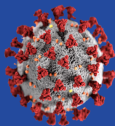


## Chapter 7

### Local Response

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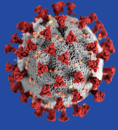
Version History

Version #	Date	Notes
0.1	9/27/2023	First Draft submitted to CPR Team
0.2	2/6/2024	Final Draft revised per review by CPR Team
0.3	3/19/2024	Final Draft revised per Expert Review
0.4	4/29/2024	Final Draft revised per CPR Leadership review

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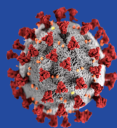




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## 7. Local Response

Public Health Emergency Preparedness and Response Capabilities: Emergency Operations Coordination.

Related CDPH AAR chapters: MHOAC and RDMHS

In this chapter, some abbreviations may be used interchangeably with their respective full spellings for ease of reading.

### Chapter Summary

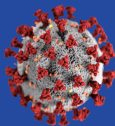
#### Overview

*This chapter summarizes the input received from the California Department of Public Health's (CDPH) survey to California's Local Health Jurisdictions (LHJs) on their COVID-19 activities.*

In spring 2023, CDPH distributed a COVID-19 Abbreviated After Action Report (A-AAR) data collection survey to all 61 Local Health Jurisdictions (LHJs) to obtain information on their key successes, challenges, and lessons learned to prepare for future public health events. The survey served two purposes: to collect information to information CDPH's COVID-19 After Action Report (AAR) and to collect information for Public Health Emergency Preparedness (PHEP), Hospital Preparedness Program (HPP), and Pandemic Influenza (Pan Flu) reporting. Due to the need to coordinate and implement policies and considerations by region instead of by county during COVID-19, CDPH formed the Local Coordination Team, which developed five health officer regions based on geographical and similar operation needs (further discussed in the County Monitoring and Local Coordination chapter in this AAR). To capture the reflections and other aspects of the response actions, the analysis in this chapter is based on the five health officer regions. Additionally, CDPH developed and sent a separate survey to Medical Health Operational Area Coordinators (MHOACs) and Regional Disaster Medical Health Specialists (RDMHSs) to collect information for the MHOAC/RDMHS chapter in this AAR. The analysis in the MHOAC and RDMHS chapter is organized by the six mutual aid regions.

Out of the 61 LHJs, 59 submitted A-AAR responses. The contents of this chapter are derived from qualitative analysis of the collected LHJ responses. In some instances, the surveys were completed by a single individual representing the

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## CDPH COVID-19 After Action Report Chapter 7 – Local Response

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entire LHJ. Refer to the last section of this chapter for the background on the data-gathering approach and methodology.

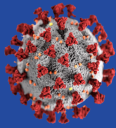
In the survey, LHJs shared their thoughts on their COVID-19 successes and challenges, their communications with CDPH, and their lessons learned for improvement. This chapter summarizes the input provided by LHJs as self-reported in the survey. **It does not reflect responses or comments from CDPH on the LHJs' observations.**

The LHJs frequently mentioned staffing, communications, resource acquisition, and the information technology used to support their response activities.

- Staffing includes the assignment, scheduling, and support of LHJ staff responding to the COVID-19 pandemic, activating Disaster Service Workers (DSWs), hiring additional personnel, leveraging contracted workers, and identifying volunteers.
- Communications includes internal messaging and coordination within the LHJ and its county; partner (state, federal, Health Care Coalition [HCC]), Medical Health Operational Area Coordinator (MHOAC), Regional Disaster Medical Health Specialist (RDMHS) collaboration, and public (media, nonprofits, schools, individuals) outreach and feedback.
- Resource acquisition includes obtaining supplies and equipment such as personal protective equipment (PPE), laboratory and testing equipment, physical space, and other material needs associated with pandemic response.
- Information technology includes the acquisition, deployment, and use of process automation tools, systems, and databases.

Overall, the LHJ A-AAR responses identified more challenges and lessons learned than successes.

