INTEGRITY OF DATA REPORTED ON THE COVID-19 DASHBOARD

OFFICE OF PUBLIC HEALTH
LOUISIANA DEPARTMENT OF HEALTH

PERFORMANCE AUDIT SERVICES
DATA ANALYTICS UNIT
ISSUED DECEMBER 16, 2020

LOUISIANA LEGISLATIVE AUDITOR
1600 NORTH THIRD STREET
POST OFFICE BOX 94397
BATON ROUGE, LOUISIANA 70804-9397

LEGISLATIVE AUDITOR
DARYL G. PURPERA, CPA, CFE

ASSISTANT LEGISLATIVE AUDITOR
FOR STATE AUDIT SERVICES
NICOLE B. EDMONSON, CIA, CGAP, MPA

DIRECTOR OF PERFORMANCE AUDIT SERVICES
KAREN LEBLANC, CIA, CGAP, MSW

FOR QUESTIONS RELATED TO THIS MEDICAID AUDIT UNIT REPORT, CONTACT CHRIS MAGEE, DATA ANALYTICS MANAGER, AT 225-339-3800.

Under the provisions of state law, this report is a public document. A copy of this report has been submitted to the Governor, to the Attorney General, and to other public officials as required by state law. A copy of this report is available for public inspection at the Baton Rouge office of the Louisiana Legislative Auditor and online at www.lla.la.gov.

This document is produced by the Louisiana Legislative Auditor, State of Louisiana, Post Office Box 94397, Baton Rouge, Louisiana 70804-9397 in accordance with Louisiana Revised Statute 24:513. Seven copies of this public document were produced at an approximate cost of $3.85. This material was produced in accordance with the standards for state agencies established pursuant to R.S. 43:31. This report is available on the Legislative Auditor's website at www.lla.la.gov. When contacting the office, you may refer to Agency ID No. 3347 or Report ID No. 82200006 for additional information.

In compliance with the Americans With Disabilities Act, if you need special assistance relative to this document, or any documents of the Legislative Auditor, please contact Elizabeth Coxe, Chief Administrative Officer, at 225-339-3800.

LOUISIANA LEGISLATIVE AUDITOR
DARYL G. PURPERA, CPA, CFE

December 16, 2020

The Honorable Patrick Page Cortez,
President of the Senate
The Honorable Clay Schexnayder,
Speaker of the House of Representatives

Dear Senator Cortez and Representative Schexnayder:

This report provides the results of our audit of the Louisiana Department of Health's Office of Public Health (OPH). The purpose of this audit was to evaluate the integrity of the data OPH reports on its COVID-19 dashboard.

OPH reports various data elements on its dashboard, including the number of COVID-19 tests performed, the number of positive COVID-19 cases, the number of individuals hospitalized due to COVID-19, the number of individuals on ventilators due to COVID-19, and the number of COVID-19 related deaths.

Overall, we found that while OPH has processes to ensure data on the number of positive cases and deaths is not over-reported on its dashboard, laboratories did not always submit all COVID-19 test results to OPH, and the results they did provide were not always submitted in a timely manner.

We found OPH does not have a process to ensure that all laboratories submit complete COVID-19 test results. As a result, OPH cannot ensure that the data on the dashboard is complete. The lack of complete test data could affect the reliability of the positivity rate and the state's ability to make informed decisions during the pandemic.

OPH officials said they do not have the staff to determine whether laboratories are reporting all COVID-19 test results nor does it have the statutory authority to require the submission of those results. Instead OPH stated that it relies on outreach and education of laboratories about the requirement to report all COVID-19 test results.

In addition, we found the COVID-19 tests submitted by the laboratories to OPH did not include all information required by the U.S. Department of Health and Human Services (HHS). The Coronavirus Aid, Relief, and Economic Security Act (CARES Act) requires that, as of August 1, 2020, laboratory testing data include 18 data elements with information about the

patient, such as race and ethnicity, the COVID-19 test used, the ordering provider, and the testing facility. However, we found the data reported to OPH did not always include these required elements because either the laboratory did not include the information, or OPH did not have a field for the provider to input the information.

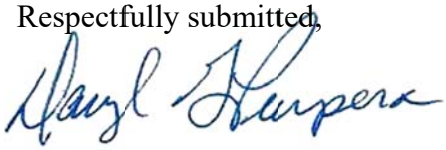
We also found laboratories did not always submit all required COVID-19 test results to OPH within 24 hours, as required by the U.S. Centers for Disease Control and Prevention and the state. The delayed receipt of COVID-19 test results makes it difficult for OPH to perform effective contact tracing and affects the state's ability to make informed decisions based on the positivity rate.

We found that it took laboratories more than five days to submit 19.4% of positive COVID-19 tests to OPH once the test result was known. OPH officials said, however, that the timeliness of test results reporting has improved.

