3

PUBLIC HEALTH RESPONSE
TO THE COVID-19 PANDEMIC IN OREGON

Report 3 of 3

Version 1.0

Produced by Rede Group in September 2023

Acknowledgments

Rede Group produced this report as a neutral third party contractor of the Oregon Health Authority (OHA), Public Health Division in response to a legislative requirement set in Senate Bill 1554 (2022). We want to acknowledge the many people who contributed to this report, including Community-based Organizations (CBOs), Coordinated Care Organizations (CCOs), City, County, and Tribal Emergency Management, Health Care Associations, Local Public Health Authorities (LPHAs), OHA Staff, Managers, and Directors, other State Agencies, the Oregon Public Health Advisory Board (PHAB), Professional Associations, Tribal Nations, and Tribal Organizations.

In addition to the study team, community partners contributed to this report by reviewing data collection instruments, supporting recruitment efforts, and reviewing and interpreting key findings.

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The OHA contract administrator and project coordinator with assistance from other OHA staff and partners supported this project through providing context, supporting recruitment, and sharing background documents and secondary data sources.

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OHA also convened a study review committee comprised of OHA staff, LPHAs, Tribal Health Directors, and CBOs to review and interpret key findings for this report.

Everyone has a right to know about and use OHA programs and services. OHA provides free help, and some examples of this help include:

- Sign language and spoken language interpreters
- Written materials in other languages
- Braille
- Large print
- Audio and other formats

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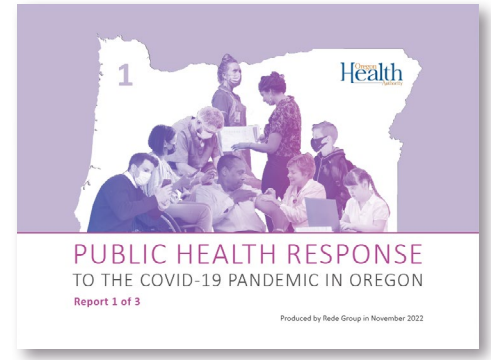
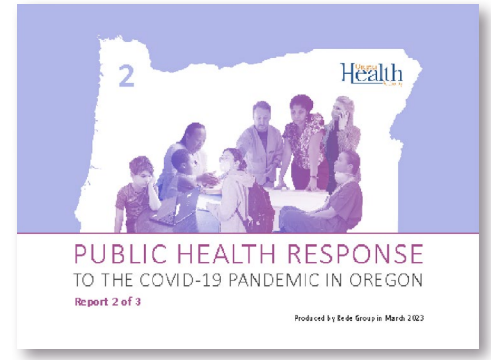
Study Summary

Introduction

This culminating summary report (third in a series of legislatively mandated reports), includes high-level key findings and recommendations from Reports 1 and 2 (linked on the right) as well as additional analyses conducted from May-August 2023.

Additional analyses included more secondary health outcomes and social determinants of health data, educational survey respondents by region and principal survey respondents by grade level, interviews with CBOs who served migrant and seasonal farmworker (MSFW) populations, and secondary documents of CBO and LPHA work serving MSFWs (for more information, see Appendix A, B, C, and D).





Click here for more information about the study

Study Purpose

The purpose of this study is to fulfill the requirements of Senate Bill (SB) 1554 (2022), which calls for a comprehensive study of Oregon's public health system response to the COVID-19 pandemic. This report outlines recommendations for improving and strengthening Oregon's public health system capacity and resiliency for responding to future public health emergencies.

This study is not an external evaluation of an individual's, team's, or agency's performance, but instead is a systematic examination of Oregon's complex and evolving public health system response to the COVID-19 pandemic. As such, this study takes into account the perspectives of a diverse array of organizations engaged in the pandemic response across the state. To ensure objectivity, reduce bias, and provide neutrality, OHA contracted with Rede Group (based on results of an open, competitive solicitation process) to conduct this study. Rede Group has no affiliation with Oregon's public health system response to the COVID-19 pandemic and was not involved in Oregon's public health system response.

Design + Limitations

The study team used an exploratory sequential design for this study, a robust mixed-methods study design that integrates qualitative data to provide an enhanced understanding and interpretation of quantitative findings. Study findings, however, should be interpreted in the context of the limitations of this study. The most significant limitation of the study was the time constraint for each report (roughly four months each). Other limitations are the retrospective nature of this study, which covers over two years, introducing recall bias in which participants may not accurately recall past events. Public health workforce turnover, limited incentive availability for specific participant groups, documents lacking dates and other context, and reliance on self-reported data for online surveys are also limitations.

Participants + Information Sources

The table on the following page describes study participants and information sources contributing to the assessment and associated key findings and recommendations.

PRIMARY DATA COLLECTION			
Participants	Interviews	Surveys	Focus Groups (participants)
CBOs	28	63	4 (27)
Professional Associations	4	n/a	n/a
Health Care Associations	4	n/a	n/a
LPHAs	18	39	n/a
OHA Directors	13	n/a	n/a
OHA Staff + Managers	20	n/a	n/a
C-19 Operations Experts	10	n/a	n/a
State Agencies	7	n/a	n/a
Tribal Orgs.	4	n/a	1 (7)
Tribal Nations	7	1	n/a
School SDs	9	84	n/a
School ESDs	5	8	n/a
School Principals	n/a	220	4 (19)
School Nurses	n/a	90	2 (8)
Local Emergency Management	n/a	22	6 (11)
Total	**129**	**527**	**17 (72)**

LITERATURE, RECORDS, + SECONDARY DATA

Literature Review: Over 30 journal articles
Records review: Over 1200 documents
Secondary Data Sources:

- Annual Trends in Birth & Pregnancy (OHA)
- Deaths by manner Oregon residents (OHA)
- Immunization Program Kindergarten Immunization Data (OHA)
- Annual Trends in Birth & Pregnancy (OHA)
- SNAP Monthly State Participation and Benefit Summary (USDA)
- HIV, Hepatitis, STD, TB, Social determinants of health data (CDC's AtlasPlus Tables)
- Nonfatal Overdose (CDC DOSE System)
- Monthly Communicable Disease Surveillance Report (OHA PHD)
- HIV, STD, & TB Section HIV/STI Prevention Testing (OHA PHD)
- Annual Performance Progress Report (ODE)
- Student Enrollment Reports (ODE)
- Statewide Report Card 2021-2022 (ODE)
- Routine Immunizations Dashboard (OHA)
- State Unintentional Drug Overdose Reporting System (CDC)
- Opioid Overdose Public Health Surveillance Update (OHA)

[Resources]

"There has to be investments in public health capacity, there has to be investments in infrastructure..."

