment to data transparency empowered cities and counties to formally adopt the governor’s recommend-actions that met the specific situation in their communities.” – Governor’s Office End-of-Year Report 2020.

³¹ https://www.governor.gov/articles/press_releases/gov-stitt-announces-open-up-and-recovery-plan

³² “Successfully breaking the chain of COVID-19 transmission and reopening state economies will require governors and senior health officials to develop a data-driven approach to contact tracing that builds on existing public health capabilities, leverages the buy-in and cooperation of the public as key players in the effort, supports coordination of stakeholders and resources, and effectively engages public and private partners to scale the workforce necessary to support these efforts in the near and long-term.” – National Governors Association, June 2020

³³ [Stitt to begin releasing White House report that calls for mask mandate, bar closures to mitigate COVID-19 spread | Local News | tulsaworld.com](https://www.localnews.com/news/stitt-to-begin-releasing-white-house-report-that-calls-for-mask-mandate-bar-closures-to-mitigate-covid-19-spread)

³⁴ One of four guiding principles in OSDH’s Strategic IT Plan FY20-FY22

³⁵ [Executive Order Reports \(oklahoma.gov\)](https://www.oklahoma.gov/Executive-Order-Reports)

Critical Importance of Publicly Available Contact Tracing Data

In a pandemic, communication of data is key to decision-making. Contact tracing data can highlight areas where the disease is spreading and assist local health authorities in swiftly developing targeted strategies to prevent further spread of infection. Providing contact tracing data also earns and builds public trust through transparency about the reality of the evolving health emergency, which, as noted, is a critical component to contact tracing’s success.

Conflicting Data Metrics and Reports regarding the COVID-19 Pandemic in Oklahoma

The State struggled with conflicting color-coded alert system reports and maps that communicated inconsistent COVID-19 metrics and health strategies to Oklahomans. On July 9, 2020, the OSDH launched their color-coded alert system to assist the public in recognizing the latest threat level of COVID-19 and guiding health precautions. As the spread of COVID-19 worsened in Oklahoma, the OSDH Alert System’s triggers for Red status shifted. Table 01 illustrates the changing triggers for the OSDH Alert System for “High Risk” counties. LOFT consistently questioned the OSDH for their justification of why the high-risk triggers were altered for the COVID-19 Alert System but were not provided a direct answer.

Table 01: OSDH’s COVID-19 Alert System “Triggers” changed as COVID-19 reporting metrics approached the threshold “triggers”.

	July 8th	September 10th	October 29th	February 4th
Triggers	Statewide ICU threshold: Percent of ICU beds available <5% statewide	Region has reached maximum hospital capacity AND at least 50% of contracted hospital beds under surge plan are filled	County resides in a Region where COVID-19 patients represent 40% or more of staffed beds (Acute Care OSDH licensed facilities)	County resides in a Region where COVID-19 patients represent 40% or more of staffed beds (Acute Care OSDH licensed facilities)
	Statewide Medical/Surgical threshold: Percent of medical surgery beds available <5% statewide	Average days of statewide PPE on hand and available is < 5 days		
	Statewide Ventilator threshold: Percent of ventilators available <5% statewide	Percent of ventilators available is < 5% statewide		
	Facility PPE threshold: Average days of PPE on hand and available < 5 days statewide			

Source: Legislative Office of Fiscal Transparency’s analysis based on data from OSDH.

The Oklahoma State School Board Association (OSSBA) created their own color-coded COVID-19 map using the guidelines set forth in the Oklahoma State Department of Education’s (OSDE) safety protocols guidance released on September 18, 2020 and the county-level data reported from OSDH. According to OSSBA, “This criteria set by the state Education Department in its safety protocols varies from the criteria set by the state Health Department.”³⁶ OSDE approved and recommended the color-coded alert levels “in the best interests of the health, safety and welfare of all members of the school community.”³⁷

As stated in discussions with OSDE officials, OSSBA’s map was created to provide more in-depth, longitudinal data to the school districts to assist in producing informed policies for controlled impact of the spread of COVID-19 in their districts. While OSSBA’s map was never officially approved by the Oklahoma State Board of Education, many school districts used this map in an unofficial capacity to build policies for their districts during the early stages of the virus.

According to OSDE officials, school districts that adhered to mitigation protocols based on the OSSBA map, such as contact tracing, were able to remain physically open longer during the pandemic. OSDE officials noted that while the map helped many districts remain open, each district has its own specific needs, many of which go beyond the students themselves, and there is no one-size-fits-all model. This further illustrates the need for a more robust, transparent, longitudinal data platform to enable stakeholders to make the most informed decisions possible within their districts.

OSSBA’s “alert map” uses data collected by OSDH from all 77 counties and then adds variants of color to their COVID-19 map based on the color-coded alert levels recommended by the OSDE. LOFT observed OSDE only lists the OSSBA COVID-19 Alert Map as a COVID-19 resource on their website and does not list the OSDH’s Alert System. LOFT frequently heard throughout this evaluation the need for a “unified voice.” OSDE needed an alert map to make more informed policy decisions, yet OSDH’s alert map only depicted “Oklahoma’s capacity to handle cases.”³⁸ These two color-coded state resources further illustrate the clear divide in the State’s response and messaging to its stakeholders on the situational reality of COVID-19.

According to OSDE officials, school districts which adhered to the mitigation protocols established by using the OSSBA map, such as contact tracing, were able to remain open longer during the pandemic.

³⁶ Oklahoma State School Board Association. (2020). *COVID-19 Map for School Districts*. <https://www.ossba.org/resources/coronavirus/covid-19-map/>

³⁷ Oklahoma State Department of Education. (2020, September 18). *Oklahoma School Safety Protocols*. <https://sde.ok.gov/newsblog/2020-03-12/coronaviruscovid-19-faqs-oklahoma-public-schools>

³⁸ Official statement from OSDH regarding the purpose of their “Alert Map.”

Local Government Leaders' Perception of the State's Response to COVID-19

LOFT developed and distributed the online Community Oriented-Response Needs Assessment (CORONA) survey (Appendix I) to 40 municipal leaders, representing both rural and urban communities across the State of Oklahoma, to gain their perspective of the State's response to the COVID-19 pandemic.

Findings from the CORONA survey reflect that fifty-six percent of respondents considered County Health Departments the most valuable resource for information and data related to COVID-19. Respondents found the Oklahoma State Department of Health (OSDH) to be a slightly effective (33%) or ineffective (11%) resource for their community. The vast majority (89%) of local government leaders believed contact tracing data from the OSDH would have been an effective data point to assist their community in formulating policies and responses related to COVID-19. One respondent stated, "We need an effective way to prevent the spread from getting worse and contact tracing is the only logical way to do that."

In lieu of contact tracing data, the OSDH releases weekly data on the spread of COVID-19 to local leaders through the COVID-19 Alert System. The Alert System's website states, "This tool offers the public and local elected officials an easy way to recognize each county's risk level."³⁹ However, seventy-eight percent of respondents from the CORONA survey stated that the Oklahoma Alert System does not provide them with specific guidance on what actions they can take within any risk level in order to help stem the COVID-19 outbreak.

Oklahoma Schools Need Data-Driven Contact Tracing to Maintain In-Person Learning through Current and Future Pandemics

"It is important that states continue to advise and monitor the threat of COVID-19 in school settings. Data about the level of community spread and impact of the coronavirus will continue to be key to guiding successful school opening and closing decisions."

– National Governors Association, November 2020⁴⁰

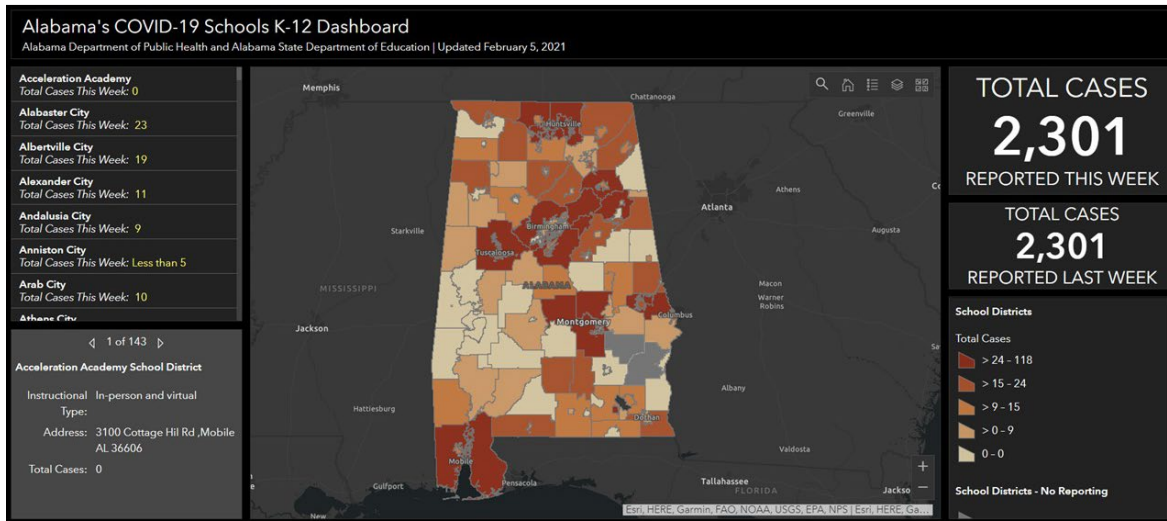
³⁹ Oklahoma State Department of Health. (n.d.). COVID-19 Alert System. <https://oklahoma.gov/covid19/covid-19-alert-system.html>

⁴⁰ [NGA State School Opening Brief.pdf](#)



Twenty-nine states, including Texas, Arkansas, Alabama, Colorado, New Mexico among many others, have developed publicly accessible COVID-19 data, reports, or dashboards to illustrate the risk level of COVID-19 cases and exposures in their respective K-12 schools districts.^{41, 42} Figure 04 displays Alabama's COVID-19 school dashboard.

Figure 04: Alabama's COVID-19 Schools K-12 Dashboard (Figure depicts the state of Alabama's COVID-19 dashboard and the level of cases and alert for specific K-12 schools.)



Source: Reprinted from Alabama Department of Public Health (ADPH)

These states have developed meaningful data tools through collaboration with teachers, staff, and health departments to collect, report, and display aggregate data on COVID-19 exposures in schools. This publicly accessible data allows government leaders, local health authorities, teachers, and parents to make data-driven decisions regarding in-person learning and instruction for students.

During LOFT's fieldwork, representatives from the Oklahoma State Department of Education (OSDE) confirmed that COVID-19 data from school districts, retrieved from internal contact tracing efforts, are being reported to the OSDH.

The OSDE developed an internal tool for school districts to securely collect COVID-19 metrics from contact tracing data that allows real-time, accessible information on COVID-19 exposure in school districts and reported these metrics to OSDH daily. The OSDE confirmed they do have this data in real time but that it is not "publicly facing."⁴³

⁴¹ Education Week. (2021, February 3). *DATA: State Dashboards on COVID-19 in Schools and Instructional Models*. <https://www.edweek.org/policy-politics/data-state-dashboards-on-covid-19-in-schools-and-instructional-models/2020/11>

⁴² Please refer to Appendix J for screen shots of reports and dashboards on COVID-19 in Schools by state

⁴³ Please refer to Appendix K for data provided to OSDH from OSDE.

While the OSDH is in possession of this critical data metric, COVID-19 data related to Oklahoma's public education system has never been reported within OSDH's weekly COVID-19 Alert System or Epidemiology and Surveillance reports. This is a vital data point that the public needed to formulate effective data-driven policy responses to COVID-19 and school instruction. School closures and transition to virtual learning ultimately impacts not only student learning but also employers and families. Having publicly accessible and accurate data available to Oklahoma's education community would have assisted parents and families in making decisions for their students and could have resulted in more efficient policy responses to COVID-19 and school instruction.

Policy Considerations

The Legislature may consider the following policy consideration:

- Require the Oklahoma State Department of Health to include school and district-level data of communicable disease exposure and outbreaks in future reports, dashboards, and other publicly accessible platforms to inform the public about the level of risk within Oklahoma schools.

Agency Recommendations

- The Oklahoma State Department of Health should adhere to the best practices of most states and recommendation from the National Governors Association to advise and monitor the level of risk from communicable diseases in schools.
- The Oklahoma State Department of Health should adhere to the best practices set by most states and make exposure and outbreak data from communicable diseases in schools publicly accessible.
- The Oklahoma State Department of Health should include representation from the Oklahoma State Department of Education in formulating and recommending future risk levels, data thresholds, and health protocols in future public health emergencies.



According to OSDH officials, a comprehensive plan to replace PHIDDO was never presented to Senior OSDH Leadership or the Legislature.

Finding 3: Communicable Disease Reporting System was a Known Vulnerability Prior to COVID-19

An outdated and overburdened technology platform has often been cited in the state's struggle to accurately collect and report data related to the pandemic. Despite being identified as a risk in 2009 during a much lesser pandemic, replacement of the system did not become a priority until COVID-19.

The Public Health Investigation and Disease Detection of Oklahoma (PHIDDO) System is the communicable disease reporting system used by all health departments and health officials within the State. Prior to the COVID-19 pandemic, PHIDDO was slated for replacement because the system's architecture was built for compatibility with Microsoft Silverlight, a program which will no longer be supported as of October 2021.

The Office of Management and Enterprise Services (OMES) Chief Technology Officer designated to OSDH referred all questions regarding PHIDDO and any plan to replace the system to OSDH. OMES provides the information technology development, maintenance, and support for OSDH.⁴⁴

OSDH acknowledges it's need to invest in IT infrastructure and addresses limitations in the agency's IT Strategic Plan (IT Plan) for FY 20-22, noting, "...OSDH continues to struggle with the lack of IT resources..." and "...OMES IS (Information Services) has limited resources in terms of networking and architecture. Limited OMES IS resources create delays in projects which can impact funding and the ability to complete projects. Most of the OSDH programs are federally funded through grants. Programs must plan ahead for IT projects and when those projects are delayed, there is an ongoing risk of loss of funding and delays in public health initiatives." In partnership with OMES, OSDH is designated 13 staff members who are centrally located in Oklahoma City. These OMES IS employees provide the information technology development, maintenance, and support for OSDH systems.

Through interviews with various stakeholders within the medical community, LOFT learned the CDC had their own reservations regarding PHIDDO's capacity and capabilities as early as 2009 during the H1N1pdm09 virus pandemic, commonly known as H1N1, or Swine Flu.⁴⁵ reported 247

⁴⁴ OSDH IT Strategic Plan FY20-22

⁴⁵LOFT has sought to independently verify this information from the CDC on several occasions. Verification is still on going as of this report.

confirmed cases, 7 hospitalizations, and 44 deaths for the Swine Flu Pandemic.⁴⁶ The CDC further expressed concerns for this system at the beginning of the COVID-19 pandemic. According to OSDH officials, a comprehensive plan to replace PHIDDO was never presented to Senior OSDH Leadership or the Legislature.⁴⁷

Understanding how crucial PHIDDO is to the state health departments is key to comprehending the effectiveness of the State's response to COVID-19. PHIDDO is the system in which cases of communicable diseases such as Ebola, seasonal flu, mumps, measles, STD's, and COVID-19 are reported. Once data is stored within PHIDDO, each health department and medical officials within the State can retrieve the case information necessary to service their specific communities and patients. Any latency issues within PHIDDO affect every health departments' ability to mitigate the spread of infectious diseases in real time. This difficulty was observed in the strategies employed by Oklahoma City-County Health Department (OCCHD) and Tulsa County Health Department (THD) in mitigating the spread of COVID-19. Often, these health departments received data from PHIDDO too late to have any measurable impact on limiting the spread of the virus. Data received from PHIDDO was reported to be up to two weeks old by the time these health departments received case information. For comparison, the CDC recommends prioritizing contact tracing efforts in a tiered structure as shown in Table 03⁴⁸.

Table 03: CDC Recommended Tiered Response for Handling Positive COVID-19 Cases

CDC-Recommended Response Times for Reporting Positive Tests		
Tier 1	Tier 2	Tier 3
24-48 Hours	48 Hours to 10 Days	10 days Plus
Most Effective	Somewhat Effective	Completely Ineffective

Source: Legislative Office of Fiscal Transparency created from CDC Recommendations

As shown in Table 03, having reporting system capabilities which can deliver lab results to health departments quickly increases the likelihood of successfully identifying potential exposures and allowing for the effective deployment of other mitigation tools and techniques to limit the spread of COVID-19.

While obtaining and inputting lab results into PHIDDO was a hinderance in the processing times, PHIDDO regularly crashed when attempting routine system functions such as adding additional users to the system. OSDH made patch improvements, but PHIDDO remained an issue through November of 2020 until OSDH was finally able to fully build out and go live with SpringML and GoogleMTX, the agency's one-year system replacements utilized exclusively for COVID-19.

⁴⁶ [Wikipedia, Originally Sourced from OSDH](#)

⁴⁷ OSDH Official further states the change in leadership within the department impacts the institutional knowledge as to if a such a plan may have existed

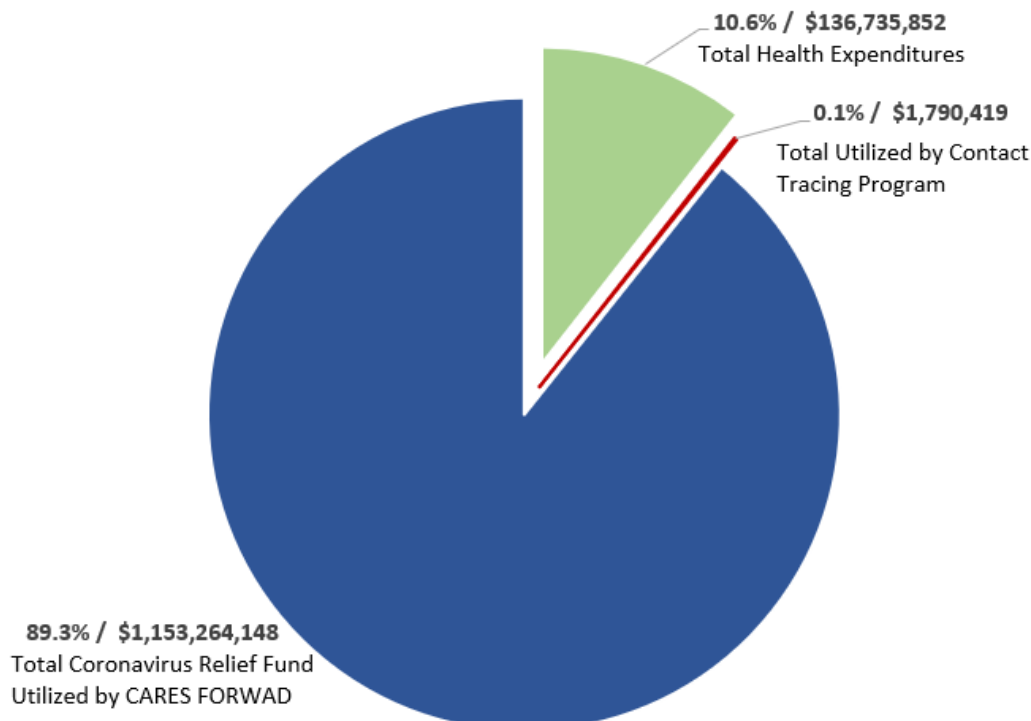
⁴⁸ Obtained from interview with OCCHD regarding direct feedback received from CDC on processing cases.

OSDH Total Investment into Contact Tracing and Surveillance Systems

According to documents provided by OSDH, the total spending on OSDH's contact tracing program from June 1, 2020 to December 31, 2020 was \$6,725,542.87.⁴⁹ Documents reflect this project was originally allocated \$55 million in Coronavirus Relief Funds. However, current information indicates only approximately \$1.79 million of the Coronavirus Relief Funds were used for the State's contact tracing program.⁵⁰ This does not include the use of \$7 million of funds used for data transformation from PHIDDO to the CDC's National Electronic Disease Surveillance System (NEDSS) Base System (NBS).

Chart 04: Contact Tracing Total Cost as Percentage of Coronavirus Relief Funds

Contact Tracing Total as Percentage of Coronavirus Relief Fund



Source: Legislative Office of Fiscal Transparency analysis of CARES FORWARD "master sheet" and OSDH provided information

Note in Chart 04, CARES FORWARD and OSDH invested 0.1% percent of the State's portion of coronavirus relief funds into the Contact Tracing Program. This does not include the Shepherd's Call Center salaries, which were paid from a routine federal operating grant provided to OSDH on a 30-month basis. This lack of investment could partially be explained by the decision made for OSDH to use CDC's National Base System (NBS).

According to OSDH, the NBS is a free to use system with the only associated cost being the migration of data to their system. CDC reports, as of November 13, 2020, twenty-six health departments, across 20 states, currently use NBS.⁵¹

⁴⁹ Appendix L Contact Tracing Expenses

⁵⁰ Please refer to Appendix M for State Comparison for Contact Tracing Spending.

⁵¹ [What is the NEDSS Base System \(NBS\)? | CDC](#)

Oklahoma is not listed among the states currently utilizing this system. OSDH has stated the Department moved one disease-tracking effort over to NBS in December 2020 and have a 36-month contract to continue to move all data to the NBS system.

The CDC's NBS has been available for state use since 2003. According to OSDH officials, when NBS first became available, the system was limited and not compatible with Oklahoma's needs, resulting in OSDH developing PHIDDO in 2004. However, OSDH officials acknowledge NBS has gained functionality over time.