The report contains our findings, conclusions, and recommendations. I hope this report will benefit you in your legislative decision-making process.

We would like to express our appreciation to OPH for its assistance during this audit.

Respectfully submitted,



Daryl G. Purpera, CPA, CFE
Legislative Auditor

DGP/ch

COVID DI

Louisiana Legislative Auditor

Daryl G. Purpera, CPA, CFE

Integrity of Data Reported on the COVID-19 Dashboard Office of Public Health

December 2020

Audit Control #82200006

Introduction

We evaluated the integrity of the data the Office of Public Health (OPH) reported on its COVID-19 dashboard (dashboard) as of October 1, 2020.[1] Although we have conducted limited work on potential duplicate cases in the past,[2] we conducted this audit as part of a national initiative involving auditors from other states[3] to evaluate the quality of COVID-19 data. In addition, we received multiple legislative and public requests to evaluate this data.

The integrity of COVID-19 data collection is important to:

- Monitor the spread and severity of the disease
- Understand risk factors for severe disease and transmission
- Estimate death and loss of health due to the disease
- Produce data for forecasting the spread and impact of the disease
- Understand how the disease impacts the capacity of the healthcare system

Source: Centers for Disease Control and Prevention

According to the United States Department of Health and Human Services (HHS), a rapid and thorough public health response to the COVID-19 pandemic requires complete and comprehensive laboratory testing data, including standardized test results and relevant demographic data. The Louisiana Department of Health (LDH) promulgated emergency rules on March 6, 2020,[4] that classified COVID-19 as a Class A Disease or Condition, which requires mandatory reporting by health care professionals and laboratories to OPH within 24 hours upon recognition of a case, suspected case, positive or negative laboratory result, unexplained death, unusual cluster of disease, and all outbreaks.[5]

OPH collects and reports various data elements on its dashboard daily,[6] including the number of COVID-19 tests performed, number of positive COVID-19 cases, number of individuals hospitalized due to COVID-19, number of individuals on ventilators due to COVID-19, and the number of COVID-19 related deaths. As of October 1, 2020, OPH reported 2,333,320 tests, 166,584 cases, and 5,329 deaths on its dashboard. For this audit we obtained

[1] https://ldh.la.gov/coronavirus/

[2] http://app.lla.state.la.us/PublicReports.nsf/0/49980A77E1C2B9AA862585BC007253D6/$FILE/COVID_19.pdf?OpenElement&.7773098

[3] As of November 30, 2020, collaborators and states and jurisdictions conducting audits as a part of this initiative include Colorado, Delaware, District of Columbia, Florida, Hawaii, Iowa, Mississippi, Ohio, Pennsylvania, and Tennessee.

[4] https://ldh.la.gov/assets/oph/Center-CP/HANs/COVID-19_LDH-OPH_Emergency_Rule_March_10_20.pdf

[5] LAC Title 51, Sections 105 and 107

[6] OPH does not update its dashboard on Saturday.

data supporting these numbers as of October 1, 2020, and reviewed OPH's processes for ensuring the data it reported was accurate.[7] Exhibit 1 summarizes the flow of test data to OPH.

Exhibit 1
Flow of Information from Test Site to OPH

Test Site 	Staff at COVID-19 testing sites collect specimens such as nasal swabs, oral swabs, or saliva from both symptomatic and asymptomatic individuals. Specimens are then sent to an in- or out-of-state Clinical Laboratory Improvement Amendments (CLIA) certified laboratory for testing to determine if the specimen is positive for COVID-19. Some test sites, such as emergency rooms, have the ability to analyze specimens and submit results to OPH instead of sending to laboratories. These sites have CLIA waivers.
Lab 	Laboratories are required by the emergency rule issued on March 6, 2020, to submit both positive and negative COVID-19 test results to OPH within 24 hours of determining the results. Laboratories submit these results electronically through the Electronic Lab Reporting system or by email or fax.
OPH	Because individuals may have multiple positive COVID-19 tests, OPH uses automated and manual processes to identify and remove duplicate COVID-19 cases before it reports on its COVID-19 dashboard. We found 740 (0.4%) of the 166,584 COVID-19 cases reported as of October 1, 2020, appear to be duplicate cases and should not have been included on the dashboard.

Source: Prepared by legislative auditor's staff using information from OPH.