—Tribal Nation Interviewee

Resources

Key Finding:

- Prior to 2020, Oregon's public health system was critically underfunded. Efforts to modernize the system by increasing state resources to rebuild the public health system from 2017-2020 were laudable but inadequate. Sustained state funding is necessary to rebuild the public health system and recover from the strains on the systems caused by the COVID-19 pandemic.

Recommendation:

1. As the COVID-19 pandemic is ongoing and additional population-level health emergencies have surfaced, the Oregon State Legislature must fund the public health system at an additional $143,000,000, annually, devoted to public health modernization. Other investments for shared health data systems may be necessary.

KEY QUOTES

"All this money was poured into the system, hospitals and public health, and they're not funded anymore, and so the rug is coming out from under us, and there's no more help, there's no more resources, right?"

—Health Care Assoc. Interviewee

"I don't need one-time funding. I need funding for staff...we can't provide public health services without the people."

—LPHA Interviewee

"We need better funding for OHA so they can staff up."

—State Agency Interviewee

[Health Equity]

"The people on the ground doing the work — they're the experts."

—OHA Director Interviewee

Health Equity

Key Findings:

- Health equity was a central focus in Oregon's public health system response to the COVID-19 pandemic. Study participants noted they were highly motivated to center equity in pandemic response efforts and were aligned in naming that the central elements of an equitable pandemic response are equitable access to information and equitable access to resources. LPHAs and CBOs were seen as invaluable resources in the response.
- The greatest health equity challenges Oregon faced in its public health pandemic response were an emergency management infrastructure that did not include equity practitioners and communities impacted by health inequities in decision-making; limited equity capacity across the state, including significant delays and challenges producing accessible and culturally-tailored public messaging; and inconsistent buy-in for equity work. A few factors that facilitated and enhanced an equitable pandemic response included strong partnership networks with role clarity; and adequate, timely, and flexible funding.

KEY QUOTES

"We really want to start at, 'Who are our vulnerable populations and why?' It doesn't matter if that's only 500 people. I think that COVID has helped push the conversation to talk about vulnerability and impact to a specific population, as opposed to, 'Show me the high numbers and then we'll talk.'"

—OHA Manager Interviewee

"I felt like they [OHA] trusted us with knowing the families that we serve, knowing our population, and being able to quickly change how we were serving those families."

—CBO Interviewee

Recommendations:

1. Improve equitable communication by ensuring information is timely and accessible for all Oregonians. OHA should do everything possible, including conducting translation in-house, to eliminate the lag in the translation of critical health information into non-English languages. OHA should be hiring, recruiting, and retaining bilingual, and preferably bicultural, staff into various departments - as opposed to hiring that is done solely in response to a critical need.
2. Ensure that timely, accurate morbidity, hospitalization, and mortality data about historically marginalized communities (those most likely to experience health inequity) are collected and available to those communities and partnering organizations serving them as well as government public health.
3. Continue to fund public health-focused CBOs serving communities experiencing historical and contemporary health inequities.

KEY QUOTES

"We could not show up in military fatigues and expect people who were non-documented to feel comfortable getting vaccinated. We had some real conflict with our commitment to lead with equity while showing up with the same tools."

—State Agency Interviewee

"Equity is a discipline and an approach...it requires people with specific skill sets, knowledge, and expertise to be infused throughout the entire process and not limited to just one area, like community engagement."

—OHA Director Interviewee

[Emergency Management + Coordination]

"We didn't know what they were doing or what they weren't doing. It was very siloed."

—City and County Emergency Management Focus Group Participant

Emergency Management + Coordination

Key Finding:

- Throughout the pandemic, some state-level primary response agencies in Oregon struggled to collaborate in coordinating the response and defining leadership roles and authorities. The lack of role clarity between the OHA and the Oregon Department of Emergency Management (OEM) likely led to confusion early on in the pandemic. Issues arising from this confusion affected the overall response but directly impacted LPHAs and City and County Emergency Management.

Recommendations:

1. Explore the concept of a fully resourced, flexible, and scalable Unified Command (UC) Structure between OEM and OHA in support of future public health emergencies.
2. OEM and OHA should work together to establish an equity-specialists team that is formally adopted into the response structure, including roles and responsibilities, job action sheets, inclusion into the Multi-Year Training and Exercise Plan (MYTEP) training and exercises, and integration into the state's emergency plans and procedures.

KEY QUOTES

"We were in competition with our efforts and not in coordination, I did not feel like that was an effective framework for the response…"

—City and County Emergency Management Focus Group Participant

"There were too many disconnections, too many things happening in a vacuum, probably too much distrust, an unfamiliarity of what the emergency management system was, and an unwillingness to rely on the experts, the people that know how to do this work to help guide some of those decision-making processes."

—LPHA Interviewee

Enforcement of Public Health Mandates

Key Findings:

- Enforcement of public health mandates was inconsistent across Oregon, especially after Stage 1 (Mar. 2020-Nov. 2020) of the pandemic when the politicization of the response effort took root, and a widespread misinformation campaign marred the compliance landscape.
- As set forth in law, Oregon's public health system is decentralized with LPHAs having specific responsibilities and rights. This differs from many states. Concerns that the localized decision-making of LPHAs created pandemic responses that put personal beliefs or politics over health was a strong theme across multiple respondent groups.

Recommendation:

1. Local and state agency partners should be convened in a formal committee to determine if the enforcement mechanisms used to protect the public's health from COVID-19 in 2020-2022 are the best fit for Oregon, given all the factors described above. If changes to the enforcement structure for public health mandates are deemed necessary

KEY QUOTES

"There were no guidelines on enforcement. The state really needs to decide who is going to enforce them."

—LPHA Interviewee

"We had a lot of willful violations relating to masking. Unfortunately, this is where things probably got really heightened for our staff because we got a lot of threats, anger, and meanness, people showing up at our houses, having barbecues out front, chanting with bullhorns..."

—State Agency Interviewee

by OHA, partners and the Oregon State Legislature should work to enact necessary statutory or regulatory changes. Minimally, this committee should include OHA, Deparment of Justice (DOJ), Oregon Department of Education (ODE), LPHAs, CBOs, Occupational Safety and Health Administration (OSHA), and Oregon Liquor and Cannabis Commission (OLCC). Enforcement of public health mandates and various roles and responsibilities should be clearly articulated and documented, and all parties in the public health system should educate themselves accordingly.