Agency Recommendations

- The Oklahoma State Department of Health should provide a plan to the Legislature to replace PHIDDO and transition to the CDC's NBS, or comparable system, to leverage available technologies and ensure the State has efficient technology for future public health emergencies.



Summary of Policy and Agency Considerations

Policy Considerations

- To enhance public trust, enact protections for citizen privacy during disease testing, contact tracing and investigations for communicable diseases. Prohibit unlawful dissemination of contact tracing data and unlawful use of surveillance technology and require privacy measures be implemented in contact tracing applications.
- As part of the state's pandemic response plan, make available discretionary public health funds to investigate and control the spread of communicable diseases. As an example, Colorado authorized emergency repurposing of select tobacco education program funds to investigate and control the spread of COVID, to include contact tracing.
- Require the Oklahoma State Department of Health to include school and district-level data of communicable disease exposure and outbreaks in future reports, dashboards, and other publicly accessible platforms to inform the public about the level of risk within Oklahoma schools.

Agency Considerations

- The Oklahoma State Department of Health should adhere to the CDC's recommended process and outcome metrics for effective case investigation and contact tracing.
- The Oklahoma State Department of Health should collect and incorporate the CDC's performance metrics for case investigation and contact tracing into daily reporting.
- The Oklahoma State Department of Health should work with surrounding regional states' respective health departments to learn best practices for collecting and publishing transparent and accessible data for the public.
- The Oklahoma State Department of Health should adhere to the best practices set by most states and make exposure and outbreak data from communicable diseases in schools publicly accessible.
- The Oklahoma State Department of Health should include representation from the Oklahoma State Department of Education in formulating and recommending future risk levels, data thresholds, and health protocols in future public health emergencies.
- The Oklahoma State Department of Health should provide a plan to the Legislature to replace PHIDDO and transition to the CDC's NBS, or comparable system, to leverage available technologies and ensure the State has efficient technology for future public health emergencies.



About the Legislative Office of Fiscal Transparency

Mission

To assist the Oklahoma Legislature in making informed, data-driven decisions that will serve the citizens of Oklahoma by ensuring accountability in state government, efficient use of resources, and effective programs and services.

Vision

LOFT will provide timely, objective, factual, non-partisan, and easily understood information to facilitate informed decision-making and to ensure government spending is efficient and transparent, adds value, and delivers intended outcomes. LOFT will analyze performance outcomes, identify programmatic and operational improvements, identify duplications of services across state entities, and examine the efficacy of expenditures to an entity's mission. LOFT strives to become a foundational resource to assist the State Legislature's work, serving as a partner to both state governmental entities and lawmakers, with a shared goal of improving state government.

Authority

With the passage of SB1 during the 2019 legislative session, LOFT has statutory authority to examine and evaluate the finances and operations of all departments, agencies, and institutions of Oklahoma and all of its political subdivisions.

Created to assist the Legislature in performing its duties, LOFT's operations are overseen by a legislative committee. The 14-member Legislative Oversight Committee (LOC) is appointed by the Speaker of the House and Senate Pro Tempore, and receives LOFT's reports of findings.

The LOC may identify specific agency programs, activities, or functions for LOFT to evaluate. LOFT may further submit recommendations for statutory changes identified as having the ability to improve government effectiveness and efficiency.

Appendices

Appendix A. Methodology

Oklahoma Court Case Research

LOFT incorporated legal research methodology and conducted a detailed analysis of state executive orders and governing policies to assist with Finding 1 and policy considerations.

Performance-Based Review of Contact Tracing Efforts

LOFT conducted a time-series analysis from data metrics provided by the OSDH to measure the productivity levels, output trends and impact on addressing the COVID-19 pandemic. LOFT also used this data to correlate with COVID-19 cases to determine how OSDH contact tracing efforts were combating COVID-19.

Peer Comparison

LOFT researched various governmental resources and the National Conference of State Legislatures (NCSL) to collect screenshots of COVID-19 dashboards, websites, data metrics, reports and other materials to conduct a comparative peer analysis. Coronavirus Relief Funds (CRF) for states was collected from NCSL.

Contact Tracing Spending and IT Infrastructure Allocations

Information regarding the level of investment for both contact tracing and replacing PHIDDO was retrieved from CARES FORWARD's website and the OSDH.

The contents of this report were discussed with the Commissioner of Health and Oklahoma Department of Health staff during the evaluation process. Additionally, sections of this report were shared with the OSDH for purposes of confirming accuracy.

It is the purpose of LOFT to provide both accurate and objective information: this report has been reviewed by LOFT staff outside of the project team to ensure accuracy, neutrality, and significance.

Appendix B. What is Contact Tracing?

Exhibit 01: What is Contract Tracing?



CDC Guidance

IN MAY 2020, the Centers for Disease Control and Prevention published Interim Guidance on Developing a COVID-19 Case Investigation & Contact Tracing Plan ("CDC's Interim Guidance"). CDC continues to update this Interim Guidance as new information about COVID-19 becomes available.

We relied primarily on CDC's Interim Guidance, as of August 2020, for the contact tracing information in this report.

What is Contact Tracing?

Contact tracing is a basic public health tool used throughout the world for tackling both minor and serious epidemiological incidents. In its simplest form, contact tracing is reaching out to the people who are infected, as well as contacting people they have had contact with, in an effort to isolate and suppress the disease.

Typically, COVID-19 contact tracing is initiated when a health department receives a report from a laboratory of a positive test result or a report from a healthcare provider of a patient with a confirmed or probable diagnosis of COVID-19. Case investigators interview patients with COVID-19, elicit their **contacts**, monitor for COVID-19 symptoms, and connect them to resources to support **self-isolation**. The contact tracing component involves notifying close contacts of the COVID-19 positive person of their potential exposure, referring them to testing resources, monitoring the contact for COVID-19 symptoms, and connecting them to resources to support **self-quarantine**.

Close Contact: *Someone who was within 6 feet of an infected person for at least 15 minutes starting from 2 days before illness onset (or, for asymptomatic patients, 2 days prior to positive specimen collection) until the time the patient is isolated.*

Isolation: *Keeps someone who is sick or tested positive for COVID-19 without symptoms away from others, even in their own home.*

Quarantine: *Keeps someone who was in close contact with someone who has COVID-19 away from others.*

Source: CDC

Figure 05: CDC Case Investigation Workflow (Figure illustrates the recommended contact tracing process from CDC.)

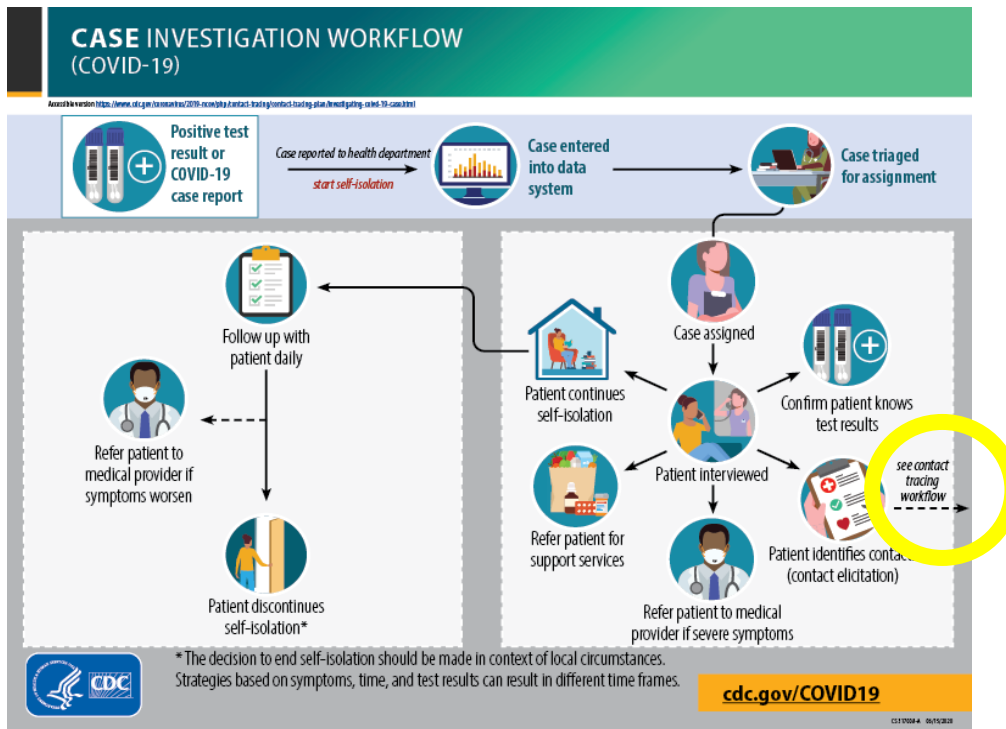
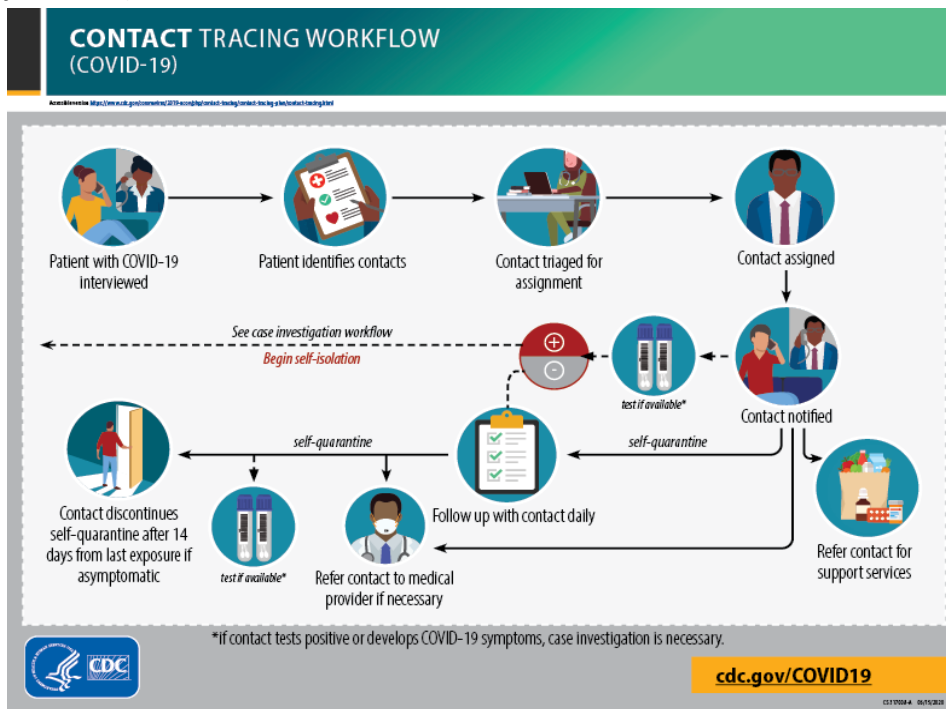


Figure 06: CDC Contact Tracing Workflow (Figure illustrates the recommended contact tracing process from CDC.)



Appendix C. Evaluating Case Investigation and Contact Tracing Success Metrics as Recommended by CDC

Individual case investigation and contact tracing supervision and management

To support supervision of case investigation and contact tracing staff, canned reports at the level of the individual case investigator and contact tracer will help ensure that staff are meeting expectations and identify areas for additional training. Reports can be produced for a 2-week review period and could include:

- Number of case investigations assigned during review period
- Number of clients interviewed during review period
- Number and percentage of clients interviewed ≤ 24 hours from report to health authority during review period
- Number of case investigations closed during review period
- Number and percent of case investigations in which at least one close contact was elicited during review period
- Median number of days from assignment of investigations to interview during review period
- Total number of contacts elicited from case investigations during review period
- Median number of contacts elicited from clients per case interview during review period, among cases where at least one contact was elicited
- Number of contacts notified during review period and percent out of total number of contacts named
- Total number of contacts interviewed/total number of contacts named by cases during review period
- Median number of days from initiation/assignment of contact to notification during review period
- Number of cases who completed isolation/total number of cases advised to isolate during review period
- Number of contacts who completed quarantine/total number of contacts advised to quarantine during review period
- Number of referrals to social support
- Number of referrals for clinical consultation

Programmatic Process Measures

Data examined among all case investigation and contact tracing staff will help provide leadership with insights into program successes and possible opportunities for additional training, resources or focus areas. These can be canned reports that are produced regularly (bi-weekly or monthly). These measures could include:

- Number of case investigations assigned during review period
- Number of clients interviewed during review period
- Number and percentage of clients interviewed ≤ 24 hours from report to health authority during review period
- Number of case investigations closed during review period
- Number and percentage of clients who named at least one close contact during review period
- Median days from receipt of report to interview during review period
- Total number of contacts elicited among case investigations during review period
- Total number of contacts interviewed/total number of contacts named by cases during review period
- Median number of contacts named per patient interview during review period
- Number of clients who completed isolation/total number of clients advised to isolate during review period
- Number of contacts who completed quarantine/total number of contacts advised to quarantine during review period
- Number of referrals to social support
- Number of referrals for clinical consultation

Programmatic Outcome Measures

- Number of clients interviewed/Number of case investigations
- Number of contacts tested for SARS-CoV-2/Number of contacts interviewed
- Number and percentage of new confirmed COVID-19 cases arising from quarantined contacts
- Number of contacts self-quarantined as a result of contact tracing
- Number and percentage of clients who completed full self-isolation period
- Number of contacts who completed 14-day self-quarantine/notified contacts

Appendix D. OSDH Call Center Metrics Report

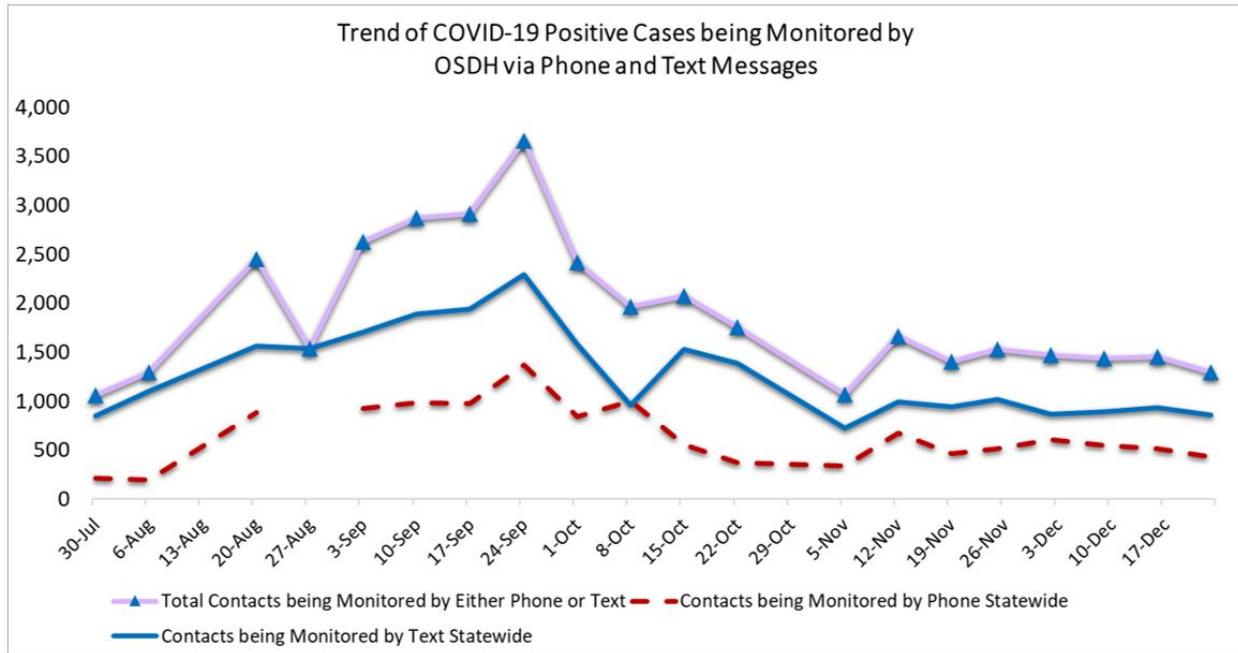
Exhibit 02: OSDH Call Center Metrics Report

Contact Tracing & Case Investigation Metrics Report																									
Reporting December 16 for week of December 9-15																									
<p>*Please note the phone system metrics for this week are still skewed. Currently, our dialer seems to be working correctly, but last week we were still experiencing issues with the InContact dialer. Additionally, our teams are still in the process of making the transition to working remotely. Agents have been taking their equipment home to test it. All of this has affected our numbers, especially our Service Level percentage, which usually is between 90-92%.</p>																									
1. Total number of Staff																									
a. Shepherd Center	373 TOTAL																								
b. County Health Departments	40 Express agents																								
2. How many Shepherd Center personnel are doing:																									
a. Case investigation	211																								
b. Contact tracing	154																								
c. Lab entry	6																								
3. How many:																									
a. Total case investigations assigned (not yet started) statewide *Includes 77 Oklahoma counties & Shepherd Center	8,989																								
b. Total case investigations assigned (not yet started) statewide * Does not include Oklahoma and Tulsa Counties	2,833																								
c. Total case investigations assigned (not yet started) at Shepherd Center	138																								
d. Total case investigations that have been worked (started and completed) statewide *Includes 77 Oklahoma counties & Shepherd Center	14,995																								
e. Total case investigations that have been worked (started and completed) statewide *does not include Oklahoma & Tulsa Counties	13,363																								
f. Total Case Investigations that have been worked (started and completed) at Shepherd Center *Does not contain the number of cases attempted and reassigned to the CHD	6,723																								
g. Total number of cumulative Case Investigations that have been worked (started and completed) at Shepherd Center	50,602																								
h. Contacts currently being monitored by phone statewide *does not include OKC & Tulsa	516																								
i. Contacts currently being monitored by texts statewide *does not include OKC & Tulsa	935																								
j. Contacts that are not being monitored statewide *Includes those that have received initial texts but have not given consent and those we are attempting to reach via phone but have not yet received 3 calls *does not include OKC & Tulsa	748																								
k. Number of contacts who completed quarantine	66,255																								
l. Lab results entered each week at Shepherd Center	Total = 2,052 Daily Average = 410																								
4. Shepherd Center Staff																									
a. Calls conducted with on-site Spanish Interpretation	202																								
b. Service level (how many people being served within a set amount of time?)	50% (our Service Level Agreement or "SLA" is that 90% of our calls will be answered within 30 seconds)																								
c. How many calls rolled (call avoidance)?	249 (36 per day; about 3 per hour)																								
d. How many inbound calls per day are we receiving?	117																								
e. How many outbound calls per day are we making?	704																								
f. What time period do we receive the most number of inbound calls?	10am-11am, Mon-Fri Noon-1pm, Sat-Sun																								
g. What time period do we place the most outbound calls?	10am-11am and 1pm-2pm, Mon-Fri 10am-11am, Sat Noon-1pm, Sun																								
h. How many people show up for work each day by shift?	<table border="1"> <thead> <tr> <th>Day</th> <th>W12/9</th> <th>TH12/10</th> <th>F12/11</th> <th>M12/14</th> <th>TU12/15</th> </tr> </thead> <tbody> <tr> <td>Full-Time</td> <td>94%</td> <td>96%</td> <td>96%</td> <td>95%</td> <td>94%</td> </tr> <tr> <td>Part-Time</td> <td>94%</td> <td>94%</td> <td>94%</td> <td>98%</td> <td>98%</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Weekend:</th> </tr> </thead> <tbody> <tr> <td>Sat 12/12</td> <td>Sun 12/13</td> </tr> <tr> <td>97%</td> <td>92%</td> </tr> </tbody> </table>	Day	W12/9	TH12/10	F12/11	M12/14	TU12/15	Full-Time	94%	96%	96%	95%	94%	Part-Time	94%	94%	94%	98%	98%	Weekend:		Sat 12/12	Sun 12/13	97%	92%
Day	W12/9	TH12/10	F12/11	M12/14	TU12/15																				
Full-Time	94%	96%	96%	95%	94%																				
Part-Time	94%	94%	94%	98%	98%																				
Weekend:																									
Sat 12/12	Sun 12/13																								
97%	92%																								
i. How many COVID cases among staff and agents do we have that are in isolation?	1																								
j. How many staff and agents are in quarantine due to COVID?	6																								

Source: OSDH

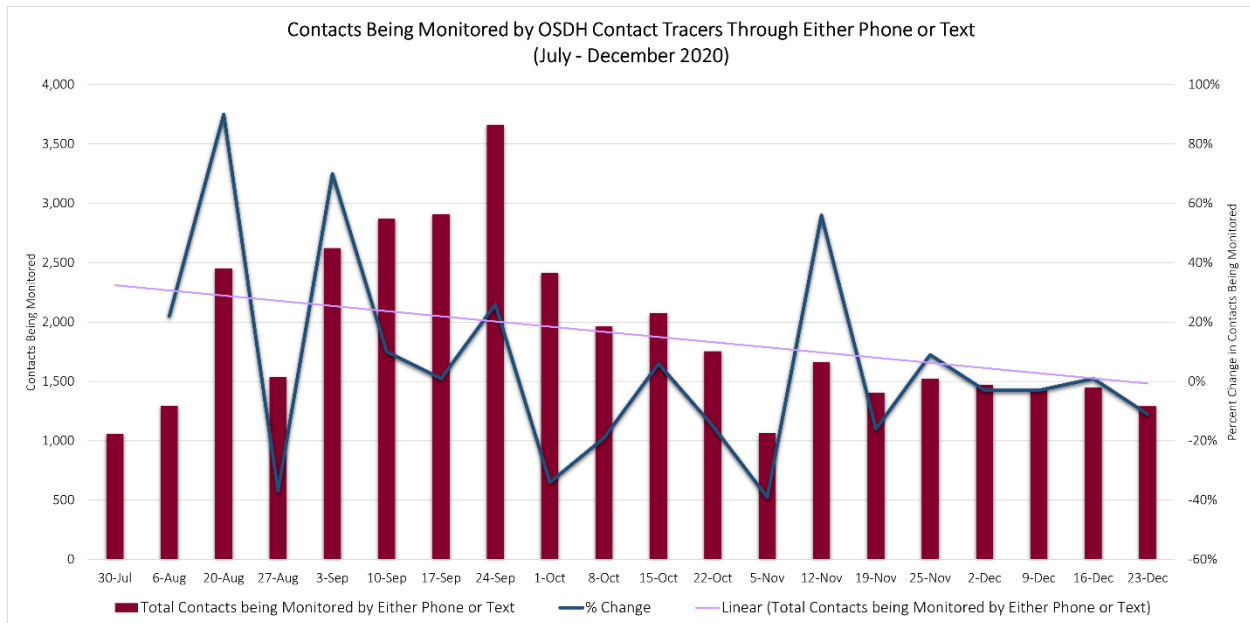
Appendix E. Trend of COVID-19 Positive Cases Being Monitored by OSDH

Chart 05: Cases Monitored by OSDH via Phone or Text Message



Source. Legislative Office of Fiscal Transparency’s analysis based on data provided by OSDH.
 Note. Data was unavailable for contacts being monitored by phone for August 27, 2020.