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## Main Strengths and Successes

*This section describes the main strengths and successes identified by LHJs in their A-AARs. Further elaboration and a more detailed discussion of these strengths and successes can be found in the Analysis of Activities section.*

### 1. LHJ Staffing Strengths and Successes

LHJs consistently noted the dedication, flexibility, and performance of their staff as the key success factor to their COVID-19 response, citing long working hours and responsiveness to the myriad challenges of the pandemic. Several respondents described staff dedication to contact investigation and tracing early in the pandemic and during subsequent surges. One LHJ called out the dedicated staff who covered pandemic response-related work in addition to their day-to-day public health work responsibilities.

Respondents also characterized their staff management as successful when it was coordinated with the jurisdiction's human resources (HR) function. Several respondents described successfully collaborating with their HR representatives to address the LHJ's staffing shortages and vacancies during the pandemic through staff reassignments and emergency hires.

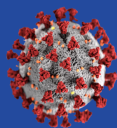
LHJs also had access to local government DSWs, volunteers, and contractor staff (either through local emergency procurements or through CDPH). According to respondents, these types of staff were successful additions to the COVID-19 response when they had relevant experience, training, and could be hired and brought up to speed quickly.

### 2. LHJ Communication Strengths and Successes

When it came to internal communications between LHJs and its staff, communications with the public, and communications between levels of government, LHJs reported that internal and public communications were the most successful.

The presence of pre-existing local plans and protocols for internal information sharing helped many LHJs communicate internally. LHJs reported that it was helpful to have a clear Incident Command System (ICS) framework that identified who was responsible for sharing

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information and updates to the organization. Many LHJs described their internal communications as successful due to routine messaging, as laid out in their emergency operations plans and procedures. These plans helped formalize and routinize internal communications. Other LHJs described how routine and scheduled internal communications enhanced "situational awareness" while reducing "disruption" during the pandemic.

Numerous LHJs attributed successes to having a Public Information Officer or Health Officer who could establish an ongoing relationship with the press and public during the pandemic. Another public communication success factor and strength was LHJs' work with community-based organizations (CBOs) to identify trusted messengers to deliver information to specific cultural, linguistic, and minority populations. Lastly, LHJs reported that communication was also successful when it was well-timed and conveyed using a channel customized to the audience. LHJs established many channels to communicate with the public and hard-to-reach populations, including social media, call centers, and door-to-door canvassing.

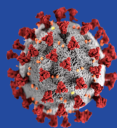
### 3. LHJ Resource Acquisition Strengths and Successes

LHJs faced unprecedented challenges in acquiring staff, equipment, and supplies during the COVID-19 pandemic. Success in these areas largely hinged on effective partnerships with MHOACs, RDMHSs, and CDPH. While some LHJs could independently secure resources, such as activating DSWs, hiring contractors, and leveraging emergency procurement systems, most relied heavily on the MHOAC/RDMHS program and CDPH for additional staffing and critical supplies like PPE, test kits, and vaccines. These partnerships were especially crucial during supply chain disruptions, providing essential resources and technical expertise. LHJs who were successful in securing supplies attributed their success to effective Emergency Operations Plans (EOPs) for quick procurement, and strong collaboration with MHOACs, RDMHSs, and CDPH.

### 4. LHJ Technology Strengths and Successes

LHJs identified the pivotal role of technology in enabling successful communication and resource management during the COVID-19

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pandemic. Telework, virtual meetings, and collaborative workspace technologies were cited as crucial for internal communication, while similar tools were also essential for external communication with stakeholders and the public. Mass communication utilities, including broadcast emails, text messaging systems, and smartphone notifications, innovated public outreach efforts. On the resource management front, some LHJs benefitted from pre-existing logistics and inventory tracking systems, while others relied on external systems provided by CDPH. Furthermore, new data management tools such as geographic information systems (GIS) and data visualization software were instrumental in tracking epidemiological data, aiding decision-making, and promoting public transparency. Overall, various new technologies were acknowledged as key contributors to the success of LHJs' pandemic response efforts.