KEY QUOTES

"Most people in the community that I serve really wanted to follow the rules. They wanted to protect the people that they loved, and they were kind of on board with that. And I didn't see enforcement about any of that stuff happening."

—CBO Interviewee

Health Outcomes

Key Findings: COVID-19

As of the end of the study period, the week of July 31, 2022, OHA recorded 860,300 COVID-19 cases in Oregon. There were 34,376 hospitalizations (4% of all cases), and 8,291 people died. The COVID-19 case rate peaked at 1,332.25 during the week of January 10, 2022. It is evident that COVID-19 exacerbated already existing health inequities in the state of Oregon. In particular, Tribal Nations and Communities of Color were impacted by the COVID-19 pandemic disproportionately in comparison to White communities. This is attributable to systemic inequities that influence the Social Determinants of Health, rather than personal choices related to virus protection. See Report 1 and Appendix J for more detailed information about the data and visualizations.

COVID-19 Testing

- Throughout the study period there were 12,243,393 COVID-19 tests reported.
  - The largest number of tests were reported in January 2022 (1,182,604).
  - The highest test positivity rate (the percent of tests that are positive) was in March 2020, at 31.8%, and the second highest test positivity rate was in January 2022, at 27.9%.

Emergency Department Visits

- Emergency department visits aligned with increases in COVID-19 cases and case rates across Oregon during the same weeks throughout the study period.

Hospitalizations

- Throughout the study period, adults aged 65 and over had the largest number of hospitalizations in Oregon, with a total of 15,870 individuals aged 65 and over ever being hospitalized, representing approximately half (48.7%) of all COVID-19 hospitalizations in Oregon.
- Hospitalization rates were consistently highest among individuals who identified as American Indian/Alaska Native, Black, Pacific Islander, and Other in comparison to those individuals who identified as Asian, White, or Multiracial.

COVID-19 Deaths

- As of the week of July 31st, 2022, there were 8,291 COVID-19 deaths in the state of Oregon. September 2021 and February 2022 were the months with the highest number of COVID-19 deaths (646 and 460, respectively).
- The number of COVID-19 deaths among individuals who had an underlying health condition decreased throughout the study period (between March 2020-July 2022).
- During the Delta wave (August 2021), a larger percent of weekly deaths were from those without an underlying health condition.
- In 2021, Oregon's death rate from COVID-19 was 69.2 per 100,000 population, the 11th lowest death rate of the US. Oklahoma had the highest death rate at 158.8 per 100,000 population, and Vermont had the lowest death rate at 29.5 per 100,000 population.[1]

1. Centers for Disease Control and Prevention. COVID-19 Mortality by State. 2021. Retrieved from: https://www.cdc.gov/nchs/pressroom/sosmap/covid19_mortality_final/COVID19.htm

Statewide Deaths by Age

- As age increased, so did the cumulative number of COVID-19 deaths.
- As of July 2022, there were 13 COVID-19 deaths among children less than 18 years of age.
- The largest number of COVID-19 deaths occurred among older adults.
- Those 80 years of age and older represent the largest number of cumulative deaths (n=3,502).

Statewide Deaths by Congregate Setting

- Although at the start of the pandemic nearly 50% of COVID-19 deaths were among people living in congregate settings, by July 31, 2022, the majority of deaths (63.8%, n=5,310) occurred among individuals whose congregate setting status was unknown.

Statewide Deaths by Race/Ethnicity

- Throughout the study period, White individuals had the highest number of total deaths.
- When looking at death rates per 100,000 of the population, Pacific Islander (196.43 per 100,000) and American Indian/Alaska Native (287.12 per 100,000) individuals had the highest death rates, compared to White individuals (155.04 per 100,000).

Key Findings: Secondary Indicators

This section reviews health equity outcomes related to the COVID-19 pandemic response, including second-hand health disparities resulting from the increased strain on hospitals, health systems,

and resources. Existing data sources were mined to examine differences in some secondary health outcomes and social determinants of health between 2019 and the end of the study period in 2022. These findings are descriptive and do not determine causality; there are likely alternative explanations for changes in outcomes during COVID-19. For example, declines in prevalence statistics may be due to decreased access to health care and screening. See Appendix A for more detailed data, visualizations, and data sources.

Behavioral Health

- Suicide deaths remained fairly constant (there was a very slight decrease).
- Unintentional opioid overdose deaths have increased substantially since 2019; there has been an increase in deaths from all drug overdoses.
- Non-fatal drug overdoses increased slightly.

Sexually Transmitted Diseases

- The incidence rate of HIV in Oregon decreased slightly between 2019 and 2021, then increased in 2022.
- The percentage of Pre-exposure prophylaxis (PrEP)[2] coverage among those with PrEP indicators[3] increased steadily.
- Reported chlamydia cases and gonorrhea cases both decreased slightly; early syphilis cases increased moderately.

2. Pre-exposure prophylaxis (PrEP) is the use of antiviral drugs to prevent HIV/AIDS.
3. PrEP indicators are factors that increase risk for HIV.

- Clinic-based HIV testing:
  - Dropped in 2020, then increased slightly but not to to pre-pandemic levels.
  - Increased slightly for people who are transgender or gender non-conforming.
  - Decreased slightly for White people and increased for other racial/ethnic groups.

Immunizations

- The number of kindergarteners completing all school-required immunizations decreased by 1%.
  - Tillamook, Curry, Crook, Harney, Grant, and Jefferson counties saw larger decreases.
- Between 2019 and 2022, the percentage of two-year-olds with up-to-date immunization status decreased by 3%.
- The number of TDaP vaccines distributed among women of childbearing age decreased substantially.
  - Regions 2 and 3 saw the greatest drops, which increased slightly over time (See Appendix A for a list of counties in each region).

Maternal Health

- Adequate prenatal care rates remained constant with a very small dip in 2022.
- The percentage of infants with low birthweight slightly increased.

Economic Well-being

- The percentage of Oregon residents receiving SNAP benefits increased substantially.