OPH also receives daily data from medical providers and coroners regarding individuals who died as a result of COVID-19. Medical providers are required by state regulations to report all deaths or suspected deaths related to COVID-19 to OPH within 24 hours. Once a coroner or medical provider certifies a death certificate, more detailed information about the cause of death is included in the data and replaces the information originally provided by the medical providers. If OPH received notification from a medical provider of a COVID-19 related death but COVID-19 is not listed on the death certificate, OPH stated that it will continue to count the death as a COVID-19 death only if the decedent had a positive COVID-19 test. Of the 5,329 deaths OPH reported as of October 1, 2020, we found that 5,278 (99.0%)[8] either had COVID-19 listed on their death certificates or had a positive COVID-19 test.[9]

[7] We did not review hospitalizations and ventilator use because hospitals self-report aggregate numbers as recommended by the CDC instead of submitting data records for each individual.

[8] According to OPH, the 51 individuals who did not have COVID-19 listed on their death certificate and did not have a positive COVID-19 test as of October 1, 2020, did have COVID-19 listed on their death certificate and/or did have a positive COVID-19 test as of December 3, 2020.

[9] Most of these tests were performed prior to the individual's death, but some tests were conducted after the individual's death. According to multiple Coroner's Offices, tests may be conducted after death to verify that the decedent had COVID-19.

The objective of this review was:

To evaluate the integrity of the data OPH reported on its COVID-19 dashboard.

Our results are summarized on the next page and discussed in detail throughout the remainder of the report. Appendix A contains OPH's response, and Appendix B contains our scope and methodology. Appendix C includes a list of all 18 data elements that laboratories must provide to OPH when submitting COVID-19 test results and whether this information was actually included in the test results provided to OPH, while Appendix D summarizes contact tracing statistics.

Objective: To evaluate the integrity of the data OPH reported on its COVID-19 dashboard.

Overall, we found that while OPH has processes to ensure data on the number of positive cases and deaths is not over-reported on its dashboard, laboratories[10] did not always submit all COVID-19 test results to OPH, and the results they did submit were not always submitted timely. As a result, the positivity rate on any given date may have been higher or lower than what OPH reported on its dashboard for that date. The reliability of the positivity rate is important since it is one of the factors that drives decision-making during the pandemic for requirements such as mask mandates, business closing and reopening plans, and nursing home visitation. Specifically, we found the following:

Louisiana, similar to other states, uses the positivity rate (the number of positive COVID-19 tests divided by the number of total COVID-19 tests performed) as one factor for making decisions during the pandemic. According to Johns Hopkins, this rate is a critical measure because it gives an indication of how widespread infection is.

- **Laboratories did not submit complete COVID-19 test results to OPH. The lack of complete test data could affect the reliability of the positivity rate and the state's ability to make informed decisions during the pandemic.** We identified COVID-19 tests that were billed to Medicaid but not included in the testing data, COVID-19 tests that were performed on a routine basis for organizations, such as the National Football League, but not included in the testing data, and laboratories that reported only positive test results or only negative test results. In addition, COVID-19 tests that were submitted by laboratories to OPH did not include all information required by HHS.

- **Laboratories did not submit all required COVID-19 test results to OPH within 24 hours, as required by the Centers for Disease Control (CDC) and state regulations. Untimely test results make it difficult for OPH to perform effective contact tracing and affects the state's ability to make informed decisions based on the positivity rate.** We found that it took laboratories more than five days to submit 19.4% of positive COVID-19 tests to OPH once the test result was known. According to OPH, the timeliness of the reporting of test results has improved over time.

Our findings, along with recommendations to assist OPH in strengthening its processes to improve the integrity of the data on the COVID-19 dashboard, are discussed in more detail throughout the remainder of this report.

[10] For the purposes of this report, the term laboratory encompasses CLIA certified labs and tests sites that have CLIA waivers.

Laboratories did not submit complete COVID-19 test results to OPH. The lack of complete test data could affect the reliability of the positivity rate and the state's ability to make informed decisions during the pandemic.

The CDC recommends COVID-19 testing for any patients who are experiencing symptoms such as fever, cough, or shortness of breath. On March 9, 2020, OPH sent guidance via the Health Action Network to laboratories performing COVID-19 tests stating that all positive and negative COVID-19 tests must be submitted to OPH within 24 hours as required by CDC[11] and state regulations. In addition, HHS requires laboratories to submit 18 data elements, such as race and ethnicity, with all COVID-19 test results. Complete reporting of COVID-19 test results is important for calculating an accurate positivity rate and to guide contact tracing and isolation requirements.