## 5. Regional Variations of Strengths and Successes

There was not significant variation across the five health officer regions on success factors. Communication and staff were identified as the top success areas across all regions. With regard to resource acquisition, larger LHJs were more likely to have their own supply warehouse and smaller LHJs were more likely to use partner and CDPH resources. LHJs across the regions described using information technology to make advances in their pandemic response.

## 6. CDPH Strengths and Successes

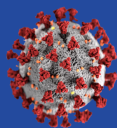
LHJs identified several operational areas in which CDPH was successful during the COVID-19 response: establishing regular communication with LHJs, obtaining resources for LHJs, and providing technology solutions.

A number of LHJs reported that CDPH's regular communications with them were successful. One LHJ wrote that it felt "positive" about CDPH's "communication pathways that were created for LHJs to be able to communicate directly with CDPH." These pathways included regularly-scheduled calls, virtual meetings, and webinars providing information specific to health care facilities and LHJs, which included question and answer segments.

Many LHJs appreciated CDPH's critical role in provisioning staff, supplies, and equipment to expand county case investigation, contact tracing,

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testing, and vaccination activities. As one wrote, “the State’s willingness to develop contracts for laboratory, staffing and PPE supplies was so helpful at the local level.” Respondents also identified creation of the centralized lab for COVID-19 testing and state allocation and distribution of PPE, hand sanitizer, specimen collection kits, and rapid antigen test kits as CDPH successes.

CDPH funding was also occasionally mentioned. One LHJ expressed appreciation for the state’s funding of Optum Serve sites and SnapNurse. Others credited CDPH’s grant funds for expanding the scope and effectiveness of their local responses.

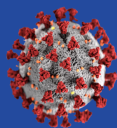
Many LHJs credited CDPH’s technology advances—such as myCAvax, CalREDIE, CalCONNECT, My Turn, and the Public Health Ordering System—as keys to their successful response. As one LHJ representative wrote, “the utilization of State vaccine scheduling and tracking software” was a huge advance.

## 7. MHOAC/RDMHS Strengths and Successes

Many LHJs reported that their MHOAC and RDMHS were essential to successfully obtaining PPE, test kits, vaccine, other equipment and supplies, and information necessary for the pandemic response. LHJs often combined the contributions of their MHOAC and RDMHS in this ability to obtain resources as one LHJ summarized, “the MHOAC/RDMHS Program proved to be the most efficient manner to work collectively with our region for receiving supplies, distributing supplies or vaccine, information sharing and daily updates.”

According to survey respondents, both MHOACs and RDMHSs contributed to successful communication and resource allocation, in which their roles were distinct: the MHOAC was lauded for its efficacy in hospital “level loading,” or capacity balancing, and for obtaining resources from a wide variety of sources including governmental agencies and the military. The RDMHS, on the other hand, was recognized for its role within the formal emergency operations command structure, provisioning staff, supplies, and equipment. The survey feedback often highlighted the MHOAC as a greater success factor, attributing this to its broader reach in resource acquisition and

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suggesting that there is a need to further support the MHOAC program given its evolving essential role in emergency management.

## 8. Health Care Coalition Strengths and Successes

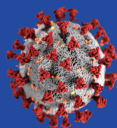
Survey responses indicated that two factors contributed to successful HCC operations during the pandemic. The first contributor to success was existing relationships with HCC members and familiarity with emergency response requirements. Through regular standing meetings and other activities pre-pandemic, successful HCCs were able to obtain resources through their MHOACs. This was due to active and engaged HCC members' familiarity with requirements, such as the General Message ICS Form 213, which is used to send any message to incident personnel that requires hard-copy delivery. As one LHJ wrote, its HCC already had strong, positive relationships and familiarity with its MHOAC program, so its members were able to get the resources they needed "such as PPE, testing supplies, and vaccines." HCC stakeholders who were familiar with ICS operations were able to quickly submit resource requests and have their supply needs met. When HCCs did not possess this pre-existing knowledge, some LHJs reported being able to provide education and training to HCCs on processes and procedures.