Education

- Fall student enrollment numbers declined by almost 30,000 students between 2019-2020 and 2020-2021 school years.
- Enrollment in Region 3, 4, and 5 increased between 2020-2021 and 2021-2022 while enrollment continued to decline in Regions 1 and 2 (See Appendix A for a list of counties in each region).
- Chronic student absenteeism rose dramatically for all students.
- The percentage of 9th graders on track to graduate decreased between the 2019-2020 and 2020-2021 school years, and increased for the 2021-2022 school year.
- The percentage of students meeting or exceeding statewide academic achievement standards in 3rd grade reading fell statewide during the study period (2019-2022).
- Inequities in school measures did not change over time, and students of color and students with disabilities remained more chronically absent, less likely to be on track to graduate, and less likely to meet/exceed statewide academic achievement standards.
- The number of students experiencing houselessness was on a downward trend between the 2018-2019 and 2020-2021 school years, and increased slightly between the 2020-2021 and 2021-2022 school years.

[Public Health Response in Schools]

"Schools shouldered so much of the public health burden of our young people and communities."

—SD Interviewee

Public Health Response in Schools

Key Findings:

Resources

- School Districts (SDs) and Educational Service Districts (ESDs) reported using state and other COVID-19 funding for an array of pandemic response activities at the district and school levels including purchasing personal protective equipment (PPE) and modifying school environments to allow for social distancing.
- SDs, ESDs, and Schools reported concerns about having continued funding to support COVID-19 response in their community.
- Lack of clarity around allowable use of funds, short timeframe to spend funds, frequent changes to funding structure(s), inflexibility of funds, and administrative requirements associated with COVID-19 funding were all cited as barriers to efficient use of funds by education sector participants.

Emergency Preparedness + Public Health Emergency Coordination

- The majority of SDs and ESDs reported their district was highly or moderately prepared to respond to the COVID-19 pandemic, but a third of SDs reported their district was minimally or not

KEY QUOTES

"We spent quite a bit of money just trying to create a more robust online experience. So, we spent a lot of money on Chromebooks…we needed to make sure that all the kids had devices and then hotspots for people that didn't have very good internet."

—SD Interviewee

at all prepared to respond. At the school level, results were less positive. Principals felt their school was unprepared for COVID-19 response. Outdated or non-existent Emergency Operations Plans (EOPs) at the school level, lack of prior training and experience in emergency preparedness, and inexperience as an administrator (i.e., COVID-19 hit during their first year as a school administrator) were all cited as reasons for unpreparedness.

- Unclear roles in pandemic response hindered the response in schools. Some educators reported that collaboration with LPHAs specifically, was, at times, a challenge due to low capacity for collaboration or not having a pre-existing relationship with their LPHA.
- Many schools collaborated with their LPHA or other community organizations (e.g., local hospital or health care clinic) to coordinate vaccine clinics on or near school grounds. Many educational participants reported confusion around the prioritization of educators for the COVID-19 vaccination without the associated return to schools.
- The vast majority of educational participants reported using COVID- 19 resources developed by the ODE and OHA to inform COVID-19 response in their district or school. Unfamiliarity with public health jargon, however, often made interpretation of these resources confusing. Further, unique challenges for

KEY QUOTES

"I had no knowledge about health care protocols or best practices. We didn't even have laptops for teachers or Chromebooks for students. We didn't have enough textbooks for everyone to take a book home. Implementation and logistics were really overwhelming."

—SD Survey Respondent

"We had internal mechanisms and protocols to immediately implement. Roll out of plans from ODE was slow for school reopening documents and protocols. Excellent working relationship, collaboration, and communication with the local health department."

—ESD Interviewee

serving populations with specific needs (e.g., students with learning or physical disabilities) added a layer of complexity to interpretation and implementation of guidance.

Public Health Mandates: Compliance + Enforcement in Schools

- Lack of clarity around roles and responsibilities in implementing public health mandates and guidelines was problematic for schools, particularly relating to contact tracing, which schools felt became overly burdensome during COVID-19 infection spikes. Role uncertainty around implementing public health mandates and associated changes to roles during the COVID-19 pandemic response hindered schools' response effectiveness.
- SDs, ESDs, Principals, and School Nurses reported trying their best to adhere to executive orders and used an array of enforcement methods, including behavior modeling, clear messaging, and punitive consequences. Overarching enforcement challenges included the politicization of mandates, the frequency with which public health mandates and associated guidance changed, and lag times between when a complaint (OR-OSHA) was filed and follow-up. Additionally, there were many enforcement-related challenges specific to the school setting, including confusion about how public health mandates applied to schools, inconsistent enforcement across districts, and inability to implement specific measures with school-aged

KEY QUOTES

"The majority of my day sometimes would be creating contact tracing lists for our public health, our county public health, and calling families and getting work and having them pick things up."

—Principal Focus Group Participant

"I mean, the scope of trying to do contract tracing for that many people, for that many schools across that many areas was probably foolish to even imagine you could do. So, I think the contract tracing was really a little bit of a disaster, just because of the scope."

—SD Interviewee

children. Enforcement was not consistently applied across all Oregon schools.

Public Health Messaging + Communication in Schools

- Education sector study participants reported numerous successes related to COVID-19 public health messaging and communication, including creating clear messaging (e.g., meetings, signage, exposure letters) and translation of materials across multiple languages. Nevertheless, the frequency at which public health guidance and communication changed from state level agencies and LPHAs, as well as conflicting guidance across different agencies, posed substantial challenges.

Recommendations:

1. Build out and invest in comprehensive emergency preparedness for schools at the district- and school-level to incorporate pandemic-level events, and include training for school administrators and frequent EOP updates.
2. Continue to invest in partnerships between the education sector (e.g., SDs, ESDs, schools) and public health sectors (e.g., LPHAs, OHA), as this will enable a more timely and collaborative response to future public health emergencies in Oregon's schools.

KEY QUOTES

"It was the worst time as an educator. There were extremely long hours, we did not have local control, and I was asked to enforce rules that my community did not believe in. It divided our staff and community, and the administrators took the brunt of it."

—Principal Focus Group Participant

"I literally had my life threatened over asking someone to wear a mask. I had milk thrown at me. I had all kinds of things happening."