Chart 06: Contacts Being Monitored by OSDH Contact Tracers Through Either Phone or Text (July – December 2020). (This chart illustrates the rapidly decreasing linear trend in contacts being monitored by OSDH contact tracers during the COVID-19 pandemic in Oklahoma.)



Appendix F. 18 States Providing COVID-19 Outbreak Data Publicly

Table 04: Setting Type Reported by States

TABLE 1. Count and Examples of COVID-19 Outbreak Setting Types Reported by States (beyond LTC)

State Reporting of Other than LTC COVID-19 Outbreaks	# of Settings Reported	School Settings Reported	Correctional Facility Setting Reported	Examples of Unique Setting Types
Arkansas	20	✓	✓	
Colorado	12	✓	✓	Agriculture/Food Supply and Retail Grocery
Hawaii	11	✓		
Illinois	36	✓	✓	Factory/Manufacturer, Funeral Home, Salon, and Community Event
Kansas	16	✓	✓	Meat Packing, Sports, Religious Gathering
Louisiana	19			Casino
Massachusetts	21	✓	✓	
Michigan	19	✓	✓	
Mississippi	1	✓		
Nevada	5		✓	Forensic Psychiatric, Behavioral Inpatient
New Hampshire	1	✓		
New Jersey	1	✓		
North Carolina	22	✓	✓	Construction, Government Services, Personal Care Services
Utah	6		✓	
Vermont	3	✓		
Virginia	6	✓	✓	
Washington	40	✓	✓	Utilities, Facility/Domestic Cleaning Service, Fishing
Wisconsin	5	✓	✓	

Source: State Health Access Data Assistance Center (SHADAC) review of state websites, November 2020.

Appendix G. Attorney General Hunter Advises Health Department to Release Data

Exhibit 03: OAG's Advisement to OSDH



The screenshot shows the website of Mike Hunter, Oklahoma Attorney General. The header includes the state seal and the text "Mike Hunter Oklahoma Attorney General" along with social media icons for Facebook and Twitter. A navigation menu lists: Home, About, Citizen Resources, Opinions, Forms, News, Contact, and Careers. The breadcrumb trail reads: HOME / ATTORNEY GENERAL HUNTER ADVISES HEALTH DEPARTMENT TO RELEASE DATA. The main heading is "Attorney General Hunter Advises Health Department to Release Data".

OKLAHOMA CITY – Attorney General Mike Hunter today advised the Oklahoma State Department of Health (OSDH) that releasing the data about COVID-19 infections does not violate state or federal law, as long as individuals are not identifiable.

After consultation with the attorney general, the OSDH will resume releasing local infection data and deaths. Demographic data, such as age and race, will only be released in aggregate.

"Releasing the total numbers of each locality, county and state-wide demographic data threads the needle of providing up-to-date information to the public while protecting the privacy of Oklahomans," Attorney General Hunter said. "This data is important for citizens to have at their disposal to make informed decisions. I appreciate OSDH Interim Commissioner Lance Frye and Secretary of Health Jerome Loughridge, for bringing this matter to the attention of my office for review."

The attorney general advised the interim health commissioner and secretary of health that while state law prohibits the department of health from disclosing personal health information, it may nonetheless release epidemiological information for statistical purposes in such a way that no person can be identified.

Officials were concerned that releasing detailed demographic information could inadvertently identify someone who is infected with or died from COVID-19, which would violate state laws on medical record confidentiality.

"I am pleased we found a way to provide this data that upholds the law and protects Oklahomans," Loughridge said. "We thank the attorney general for helping us get to this conclusion."

Previously, the numbers were being released under the Catastrophic Health Emergency Powers Act, which allowed the governor to temporarily suspend state laws that could hinder the state's ability to respond to a health emergency or increase the health threat to the population. The emergency declaration under that act expired Monday.

"It is incumbent upon us as state leaders to protect sensitive health information," Frye said. "I encourage Oklahomans to use the information to make informed decisions in dealing with the COVID-19 pandemic."

Source: [Attorney General Hunter Advises Health Department to Release Data | Oklahoma Attorney General](#)

Appendix H. OSDH COVID-19 Positive Case Questionnaire

Exhibit 04: COVID-19 Positive Case Questionnaire (nine pages)

OSDH COVID-19 Positive Case Questionnaire

PHIDDO ID: _____

Interviewer's name: _____ Call date: _____ Call time: _____

Person Information

Last Name: _____ First Name: _____ Middle: _____ Suffix: _____

Address: _____

City: _____ State: _____ Zip: _____ County: _____

Primary Phone: (____) _____ - _____ Secondary Phone: (____) _____ - _____

Work Phone: (____) _____ - _____ Ext: _____

Email: _____

Parent or guardian name (if case is a minor): _____

Date of Birth: ____/____/____ Age: _____

Country of Birth: _____ (consider asking this at the end of the call)

Sex: Male Female Unknown

Ethnicity: Hispanic or Latino Not Hispanic or Latino Unknown

Race: American Indian or Alaska Native Asian Black or African American

Native Hawaiian or Other Pacific Islander White Unknown

Preferred language (if other than English): _____

Interpreter needed? Yes No Unknown

- Language Line Information:

- 1-866-874-3972

- Client (OSDH) ID: 534205

- Indicate Language: Mandarin, Spanish, Marshallese, etc.

- Four-Digit Location Pin: 2834

- More rare languages may take longer. Scheduling a callback may be best.

"Hi, my name is _____ and I'm calling from the Oklahoma State Department of Health. Is _____ available? Could you verify your date of birth for me so that I know that I am talking to the right person?"

NOTE If contact is under 18, you must first speak to the parent/guardian and explain your role. If the minor is unable to be interviewed, request that the parent/ guardian answer questions on their behalf.

For voicemail:

"The Oklahoma State Department of Health is trying to reach you about an urgent public health issue. Please contact us immediately at **405-522-0001**. If no one is available when you call back, please leave a message with your full name and the best phone number where you can be reached. Thank you."

"On _____, you tested positive for COVID-19 and I am calling you as a follow-up to keep you and your family/friends safe and healthy. I need to speak with you regarding your positive COVID-19 testing, which will take about 20-30 minutes to ensure your family and friends' continued safety and health. **Just so you know, everything we discuss is confidential and will not be shared with anyone.** Do you have any questions before we get started?"

Verify correct spelling of name, DOB, address, demographics.

Were you admitted to the hospital? Yes No Unknown

If yes, were you hospitalized for COVID? Yes No Unknown

If yes, which hospital? _____

What day were you admitted? ____/____/____ What day were you discharged? ____/____/____

Do you have a Primary Care Physician? Yes No Unknown

If Yes, what is their name? _____

OSDH COVID-19 Positive Case Questionnaire

PHIDDO ID: _____

Interviewer's name: _____ Call date: _____ Call time: _____

**Now I'd like to discuss symptoms with you. Do you have or have you had any of the following symptoms:
(If Yes to any, get onset date and duration)**

Symptom	Present (Y/N)	Onset (MM/DD/YYYY)	Duration (Days)	Notes
Fever				Max Temp:
Anorexia (loss of appetite)				
Abdominal Pain (stomach pain)				
Apnea (temporarily stopping breathing)				
Chest Pains				
Chills				
Conjunctivitis (very red eyes/Pink Eye)				
Cough (productive)				
Cough (nonproductive)				
Dehydration				
Diarrhea				
Headache				
Loss of Taste/Smell				
Malaise (general discomfort)				
Myalgia (muscle pain)				
Nausea				
Rash				
Rhinorrhea (runny nose)				
Rigors (severe shivering)				
Seizures				
Shortness of breath (SOB)				
Sore Throat				
Vomiting				
Wheezing				
Any Other Symptoms, Not Listed				

Do you have any of these medical conditions?

Condition	Present (Y/N)
Placed on ventilator	
Acute respiratory distress syndrome (ARDS)	
Pneumonia	
Chronic liver disease	
Chronic renal (kidney) disease	
List continued on next page	

OSDH COVID-19 Positive Case Questionnaire

PHIDDO ID: _____

Interviewer's name: _____ Call date: _____ Call time: _____

Condition (list continued)	Present (Y/N)
Diabetes	
Chronic lung disease (asthma/emphysema/COPD)	
Chronic heart or circulatory disease	
Immunocompromising condition such as cancer, rheumatoid arthritis or HIV:	
Other Chronic Disease:	
If Yes, Specify:	
If female: are you currently pregnant?	
Smoking (check one):	Do you currently smoke? <input type="checkbox"/> Yes <input type="checkbox"/> No Are you a former smoker? <input type="checkbox"/> Yes <input type="checkbox"/> No Never smoked? <input type="checkbox"/> Yes <input type="checkbox"/> No
Former Smoker	

During the 2 to 14 days before you had your first symptom, did you:

Travel within Oklahoma? Yes No Unknown

If yes: Date Departed: ___/___/___ Date Returned: ___/___/___

List cities and counties visited: _____

Travel outside the state? Yes No Unknown

Date Departed: ___/___/___ Date Returned: ___/___/___

List cities and states visited: _____

Travel outside the United States? Yes No Unknown

Date Departed: ___/___/___ Date Returned: ___/___/___

List country and cities visited: _____

During this time, did you attend/visit group gatherings, events, or venues? Yes No Unknown

If yes, describe name, date, location, other details:

Where do you work? _____

Address/City if available: _____

What is your job there? _____

Depending on work responses, the following may be applicable:

How many people do you work with that you are in direct contact with?

Do you need a letter from your employer from the health department stating you need to be excluded from work?

High-Risk Settings

In the 14 days prior to the onset of symptoms has the patient attended, lived in or worked in any of the following high-risk settings:

- Child Care Setting
- Correctional Facility
- Dormitory/College
- Food Service
- Health Care
- Homeless Shelter
- Long Term Care
- Mental Health Facility
- Nursing Home
- School
- Other: _____
- Unknown
- None

If yes, high-risk activity type:

- Attended
- Direct Patient Care
- Worked In
- Lived In
- Visited
- Worked as Food Handler

High Risk Setting Information:

OSDH COVID-19 Positive Case Questionnaire

PHIDDO ID: _____

Interviewer's name: _____ Call date: _____ Call time: _____

Facility Name: _____ Street Address: _____

City: _____ State: _____ Zip Code: _____

Phone Number: (____) _____ - _____ Ext: _____

During your infectious period (2 days before symptoms, until 10 days after symptoms) when were you at the setting?*

**if no symptoms, use the date of their lab test*

Start date: ____/____/____ End date: ____/____/____

Discuss transmission and prevention:

The virus that causes COVID-19 is spread from person to person through respiratory droplets from the nose and mouth of an infected person while coughing, sneezing, singing, talking or breathing. The droplets can land in the mouths or noses of people who are nearby, or can be inhaled into the lungs through the air of people within 6 feet, sometimes further. The highest risk of spread is in households and between people who are in close contact for ≥ 15 minutes.

Identify contacts: *With that in mind, let's talk about anyone you have been around since _____ (See Date Calculation Below) who could have exposed you or been exposed. These would be anyone who you were within 6 ft of for 15 minutes or more. This could be family, coworkers, sexual partners, etc. Keep in mind that all information that you provide is confidential and we will not discuss your test results or name with anyone we may reach out to and offer testing. (ADD TO CONTACT GRID)*

DATE =

- Symptomatic= 2 days prior to onset of symptoms or positive lab, whichever came first
- Asymptomatic= 2 days prior to positive lab

End of Isolation Period: *Person(s) with COVID-19 may discontinue home isolation when:*

- *3 days (72 hours) have passed since fever has resolved without use of fever-reducing medications*
- **AND** *respiratory symptoms have improved (e.g., cough, shortness of breath)*
- **AND** *10 days have passed since symptoms first appeared*

Based on your situation, you will need to stay isolated at home until at least _____ (day 10), and you can return to work and other outside activities on _____ (day 11).

*Therefore, we ask you to **please stay at home and continue to monitor your symptoms throughout this time.***

For healthcare workers: *return to work practices include:*

- *Wear a mask at all times while in healthcare facility until symptoms have completely resolved or until 14 days have passed since illness onset, whichever is longer.*
- *Self-monitor for symptoms, and seek re-evaluation from employee (occupational health) if symptoms recur or worsen.*

<https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/hcp-return-work.html>

For their household contacts: *Also, until all household contacts have been cleared to leave isolation or quarantine, you also need to continue to limit contact (> 6ft) and wear a face covering when others are present.*

If you should experience trouble breathing, continued pain or pressure in the chest, new confusion or the inability to arouse, lips/ face turning blue, or any other concerning symptoms consult with your medical provider. Call 911 if you have a medical emergency. Notify the operator that you have COVID-19. If possible, put on a mask or other face covering before medical help arrives.

OSDH COVID-19 Positive Case Questionnaire

PHIDDO ID: _____

Interviewer's name: _____ Call date: _____ Call time: _____

Where do you plan to isolate?

If other than known address, request that information: _____

If we should need to ask you anything additional during this time, what is the best number to reach you?

If different from the number you called: _____

If patient advises that they will not comply with isolation recommendations:

Thank you for your time. The Oklahoma State Department of Health has the authority to require your isolation to reduce the risk of further spread to other individuals. An order for isolation can be drafted and served to you.

(Document the name, date of contact with the person, and the date their isolation is over, in other words the day after the end of their isolation period, or the 11th day. Notify your Supervisor so that OSDH Legal can prepare the letter and have it served.)

Thank you for providing this information. Please contact us at 405-521-0001 if you have any further questions.

If you need assistance while you are in isolation, please call your county health department (provide that number).

NOTES:

OSDH COVID-19 Positive Case Questionnaire

PHIDDO ID: _____

Interviewer's name: _____ Call date: _____

Call time: _____

2020

Holidays & Observances

January

Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

February

Su	M	Tu	W	Th	F	Sa
					1	
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

March

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Jan 01	New Year's Day
Jan 20	Black Lutheran King Day
Jan 25	Chinese New Year
Feb 12	Lincoln's Birthday
Feb 14	Valentine's Day
Feb 17	President's Day
Feb 25	Ash Wednesday
Mar 08	Daylight Saving begins
Mar 17	St. Patrick's Day
Mar 20	Vernal Equinox
Apr 01	April Fool's Day
Apr 09	Passover
Apr 12	Easter
Apr 22	Admin Assistants Day
Apr 24	Ramadan begins
May 10	Mother's Day
May 25	Memorial Day
May 31	Pentecost
Jun 14	Flag Day
Jun 20	June Solstice
Jun 21	Father's Day
Jul 04	Independence Day
Sep 07	Labor Day
Sep 19	Rosh Hashanah
Sep 22	Autumn's equinox
Oct 12	Columbus Day
Oct 31	Halloween
Nov 01	Daylight Saving ends
Nov 11	Veteran's Day
Nov 26	Thanksgiving
Dec 10	Hanukkah begins
Dec 21	December Solstice
Dec 25	Christmas Day
Dec 26	Kwanzaa begins
Dec 31	New Year's Eve

April

Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June

Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

July

Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August

Su	M	Tu	W	Th	F	Sa
					1	
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September

Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

October

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

November

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December

Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

OSDH COVID-19 Positive Case Questionnaire

PHIDDO ID: _____ Call time: _____
 Interviewer's name: _____ Call date: _____

COVID-19 CASE CONTACT GRID

Please list *all individuals* that would be considered a *close contact* (being within approximately 6 feet of a COVID-19 case for a prolonged period of time ≥ 15 minutes while caring for, living with, visiting, or sharing a healthcare waiting area/room with a COVID-19 case—OR—having direct contact with infectious secretions (being coughed on by a COVID-19 case) 48 hours prior to onset and through 10 days after symptom onset of a confirmed COVID-19 case.

Date: ___/___/___ Name of Investigator: Investigator Phone: Case Name:	Demographics			Symptoms											Settings/Activities		Comments: <i>*If noted to be a workplace exposure.</i>	
	Gender (Male (M)/Female (F))	Date of Birth	Phone Number	Contact type (CCS = Child Care Setting; HH = Household member (non-sexual); HS = Household member (sexual); HL = Household-like; S = School; SX = Sexual; IN = Institutional; W = Workplace)	No symptoms	Date of symptom onset?	Fever? (Y/N/Unk)	Cough? (Y/N/Unk)	Shortness of breath? (Y/N/Unk)	Sore throat? (Y/N/Unk)	Runny Nose? (Y/N/Unk)	Myalgias? (Y/N/Unk)	Chills? (Y/N/Unk)	Nausea or vomiting? (Y/N/Unk)	Abdominal Pain? (Y/N/Unk)	Headache? (Y/N/Unk)		Diarhea? (Y/N/Unk)
NAME																		Other symptoms or additional information
1.																		
2.																		
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		

Please see the following pages for:

- COVID-19 Contact Investigation Risk Level Characterization and Controlled Movement Guidance* to assist in defining contact categories and management of asymptomatic/symptomatic individuals.
- Exposure timeline to aid in identifying movements and possible groups/settings to investigate further.

OSDH COVID-19 Positive Case Questionnaire

Interviewer's name: _____ PHIDDO ID: _____

Call date: _____ Call time: _____

COVID-19 Contact Investigation Risk Level Characterization and Controlled Movement Guidance

Risk Level	Exposures Identified Through Contact Investigation	Management if Asymptomatic	Management if Symptomatic
HIGH <i>(assumes no exposures in the high-risk category)</i>	Living in the same household as, being an intimate partner of, or providing care in a non-healthcare setting (such as a home) for a person with symptomatic, laboratory-confirmed COVID-19 infection without using recommended precautions for home care and home isolation	<ul style="list-style-type: none"> Quarantine (voluntary or under public health orders) in a location to be determined by public health authorities. No public activities. Daily active monitoring, if possible, based on local priorities. Controlled travel. 	<ul style="list-style-type: none"> Immediate isolation with consideration of public health orders. Public health assessment to determine the need for medical evaluation; if medical evaluation warranted, diagnostic testing should be guided by CDC's PUI definition. If medical evaluation is needed, it should occur with pre-notification to the receiving HCF and EMS, if EMS transport indicated, and with recommended infection control precautions in place. Controlled travel: Air travel only via air medical transport. Local travel is only allowed by medical transport (e.g., ambulance) or private vehicle while symptomatic person is wearing a face mask.
MEDIUM <i>(assumes no exposures in the high-risk category)</i>	Close contact with a symptomatic laboratory-confirmed COVID-19 person On an aircraft, being seated within 6 feet (two meters) of a traveler with symptomatic laboratory-confirmed COVID-19 infection; this distance correlates approximately with 2 seats in each direction Living in the same household as, an intimate partner of, or caring for a person in a non-healthcare setting (such as a home) to a person with symptomatic laboratory-confirmed COVID-19 infection while consistently using recommended precautions for home care and home isolation	<ul style="list-style-type: none"> Recommendation to remain at home or in a comparable setting Practice social distancing Active monitoring as determined by local priorities Recommendation to postpone long-distance travel on commercial conveyances 	<ul style="list-style-type: none"> Self-isolation Public health assessment to determine the need for medical evaluation; if medical evaluation warranted, diagnostic testing should be guided by CDC's PUI definition If medical evaluation is needed, it should ideally occur with pre-notification to the receiving HCF and EMS, if EMS transport indicated, and with all recommended infection control precautions in place. Controlled travel: Air travel only via air medical transport. Local travel is only allowed by medical transport (e.g., ambulance) or private vehicle while symptomatic person is wearing a face mask.
LOW <i>(assumes no exposures in the medium or high-risk categories)</i>	Being in the same indoor environment (e.g., a classroom, a hospital waiting room) as a person with symptomatic laboratory-confirmed COVID-19 for a prolonged period of time but not meeting the definition of close contact	<ul style="list-style-type: none"> No restriction on movement Self-observation for symptoms 	<ul style="list-style-type: none"> Self-isolation, social distancing Person should seek health advice to determine if medical evaluation is needed. If sought, medical evaluation and care should be guided by clinical presentation; diagnostic testing for COVID-19 should be guided by CDC's PUI definition Travel on commercial conveyances should be postponed until no longer symptomatic.
NO IDENTIFIABLE RISK	Interactions with a person with symptomatic laboratory-confirmed COVID-19 infection that do not meet any of the high-, medium- or low-risk conditions above, such as walking by the person or being briefly in the same room.	None	<ul style="list-style-type: none"> Self-isolation, social distancing Person should seek health advice to determine if medical evaluation is needed. If sought, medical evaluation and care should be guided by clinical presentation; diagnostic testing for COVID-19 should be guided by CDC's PUI definition. Travel on commercial conveyances should be postponed until no longer symptomatic.