The second success factor for HCCs was that it facilitated cross-facility communication and coordination of resource needs. Several respondents identified unique needs across long-term care facilities (LTCFs), skilled nursing facilities (SNFs), and hospitals; the HCC provided a format and forum to coordinate across these entities. A number of LHJs reported that the HCC offered a venue to build relationships with the facilities in their jurisdiction. One LHJ described how its Public Health Officer routinely spoke directly to HCC leadership to "answer one-on-one questions" and provide guidance specific to each facility. When communication was strong, LHJs' relationships with HCCs were often described as more successful.

## 9. Public Health Laboratory Strengths and Successes

There was an unprecedented demand for testing during the pandemic. For LHJs that operated their own public health (PH) lab, expanding testing capacity (e.g., obtaining additional staff, space, and equipment) was a primary success. Several LHJs reported utilizing private laboratory partners and CDPH's Optum Serve testing service

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successfully. As with any other successful response to the pandemic, the PH lab depended on the efforts of individual staff. Many LHJs acknowledged how laboratory staff rose to the challenge, as exemplified by this representative comment: “[PH lab] staff willingly adjusted their daily schedules, extended their hours, and worked on weekends. Dedication and flexibility of laboratory staff, including microbiologists, laboratory technicians, and data entry/billing staff greatly contributed to the major success of the PH lab.”

## Main Challenges and Lessons Learned

*This section summarizes the main challenges and lessons learned by LHJs in their A-AARs. Further elaboration and a more detailed discussion of these challenges and lessons learned can be found in the Analysis of Activities section.*

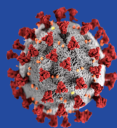
### 10. LHJ Staffing Challenges and Lessons Learned

The unprecedented size and scope of the COVID-19 pandemic response meant that LHJs had to rapidly increase their staffing in response to the increased workload. This resulted in multiple challenges:

- Hiring of temporary employees and the activation of DSWs increased the need for training, which was not always effective.
- Staffing shortages in key job categories, such as emergency managers, laboratory personnel and healthcare facility workers, resulted in the need for extensive overtime.
- Public health staff worked extensive overtime without taking time off, which resulted in burnout and mental health issues.
- Existing staff support services such as employee assistance programs were inadequate to address the scope of staff burnout and stress.
- Some LHJs experienced significant staff turnover due to COVID-19.

LHJ respondents identified several lessons learned to address staff stress. One was the need to operationalize ways to expedite emergency hiring and to support public health staff during a prolonged pandemic response. According to one respondent LHJ staff were working “12-hour days 7-days a week for a prolonged period,” which was not sustainable. To address this, LHJs recommended improving hiring and onboarding

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processes during prolonged public health emergencies to expand the emergency response workforce. To minimize burnout HR departments could require LHJ staff who work without meaningful time off during a prolonged emergency response to take mandatory time off. Additionally, emergency response plans could be updated to better support staff assignments and training. As one LHJ put it, “building and sustaining a culture of preparedness across the County through planning, training, and exercise involving all levels of staff will help to ensure the success of future responses.”

## 11. LHJ Communication Challenges and Lessons Learned

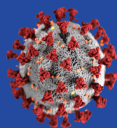
Many LHJs stated that inter-governmental communication was a challenge, especially when it came to COVID-19 policy and guidance. Numerous LHJs referenced contradictory information being disseminated by the CDC and CDPH, and the lack of advance warning when public health guidelines were changed. Several LHJs described frequently learning about CDPH decisions at the same time as the public. In these instances, LHJs did not have time to understand the policy ramifications and develop local implementation measures. As one wrote, “decisions [were] made that were not understood at the local level, but we were expected to support and explain them to our communities.” Many LHJs mentioned communications regarding changing vaccine eligibility as a challenge, with one respondent calling it “chaotic.”