OPH does not have a process to ensure that all laboratories submit complete COVID-19 test results. As a result, OPH cannot ensure that the data on the dashboard is complete. According to OPH, it does not have a method to determine whether all laboratories report all test results and instead relies on new COVID-19 testing laboratories to initiate contact with OPH in order to begin reporting the results of COVID-19 tests that the laboratory has performed. In addition, OPH does not use Medicaid data or other data sources to identify potential issues with the completeness of the COVID-19 testing data. According to OPH, it does not have the staff to determine whether laboratories are reporting all COVID-19 test results nor does it have the statutory authority to require the submission of these COVID-19 test results. Instead OPH stated that it relies on outreach and education of laboratories about the requirement to report all COVID-19 test results. In addition, OPH noted that in-home tests have recently been approved by the Federal Drug Administration and will present a significant challenge as private citizens are not required to report the results of in-home tests.[12] To determine whether the COVID-19 testing data was complete, we analyzed the COVID-19 testing data and other data sources and found the following:

- Using Medicaid data, we identified 1,112 Medicaid encounters[13] for COVID-19 tests that were not included in the COVID-19 testing data as of October 1, 2020. Three laboratories account for 435 (39.1%) of these unreported COVID-19 tests, meaning these COVID-19 tests may be "backlogged" and not yet reported to OPH.

- Some organizations, such as the National Football League, require mandatory COVID-19 testing for employees. However, we found that while the test results of some employees were reported as required in the COVID-19 testing data, other employees had no COVID-19 test results in the data. For example, we found that

[11] https://www.cdc.gov/coronavirus/2019-ncov/lab/reporting-lab-data.html
[12] However, these types of tests were not available during the scope of our audit.
[13] An encounter is a distinct set of healthcare services provided to a Medicaid member enrolled with an MCO on the date that the services were delivered. It is a claim paid for by the MCO then submitted to LDH.

12 (37.5%) of the 32 New Orleans Saints players that we analyzed[14] did not have any COVID-19 test results related to this testing requirement in the COVID-19 testing data. According to the Vice President of Connectivity Solutions at Bioreference Laboratories, these players did have the required COVID-19 testing performed, but their results were sent to other states instead of to OPH because players submitted out-of-state residential addresses.

- Using OPH's COVID-19 testing data, we found that of the 592[15] unique laboratories[16] reporting test results, 294 (49.7%) only reported positive results[17] totaling 3,742 tests, and 64 (10.8%) only reported negative results,[18] totaling 393 tests. This may indicate that these laboratories are not reporting all COVID-19 test results to OPH. According to OPH, it currently conducts analyses to identify laboratories that only report positive test results and then conducts outreach to inform them of the requirement to report both positive and negative tests. In addition, OPH stated that test results reported by laboratories which manually report only positive test results are not included in the positivity rate.

- It was reported to the LLA that a school was conducting weekly COVID-19 testing of both staff and students. However, we found that the entity responsible for reporting all COVID-19 test results was only submitting positive COVID-19 test results to OPH. In addition, we found that at least 5,204 negative tests were not submitted to OPH for this school.[19] Instances such as these could be artificially increasing the COVID-19 positivity rate within Louisiana.

- As of October 1, 2020, OPH did not include the 13,654 rapid antigen tests reported to OPH in the number of tests it reported on its dashboard as 37 other states did. However, as of November 13, 2020, OPH began including rapid antigen tests on its dashboard.

In addition, COVID-19 tests that were submitted by laboratories to OPH did not include all information required by HHS. The Coronavirus Aid, Relief, and Economic Security Act (CARES Act) requires that, as of August 1, 2020, laboratory testing data include 18 data elements with information about the patient, such as race and ethnicity, the COVID-19 test used, the ordering provider, and the testing facility. HHS also issued guidance for laboratories further detailing the need for this information. However, we found that COVID-19

HHS states that these data elements improve the public health response by:
- contributing to the understanding of disease incidence and trends
- initiating epidemiologic case investigations
- assisting with contact tracing
- assessing availability and use of testing resources
- identifying supply chain issues for reagents and other material

[14] As of November 6, 2020, there were 51 Saints players listed on the active roster; however, we only reviewed 32 of them.
[15] There were 468 test results that did not include the name or CLIA number of the laboratory that performed the test.
[16] For this analysis we used the laboratory name as the unique identifier, since some labs have multiple locations and/or CLIA numbers.
[17] Of these 294 labs, 152 (51.7%) only reported one positive test result in the data
[18] Of these 64 labs, 32 (50.0%) only reported one negative test result in the data.
[19] As of November 2, 2020.

testing data did not always include these required data elements because the laboratory did not include the information, or OPH did not have a field for the provider to input the information. For example, 257,478 (30.0%) of 858,358 COVID-19 test results submitted on or after August 1, 2020, did not have the ethnicity of the patient, making it more difficult for OPH to determine how COVID-19 affects individuals of different ethnic backgrounds. In addition, OPH does not have fields to collect the National Provider Identifier number of the provider who ordered the COVID-19 test, the date the COVID-19 test was ordered, or the device identifier, which are all required by HHS. Appendix C shows issues identified for all 18 data elements. Not having all information required affects the ability to understand and respond to current and future pandemics.