OSDH COVID-19 Positive Case Questionnaire PHIDDO ID: _____
Interviewer's name: _____ Call date: _____ Call time: _____

COVID-19 EXPOSURE TIMELINE

Day	Date	Time	Place	Contacts
-2				
-1				
Symptom Onset				
0				
+1				
+2				
+3				
+4				
+5				
+6				
+7				
+8				
+9				
+10				
+11				
+12				
+13				
+14				

Potential Source Exposure

3

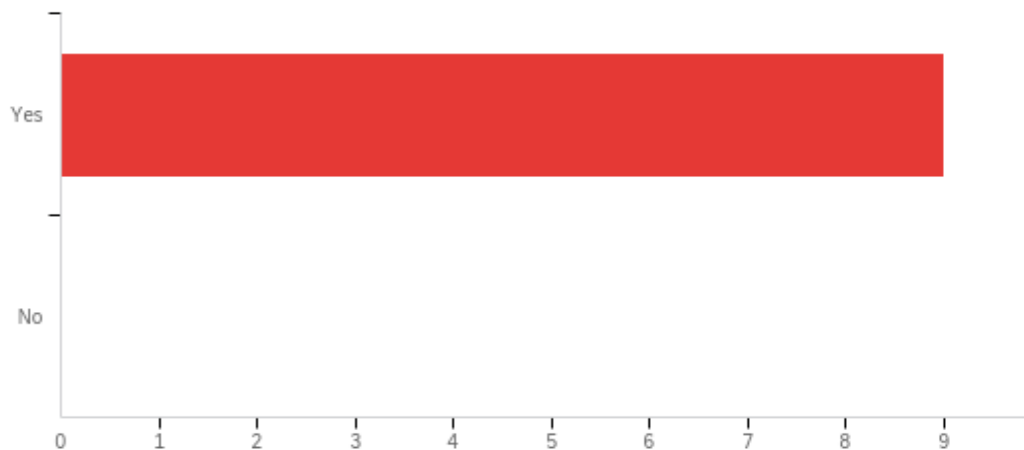
Appendix I. LOFT CORONA SURVEY

Default Report

LOFT Community Response-Oriented Needs Assessment (CORONA) Survey

March 10th 2021, 11:47 am MST

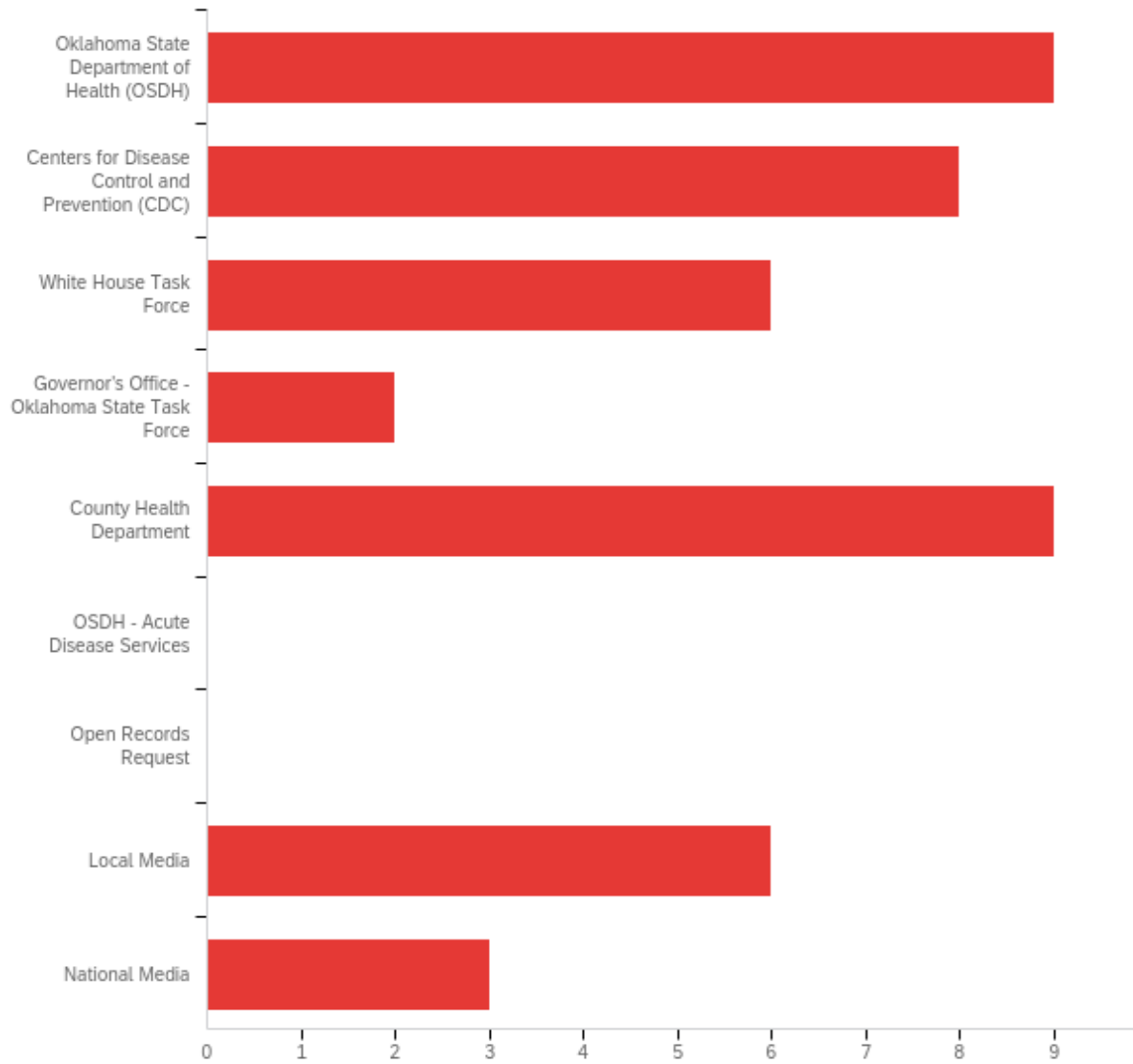
Q2 - You are being invited to participate in Legislative Office of Fiscal Transparency (LOFT) CORONA Survey. This survey should take, on average, 5 minutes. The survey is administered via Qualtrics and insures your confidentiality. You will not be asked to provide your name within the survey. This survey will be used to better understand community leadership perceptions of the State's response to COVID-19, the data shared during the pandemic, and will be reflected in the Contact Tracing Evaluation Report currently being conducted by LOFT. The link for this survey will be open from October 21st, 2020 to November 18, 2020. Should you have any questions or comments with regards to this survey, please contact Frank Magness at (405)-724-9185 or frank.magness@okloft.gov. If you agree with the explanations and description of this evaluation project and wish to participate, click "Yes" to proceed with the brief survey.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	You are being invited to participate in Legislative Office of Fiscal Transparency (LOFT) CORONA Survey. This survey should take, on average, 5 minutes. The survey is administered via Qualtrics and insures your confidentiality. You will not be asked to provide your name within the survey. This survey will be used to better understand community leadership perceptions of the State's response to COVID-19, the data shared during the pandemic, and will be reflected in the Contact Tracing Evaluation Report currently being conducted by LOFT. The link for this survey will be open from October 21st, 2020 to November 18, 2020. Should you have any questions or comments with regards to this survey, please contact Frank Magness at (405)-724-9185 or frank.magness@okloft.gov. If you agree with the explanations and description of this evaluation project and wish to participate, click "Yes" to proceed with the brief survey.	1.00	1.00	1.00	0.00	0.00	9

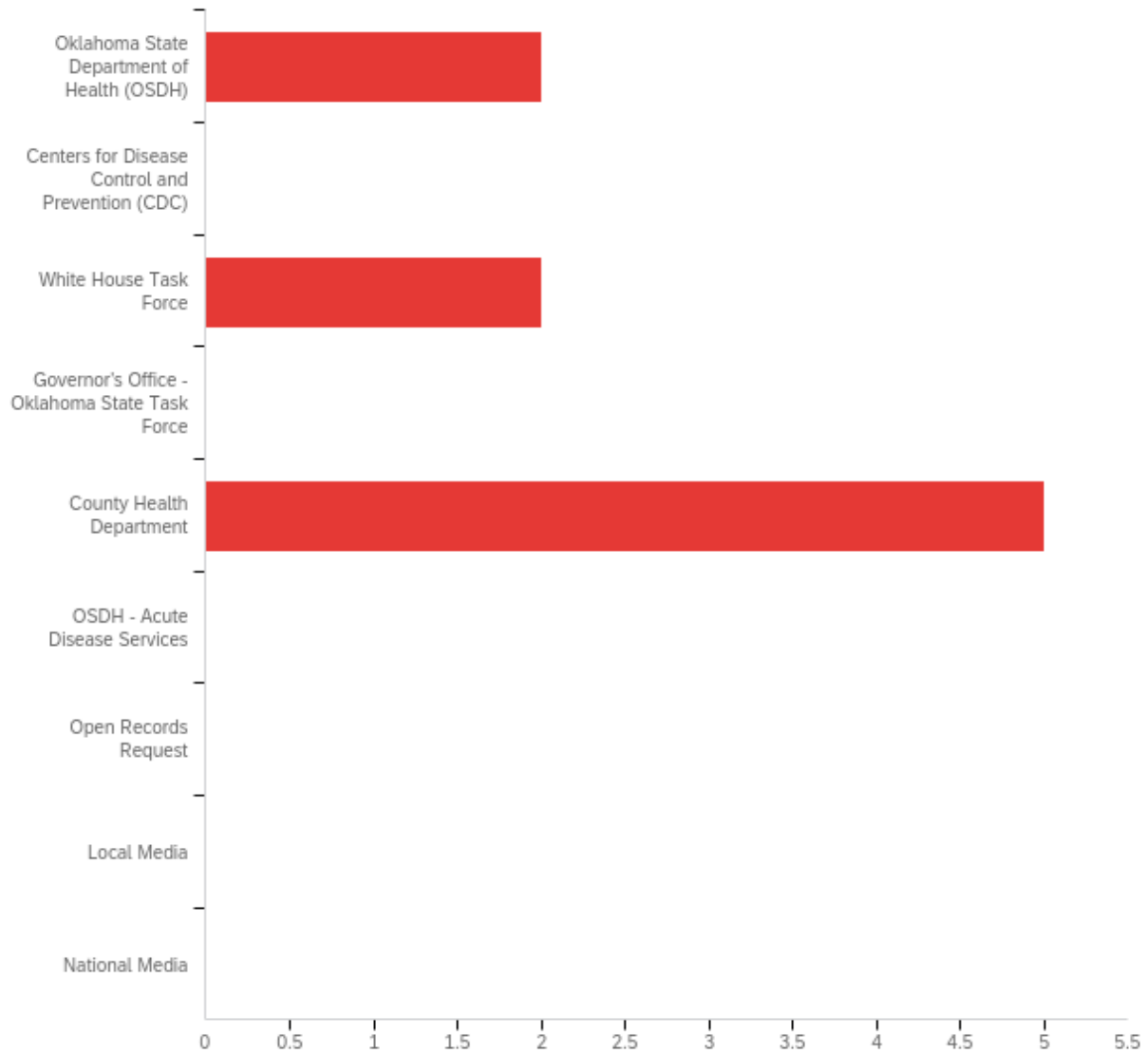
#	Answer	%	Count
1	Yes	100.00%	9
2	No	0.00%	0
	Total	100%	9

Q3 - What resources have you been utilizing to receive information and data related to COVID-19? Select all that apply.

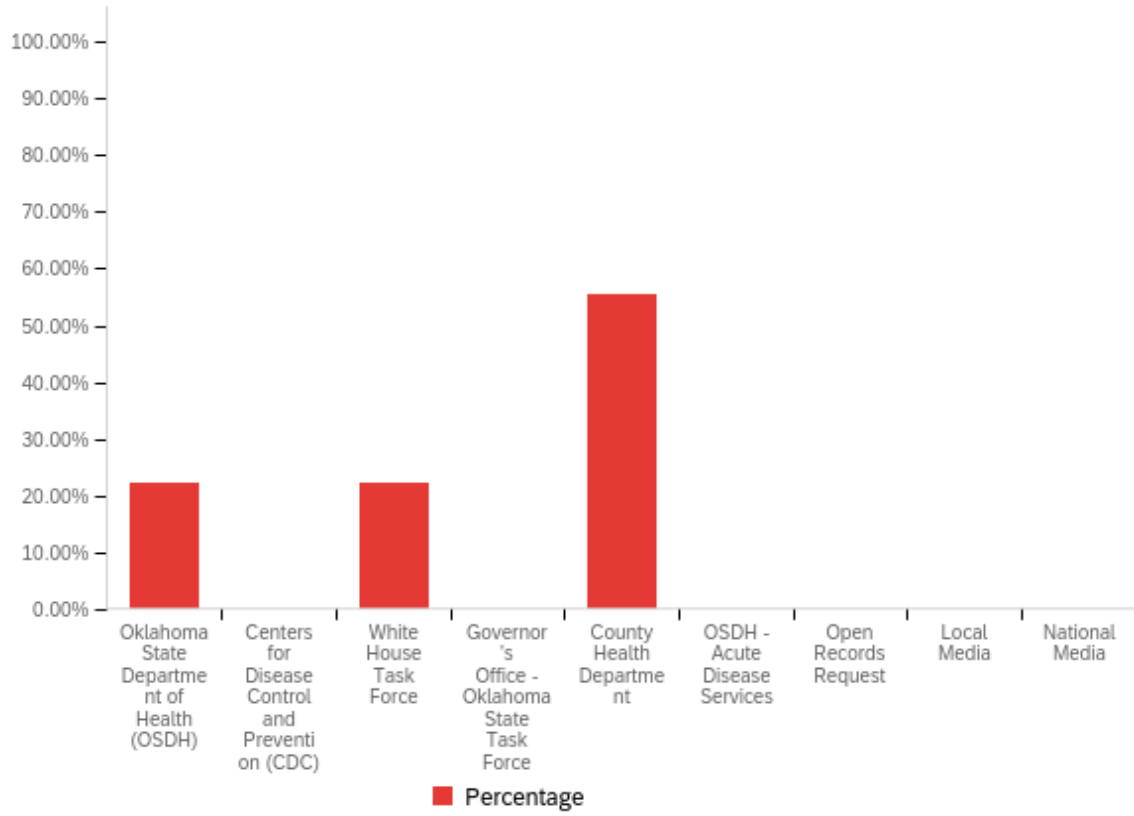


#	Answer	%	Count
1	Oklahoma State Department of Health (OSDH)	20.93%	9
2	Centers for Disease Control and Prevention (CDC)	18.60%	8
3	White House Task Force	13.95%	6
4	Governor's Office - Oklahoma State Task Force	4.65%	2
5	County Health Department	20.93%	9
6	OSDH - Acute Disease Services	0.00%	0
7	Open Records Request	0.00%	0
8	Local Media	13.95%	6
9	National Media	6.98%	3
	Total	100%	43

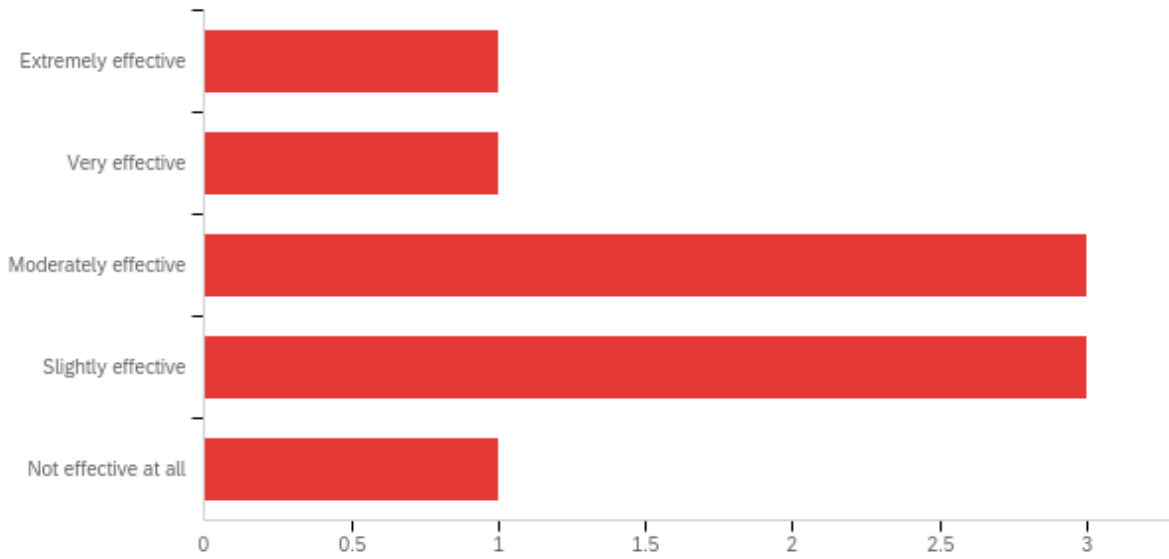
Q4 - Which has been the most valuable resource to receive information and data related to COVID-19? Select only one.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Which has been the most valuable resource to receive information and data related to COVID-19? Select only one.	1.00	5.00	3.67	1.63	2.67	9



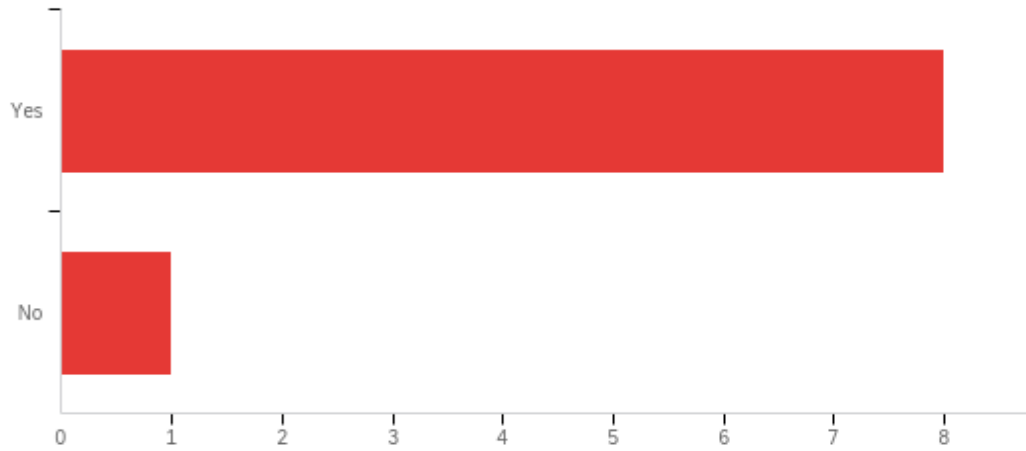
Q5 - Has the OSDH been an effective resource for your community during the COVID-19 pandemic?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Has the OSDH been an effective resource for your community during the COVID-19 pandemic?	1.00	5.00	3.22	1.13	1.28	9

#	Answer	%	Count
1	Extremely effective	11.11%	1
2	Very effective	11.11%	1
3	Moderately effective	33.33%	3
4	Slightly effective	33.33%	3
5	Not effective at all	11.11%	1
	Total	100%	9

Q6 - Would data related to contact tracing from the OSDH been an effective data point to assist you and your community in formulating local policies and responses related to addressing COVID-19?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Would data related to contact tracing from the OSDH been an effective data point to assist you and your community in formulating local policies and responses related to addressing COVID-19?	1.00	2.00	1.11	0.31	0.10	9

#	Answer	%	Count
1	Yes	88.89%	8
2	No	11.11%	1
	Total	100%	9

Q7 - Please explain your reasoning related to contact tracing data from Question 6.

Please explain your reasoning related to contact tracing data from Question 7.

Data about how the virus is spreading aids us in making decisions to mitigate its spread.

We need to know where people are contracting the virus.

Precise data from reliable sources is vital to best practices decisions.

Better, more specific information on the spread of COVID based on contract tracing would allow us to make better decisions about how to respond locally. What events did people attend, how many positive cases are associated with specific locations or types of locations, etc.