Overall, this dynamic led to frustration and distrust between LHJs, their constituencies, and the State. Several LHJs suggested recommendations to address this challenge, including coordinating guidance announcements across federal, State, and local agencies; involving LHJs more in decision-making; and communicating policy and guidance changes to LHJs in advance, so they could be better prepared to answer questions from the public.

## 12. LHJ Resource Acquisition Challenges and Lessons Learned

Most LHJs faced challenges in obtaining essential PPE and testing supplies during the early stages of the pandemic due to widespread supply chain issues. Partnerships with organizations such as the MHOAC/RDMHS program and CDPH helped mitigate these shortages.

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However, LHJs also encountered logistical difficulties in tracking, distributing, and reporting acquired resources. The pandemic led to a substantial expansion in medical health warehousing capacity and operations, requiring more staff, new skills, and technology, which were hard to acquire during the crisis. Lessons learned underscored the need for a centrally coordinated, State-level strategy for resource acquisition, streamlined local emergency procurement protocols, and standardized data requirements for easier reporting and reduced staff workload.

Obtaining equipment and supplies for PH labs presented unique challenges for LHJs and this topic is addressed in the Public Health Laboratory Challenges and Lessons Learned section in this chapter.

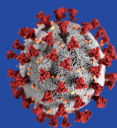
### 13. LHJ Regional Variations of Challenges and Lessons Learned

There was variation in the perceived challenges from the more rural LHJs compared to the more urban LHJs, as more rural communities reported feeling dissatisfied with CDPH's guidelines, communication toolkits, and messaging, perceiving them as being more appropriate for urban settings. One rural LHJ wrote that it had "unique issues and strengths that are much different from larger counties, and leveraging that relationship to inform CDPH about our jurisdiction's landscape was very useful." Another LHJ wrote that CDPH could have "a specific section or technical assistance for rural counties." A different rural LHJ described how CDPH guidance "didn't work in all rural areas" and the feeling that CDPH mandates were "very geared for big Metro Cities."

Rural/urban distinctions also surfaced in discussions about HCC and PH lab operations, which many smaller LHJs could not access. One LHJ did not have a hospital within its jurisdiction and was unable to coordinate its activities within an HCC framework, finding it "unrealistic" to coordinate with hospitals in two different counties spread over 8,000 square miles. Another small, rural LHJ did not have a lab and relied on labs outside of its county to process tests. This created time delays that were "difficult to navigate in early response days because we were not able to right-size expectations on turn-around times and were competing with the lab's other priority customers."

Lessons learned offered by rural LHJs on the topics of communication, organization, and operations include creating working groups to

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specifically and proactively address the unique needs of rural counties before and during the next pandemic.

#### 14. CDPH Challenges and Lessons Learned

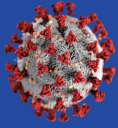
LHJs identified three categories of interactions with CDPH that presented challenges:

- Changes to COVID-19 guidance;
- Communications and resource requesting; and
- Deployment of new technology during the pandemic.

While many LHJs viewed CDPH's communication efforts during the pandemic as successful, there was significant frustration about the timeliness and clarity of guidance and policy updates. The ever-changing nature of information led to a "trickle-down" impact that eroded public trust. Issues were exacerbated when CDPH released information to the public before consulting with LHJs, limiting their time to adapt guidance to local contexts and needs. Confusion also arose when CDPH's State guidance diverged from that of other entities like CDC, leading to additional work for LHJs in reconciling conflicting guidelines. The key lesson identified was the urgent need for improved communication channels among federal, state, and local agencies to ensure clear, consistent, and timely guidance. Some LHJs noted that CDPH had already made strides in improving coordination and communication as the pandemic progressed.