Recommendation 1: OPH should develop processes to help it detect incomplete test data, including expanding its routine analyses to identify laboratories who submit all or the majority of their COVID-19 tests as positive or negative and using its own COVID-19 testing data, Medicaid data, and any other available data to identify unreported COVID-19 tests.

Summary of Management's Response: OPH agreed with this recommendation and stated that it is currently expanding routine analyses to monitor completeness of data reported by testing sites, developing a plan for improved tracking of incomplete reporting and outreach, and exploring avenues to identify unreported COVID-19 tests. OPH also stated that it strongly believes that the positivity rate calculated is as reliable as possible. OPH stated that it would agree with a characterization of the data not being "complete" but not unreliable. OPH further stated that it adheres to the highest data integrity standards and that it is unlikely the small minority of test results not yet reported to OPH as required would substantively affect percent positivity calculations. See Appendix A for OPH's full response.

Laboratories did not submit all required COVID-19 test results to OPH within 24 hours, as required by CDC and state regulations. Untimely test results make it difficult for OPH to perform effective contact tracing and affects the state's ability to make informed decisions based on the positivity rate.

Of the 2,346,974 test results submitted as of October 1, 2020, 95,622 (4.1%) did not have the date of the test result. For the remaining 2,251,352 tests that did have the test result date, 1,135,247 (50.4%) were not submitted within 24 hours. According to OPH, delays often occur when laboratories which have not previously reported Class A infectious diseases begin reporting them for the first time. However, OPH stated that the timeliness of the reporting of test results has improved over time. Exhibit 2 shows the amount of time it takes for positive and negative or inconclusive COVID-19 test results to be reported to OPH by laboratories.

Exhibit 2
Time from Date of Laboratory Result to Receipt by OPH

Time Period	Positive COVID-19 Tests	Positive Percentage	Negative and Inconclusive COVID-19 Tests	Negative and Inconclusive Percentage
Within 24 hours	109,907	45.0%	1,006,198	47.9%
Between 2 and 14 days	99,175	40.6	889,433	42.3
Greater than 14 days	19,424	8.0	127,215	6.1
Invalid/Missing Data	*15,468*	*6.3*	*80,154*	*3.8*
Total*	**243,974**		**2,103,000**	

* The sum of these two totals (2,436,974) of the positive and negative tests is higher than the 2,333,320 tests reported by OPH on October 1, 2020, because we also included antigen tests, which OPH does not include in its dashboard numbers as stated previously.
Source: Prepared by legislative auditor's staff using information from OPH.

Delays in receiving test results can also affect the reliability of the reported positivity rate. For example, a laboratory that began conducting COVID-19 testing on April 2, 2020, did not begin reporting test results to OPH until May 26, 2020. This laboratory then stopped reporting results to OPH from June 16, 2020, through July 7, 2020, and then submitted 14,286 tests all on one day, including 2,284 positive tests, even though these tests results were available up to two months prior. According to OPH, it attempts to account for these delays by allowing a time lag before reporting a positivity rate for a specific time period.

Delays in the receipt of COVID-19 test results from laboratories limits the ability of contact tracers to contact individuals timely after the onset of COVID-19 symptoms. According to the CDC, contact tracing attempts to identify individuals who were in close contact with a person who has tested positive for COVID-19. The goal of contact tracing is to limit further transmission of the disease by informing individuals that they may have been exposed to the virus, so those individuals can take steps to voluntarily self-isolate. OPH received a grant totaling approximately $48 million through the CARES Act to fund contact tracing activities from June 2020 through November 2022. However, OPH does not always receive timely information from laboratories for individuals who have tested positive for COVID-19, which also delays the timeliness of contact tracing. For example, 47,414 (19.4%) of the 243,974 positive COVID-19 tests results took more than five days to be reported to OPH after the test result was known. In addition, 66,231 (27.1%) of the 243,974 positive COVID-19 test results took more than five days to be reported to OPH after the date the specimen was collected. According to OPH, it takes an average of seven to eight days from the onset of symptoms until that individual is contacted by OPH due to a positive COVID-19 test. Exhibit 3 provides an example of how delayed COVID-19 test results affects contact tracing.

Exhibit 3
Example of Delay In COVID-19 Test Results – 8 Days from Infection to OPH Contact

Date	Description
June 1, 2020	Individual with unknown COVID-19 infection has contact with individuals
June 2, 2020	Onset of symptoms
June 3, 2020	COVID-19 test date
June 8, 2020	Date OPH receives test
June 9, 2020	Date OPH does case investigation and contacts the individual who had positive COVID-19 test

Source: Prepared by legislative auditor's staff using information from OPH.