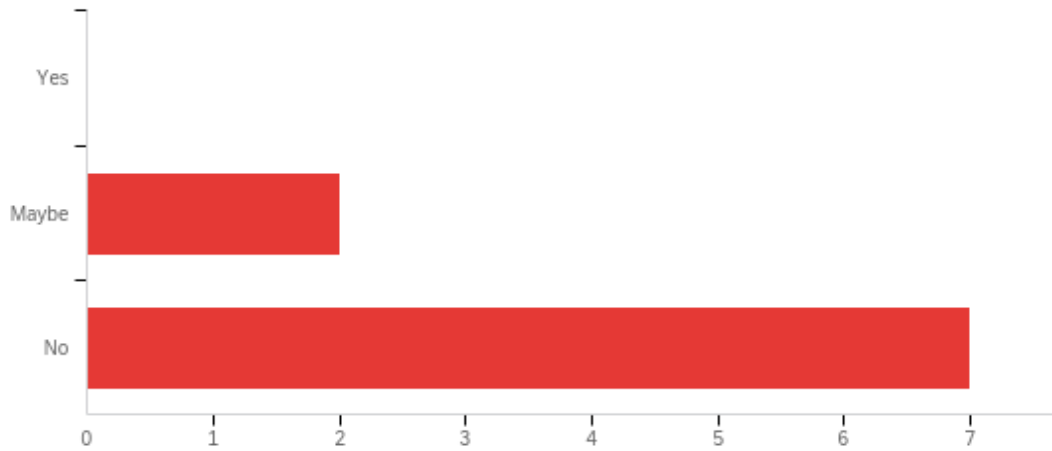
Quickly reduce the risk of secondary infection.

We need an effective way to prevent spread from getting worse and contact tracing is the only logical way to do that

Without all relevant information pertaining to COVID in our area we cannot make the best decision possible.

I believe it would give more credibility to the force of the transmission.

Q8 - Does the current Oklahoma Alert System provide you with specific guidance on what actions you can take within any risk level which can help stem the COVID-19 outbreak?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Does the current Oklahoma Alert System provide you with specific guidance on what actions you can take within any risk level which can help stem the COVID-19 outbreak?	48.00	49.00	48.78	0.42	0.17	9

#	Answer	%	Count
47	Yes	0.00%	0
48	Maybe	22.22%	2
49	No	77.78%	7
	Total	100%	9

Appendix J. COVID-19 School Dashboards by State

Exhibit 05: Arkansas School Dashboard

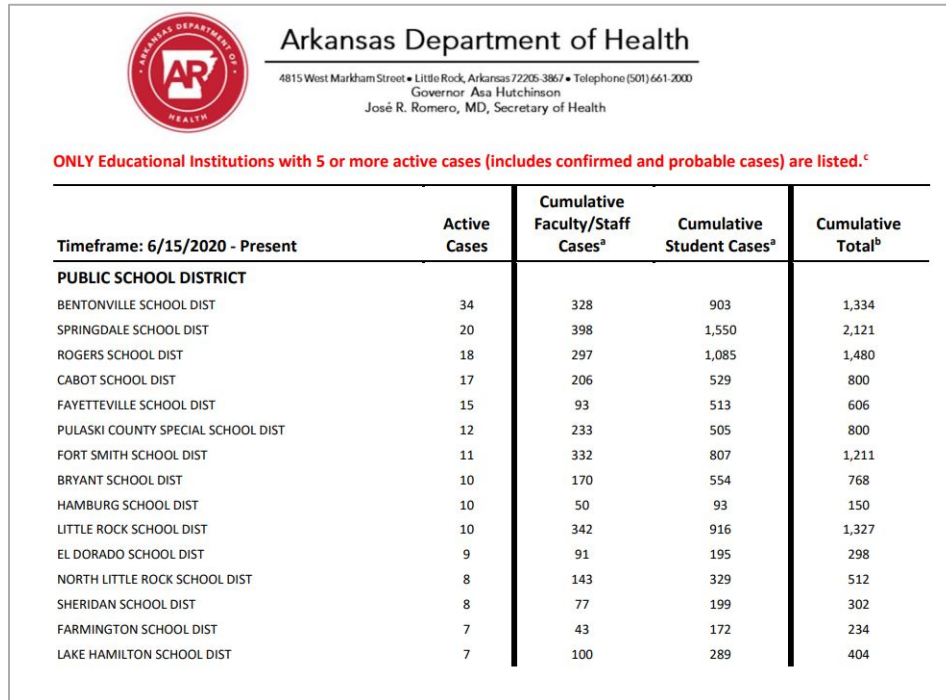


Exhibit 06: Missouri School Dashboard

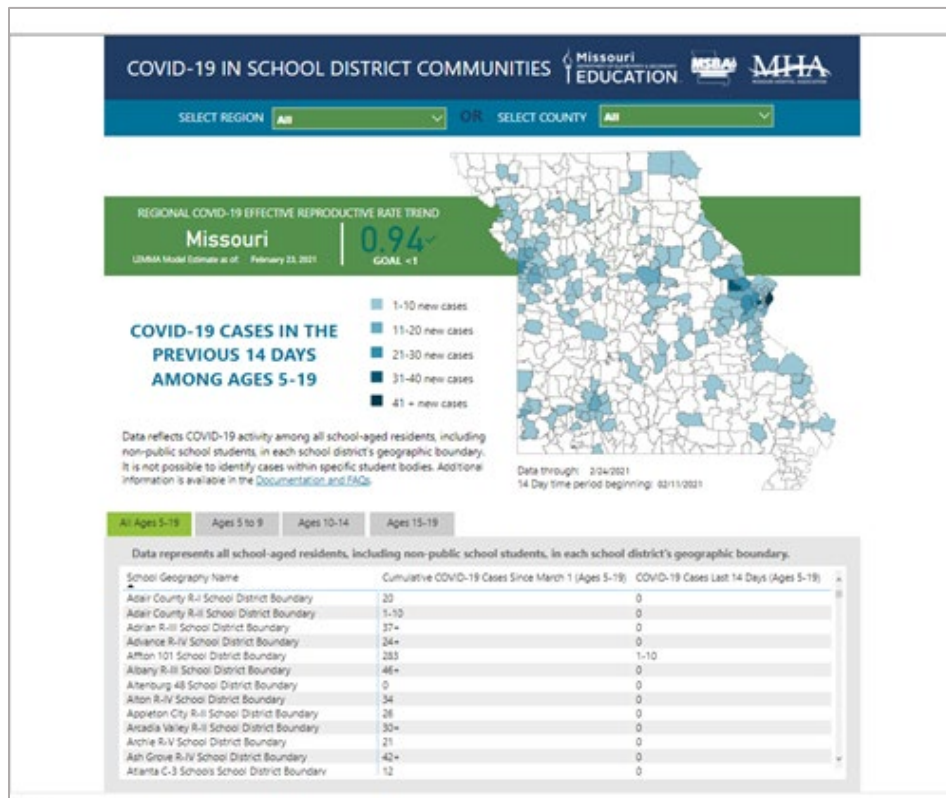


Exhibit 07: Kentucky School Dashboard

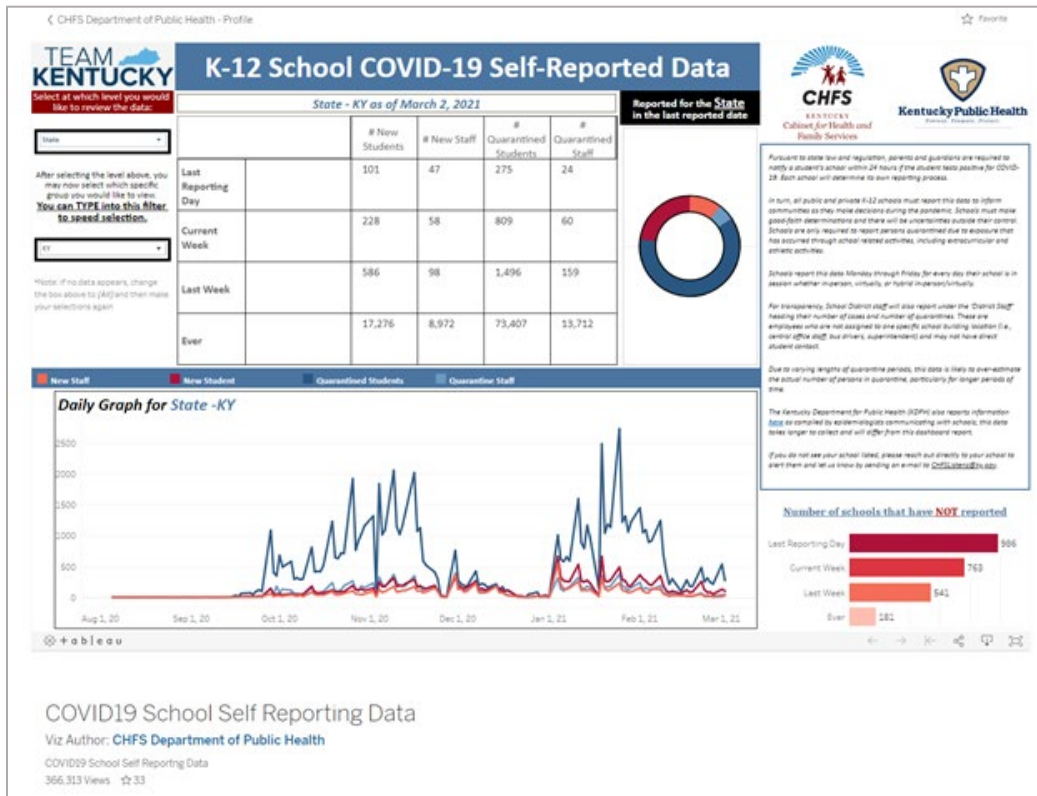


Exhibit 08: Texas School Dashboard

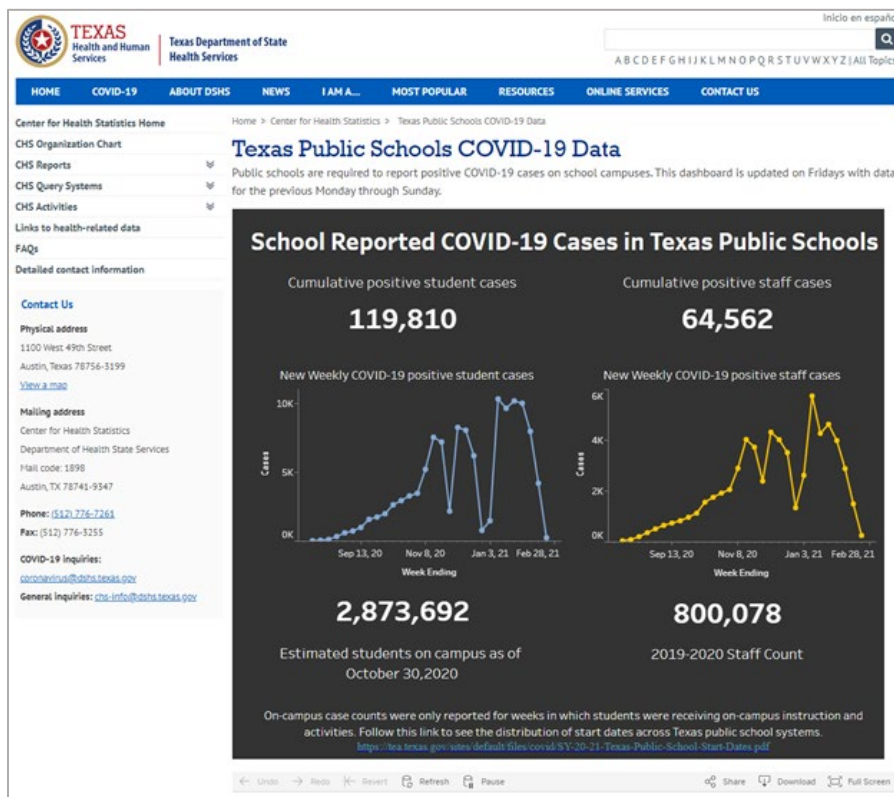


Exhibit 09: Utah School Dashboard

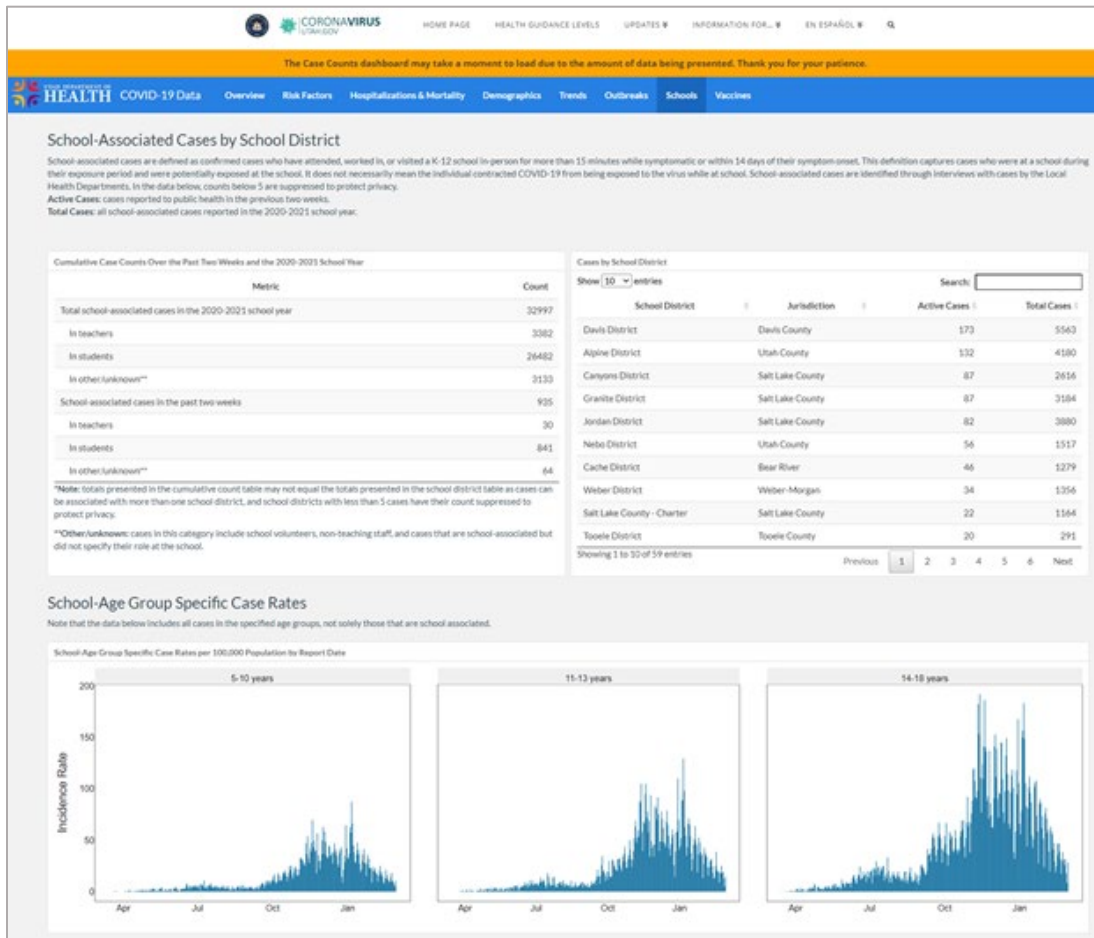


Exhibit 10: Ohio School Dashboard

The screenshot shows the 'State of Ohio | School Reporting' dashboard. It includes filters for 'County' (set to All) and 'School / School District' (set to All). A 'Published: 2-25-2021' timestamp is visible. Below the filters is a table with the following data:

County	School / School District	Type	Student Cases - New Reported	Student Cases - Cumulative	Staff Cases - New Reported	Staff Cases - Cumulative
Clermont	Milford Exempted Village	Public District	8	343	1	78
Clermont	New Richmond Exempted Village	Public District	3	71	0	0
Clermont	Ohio Valley Voices	Preschool	No Cases Reported	No Cases Reported	No Cases Reported	No Cases Reported
Clermont	Ohio Valley Voices	Private School	No Cases Reported	No Cases Reported	No Cases Reported	No Cases Reported

Appendix K. OSDE District-Level Data Provided to OSDH⁵²

Table 05: COVID District Summary

County-District	Description	Positive Test Count	Negative Test Count	Total Test Count	Positive Test Case Count	Close Contact Quarantine Count	Total Case Count	Login Count
01-C001	SKELLY	0	0	0	0	0	0	0
01-C019	PEAVINE	0	0	0	≤3	≤3	4	6
01-C022	MARYETTA	0	0	0	40	128	168	74
01-C024	ROCKY MOUNTAIN	0	0	0	≤3	10	13	18
01-C028	ZION	0	0	0	8	39	47	54
01-C029	DAHLONEGAH	≤3	42	45	≤3	≤3	4	48
01-C032	GREASY	0	0	0	0	0	0	0
01-C033	BELL	0	0	0	0	0	0	≤3
01-I004	WATTS	0	0	0	12	26	38	15
01-I011	WESTVILLE	0	0	0	68	225	293	44
01-I025	STILWELL	0	0	0	66	101	167	21
01-I030	CAVE SPRINGS	0	0	0	≤3	16	19	6
01-N001	IMPACT CHURCH	0	0	0	0	0	0	0
01-P001	COOKSON HILLS CHRISTIAN SCHOOL	0	0	0	0	0	0	0
01-V004	INDIAN CAPITAL, STILWELL	0	0	0	0	0	0	0
02-I001	BURLINGTON	0	0	0	0	0	0	0
02-I046	CHEROKEE	0	0	0	≤3	20	23	10
02-I093	TIMBERLAKE	0	0	0	0	0	0	≤3
03-C021	HARMONY	0	0	0	0	0	0	≤3
03-C022	LANE	0	0	0	≤3	4	6	25
03-C023	FARRIS	0	0	0	0	0	0	0
03-I007	STRINGTOWN	0	0	0	≤3	0	≤3	12
03-I015	ATOKA	0	0	0	0	0	0	≤3
03-I019	TUSHKA	0	0	0	≤3	24	26	23
03-I026	CANEY	0	0	0	0	0	0	0
03-K002	(ILC) ATOKA-COAL COUNTIES	0	0	0	0	0	0	0
03-V007	KIAMICHI	0	0	0	0	0	0	0
04-I022	BEAVER	0	0	0	0	0	0	12
04-I075	BALKO	0	0	0	0	0	0	0
04-I123	FORGAN	0	0	0	0	0	0	0
04-I128	TURPIN	0	0	0	≤3	15	17	33
05-I002	MERRITT	7	28	35	30	141	171	26
05-I006	ELK CITY	37	312	349	0	0	0	23
05-I031	SAYRE	0	0	0	25	46	71	71
05-I051	ERICK	0	0	0	8	65	73	32
05-V012	WESTERN TECH. CTR, SAYRE	0	0	0	0	0	0	0
06-I009	OKEENE	0	0	0	14	59	73	22
06-I042	WATONGA	0	0	0	≤3	≤3	≤3	16

Source: OSDH

⁵² OSDE Report is 18 pages, additional or full report is available upon request.

Appendix L. OSDH Itemized Expenses for Contact Tracing (June 2020-December 31, 2020)

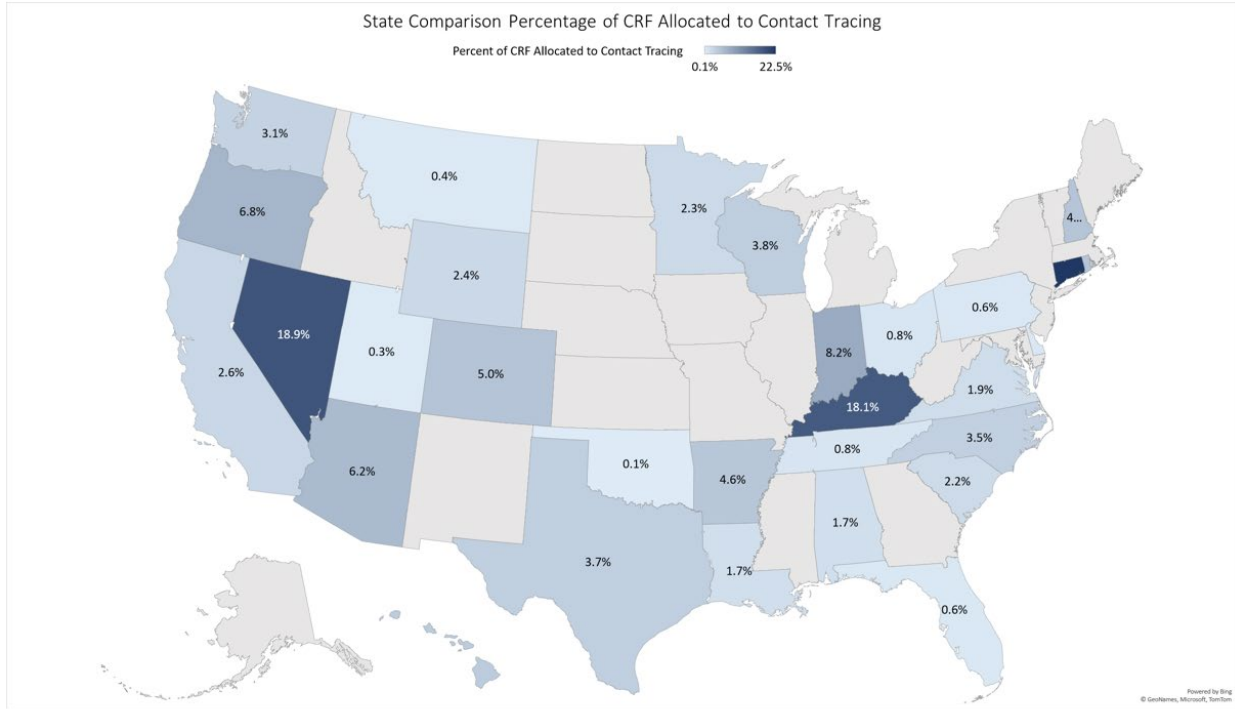
Table 06: OSDH Itemized Expenses for Contact Tracing

OSDH - COVID -19 Contact Tracing Center - Shepherd Mall, Oklahoma C	
Staffing Costs	
OSDH Staff Costs	
Express Employment	4,935,123.55
Professional Services - Epidemiologists	28,112.75
Professional Services - Consultants	102,083.33
Occupation Costs	
Office Lease	204,928.09
Furniture Rental	5,322.73
Security	47,147.30
Printing	
Sanitizing Supplies	
General Office Supplies	
Confidential Waste Recycling	277.45
IT Costs	
Data Costs (inc. laptops/ Tablets)	15,388.01
Copier/ Printer Costs	853.24
Additional Software Costs	
Develop Dashboard for COVID Reporting	268,829.05
MTX Software	151,430.49
Google/Looker-Release 2	65,333.10
Google/Looker-Release 3	138,953.20
MTX-Antibody	207,089.03
Salesforce Licensing	127,777.50
MTX T&M for front end enhancements (Antibody testing)	217,904.05
Softchoice Licensing	208,990.00
	6,725,542.87

Source: OSDH

Appendix M. State Comparison of CRF Expenditures on Contact Tracing

Figure 07: State Comparison Percentage of CRF Allocated to Contact Tracing



Source. Legislative Office of Fiscal Transparency’s analysis based on data from NCSL and NASHP.