Some LHJs criticized CDPH's resource requesting process, particularly the prolonged time required to access vaccinators. These delays led to inefficiencies, as demand for vaccinations waned by the time resources were deployed. Communication challenges further complicated the situation, with LHJs reporting confusion and inaccuracies concerning available resources from CDPH. There were instances where resources thought to be available did not actually exist or were not applicable for specific counties. Furthermore, unexpected changes in resource allocations and the delivery of short-dated supplies created additional challenges. The lesson learned was the importance of using the Public Health Ordering System to reliably track resource requests.

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Lastly, some LHJs were frustrated by CDPH's deployments of its new technologies during the pandemic. Several identified challenges with the rapid expansion of technology systems during the COVID-19 response. LHJs found themselves grappling with multiple platforms for various tasks, such as contact tracing, resource requesting, and vaccination scheduling. The pace of technological changes (particularly concerning the State's vaccination systems), posed difficulties, especially when these changes were rolled out without sufficient consultation with LHJs. The key lesson learned was the need for "early communication" between CDPH and LHJs on upcoming technology projects, along with increased engagement during the requirements gathering and system testing phases.

#### 15. MHOAC/RDMHS Challenges and Lessons Learned

Many LHJ respondents highlighted inconsistencies and challenges in the effectiveness of their MHOAC and RDMHS programs during the pandemic. While some programs were well-coordinated and resourceful, others suffered from a lack of awareness, understaffing, and inexperienced personnel. Issues ranged from programs being dormant before COVID-19 to staffing turnovers that led to delays and communication gaps. These limitations were evident in both MHOAC and RDMHS roles, including resource allocation and emergency response coordination. Many LHJs cited a lack of knowledgeable RDMHS staff as a key challenge, leading to delays and miscommunications.

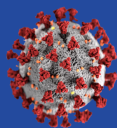
In response to these challenges, LHJs recommended a series of lessons learned and improvements. These include the formalization of roles, responsibilities, and budget lines for MHOAC and RDMHS programs, timely hiring and training of staff, and ongoing exercises to maintain high levels of operational familiarity. Respondents emphasized the need for these programs to evolve based on real-world experiences and underscored their critical role in future emergency responses.

#### 16. Health Care Coalition Challenges and Lessons Learned

Respondents described communicating and coordinating with HCC representatives as a challenge. A small number of LHJs reported that their HCCs had not been as active pre-pandemic, and as a result they

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lacked current contact lists to establish communications with their HCC stakeholders. According to several LHJ survey responses, members of HCCs—especially small facilities or new facilities—were often overwhelmed by staff turnover or by their daily operations. As a result, health care organization staff were not available to engage in HCC activities regularly, and participation was often low. Crucially, several LHJs reported that facility decision-makers did not often attend HCC meetings, which impacted the ability of the LHJ to coordinate the pandemic response. LHJs described the lack of authority to compel participation as a challenge of the HPP program.

Even active and successfully engaged HCCs posed a challenge, as some members might be unfamiliar with processes and procedures and required significant LHJ staff support. Often, HCCs did not know how to correctly formulate their resource requests, which required follow-up from the LHJ.

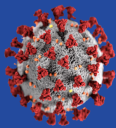
The most frequently cited lesson learned to address HCC challenges was to ensure that HCC stakeholders are not “under-resourced and over-strained” so they can fully participate in this program. This involves regularly convening with HCC stakeholders to maintain an up-to-date roster, as well as ensuring all members are familiar with resource requesting procedures and communications protocols.

## 17. Public Health Laboratory Challenges and Lessons Learned

LHJs faced significant challenges in PH lab testing, particularly during the COVID-19 pandemic. Smaller LHJs, which often lacked their own PH labs, had to rely on various external contractors for testing services, leading to delays and constantly changing requirements. Even LHJs with in-house labs outsourced testing due to overwhelming demand and resource constraints. Additionally, they were unable to offer all types of tests, necessitating further contracts. Regulatory hurdles also added to processing times. Beyond testing, administrative duties such as shipping specimens, handling inquiries, and data entry created additional strain, resulting in delays and errors. These issues collectively hampered the efficiency and effectiveness of public health lab operations.