—School Nurse Focus Group Participant

3. Invest in sustained emergency operations funding for schools; with sustained effort, EOPs and communicable disease management plans in schools will be implemented with more efficiency and timeliness. Specific recommendations regarding funding for schools include:
    a. Invest in necessary school building infrastructure improvements (i.e., HVAC, desks, filtration systems, outdoor access) to align with best practices to prevent or slow transmission of communicable diseases.
    b. Streamline funding to reduce administrative burden for schools.
    c. Improve communication about emergency operations funding, including communication specific to allowable use of funds, timeline for spending funds, and duration of funding.
4. Clearly define roles and expectations for all involved in public health response in schools in advance of emergency response.
5. Support disease investigation training and resources in schools to effectively respond in future communicable disease related emergencies.
6. Support both districts and schools to conduct an After-Action Review (AAR) of their response and to define areas of improvement to inform future public health emergency response.
7. Involve schools when making decisions about public health mandates and other emergency response decisions that impact schools; it is imperative that the education sector is brought to the table to inform development of guidelines and recommendations for the school setting. School nurses, in particular, are a valuable resource that should be utilized when planning emergency response at both the district and school levels.
8. Ensure data availability at district and local levels that includes sub-population data and corresponding TA; a designated liaison at LPHAs to coordinate data availability and provide

TA for each district would ensure greater availability and accessibility of TA to inform response for future public health emergencies. This recommendation may require additional resources for LPHAs.

9. Recommendations related to the enforcement of public health protection mandates in schools are summarized as follows:
    a. Comprehensively examine the benefits and risks of specific public health mandates in varied schools and population settings, including the long-term impact of using specific mandates in Oregon preschool and school settings on child health and educational outcomes.
    b. Re-examine the enforcement structure for public health mandates in schools to ensure schools are adequately equipped with the necessary resources to support enforcement.
    c. Clearly articulate compliance roles and responsibilities; all parties involved in this structure should receive the necessary training to ensure successful follow-through in future public health emergencies.
    d. Ensure that enforcement-related messaging is clear, consistent, and takes into consideration the individualized needs of the populations(s) the district or school serves.
10. Coordinate messaging across public health and education organizations before information is communicated to the public. This step is imperative to build trust and allow schools time to digest guidance and figure out how to implement guidance at their school. Further, schools need support (via additional funding, staffing, or otherwise) with translating and communicating information to be culturally-specific and tailored for the population served.

[Non Governmental + Community Partners]

"We need to have CBOs at the table when it comes to any kind of pandemic response."

—CBO Interviewee

Non Governmental + Community Partners

Key Findings:

- CBOs made pivotal contributions to Oregon's COVID-19 pandemic response and played four primary roles:
  - Providing essential resources to community members;
  - Educating community members about COVID-19 and pandemic control measures;
  - Implementing or partnering to support emergency response activities; and
  - Elevating community needs with state and local partners through advocacy.
- Most CBOs reported they were highly or moderately prepared for the pandemic and significantly grew their capacity throughout the pandemic. CBOs cited their capacity strengths as trust with the community, experience supporting community members to navigate services, strong communication channels, extensive partner networks, and flexibility. The top CBO capacity limitations were financial and staffing-related.
- OHA and LPHAs provided significant support to CBOs, including funding via grants and contracts, resource allocation, training and technical assistance, and information and data-sharing.
- CBOs identified several gaps in the support they received, including:

KEY QUOTES

"Our team was ready, willing and able to implement COVID protocols at our events and in daily operations. We are an extraordinarily flexible organization and built our capacity quickly to respond to the emergency."

—CBO Survey Respondent

"We underestimated the lack of trust that communities of color have in government institutions and health care, due to lack of access or discrimination... Building trust and being more engaged with our partners earlier on, I think could have really helped us, by way of inequities."

—OHA Director Interviewee

- Lag in the prioritization of vulnerable populations in the pandemic response;
- Limited understanding within government agencies of how to operationalize equity in response activities;
- Need for more funding support;
- Limited buy-in from some local leaders for pandemic control measures; and
- Lack of role clarity between LPHAs and CBOs which hindered partnerships.

Recommendations:

1. Improve communication about funding opportunities.
2. Simplify funding application and documentation processes.
3. Increase flexibility of funding.
4. Prioritize learning and capacity building around equity practices in a public health emergency response.
5. Designate OHA and LPHA staff contacts for CBOs, creating a clear and consistent chain of communication for support and efficiency.
6. Foster and maintain relationships and collaboration between CBOs and OHA and LPHAs.

KEY QUOTES

"We had the infrastructure in place to reach our community, but we lacked the resources to do so."

—CBO Survey Respondent

"Two of the most important factors in our ability to respond to the COVID-19 pandemic were established relationships with communities most impacted and community trust. We had both going in, and were able to respond quickly to connect folks to information and resources."

—CBO Survey Respondent

[Tribal Nations + Tribal Organizations]

"As a sovereign nation, we can set our own [vaccine] priority list..."

—Tribal Nation Interviewee

Tribal Nations + Tribal Organizations

Key Findings:

- Tribal Nations performed key public health functions for their tribal and non-tribal communities throughout the pandemic.
- Tribal Nations implemented and enforced similar public health measures as state and local governments, such as mask mandates, stay-at-home orders, and remote work.
- Tribal Organizations filled a critical supportive role for American Indians/Alaska Natives (AI/ANs) during stay-at-home orders and isolation/quarantine with food, traditional medicines, activities, and cultural connection.
- Partnerships were an important way to coordinate COVID-19 testing and vaccination clinics; acquisition of PPE, testing, and vaccination supplies; and coordinating care for community members.
- Funding provided to Tribal Nations and Tribal Organizations was often too specific in requirements for what it could be spent on and inconsistent with current needs of the community.
- Both Tribal Nations and Tribal Organizations struggled with having enough staff/staff capacity to efficiently support their communities during the pandemic.

KEY QUOTES

"COVID is… or at least the negative aspects of it, are highlighted by capitalism and colonialism… what we have is people fighting for dollars and fighting for land and space, and health, as a direct result."

—Tribal Organization Interviewee

"We were given a lot of money to meet critical needs, but none of that came with FTE. So it was great being able to get money out and get people's rent paid, but it was a huge burden on our staff."

—Tribal Organization Interviewee

- Tribal Nations reported a lack of accessible tribal-specific data to support their decision-making related to COVID-19 response in their communities.

Recommendations:

1. Implement flexible funding streams for Tribal Nations and tribal organizations so they can identify and support their communities specific needs.
2. Develop data collection and reporting methods for tribal-specific data.
3. Increase communications between Tribal Nations and Tribal Organizations with LPHAs, OHA, Northwest Portland Area Indian Health Board (NPAIHB), and Indian Health Services (IHS) to better coordinate disease investigation and reporting processes.
4. Maintain new and strengthened partnerships that were built by Tribal Nations and Organizations during COVID-19 response. Utilize these partnerships to actively work together to eliminate health inequities in order to reduce the disproportionate impact of public health emergencies on tribal communities in the future.