Appendix N. 2016 Oklahoma Pandemic Response Plan

Exhibit 11: 2016 Oklahoma Pandemic Response Plan



2016 Oklahoma Pandemic Response Plan

Prepared by the OSDH Pandemic Influenza Committee
February 2016



Source: OSDH⁵³

⁵³ Full report can be found at: [2016 Oklahoma Pandemic Response Plan.pdf](#)

Appendix O. OSDE Oklahoma School Safety Protocols

Exhibit 12: OSDE Oklahoma School Safety Protocols



Source: OSDH⁵⁴

⁵⁴ Full report can be found at: [Oklahoma School Safety Protocols.pdf](#)

Appendix P. Contact Tracers Required to Curb the Pandemic

According to CDC, estimates of the number of case investigators and contact tracers needed in a particular community may be large and will vary depending on a number of factors, including the number of COVID-19 cases reported each day, number of close contacts elicited per case, languages spoken in the community, and the amount of time and resources needed to notify and monitor clients and contacts.⁵⁵ One of the tools CDC recommends for estimating contact tracing workforce needs is an estimator provided by George Washington University and their partners, with the Association of State and Territorial Health Officials and the National Association of County and City Health Officials (NACCHO). Utilizing real-time data, the estimator helps state and local public health officials assess the workforce required to effectively trace contacts of all infected people in their jurisdictions.

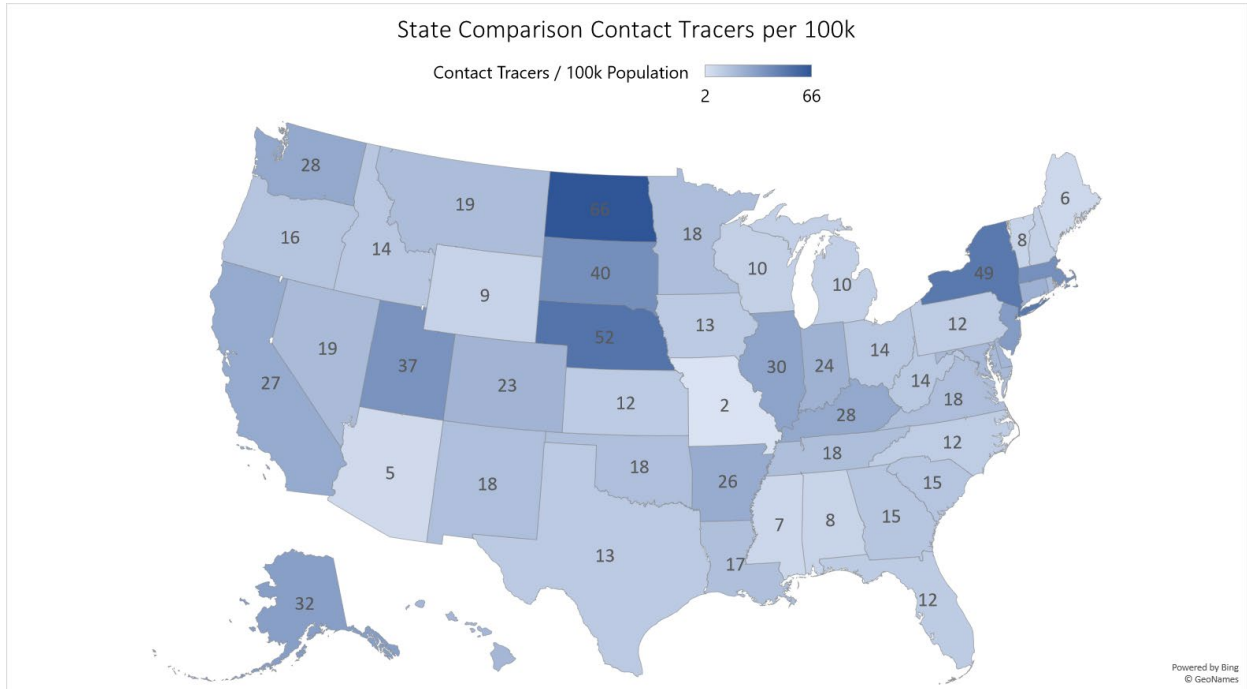
Under non-emergency situations, the NACCHO Contact Tracing Workforce Estimator recommends 15 professionals per 100,000 population.⁵⁶ Given the magnitude of COVID-19, the need to quickly complete contact tracing (within hours versus days for other communicable diseases), and the demand for these services across all areas of the country at once, NACCHO estimates that twice as many professionals will be needed, 30 professionals per 100,000 population. The OSDH's current contact tracing staffing levels falls extremely short of the NACCHO recommended workforce to properly address COVID-19. Current OSDH contact tracing workforce equates to 18 tracers per 100,000; just slightly above the ratio NACCHO recommends for non-emergency situations.

Figure 9 highlights the ratio of contact tracers per 100,000 people by state. Oklahoma is tied for the third most contact tracers per 100k within the region behind Arkansas at 26 and Colorado at 23. Oklahoma's 18 contact tracers per 100,000 people is below the national average at 21.

⁵⁵ Hawaii Contact Tracing Report

⁵⁶ https://www.gwhwi.org/uploads/4/3/3/5/43358451/contact_tracing_brief_05.05.20.pdf

Figure 08: Contact Tracers per 100k Residents Comparison

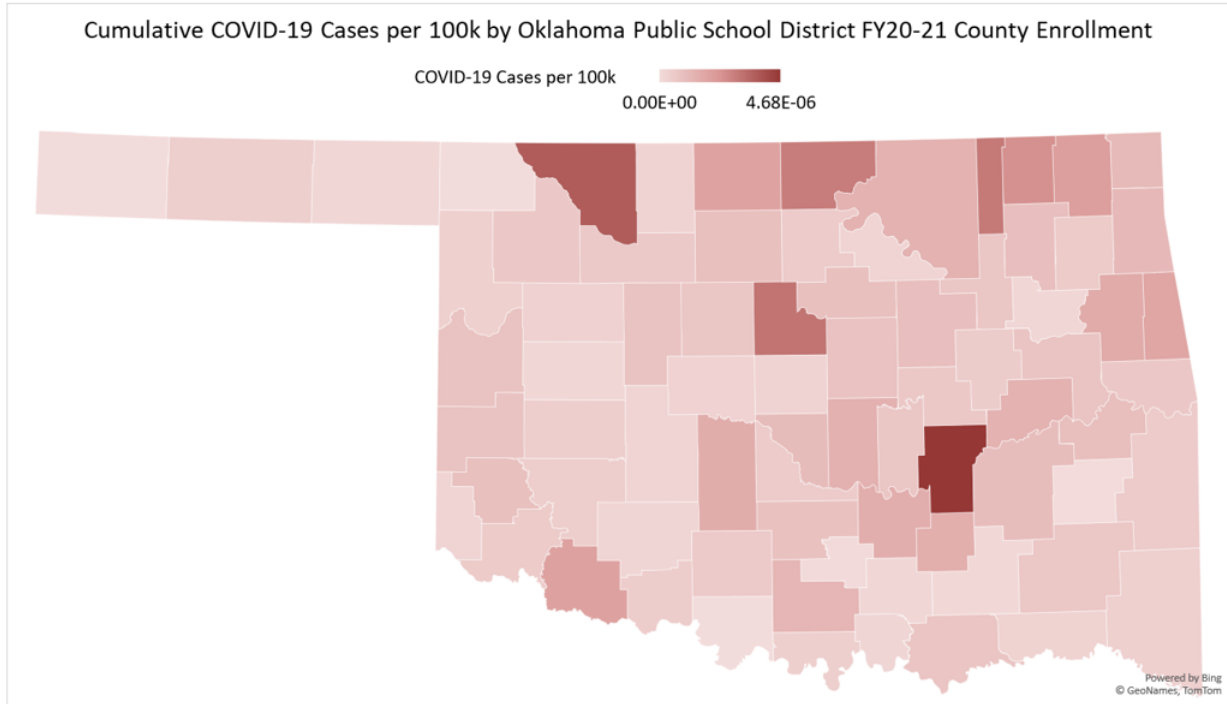


Note. Data is reflected as of March 12, 2021 from the COVID Tracking Project⁵⁷

⁵⁷ <https://testandtrace.com/state-data/>

Appendix Q. Cumulative COVID-19 Cases per 100k by Oklahoma Public School District FY20-21 County Enrollment

Figure 09: Cumulative Cases per 100k by School Districts



Source. Legislative Office of Fiscal Transparency’s analysis based on data from OSDE.

Appendix R. A Comparison Between Case Investigation and Contact Tracing/Monitoring

Table 07: Comparison Between Case Investigation and Contact Tracing/Monitoring.

A Comparison Between Case Investigation and Contact Tracing/Monitoring		
	Case investigation	Contact Tracing/Monitoring
Who does it	Conducted by state or local health department employees with a clinical background (primarily BCHS nurses for DOH)	Various partner organizations are engaged in the process, including organizations directly engaged by PADOH, healthcare facilities, and employers
Who do they engage with	Confirmed positive COVID cases who have a positive test result in NEDSS	Close contacts of cases who are identified during the case investigation process
What happens	<p>The investigator contacts a confirmed case and fills out a questionnaire to identify:</p> <ul style="list-style-type: none"> • Risk factors and where the person may have been exposed • Demographic and clinical information about the disease status of the individual • Who were the close contacts of the case – this information is shared with the contact tracers <p>Provide isolation guidance and written isolation order (or verbal order) to ensure that positive cases do not expose others. The isolation order instructs the case to stay home for a minimum of 10 days.</p>	<p>The contact tracer receives close contact data from case investigators and calls them in order to:</p> <ul style="list-style-type: none"> • Inform the contact of their status and provide them with a quarantine letter (or verbal quarantine order) • Enroll them in a monitoring system, such as SaraAlert, which will automatically check in with individuals in quarantine to assess their status • Manually follow up with individual who decline enrollment in SaraAlert or other automated systems <p>Close contacts are instructed to quarantine for 14 days after their last exposure to the known case. If the case is a household member of the contact, then that quarantine period could be as long as 24 days or more.</p>
What systems are used	<p>Case investigators put all data into NEDSS, the state’s disease surveillance system; this is what allows the daily case information reports to be run</p> <p>Various data systems are used to provide contact investigators with the contact information collected during the case investigation</p>	<p>SaraAlert is used to automatically check in with individuals who are currently in quarantine.</p> <p>Various data systems are used to provide contact investigators with the contact information collected during the case investigation</p>
When does this happen	Case investigations typically happen within 24 hours of a positive test result being entered into NEDSS by a laboratory. It is typically a one-time conversation, although monitoring of isolation compliance may occur.	Contact tracing typically begins within 24 hours of identification of contacts. Contacts are typically followed up with over a 14-day period (since their time of exposure)

Source: [Case Investigation vs Contact Tracing.pdf \(pa.gov\)](#)

Agency Response

- LOFT's response to OSDH response, March 19, 2021
- OSDH Response, March 17, 2021

March 19, 2021



LOFT
LEGISLATIVE OFFICE OF
FISCAL TRANSPARENCY

LOFT's comments on the response from the Oklahoma State Department of Health

As part of LOFT's protocol, agencies are granted the opportunity to respond to the evaluation report and findings. For this rapid response evaluation, which is limited in scope, LOFT analyzed the effectiveness of the State's contact tracing program in limiting the spread of the pandemic, examined costs associated with the program, and identified opportunities for improved outcomes. To complete this work, LOFT engaged the Oklahoma State Department of Health (OSDH), the agency responsible for managing the State's contact tracing efforts and tracking and reporting related COVID-19 data. Portions of the agency's response warrant further clarification and correction, which will be addressed. With this response, LOFT seeks to address questions of fact, and not differences of opinion.

Limited Scope of Project

The limited scope of LOFT's Rapid Response evaluation focused on one element of the State's response: the contact tracing program administered by the Oklahoma Department of Health. LOFT's report does not make a determination on the effectiveness of the State's comprehensive response to the COVID-19 health pandemic. LOFT acknowledges the State's pandemic response required a multi-faceted approach. The contact tracing program was a proactive element of that response, was coordinated by the State, and recommended by governmental leadership and global health organizations as an effective tool for managing the spread of disease.

The Department of Health's response suggests that virus tolls across states were fairly similar, regardless of state actions, an overly broad assessment that does not specifically address contact tracing's role in protecting public health. In response to the pandemic, Oklahoma expanded its contact tracing program, invested state time and resources, and published related data. LOFT evaluated the outcomes of these efforts.

Clarification of Agency's Response:

For clarification, the Department of Health's response often seeks to separate case investigation from contact tracing, when they are two functions within one process. Identifying positive cases without also conducting contact tracing would only collect data on infections and not effect transmission rates.

The Department of Health cites the privacy and security requirements of the Federal HIPPA Act as limitations on making publicly available data regarding the spread of the disease. All states must comply with HIPPA, and based on LOFT's comparative analysis, other states appear to have reached a balance in providing information to the public and protecting individual privacy.

The Department of Health cites the publishing of data about positive cases and deaths as information that assisted the public in making decisions regarding their health and safety. LOFT's analysis found that more detailed information about the greatest areas of risk (e.g., geographical hot-spots or type of activities with high occurrence of spread) could have allowed for more specific behavior modifications, and perhaps avoided unnecessary restrictions to low-risk activities.

March 19, 2021



LOFT’s response to claims of inaccuracy within report:

In response to Finding 1: “Oklahoma State Department of Health (OSDH) Lacked Sufficient Contact Tracing Data to Measure the Impact on Limiting Spread of COVID-19,” the Health Department questions LOFT’s exclusion of data reflecting case investigations occurring at local county health departments and tribal jurisdictions. As detailed in the executive summary of this report, the scope of the evaluation was limited to contract tracing efforts led by the State Department of Health.

OSDH also objects to LOFT’s statements that some data was not provided for review, or that the agency is not collecting outcome-related performance metrics. The agency’s response asserts that the data exists, but is not available due to system reporting limitations. During the evaluation, LOFT became aware that data was provided to the Executive Branch on a weekly basis in the form of a “Strike Report.” LOFT did not receive any copies of this report for review.

In its written response, OSDH provided new information to LOFT regarding the intended use for the “Healthy Together” contact tracing app that was created for the agency.

In response to LOFT’s comparative analysis to other states, OSDH offers a cursory review of each of those states’ entire mitigation approach to the pandemic. LOFT did not evaluate Oklahoma’s comprehensive pandemic response strategy, nor the comprehensive strategy of peer states included in this evaluation. Rather, the report evaluated how other states presented and used contact tracing data as part of their respective strategies.

Regarding OSDH’s attempt to correlate COVID-19 death rates to mitigation strategies, the charts embedded within the agency’s response are an incomplete representation of data as OSDH used aggregated cases instead of common sizing the data for comparison. For example, Colorado and Texas have higher population bases than Oklahoma, so comparing aggregated data is not an accurate reflection of cases by region.

Regional Comparison of Reported COVID-19 Cases, Deaths and Tests per 100k People			
State	Total COVID-19 Cases per 100k	Total COVID-19 Deaths per 100k	Total COVID-19 Tests per 100k
Arkansas	10.7k	182	82k
Colorado	7,647	104	104k
Kansas	10.3k	164	87.1k
Louisiana	9,369	211	114k
Missouri	8,782	140	41.8k
Nebraska	10.4k	111	89.7k
New Mexico	8,758	183	89.1k
Oklahoma	10.9k	118	36.9k
Texas	9,360	158	72.3k

Source: Legislative Office of Fiscal Transparency's Analysis based on data from Opportunity Insights. Data is accurate as of March 16, 2021.

The table created by LOFT (left) illustrates the confirmed COVID-19 cases, deaths and tests per 100k and total since January 2020 as confirmed by the CDC. LOFT’s analysis is based on longitudinal data since the first confirmed case of COVID-19 in the United States.

As illustrated in LOFT’s regional analysis, Oklahoma had the lowest COVID-19 tests per 100k but highest COVID-19 cases per 100k within the region.

March 19, 2021



In response to Finding 2: “OSDH’s COVID-19 Reporting Fails to Align with Stakeholders’ Needs to Make Data-Driven Policy Decisions,” the agency questions the reliability and statistical significance of LOFT’s survey of municipal leaders. While LOFT acknowledges the sample is not statistically representative of all local and municipal leaders, the survey responses represent the voice of the customer and provide a valuable stakeholder perspective.

Regarding OSDH’s statement that it will work with the State Department of Education for potential sharing of the OSSBA alert map information, LOFT would further recommend OSDH reassess use of its own alert map, specifically, if it is intended for internal use by the agency and not for public awareness, then it could create additional confusion for public (external) users.

In response to Finding 3: “Communicable Disease Reporting System was a Known Vulnerability Prior to COVID-19,” OSDH claims the reflection of federal funding dedicated to contact tracing is inaccurate. The agency describes a federal grant specific to staffing costs. OSDH also states “There was never a documented request or expense for contact tracing wherein leadership advised there were insufficient funds...” In the March 15, 2021 exit conference between LOFT and OSDH, it was stated by OSDH that a verbal request had been made and denied for CARES funds. LOFT maintains its observation that the use of CARES funds would have been an appropriate source of funding to address the agency’s technology challenges and testing capacity specific to contact tracing.



Evaluation Report
Rapid Response Evaluation of
Oklahoma Department of Health's
Contact Tracing Program

I. Introductory Comments from Agency regarding the subject of evaluation

LOFT has performed a rapid response evaluation of limited scope regarding contact tracing at the Oklahoma State Department of Health. The work plan on LOFT's website describes the project as the evaluation of efficiency and outcomes of contact tracers related to limiting the spread of COVID-19, including the examination of outcomes of contact tracing for COVID-19 active infections. While contact tracing is certainly one aspect of limiting the spread of COVID-19, there are multiple aspects that contribute to mitigating the overall impact of the virus, including policy implementation (i.e., social distancing, mask wearing, shelter-at-home, business restrictions), a particular state or community's pre-existing health conditions and social vulnerabilities, community adherence to public health guidance, data transparency, and access to medical care and testing. Described as limited in scope, while OSDH appreciates the focus and insight regarding the contact tracing program, this single aspect of a response to COVID-19 cannot be the sole barometer used to define the success or failure of Oklahoma's overall public health response.