In addition to OPH receiving untimely COVID-19 test results from laboratories, OPH was not always able to interview individuals and obtain contact information from individuals who tested positive for COVID-19. From May 15, 2020, through October 1, 2020, contact tracers interviewed a total of 70,500 (63.2%) of the 111,474 COVID-19 individuals[20] entered into the contact tracing system as a case. However, only 24,517 (34.8%) of the 70,500 individuals with positive COVID-19 tests who OPH was able to interview provided information for individuals with whom they had close contact. OPH was able to interview 30,866 (75.0%) of the 41,163 contacts that were identified by individuals with positive COVID-19 tests as close contacts. Appendix D shows the varying levels of success contact tracers had in case investigations and contact tracing from May 15, 2020 through October 1, 2020.

Recommendation 2: OPH should conduct routine analyses to identify laboratories who submit untimely COVID-19 test results.

Summary of Management's Response: OPH partially disagreed with this recommendation and stated that outdated results are often unavoidably included among the first reports transmitted when testing sites are newly on-boarded into the Electronic Laboratory Reporting (ELR) System. OPH further stated that it has already established a process to identify and follow up on reporting delays among facilities after they have been on-boarded into the ELR system through internal review and direct outreach. See Appendix A for OPH's full response.

[20] This number is different from the number of COVID-19 cases reported on the dashboard on this day due to a variety of factors, including the exclusion of individuals with an out-of-state address, positive COVID-19 test results older than 24 days, and individuals who are in communal settings such as nursing homes and prisons.

APPENDIX A: MANAGEMENT'S RESPONSE

John Bel Edwards
GOVERNOR

Dr. Courtney N. Phillips
SECRETARY

State of Louisiana

Louisiana Department of Health
Office of the Secretary

December 13, 2020

VIA E-MAIL ONLY

Daryl G. Purpera, CPA, CFE
Legislative Auditor
P.O. Box 94397
Baton Rouge, Louisiana 70804-9397

Re: Integrity of Data Reported on the COVID-19 Dashboard

Dear Mr. Purpera:

Thank you for the opportunity to respond to the findings of your audit on the integrity of data reported on the COVID-19 dashboard. The Louisiana Department of Health (LDH), Office of Public Health (OPH), is dedicated to the mission of reducing the incidence, morbidity, and mortality of COVID-19 among Louisianans. LDH is committed to collecting, analyzing and reporting COVID-19 data according to the highest standards of accuracy and transparency. Providing accurate and reliable epidemiologic information about COVID-19 in Louisiana is critical to this mission because it serves as a guide to decision making related to community mitigation measures and individual risk assessments.
LDH responses to specific Louisiana Legislative Auditor's findings and recommendations are below.

Finding 1:

Laboratories did not submit complete COVID-19 test results to OPH. The lack of complete test data could affect the reliability of the positivity rate and, the state's ability to make informed decisions during the pandemic.

LDH Response:

In accordance with CDC methodology, LDH calculates percent positivity as the number of positive tests divided by the number of positive and negative tests according to specimen collection date. Within Louisiana, all COVID-19 laboratory test results, both positive and negative, are required to be reported to OPH. This requirement presents a unique challenge for healthcare providers, such as those in urgent care and community clinics, who are beginning to conduct point-of-care testing for SARS-CoV-2 but do not have an infrastructure

for electronic laboratory reporting (ELR) as exists in larger institutions. Through evaluation of reported data, OPH observed that some of these providers prioritize reporting of positive laboratory tests. Because the percent positivity calculation requires both positive and negative results, OPH excludes from percent positivity calculations data from sites that only report positive test results. This practice ensures the highest possible level of accuracy when calculating this measure. OPH also works with these providers to improve their understanding of reporting requirements and to encourage complete reporting of all SARS-CoV-2 laboratory tests, regardless of the result.

LDH agrees that percent positivity is an important COVID-19 indicator used to inform personal and community-based decision-making. LDH epidemiologists make every effort to ensure that the percent positivity calculations reported for Louisiana are performed correctly and in accordance with CDC established methodology. As a result, and based on the exclusion criteria mentioned above, LDH **strongly believes** that the positivity rate calculated is as reliable as possible. LDH would agree with a characterization of the data not being "complete" but surely not unreliable. In fact, LDH adheres to the highest data integrity standards and it is unlikely the small minority of test results not yet reported to LDH as required would substantively affect percent positivity calculations. Thus, LDH is of the opinion that the decisions made, and public health guidance provided, by reference to the positivity rate have properly informed the public and reduced disease transmission and spread.

Finding 2:

Laboratories did not submit all required COVID-19 test results to OPH within 24 hours, as required by CDC and state regulations. Untimely test results make it difficult for OPH to perform effective contact tracing and affects the state's ability to make informed decisions based on the positivity rate.