KEY QUOTES

"It was difficult when the money was specifically earmarked for testing only, or for quarantine, or something like that."

—Tribal Nation Interviewee

"Keeping up on the disease investigation became harder as case numbers went up, just due to the number of staff we had who could do that. So we did turn contact tracing back over to the county… that process… could definitely use some improvement on how the LPHA and the Tribe are going to work together in response, that communication back and forth and how it works in the different software systems."

—Tribal Nation Interviewee

Migrant + Seasonal Farmworker Supports

Key Findings:

- OHA, CBOs and LPHAs supported Migrant and Seasonal Farmworker (MSFW) communities by providing funding, disseminating information/combating misinformation, and providing testing services, vaccinations, emergency financial assistance, food boxes, and connections to other resources in the community.
- CBOs were critical in supporting MSFWs in the COVID-19 response. Most CBOs believed that their separation from the local and state government accelerated relationship-building with MSFWs and allowed them to provide services to many more people than would have received services if they were not involved in the COVID-19 response.
- One of the biggest barriers to providing COVID-19 supports to MSFWs was reaching them at times and locations that were tenable with their long working hours and limited time off and transportation. This was overcome by bringing the supports to MSFWs in the form of PPE deliveries, mobile testing and vaccination units, and information sessions at worksites.

KEY QUOTES

"In partnership with [a health center] and [a CBO], we coordinated on-site vaccination events at all of the largest agricultural employers in our county. By offering vaccinations on job sites, we have been able to vaccinate individuals who otherwise would not have had the opportunity given the financial impact of missing work."

—LPHA Equity Plan

"There's new infrastructure, there are new working relationships between the state and public health departments as well as with CBOs. I think we need to continue that and continue the resources."

—CBO Interviewee

Recommendations:

1. Continue to nurture relationships between OHA, LPHAs, CBOs, farmers, and MSFWs to improve coordination in future public health emergencies and support health equity among MSFWs more broadly.
2. Embrace population-specific engagement methods, including radio, on-site information and services, and the use of trusted messengers such as CBOs with established relationships to MSFW communities.
3. Restructure contracts and reporting requirements for CBOs to facilitate sustained relationships between OHA, LPHAs, and CBOs, and minimize administrative burden.

KEY QUOTES

"This is the first time that the government, the state of Oregon, and the federal government really considered farmworkers as essential workers in the midst of the pandemic. We need folks to continue growing food, processing food for the country. The fact that we're recognizing that folks, their work, and their families as essential needs to be continued in some way. And within the Oregon Health Authority and the state overall, I think that particular community needs to be lifted up because they're often without resources, even though they are essential within our community."

—CBO Interviewee

Local Epidemiological Capacity + Data

Key Findings:

- Not surprisingly, the COVID-19 pandemic stretched Oregon's epidemiological capacity. Many LPHA participants reported great difficulty hiring staff with the necessary skills and knowledge to perform critical data collection, interpretation, and dissemination functions.
- OHA supported local epidemiological capacity in various ways, including:
  - Providing direct technical assistance;
  - Conducting statewide and regional meetings that provided an opportunity to share epidemiological data and get technical assistance;
  - Routing funding to LPHAs to increase staffing for local epidemiological data capacity;
  - Sharing epidemiological data communication and messaging resources that aided LPHAs in addressing misinformation efforts in their communities; and
  - Setting up and streamlining systems for LPHAs to order and receive tests, vaccines, and other supplies.
- Existing epidemiological data systems were severely strained by the surge of users trying to access the system at the same time. LPHA participants described these systems

KEY QUOTES

"We had to do a lot of our own data analyses before the state could ever do it, to understand what was happening in our community. Our epidemiologist identified the disparities in our Hispanic/Latino/Latina/Latinx community before the state did. But we had to navigate discrepancies in race/ethnicity data, [the] old way of collecting data versus REALD."

—LPHA Interviewee

as all but unusable during peak stages of the pandemic, and OHA reported that modules had to be built and separated from the original system to improve usability.

- When Oregon's pandemic response officially began in March 2020, OHA was in the process of developing standards to improve collection and reporting of Race, Ethnicity, Language and Disability (REALD) data and sexual orientation and gender identity (SOGI) data, which meant that there were not strong practices in place or sufficient capacity to build and adapt standards across governmental public health entities and the array of partners engaged in pandemic response activities. These capacity challenges hindered the use of REALD and SOGI data to inform Oregon's health equity work in response to the public health pandemic.

Recommendations:

1. Invest in epidemiological data systems improvements.
2. Continue to prioritize the development of standards for the collection of and access to REALD and SOGI data.
3. Collaborate with LPHAs to consider innovative staffing models that support sustainable epidemiological capacity, such as regional epidemiologists that can support multiple counties.