Contact tracing has been used for decades by state and local health departments to slow or stop the spread of infectious diseases. Specifically, CDC references contact tracing slowing the spread of COVID-19 by: *Letting people know they may have been exposed to COVID-19 and should monitor their health for signs and symptoms of COVID-19; Helping people who may have been exposed to COVID-19 get tested; and Asking people to self-isolate if they have COVID-19 or self-quarantine if they are a close contact of someone with COVID-19.* [COVID-19 Contact Tracing | CDC](#)

While contact tracing may have been used successfully for years, never before have we faced a worldwide pandemic on this scale of such a highly contagious virus. Techniques used previously faced multiple challenges in a highly-advanced, technical society, wherein decentralized societies are used to operating with a great deal of independence and freedom to make personal choices regarding their own public health. The coronavirus is fast-moving and transmitted through a variety of ways, including close personal contact with an infected individual, less commonly by touching contaminated surfaces like door knobs, or becoming aerosolized when someone sneezes two aisles over in the grocery store or coughs in an elevator. As we emerge from the worst surges of COVID-19, we will now learn which public health measures were the most impactful, and which ones had little to no effect or perhaps even negatively influenced behavior by causing citizens to hide quarantine fatigue behaviors. While previous research demonstrates that mask mandates and limits on group activities, such as indoor dining, can help slow the spread of the coronavirus, states with greater government-imposed restrictions have not always fared better than those without them. [Virus tolls similar despite governors' contrasting actions \(yahoo.com\)](#)

Lancet Global Health scientists concluded that contact tracing works when “less than one percent of transmission occurred before the onset of symptoms.” That is the opposite of the coronavirus: Victims are most contagious before or just as their symptoms begin, research indicates. By the time they are diagnosed and asked for contacts, those contacts are already infecting others. Oxford University scientists also caution that the coronavirus spreads by too many mechanisms “to be contained by manual contact tracing.” [Sorry: Contact tracing isn't the answer to ending lockdowns \(nypost.com\)](#)

A great deal of this evaluation focuses on case investigation, which is related to contact tracing but is, in fact, a different process. Case investigation is the process of working with a person (patient) who has been diagnosed with COVID-19 to discuss their test result or diagnosis, assess their symptom history and health status, and provide instructions and support for self-isolation and symptom monitoring. It is in this process that potential contacts for contact tracing may be identified. Identifying contacts of new cases by itself won't slow down the disease; those contacts must follow public health instruction and quarantine. For COVID-19, the initial guidance was an immediate self-quarantine lasting 14 days from exposure (since revised). This applied to all contacts—even those with no symptoms or a negative test. A good majority of these contacts, fortunately, did not go on to get COVID-19 by the end of that period, but had been asked to put their lives on hold for two weeks for the public good. That means staying home from work (and possibly losing income as a result), arranging for groceries and other necessities, and delegating childcare responsibilities. Early on, we recognized this was not an easy ask, especially for those in a disadvantaged socioeconomic situation. [Can Contact Tracing Work At COVID Scale? | Health Affairs](#)

In countries with centralized governments, like China or Singapore, contact tracing is mandated and compliance is universal. Governments track people's movement through a national phone app or some wearable tracking device. Noncompliance is heavily fined. The common good was prioritized over individual privacy, however, in democratic societies individual rights cause tension with social mandates of washing hands, keeping a distance and wearing a mask. Many of those same strategies that are effective in centralized societies are less likely to work in decentralized ones. Here in the United States, and in Oklahoma, many people do not completely trust the technology that might make digital contact tracing effective. Privacy and individual freedoms seem to rub against the protections offered by quarantining and isolating. Public health had a momentous task in 2020 – testing and tracing COVID-19. Resources were an issue at every step of the response. Our technology was inadequate to meet the needs of such a high demand on a system. In attempting to track and record the spread of COVID-19 in our own state, because of the communal spread of the disease, data transparency became a critical focus. With this need for data was a conflicting need for privacy. All medical and epidemiological records created, received, or otherwise maintained by OSDH are subject to the privacy and security requirements of the Health Insurance Portability and Accountability Act of



1996 (“HIPAA”), 45 CFR Parts 160 and 164, as well as the confidentiality requirements of 63 O.S. § 1-502.2. OSDH is authorized to make disclosures of health information under 45 CFR § 164.514(a) so long as the information is de-identified; meaning that there is no reasonable basis to believe that the information can be used to identify an individual. There are a total of eighteen identifying factors of information that go beyond direct identifiers, such as name or social security number; geographic areas containing less than 20,000 people and elements of dates that are directly related to the individual are also considered to be identifiable information. The agency must also be cognizant of all disclosed information as a whole to minimize risk that the compilation of data leads to the identification of an individual. The HIPAA requirements regarding such records and information were significantly relaxed as they related to COVID-19 and covered entities’ needs to support public health and safety. Accordingly, Oklahoma, along with most, if not all, states and districts published data regarding COVID-19 outbreaks within its jurisdiction on an unprecedented level.

However, even with the leniencies afforded to protected health information (“PHI”) subject to HIPAA relating to COVID-19, OSDH was and is subject to comply with the strict confidentiality standards of 63 O.S. § 1-502.2 for that same information. OSDH’s ability to disclose health information relating to COVID-19 was significantly limited by 63 O.S. § 1-502.2(A) which requires “all information and records concerning any person who has participated in a public health investigation or who may have any communicable or non-communicable disease which is required to be reported” to be confidential and only releasable under eight specific circumstances. These impacted the agency’s ability to disclose information to the public and media, responding entities that were not state agencies or health care providers, employers, and others in a manner that would not have occurred had OSDH only been subject to comply with HIPAA. This statute, unique to Oklahoma, undoubtedly impacted what and how OSDH communicated health information regarding positive COVID-19 cases as compared to other states and districts.

Despite the challenges presented by OSDH being subject to comply with two sets of privacy and confidentiality standards, OSDH does publish and/or disclose an incredible amount of data regarding COVID-19 positive cases, contact tracing, and vaccination administration. Soon after the pandemic reached Oklahoma, OSDH began publishing data for positive cases and deaths by county, regardless of the standard threshold of not releasing for geographic areas with less than 20,000 residents. OSDH expanded on this and also began publishing data for positive cases and deaths in cities regardless of population and ZIP codes with populations greater than 100 residents. OSDH also began to publish statewide demographic information for positive cases and deaths, including age, gender, and race. This cumulative information assists the public in making informed decisions regarding their health and safety.



OSDH also worked closely with several health care providers including medical divisions of tribal nations and military branches, schools, and universities by disclosing data and information and implementing cooperative procedures to contact trace to reduce spread of COVID-19 throughout Oklahoma communities. Moreover, since April 2020, OSDH has disclosed positive case information with first responders, further reducing the risk of spread of COVID-19. In fact, Oklahoma was given a grade of A+ for data transparency according to the COVID Tracking Project, which has been reviewing the data offerings of all 56 states and territories. Based on what data is reported by states, the project gives each state a data quality grade . <https://covidtracking.com/analysis-updates/the-state-of-the-states-data>. You can see the sixteen different metrics tracked and our grade here:

https://docs.google.com/spreadsheets/u/1/d/e/2PACX-1vRL2zG1o-qj9l2sl19d1lj1oHd6WbkJOukFwN04a_ms_ANUdgxTMpl7AF-gbQzwOSreJUDx6PEK7Vnq/pubhtml

In the United States, contact tracing has not been as successful with COVID-19 as it has historically been . Despite repeated efforts to determine contacts and quarantine those affected, many refused to comply and continued to work and participate in social events in town, infecting others and spreading COVID-19. Many had difficulties in complying for numerous reasons, with no paid leave or the inability to isolate in a crowded apartment or home. Many of those we called would refuse to answer the phone or cooperate, for fear of technology or being scammed. Quarantine fatigue, for numerous reasons, was a term we all understood and realized its potential in limiting the effectiveness of contact tracing. As we started to see case numbers double and triple, and hospitalizations increase to the point of exceeding capacity, some looked to contact tracing as the answer. However, contact tracing was not intended or able to stop or limit those overwhelming numbers that were due to a variety of factors .

[Is Contact Tracing Working in the U.S.? - The Atlantic](#) and [Contact Tracing Is Failing in the U.S. Here's How to Fix It. \(northwestern.edu\)](#)

While we should and will strive to improve upon all aspects of our response, we also believe the most important measure of a state's pandemic response is lives saved. Despite incredible challenges, Oklahoma is among the top states in the nation for COVID fatalities per 100,000, often performing better than the model contact tracing states discussed in this report.

<https://www.beckershospitalreview.com/public-health/us-coronavirus-deaths-by-state-july-1.html>

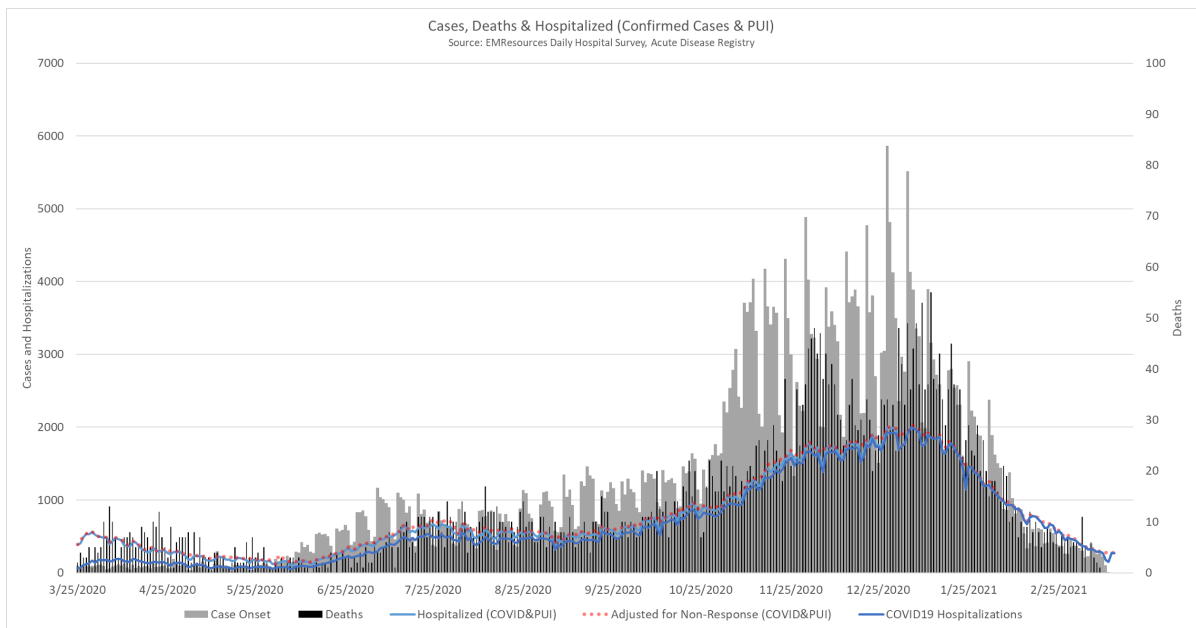
Nevertheless, OSDH's data infrastructure and contact tracing capabilities are among the agency's top priorities for improvement. For that, we are incredibly grateful for the hard work and research contributed by the LOFT staff in this report. We look forward to working with

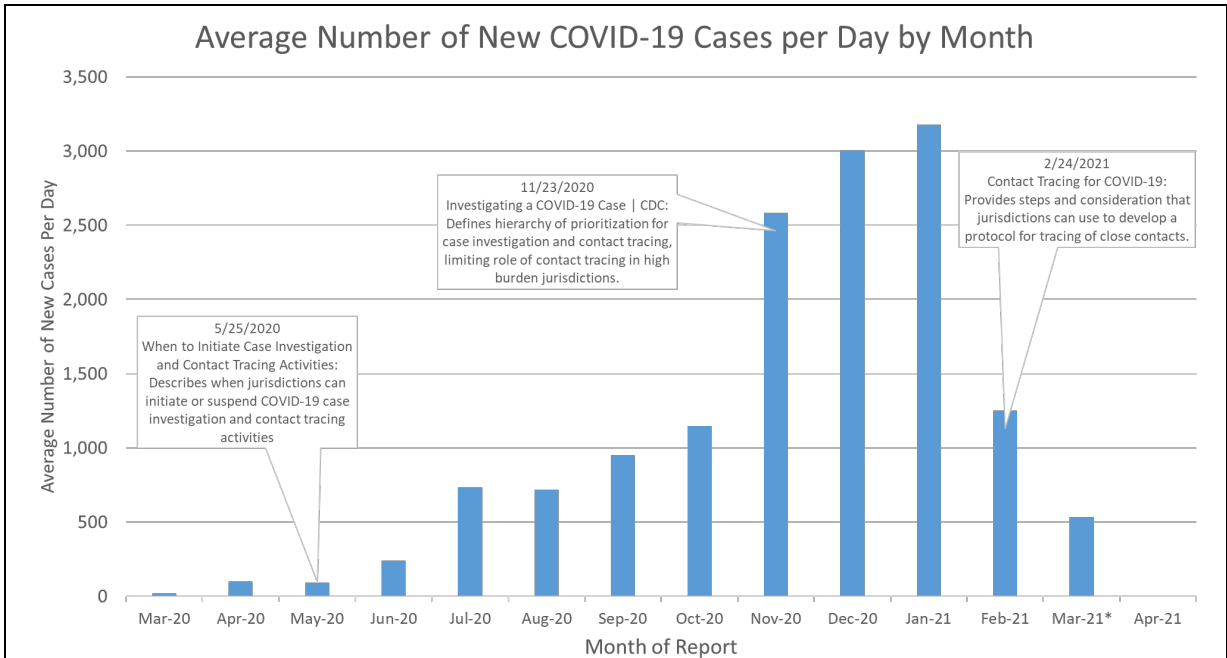
LOFT as well as the members of the Oklahoma Legislature on this project and others as we work together to improve health outcomes in Oklahoma.

Finding 1: Oklahoma State Department of Health (OSDH) Lacked Sufficient Contact Tracing Data to Measure the Impact on Limiting Spread of COVID-19

Does the agency agree with the facts as presented?	Does the agency agree with the recommendations related to this finding?
Yes, in part, with technical response and clarifications.	Yes.
<p>Agency Comments and Clarifications (Technical response)</p> <p>In Chart 01 as reflected, the inference is that OSDH failed to investigate over 100,000 cases. Cumulative cases represent total cases across Oklahoma, except OKC and Tulsa, including all other counties and tribal jurisdictions. Due to the utilization (and migration) of two different IT systems, PHIDDO and MTX, for case investigation and contact tracing – this data fails to reflect all the case investigations occurring at the local county health departments who were utilizing PHIDDO as well as the tribal jurisdictions who investigate their own cases. It is interesting to note that OCCHD and THD were not included in this chart as they represented the largest numbers of COVID-19 cases. PHIDDO and local case investigations and contact tracing became more difficult to track without the use of MTX, as well as the fact that many contact tracing efforts became shared with local school districts for expediency purposes and confidentiality reasons.</p> <p>OSDH objects to the characterization/comment regarding any perceived failure to provide additional data when numerous emails document OSDH’s intent to fulfill any further outstanding data needed yet further reports were not requested. Further, the inference that OSDH is not collecting data for outcome related performance metrics is an inaccurate representation. The data is present, but is not yet available until we fully convert into MTX. After that point, we can begin requesting reports which will contain the recommended, yet not required, CDC metrics.</p>	

In this chart, with the rolling averages of COVID-19 cases over the past year, the CDC guidance which is reflective of the continually changing priorities for case investigation/contact tracing is overlaid.





While cases were growing at an alarming rate, the entire country was experiencing a similar fate and the CDC recognized the first priority as case investigation— not contact tracing. Our jurisdictions immediately began implementing this guidance which is reflected in the slowdown of contact tracing. Without first properly notifying positive cases of their health status, contact tracing becomes obsolete. With the higher amount of community spread and positivity, contact tracing is less effective and other community mitigation efforts are an alternative source of mitigation.

Further, the mention of the contact tracing app, “Healthy Together”, has no bearing upon the disbandment of the centralized call center as it is strictly applicable only to college and university settings.

As described numerous times to LOFT, OSDH was at a disadvantage during the pandemic response due to the outdated technology in place with our disease surveillance system, PHIDDO. Described as converting from a home kitchen to operating a Chick- Fil- A fast food restaurant with a triple drive thru, the demands placed upon PHIDDO caused latency issues, as well as a failure to filter or obtain data from this antiquated technology. OSDH implemented many of the CDC recommended metrics for reporting on contact tracing in its weekly reports, but several of them could not be obtained either due to PHIDDO’s inability to extract and/or collect the data and the fact that the new system employed to house COVID-19 disease data could not effectively “talk” to PHIDDO. Full implementation and usage of MTX for COVID-19 is near completion as of the date of this report.

LOFT recognizes Colorado, Kansas and the District of Columbia for their use of contact tracing data in reducing the spread of COVID-19. OSDH participates in routine (often weekly) calls with many of our

peers in other states to receive and share information on successful strategies and shared difficulties, including with the CDC, ASTHO, the White House, and the NGA. However, in the limited scope of this evaluation, LOFT is perhaps unaware and unable to take into account the many other mitigation efforts utilized by the various states in attempting to mitigate COVID-19. In fact, Johns Hopkins dedicates an entire section of their esteemed Coronavirus Dashboard to look at how social distancing measures may have influenced trends in COVID-19 cases and deaths. While mitigation efforts differed, only Colorado holds a slight advantage in fewer COVID-19 death rates per capita, with Oklahoma well above the average as compared to the District of Columbia and Kansas. • [U.S. COVID-19 death rate by state | Statista](#) This seems like an unfortunate statistic to tout, yet we also performed as well or better than several of these comparison states in numbers of COVID-19 cases per 100,000 capita. See the charts below.

The states LOFT highlighted each had very unique and differing approaches to COVID-19 as demonstrated below:

Kansas: Gov. Laura Kelly issued a mask mandate, effective Nov. 25. Individuals over age 5 must wear a face covering in indoor public spaces, when obtaining health care services, while using transportation services, or in outdoor public spaces if a 6-foot distance between non-household members cannot be maintained. Businesses must also require employees, customers and visitors to wear a face mask when in an enclosed space where social distancing cannot be maintained, or when in an area where food is being prepared or packaged, among other circumstances. Counties can opt out of the mandate or issue their own. Previously, Kelly announced that counties should come up with their own plans to reopen businesses. A statewide plan to restart the economy in phases offers guidance, but counties aren't required to follow it. The State Department of Health and Environment mandated a 14-day home quarantine for people arriving in Kansas who traveled to certain states or countries with widespread transmission or attended an out-of-state mass gathering and didn't wear a mask and practice social distancing. The mandate also applies to anyone who traveled on a cruise ship on or after March 15. Early efforts to curtail the emergency powers of Gov. Laura Kelly, a Democrat, resulted in decisions about restrictions being left up to individual counties. Gov. Kelly issued a statewide mask mandate in July, but counties are allowed to opt out of the order. A number of counties, including Johnson County, have a mask order in place.

District of Columbia: Mayor Muriel Bowser announced that she will loosen some coronavirus restrictions. Effective March 22, outdoor gatherings of 50 people are allowed (up from 25). Indoor gatherings must comply with CDC guidance, such as ensuring guests remain 6 feet apart. Indoor dining can continue at 25 percent capacity or 250 people (whichever is smaller). Restaurants can serve alcohol until midnight. Gyms and fitness centers can operate at 25 percent capacity or 250 people. Indoor group classes must be capped at 10 people and outdoor classes at 50. Museums and libraries can continue to operate at 25 percent capacity, although the Smithsonian museums haven't reopened. Grocery stores and big-box retailers can continue to operate, but they must implement social distancing and limit occupancy. Visitors to Washington coming from areas with a high rate of infection must either get a coronavirus test 72 hours before arrival and be tested again three to five days after arrival or self-quarantine for 14 days. District residents returning from other states must

limit their activities for two weeks or get tested upon their return; residents of Maryland and Virginia are exempt. Vaccinated travelers are also exempt. The mayor ordered people older than 2 to wear a mask when leaving their residence if more than fleeting contact with others is likely. Masks also must be worn on National Park Service-managed lands, including trails, when physical distancing cannot be maintained. Mayor Muriel Bowser will relax restrictions on outdoor gatherings, sports and the sale of alcohol in restaurants, starting March 22. Movie theaters will reopen at 25 percent capacity, and after March 29, some public libraries will reopen too. Masks mandatory.

Colorado: Under the direction of Gov. Jared Polis, the health department updated the state's Dial framework to Dial 2.0, a tool that determines restrictions by county. Counties fall into one of six color-coded levels of risk, depending on the incidents of COVID-19. Level green is the least restrictive, under which businesses can operate at 50 percent capacity or 500 people, whichever is smaller. In level-blue counties, public and private gatherings cannot exceed 10 participants or people from more than two households. Restaurants, indoor event venues and houses of worship can operate at 50 percent capacity or 175 people, whichever is smaller. In yellow counties, public and private gatherings cannot exceed 10 participants or people from more than two households. Restaurants and indoor event venues can operate at 50 percent capacity, with a maximum of 50 people per room (the maximum might be higher for larger establishments). In orange counties, public and private gatherings cannot exceed 10 participants or people from more than two households. Restaurants can operate at 25 percent capacity, with a maximum of 50 patrons per room. In red counties, restaurants must halt indoor dining, but outdoor table service, delivery and takeout are permitted. Gatherings with members outside the household are prohibited, and indoor events are closed. Limited exceptions include gatherings at houses of worship, which can operate indoors at 25 percent capacity or 50 people (whichever is smaller). Outdoor events are limited to 25 percent capacity or 75 people (whichever is smaller). Retail stores can operate at 50 percent capacity and personal care services at 25 percent capacity. Gyms can operate at 10 percent capacity, with a maximum of 10 people. No counties are in the most restrictive purple level. The amended order took effect Feb. 6.