LDH Response:

The changes in the SARS-CoV-2 testing landscape since the first COVID-19 case in Louisiana was identified on March 9th are striking. In particular, the number of available SARS-CoV-2 laboratory assays and sites performing testing have increased dramatically. In response, OPH has conducted outreach and communication to testing sites and implemented improvements to the OPH ELR system. As a result, substantial progress with regard to improved reporting times has been achieved. The average number of days between the laboratory test result date and the date the report was processed by OPH has decreased from 9.1 days in March to 2.0 days in November of 2020. OPH efforts to improve reporting time are ongoing. In the interest of transparency, LDH recently started providing a visual representation of new tests received

each day so that viewers can see the distribution of new cases by collection date. This visualization is on the Louisiana COVID19 dashboard and is entitled 'New and Prev Cases by Collection Date'. Finally, as mentioned above, LDH is of the opinion that the delays mentioned in the LLA's report has not significantly altered the calculated positivity rate and that such rate is a reliable measure.

Finding 3:

It was reported to the LLA that a school was conducting routine COVID-19 testing of both staff and students, but that the entity responsible for reporting all COVID-19 test results was only submitting positive COVID-19 test results to OPH. We found that at least 5,204 negative tests were not submitted to OPH for this school. Instances such as these could be artificially increasing the COVID-19 positivity rate within Louisiana.

LDH Response:

The school (surveillance) testing described above was conducted as part of an effort to evaluate COVID-19 transmission and the efficacy of prevention measures implemented in a school setting. SARS-CoV-2 tests were performed by a research institution that did not have access to the demographic data elements required for reporting. Because facilities performing testing are generally the entities responsible for reporting and normally do have access to the information required for reporting, LDH considers this circumstance to be atypical. OPH is working with the parties involved to establish an alternate mechanism for reporting according to the unique situation.

Recommendation 1:

OPH should develop processes to help it detect incomplete test data, including expanding its routine analyses to identify laboratories who submit all or the majority of their COVID-19 tests as positive or negative and using its own COVID-19 testing data, Medicaid data, and any other available data to identify unreported COVID-19 tests.

LDH response:

OPH agrees with this recommendation in that we always strive to ensure accurate data. OPH is currently expanding routine analyses to monitor completeness of data reported by testing sites. ELR staff are in the process of developing a plan for improved tracking of incomplete reporting and outreach in response to deficiencies identified. OPH will explore avenues to identify unreported COVID-19 tests.

Recommendation 2:

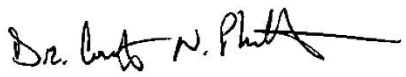
OPH should conduct routine analyses to identify laboratories who submit untimely COVID-19 test results.

LDH response:

OPH partially disagrees with the recommendation; however, when testing sites are newly on-boarded into ELR system, outdated results are often unavoidably included among the first reports transmitted from the facility. Further, OPH must assess how to best utilize its staff during this global pandemic and place priority on situations that lessen the negative impacts on the public's health caused by the unchecked spread of COVID19. However, OPH has already established a process to identify and follow up on reporting delays among facilities after they have been on-boarded into the ELR system. Internal review and direct outreach to facilities with identified delays are conducted in order to address any data transmission or processing errors that may be occurring.

You may contact Jarrod Coniglio, Interim Compliance Officer by telephone at (225) 219-4150 or by e-mail at jarrod.coniglio@la.gov with any questions concerning this matter.

Sincerely,



Dr. Courtney N. Phillips

APPENDIX B: SCOPE AND METHODOLOGY

We conducted this analysis under the provisions of Title 24 of the Louisiana Revised Statutes of 1950, as amended. This purpose of this analysis was:

To evaluate the integrity of the data OPH reported on its COVID-19 dashboard.

The scope of our audit was less than that required by *Government Auditing Standards*. We believe the evidence obtained provides a reasonable basis for our findings and conclusions. To conduct this analysis we performed the following steps:

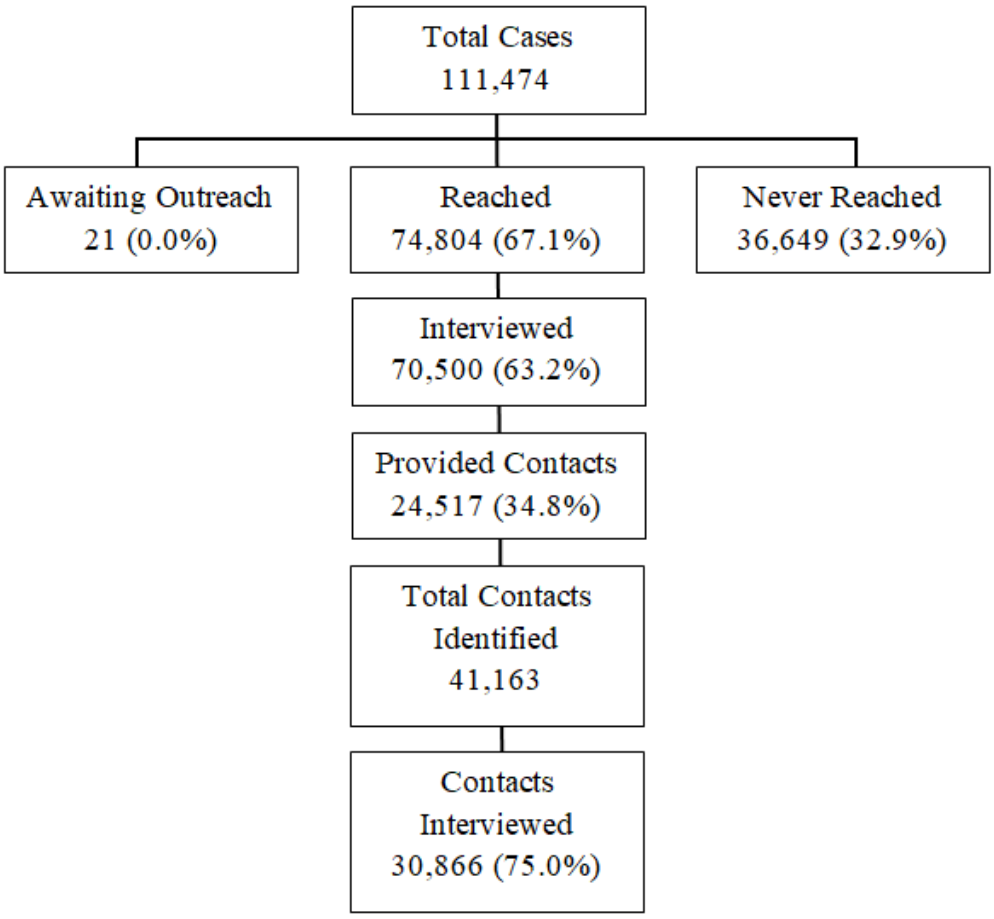
- Researched guidance from the World Health Organization, the United States Department of Health and Human Services, the Centers for Disease Control and Prevention, the American Association of Family Practitioners, and OPH's best practices regarding the collection and reporting of COVID-19 data.
- Interviewed OPH staff regarding implementation of policies and practices related to the collection and reporting of COVID-19 data.
- Obtained and analyzed COVID-19 testing, case, death, hospitalization, ventilator, and contact tracing data and information from OPH.
- Interviewed multiple coroner's offices regarding the reporting of COVID-19 deaths to OPH.
- Interviewed multiple organizations regarding testing practices and reporting of test results to OPH.

APPENDIX C: 18 DATA ELEMENTS REQUIRED WITH COVID-19 TESTING RESULTS

Category	Data Element	1,488,616 COVID-19 Tests Performed Between March 17, 2020 and July 31, 2020		858,358 COVID-19 Tests Performed Between August 1, 2020 and October 1, 2020	
		Number Missing Data Element	Percent Missing Data Element	Number Missing Data Element	Percent Missing Data Element
Facility	Facility CLIA Number	111,342	7.5%	53,699	6.3%
	Facility Name	0	0.0	468	0.1
	Facility Zip Code	28,624	1.9	18,269	2.1
Ordering Provider	Provider Name	105,453	7.1	112,989	13.2
	Provider NPI*	1,488,616	100.0	858,358	100.0
	Provider Zip Code	494,273	33.2	393,066	45.8
Patient	Age**	1,872	0.1	303	0.0
	Ethnicity	612,316	41.1	257,478	30.0
	Race	174,492	11.7	27,129	3.2
	Residence Parish	1,138,657	76.5	581,946	67.8
	Residence Zip Code	111,758	7.5	39,205	4.6
	Sex	76	0.0	703	0.1
COVID-19 Test	Date Specimen Collected	0	0.0	0	0.0
	Date Test Ordered*	1,488,616	100.0	858,358	100.0
	Device Identifier*	1,488,616	100.0	858,358	100.0
	Specimen ID	113,423	7.6	45,647	5.3
	Specimen Source	803,400	54.0	544,363	63.4
	Test Type Ordered Code	143,187	9.6	73,698	8.6
	Test Result Code	751,570	50.5	524,334	61.1
	Test Result Date	65,992	4.4	28,524	3.3

* OPH's COVID-19 testing data does not include these fields.
** While Age is not a field in the data, the date of birth of the individual who was tested is included in the data as a field. Therefore, the results in this row reflect statistics based on that field.
Source: Prepared by legislative auditor's staff using information from HHS and OPH.

APPENDIX D: CONTACT TRACING STATISTICS FROM MAY 15, 2020 THROUGH OCTOBER 1, 2020



Source: Prepared by legislative auditor's staff using information from OPH.