KEY QUOTES

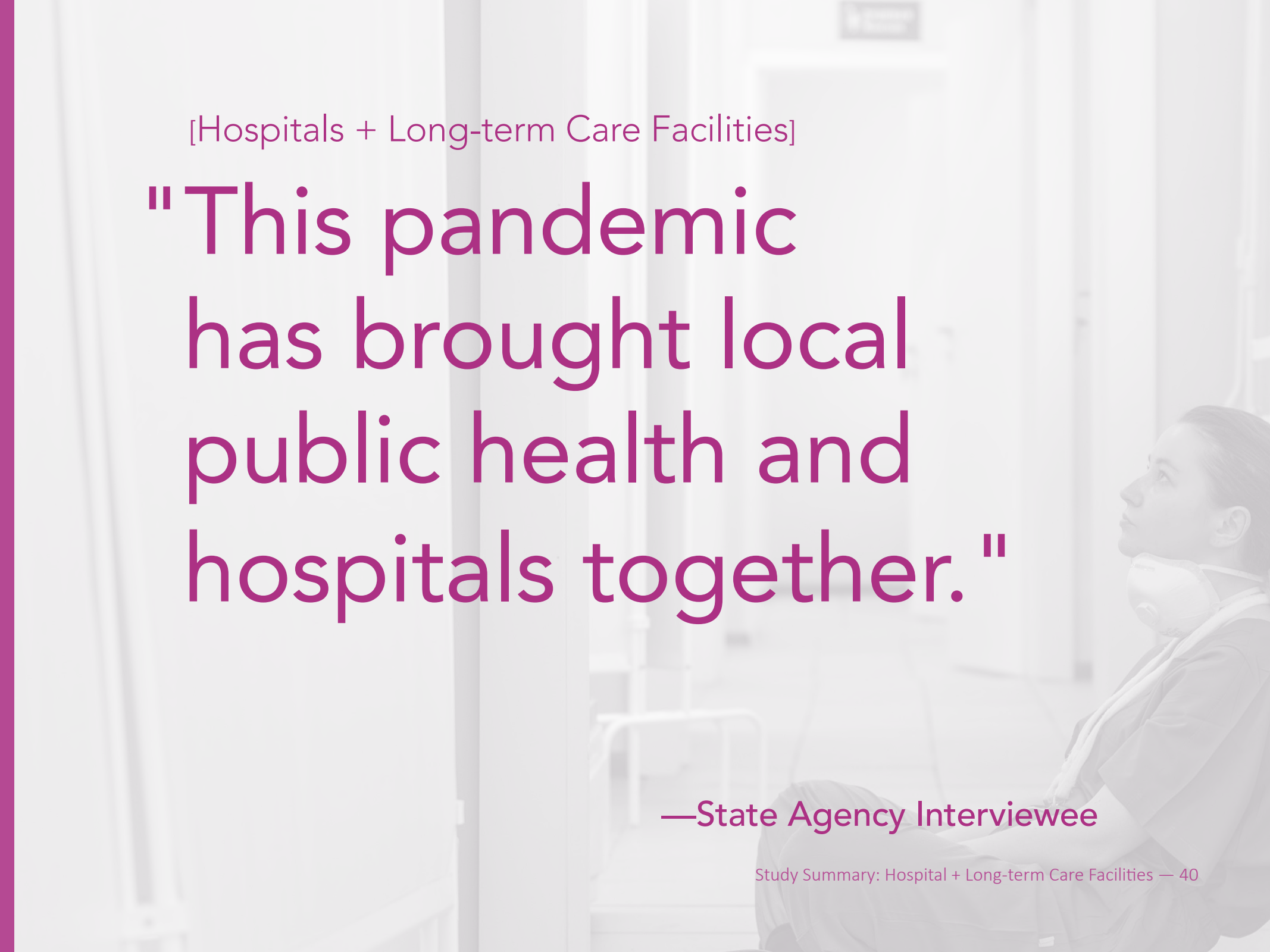
"Disease investigation started to improve because we leveraged the support of OHA. We didn't have enough staff trained to do that."

—LPHA Interviewee

[Hospitals + Long-term Care Facilities]

"This pandemic has brought local public health and hospitals together."

—State Agency Interviewee



Hospitals + Long-term Care Facilities

Key Findings:

- Long-term care facilities (LTCFs) required special attention in Oregon's public health system response to COVID-19.
- Previously established relationships and lines of communication were essential for successful role coordination between hospitals, LTCFs, and LPHAs. In cases where LPHAs and LTCFs did not have extant working relationships, pandemic response was markedly less effective, causing harm to LTCF residents.
- Jurisdictional role confusion about OHA and Oregon Department of Human Services' (ODHS) roles occurred around enforcement of public health measures in LTCFs. This created additional (and unnecessary) challenges for LTCFs.

Recommendations:

1. Develop and maintain relationships among LPHAs, LTCFs, and hospitals to ensure effective communication during a public health emergency.
2. Develop clear guidance for LTCFs around public health and infection control regulations outlining different roles of OHA and ODHS. Ideally, dissemination of this information would be co-created with LTCFs and LTCF advocacy groups.

KEY QUOTES

"I think that we had a great relationship with our local hospital before. We have an excellent relationship now."

—LPHA Group Interview Participant

"In some regions, the relationship was really good; and in others, it depends on personalities."

—Health Care Association Interviewee

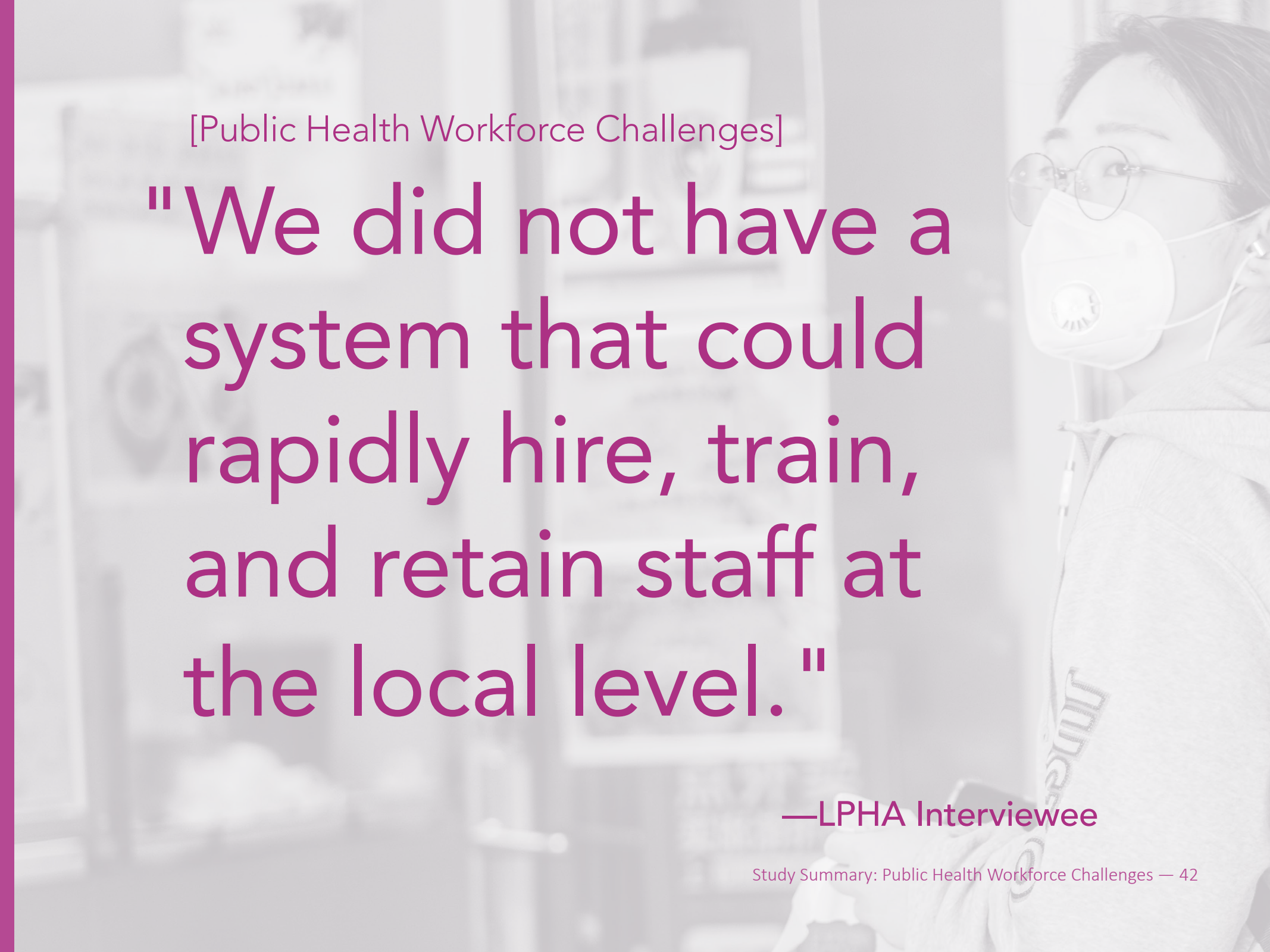
"The nursing homes, they were getting conflicting guidance from the state and the feds… We absolutely positively need to figure out who the nursing homes are going to answer to."