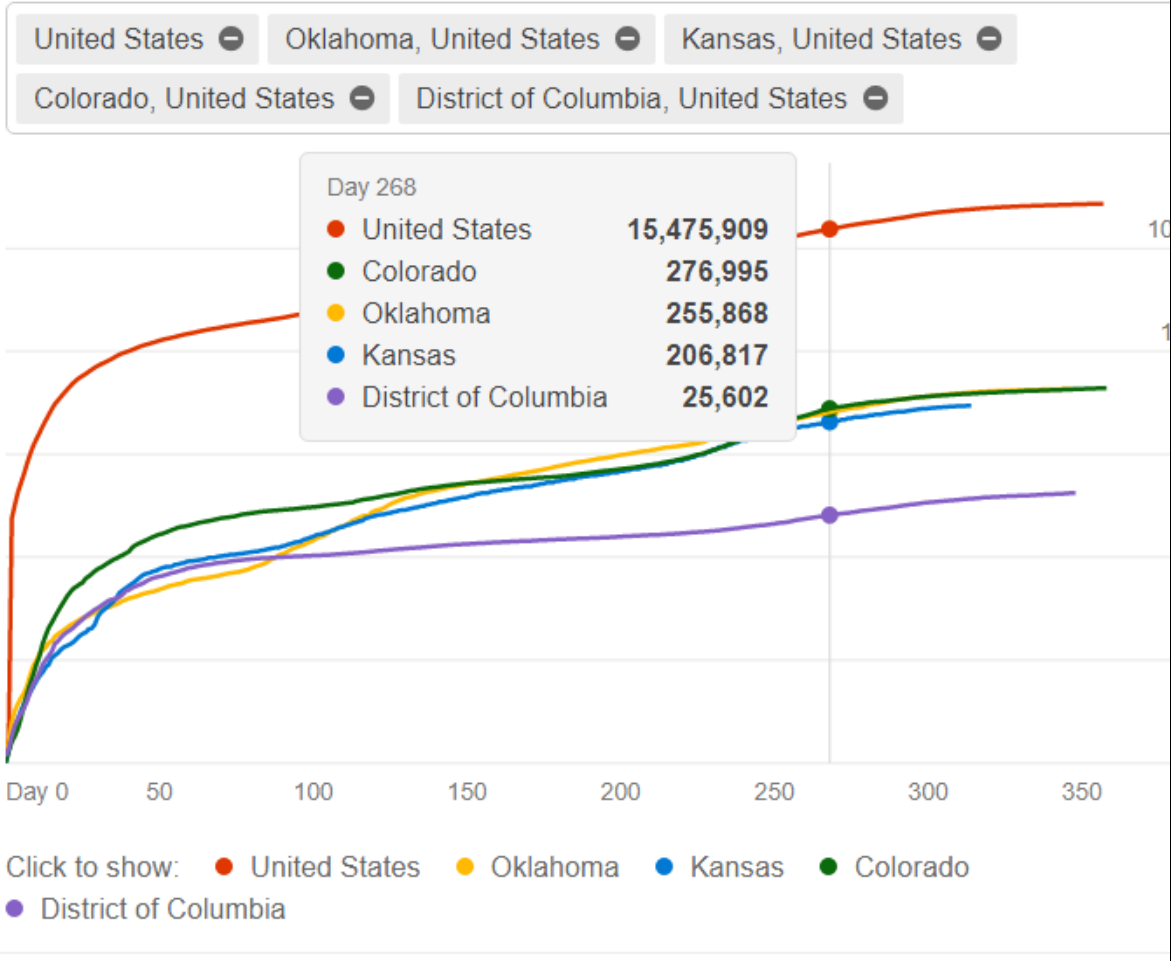
A mask mandate remains in effect. People 11 and older must wear a face covering in indoor public spaces or while using public transportation or ride-hailing services. Workplaces can deny service or admission to customers who aren't wearing a face mask. An organization can request a waiver from the state for certain indoor activities if wearing a mask during an activity is not practical.

[Impact of Opening and Closing Decisions in Kansas, New Cases - Johns Hopkins \(jhu.edu\)](#)
[comparison of covid cases in united states per capita - Bing](#)

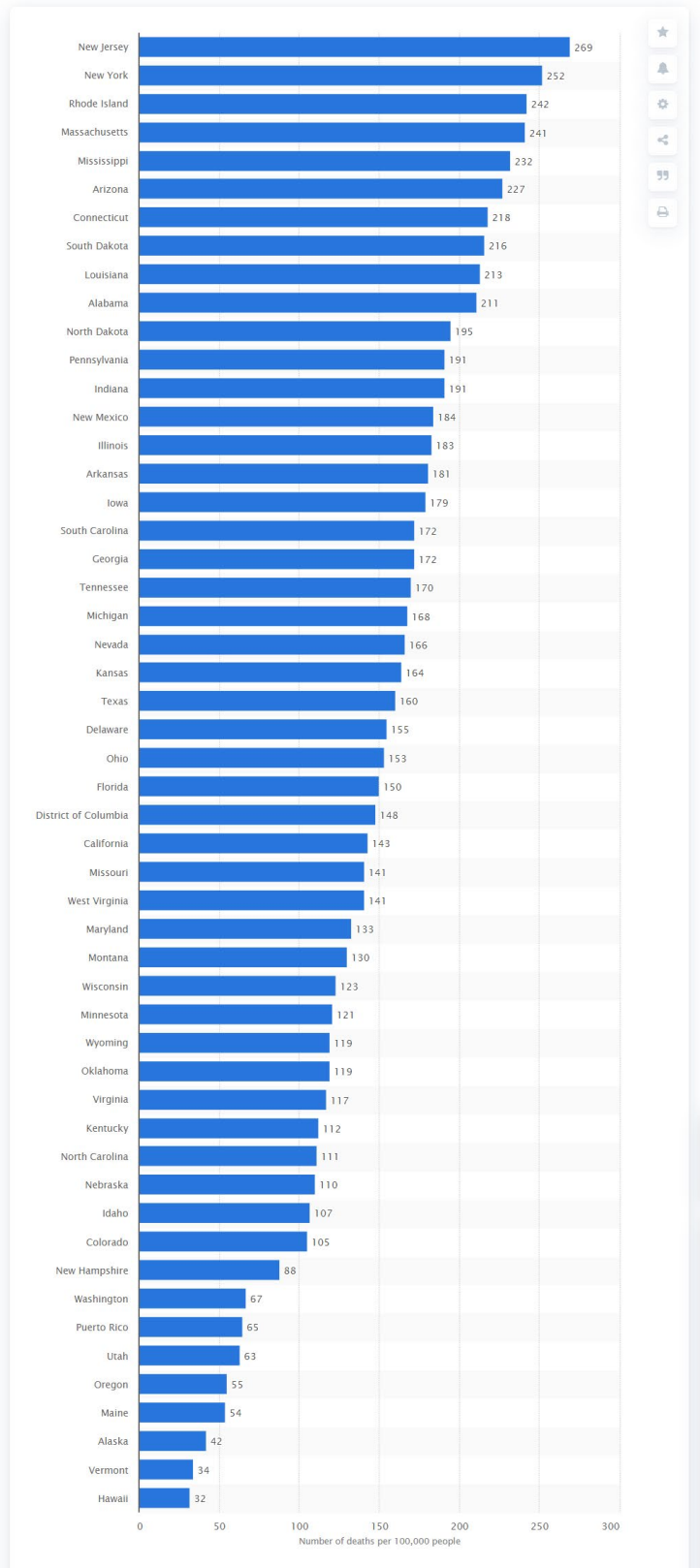
While different in approach as described above, OSDH is open to learning from the successes of other states and incorporating as much data as legally permissible into its own dashboard once MTX is fully functional as the COVID-19 disease database.

Compare cases by region

Starting the day 100+ cases were confirmed in each region



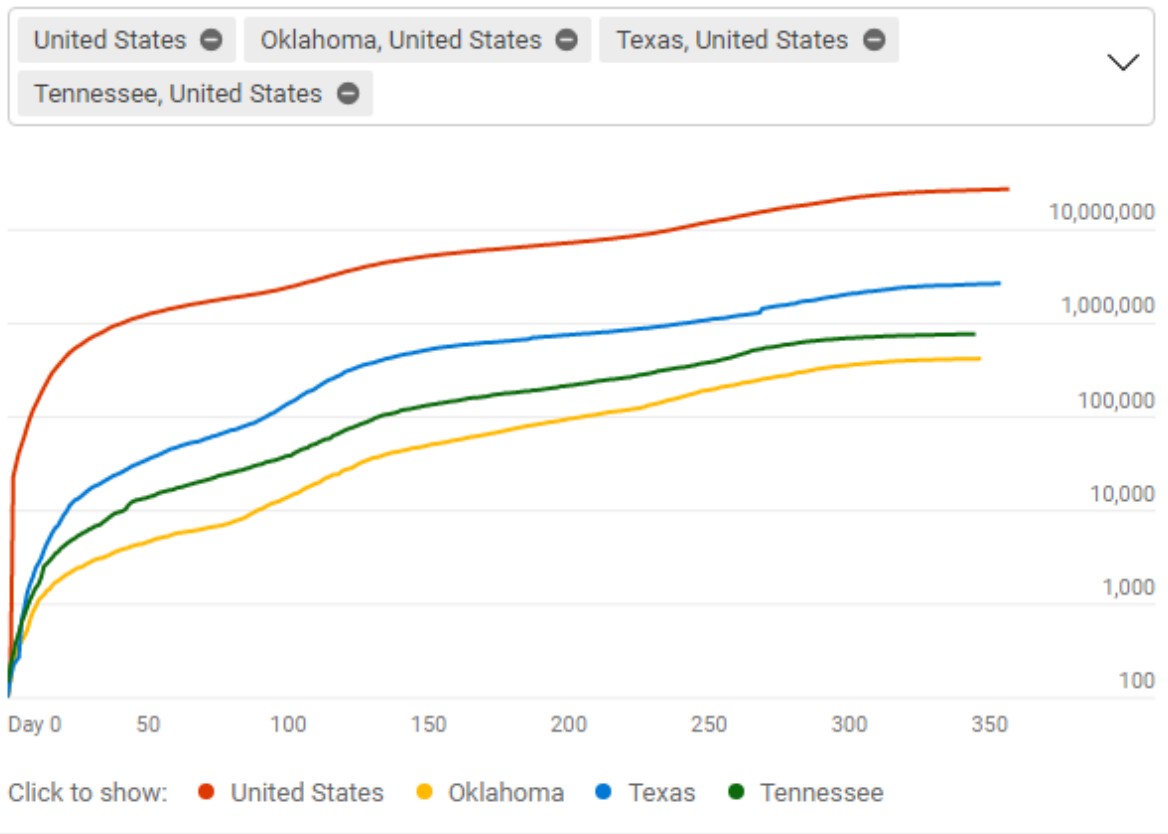
Death rates from coronavirus (COVID-19) in the United States
state
(per 100,000 people)



Instead, with less business restrictions and local mask mandates more the norm, Oklahoma might better be compared to Texas and Tennessee. Oklahoma also fared better in terms of COVID-19 deaths, 121 per 100,000 individuals versus 161 and 169 per 100,000, respectively. [COVID-19 death rates by state: March 17 \(beckershospitalreview.com\)](#) and [comparison of covid cases in united states per capita - Bing](#)

Compare cases by region

Starting the day 100+ cases were confirmed in each region



While our own privacy laws prevent the sharing of some information (as described in our opening statement) which many other states are able to share, we also had the limitations of our IT systems in extracting data. Pitting old technology against Google’s MTX platform did not allow for any ease in sharing information between the two. OSDH is a science-based agency and while we can ask individuals during the case investigation process where they might have been in the past 14 days, their response only shows the frequency of data and not where someone actually contracted the disease. This question mentioned and included in the case investigation interview about where someone who tested positive for COVID-19 had been over the past 14 days, while subject to great

scrutiny as to disease surveillance and the potential for hot spots, is not a scientific basis for determination of where someone actually contracted COVID-19.

Finally, while OSDH would agree that our technology falls far short of where it needs to be, we would assert that we did everything within our legal rights to share data. As early as mid-April 2020, we obtained an opinion from the Attorney General to allow OSDH to share zip code level data to areas of 100+ persons to ensure that individuals could make data driven decisions on where to go and what to do based upon the level of COVID positive cases in their local area. While we would have liked and still hope to share more data in the future, some of our own laws held us hostage in our ability to be transparent.

Finding 2: OSDH’s COVID-19 Reporting Fails to Align with Stakeholders’ Needs to Make Data-Driven Policy Decisions.

Does the agency agree with the facts as presented? Yes, with clarifications and technical response below.	Does the agency agree with the recommendations related to this finding? Yes.
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Agency Comments and Clarifications (Technical response)

In reviewing the survey results, OSDH would cast doubt upon the reliability of a survey of 40 municipal leaders with only 9 responses ability to qualify as a statistically significant and reliable result for the State of Oklahoma. A power analysis to determine the appropriate survey (sample) size involves the effect size, sample size, significance level and statistical power. This type of analysis allows you to see the sample size you'll need to determine the effect of a given test within a degree of confidence. With such a small survey and an even smaller result (less than 23% of those surveyed), the accuracy of this result is highly questionable as statistically significant.

Interestingly, several of these few respondents actually responded that they relied upon the county health department as the most valuable resource for COVID-19 data for decision-making purposes. In fact, all county health departments – other than Oklahoma City County Health Department or Tulsa Health Department – operate autonomously with OSDH and utilize the same information and data. We have worked for years for communities to trust and rely upon their local health departments for public health information, and while limited in its results, this survey may demonstrate that these efforts paid off for OSDH and the State. While the respondents may not have been aware, much of the information on guidance on specific actions to be taken to reduce risk levels were already available on the OSDH website.

OSDH also notes that the White House reports were available to the public during much of this period, but the request for the release of such information was in the control of the Executive Branch.

OSDE and OSDH worked very closely together regarding the data published by OSSBA (alert map) that LOFT mentions which differs from the OSDH color-coded alert system. OSDE was focused on a more narrow and sensitive view of the data to inform its districts of COVID cases. OSDH had no issue with this sort of focus and instead utilized something that was modeled off the original White House 3-tiered structure for alert reporting. This chart changed at certain points within the response after

working closely with external partners, including the medical community, to ensure that our ability to respond to the number of COVID-19 cases was based upon the right factors. Multiple changes helped get us to the point of adjustments needed so we had a trigger for the proper level of response.

OSDH and OSDE worked closely together, sharing data and best recommendations regarding the formulation of risk levels and data threshold implications, as well as health protocols, and we will continue to do so. OSDH is reaching out to OSDE about possibly sharing this OSSBA alert map information on a link through the OSDH website. Both agencies have differing and stringent confidentiality requirements impacting the ability to share information, but we will work with each agency’s legal department to ascertain if this is feasible.

Finding 3: Communicable Disease Reporting System was a Known Vulnerability Prior to COVID-19

Does the agency agree with the facts as presented? Yes, with few technical notes.	Does the agency agree with the recommendations related to this finding? Yes.
<p>Agency Comments and Clarifications (Technical response)</p> <p>OSDH agrees that PHIDDO is a vulnerability and has a plan for replacement. In fact, this finding #3 is actually the root cause of Findings #1 and #2. Our communicable disease reporting system, PHIDDO, is used not only by OSDH and all local county health departments, Oklahoma City County Health and Tulsa Health Departments, but also by all hospitals. PHIDDO’s original architecture is compatible with Silverlight as described, and an alternative to Microsoft Silverlight has been identified that our PHIDDO support team is investigating. This is a risk mitigation option.</p> <p>A multi-pronged approach is being utilized to address the disease reporting and case management needs of the state. PHIDDO has been the singular system for all infectious diseases in the state for over a decade. A reporting system, SpringML, dedicated solely to COVID-19 lab reporting has been deployed. That system directly interacts with MTX that is being utilized for case management of COVID-19. To be clear, GoogleMTX does not exist. MTX is a consulting vendor that built a solution in the Google Cloud Platform. Early during the pandemic, as OSDH and OMES were exploring the limits and capacity of PHIDDO, it was decided by Secretary David Ostrowe that the MTX system would be utilized as a solution for building capacity to respond to COVID-19. The third system described within our plan and the report is NBS. NBS, part of the CDC solution available to states, is for both reporting and case management of all infectious diseases in the state. While this may seem unfairly complicated, nearly every state has found that the demands of COVID-19 has overwhelmed traditional systems such as NBS when used exclusively for the COVID-19 response.</p> <p>The plan, at a high level, for replacement of PHIDDO is listed below. Our next steps are to draft systems and work sequence views:</p>	

Disease business if fully integrated into NBS, except for TB, Rabies, RW & HIV
 NBS replaces disease reporting from PHIDDO, except for TB, Rabies, RW & HIV

1. Configure NBS for diseases
2. Establish ELR data feeds to NBS
3. Develop/configure reports for CDC
4. Migrate most recent two years of data from PHIDDO
5. Test NBS
6. Train Health team to use NBS
7. Communicate change to NBS to Health and partner teams (external)
8. Train external partners to use NBS
9. Deploy NBS
10. Remove Health personnel access to PHIDDO, except for TB, Rabies, RW & HIV

TB, Rabies, RW, HIV in long-term clinical management systems, not PHIDDO
 TB, Rabies, RW, HIV have standard reporting system to CDC

1. Gather functional and reporting requirements
2. Research and evaluate systems available
3. Select systems to implement and establish agreement with vendors
 - a. There will be more than one system to meet these objectives
1. Configure systems for functional and reporting needs
2. Migrate data from PHIDDO as appropriate
3. Test systems
4. Train Health team to use systems
5. Communicate systems changes to Health and external partner teams
6. Train external partners to use solutions
7. Deploy solutions
8. * may have to run through this sequence multiple times (maybe once for each disease)
9. * if TB and RW do not have its own solution when move to NBS happens, manual or automated integration from PHIDDO to NBS for TB may be required

One database for all lab results, we do not have a disease specific test results db

1. Current ingestion points: SML, Rhapsody, NBS
2. Determine preferred lab ingestion point
3. Continue to use all ingestion points
4. For new data sources, onboard into preferred lab ingestion point
5. For material maintenance issues with non-preferred ingestion points, migrate to preferred ingestion point
6. End result is move to preferred ingestion point as convenient
7. * scope of HIE integration TBD

Outbreak management system in place for CT/CI if/when needed, functioning above and beyond NBS, yet integrated w/ NBS

1. Gather requirements

- a. Look to other states for what they are successful with
2. Research and evaluate systems available
3. Select systems to implement and establish agreement with vendors
4. Configure systems for functional and reporting needs
5. Migrate data from PHIDDO and/or other sources as appropriate
6. Test systems
7. Train Health team to use systems
8. Communicate systems changes to Health and partner teams
9. Deploy solutions

PHIDDO data should be archived and accessible

1. Identify scope of data to be archived as well as retention period
2. Gather requirements for interacting with PHIDDO data archive
3. Research and evaluate systems available
4. Select systems to implement and establish agreement with vendors
5. Configure systems as appropriate
6. Migrate data from PHIDDO
7. Test systems
8. Train Health team to use systems
9. Communicate systems changes to Health and partner teams
10. Deploy solutions

Mention of the CDC's "concerns" and the source of such a comment is unclear. The CDC has not previously made clear to OSDH a level of concern regarding the use of PHIDDO prior to COVID-19, and it was during COVID-19 that we actually approached the CDC about a solution through NBS. While previously NBS was considered as rigid and not fully functional for Oklahoma's needs, NBS has progressed. Clearly, only 20 states are still utilizing NBS as a free resource, and if it were a turnkey solution, likely all states would utilize this free resource. The CDC allows individual states the freedom to choose their own surveillance systems.

While PHIDDO has certainly been overwhelmed as described, many of the delays referenced are also attributable to external partners. While OSDH utilized internal and additional temporary staff to ensure that lab entries were entered timely, partners often submitted labs 1-2 weeks late (or months late), choosing instead to care for patients by administering tests as quickly as possible. These external partners' actions in submitting lab results are outside of OSDH control. To be fair, during the height of the pandemic, labs were also operating at an unsustainable capacity and did all they could to ensure testing and results were performed accurately. While medical providers followed up with patients positive for COVID-19, the formal reports were not always sent back timely due to competing priorities.

Regarding the support from OMES, the thirteen people referenced are in the application development team within OMES IS. They provide the following primary functions:

- 1) Administer applications - manage access, upgrades, patch vulnerabilities, etc.
- 2) Provide support to users
- 3) Enhance applications - small improvements that don't scale up to be a project
- 4) Large improvements in the form of projects

From an IT discipline perspective, they are a mix of system administrators, software developers, database administrators and managers. OSDH has over 180 different applications, which are a mix of "off the shelf" and custom applications.

In addition to the thirteen people above, two leadership positions are also dedicated to Health. Additionally, Health has access to "shared services" from OMES IS, such as the service desk, desktop support and information security team members. Something to consider is what Health does not have when it comes to dedicated OMES IS support. Health does not have: business analysts, program or project managers, desktop support, architects, data analysts, network engineers or anyone dedicated to managing "incidents" when something unexpectedly does not work.

The IT strategic plan which was referenced was developed before most of current leadership joined Health and certainly does not take the pandemic response into consideration. Also, since it was developed with a prior leadership mindset, this may not be as applicable to the leadership today, but given the timing of the pandemic this specific plan has not yet been revised overall.

Finally, it is worth noting that Chart 04 is not a full and fair description of contact tracing costs as a percentage of COVID-19 relief funding. While it is true that the contract staff salaries were paid from a different grant, this grant was specifically set aside for reimbursement of contact tracing and case investigation funds, not a routine grant as described. The total of \$55 million described was for a combination of expenses, including expanding Oklahoma's testing and ongoing disease monitoring system, which is critical to successfully contain the spread and impact of the pandemic in Oklahoma's diverse communities. This project was to fund and implement all three phases. Based on assessment of need, our strategy for implementation encompasses three core components: testing capacity, reporting systems, contact tracing and case investigation. With these components, each one played out just a bit differently as we progressed, with testing becoming the most expensive of the three. With other grant funding available, OSDH made the choice to fund those contract staff salaries from the grant so that more testing could be funded as needed. There was never a documented request or expense for contact tracing wherein leadership advised there were insufficient funds to further this effort. While we attempted to make efficient and thoughtful choices regarding our funding sources, we also were very invested in the case investigation and contact tracing process, building out technology for text notification, utilizing the InContact system for our call center approach, and ensuring health and safety standards were of the highest standard at this time in our centralized facility. Also, OSDH employees, while not specifically listed, spent countless hours working on case investigation and contact tracing, and those salaries are not reflected here.