—LPHA Interviewee

[Public Health Workforce Challenges]

"We did not have a system that could rapidly hire, train, and retain staff at the local level."

—LPHA Interviewee



Public Health Workforce Challenges

Key Findings:

- Staffing challenges hindered pandemic response for governmental public health. Difficulty recruiting, onboarding, and retaining staff was a strong theme across individual interviews, group interviews, and surveys with LPHA administrators and staff. In the LPHA survey, 87.2% (n=34) of respondents reported that staffing shortages hindered the effectiveness of their pandemic response.
- A majority of OHA Director interviewees ranked staffing capacity at OHA as a significant challenge that negatively affected OHA's ability to respond to COVID-19. At the beginning of the pandemic, OHA needed to hire numerous new staff to mount and coordinate an effective response; in addition, OHA reassigned many existing staff to new COVID-related work and roles. Small applicant pools for hiring and contracting and limited human resources administrative capacity to meet the hiring demand stalled hiring efforts.
- Multiple respondent groups routinely reported working 60-70 hour work weeks for many months during 2020 - 2022. Several OHA Staff and Manager interviewees indicated that maintaining overall workforce capacity after the Delta variant emergency was especially difficult because the workforce was already stretched thin.

KEY QUOTES

"It was difficult to onboard staff and do training in the midst of dealing with case investigation and contact tracing. It was definitely like building the plane as you were flying it."

—LPHA Group Interview Participant

- Analysis of individual interviews, group interviews, and LPHA survey responses surfaced two themes within challenges to recruiting public health staff during the pandemic:
  - County-level administrative burden for hiring; and,
  - Overall public health workforce shortages, especially for nurses and epidemiologists.
- LPHAs were able to relieve some of the burden on staff by turning to volunteers to assist with the work. Medical Reserve Corps were specifically named by several LPHAs as a helpful resource during the pandemic response. However, a few LPHAs noted that because individuals in Medical Reserve Corps were older, they were at higher risk for COVID-19 serious illness and therefore were not able to be as involved. Other LPHAs were able to draw on community volunteers, including retired nurses, through the county government volunteer management department or through partnerships with CBOs. Importantly, volunteer management required staff capacity and many health departments were not able to devote resources to this task.
- Other solutions LPHAs used to augment staff capacity included:
  - Contracts with CBOs to facilitate major work areas such as contact tracing;
  - "Loaned" staff from other departments within county government;
  - Mobilizing graduating nurses directly to the LPHA's pandemic response or working with university to

KEY QUOTES

"We needed to staff up with 100+ contact tracers, and we didn't have the HR systems in place to do good, quick hiring. I mean, it just felt like we were always one step behind in trying to catch up. It impacted our ability to be responsive to community. It impacted our ability to get ahead of some of the work like contact tracing and vaccines."

—OHA Director Interviewee

intern PhD students for epidemiology support; and
  - Hiring temporary staff.
- OHA also relied on reassignment of staff from other non-communicable disease programs and hiring temporary staff.
- LPHAs and OHA demonstrated tenacity, creativity, and accountability in staffing up for the pandemic.

Recommendations:

1. Plan for surge capacity within a large-scale, longer-term public health emergency using lessons learned from the COVID-19 experience. Mutual aid agreements, whereby jurisdictions establish the legal basis for sharing resources in the event of an emergency, are critical tools for preparedness planning, but may be of limited value in a geographically dispersed event; thus planning for hiring, reassigning, and limiting non-emergency response functions should be established.
2. Create plans and protocols at every jurisdiction in the entire public health system that can be activated in a large-scale event, such as the COVID-19 pandemic, for streamlining hiring and worker reassignment processes.
3. Cooperatively, between LPHAs and city and county emergency management programs, create, review, and simulate surge capacity models and plans to outline the most efficient use

KEY QUOTES

"It always felt like we were trying to catch up and it has created a great incredible strain on people and mental health, physical health of us in the agency."

—OHA Director Interviewee

of available human resources in a public health and medical services emergency.
    - Models and plans should clarify roles and responsibilities for primary, supporting, and coordinating agencies to avoid duplication of efforts and provide a baseline for expanding workforce capacity in areas where it is most needed.
    - Planning should include additional partners such as CBOs, neighborhood associations, and other government agencies (e.g., housing, human services, volunteerism, and natural resources departments).
4. Emphasize and create local public health emergency preparedness relationships, especially as the public health leadership workforce rebounds from the strain of the COVID-19 pandemic and experiences an influx of new leadership.
5. Improve local epidemiological capacity while recognizing that local capacity may come in the form of regional epidemiological services or other shared services models. Recognize that funding, in addition to Public Health Modernization funding, may be necessary to create the requisite capacity.

KEY QUOTES

"There was not an adequate infrastructure prior to the pandemic that could have supported something so longterm and of this magnitude. We did not have a system that could rapidly hire, train, and retain staff at the local level…. We have been working with the bare minimums for decades."

—LPHA Interviewee

Appendix

- Appendix A: Secondary Health Outcomes + Social Determinants of Health Data
- Appendix B: Educational Survey Respondents Regional Analysis
- Appendix C: Principal Survey Respondents Analysis by Grades Served
- Appendix D: Migrant + Seasonal Farmworker Supports in Response to COVID-19

Click here for more information about the study