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## Analysis of Activities

*This section elaborates and provides more detail on the findings presented in the Strengths and Successes and the Challenges and Lessons Learned sections.*

### LHJ Activities

#### LHJ Staffing

##### Hours Worked and Impact on Staff Well-being

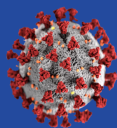
Nearly every LHJ mentioned the tremendous dedication, flexibility, and performance of its staff despite enormous challenges as a key success factor. As one respondent summarized, “staff willingly adjusted their daily schedules, extended their hours, and worked on weekends.” Several other surveys described how staff performed their pandemic response work in addition to their regular public health duties. Compounding the demands of COVID-19 on staff, several LHJs cited the challenge of having to concurrently respond to other emergency activations, including wildfires and the mpox outbreak.

In numerous cases, LHJ staffs' long days were the result of vacancies, mandated overtime, or a “shallow bench” of staff who were knowledgeable enough to perform critical activities. In general, LHJ staff were overtasked and overtaxed during the pandemic. The stress of working long hours continuously for many months, under intense public scrutiny, resulted in staff burnout, mental health issues, and resignations of key personnel. As one LHJ respondent put it, staff “rose to the challenge of doing too much with too little and suffered trauma and burnout as a result.”

For some LHJs, stress was worsened by public hostility. A few LHJs reported that their staff did their jobs with professionalism despite experiencing harassment, threats, and confrontations with the public who were philosophically opposed to some public health measures.

Existing staff mental health resources were not adequate to support LHJ staff through the pandemic. Several respondents reported that their jurisdictions' employee assistance programs were inadequate, and that there were few other formal options available for staff. Even when there was a “Critical Incident” stress support program available at one LHJ, one respondent noted that “staff were unaware how the service worked or believed that it would not be beneficial for their recovery.”

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LHJs offered some lessons learned for county HR departments to address these challenges of staff overtime and burnout. One respondent stated that HR departments could prioritize vacancies in public health for recruitment and hiring. Another respondent suggested that LHJ managers and HR departments cooperatively monitor staff hours during public health emergencies to ensure staff uses time off to avoid burnout. In a similar approach, another LHJ suggested that management and HR “incorporate burnout recognition training and staff wellness activities” as part of their staff monitoring and support during emergencies.

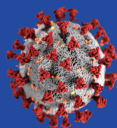
Lastly, some respondents suggested that HR can be embedded within emergency operational command structures to monitor the impact of the emergency response on staff, provide mental health counseling resources or alert management when symptoms of staff burnout appear, coordinate staff schedule rotations, and expedite background clearances and license vetting for emergency hires during a pandemic.

### Acquiring Additional Staff

To better respond to the pandemic, many LHJs attempted to find additional staff to conduct case investigation and contact tracing, testing, vaccinations, and other response work. LHJs reported success at acquiring additional staff to support pandemic response when:

- There was a well-organized and well-trained DSW program in their county, with DSWs that could receive just-in-time training and be quickly deployed.
- The county HR department could quickly pivot from routine civil service hiring procedures to emergency hiring procedures.
- The LHJ or county could use existing contracts with private service providers, or could use memoranda of understanding (MOU) and mutual aid agreements with other public entities to fill positions.
- The LHJ or county arranged with local law enforcement and paramedics to expand the number of personnel for their COVID-19 response.
- The LHJ could activate volunteer networks, such as the Medical Reserve Corps (MRC), or recruit volunteers through community service organizations to support public health activities.

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- The LHJ could request and obtain staff from the State via the MHOAC/RDMHS system.

When these elements were in place respondents described their staffing efforts as successful. As one LHJ noted, “use of staff was a huge success, through internal staff reassignments, volunteer recruitment, mutual aid staffing, new hires and having HR as part of the Emergency Operations Center (EOC).”

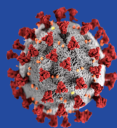
Not all LHJs reported success in acquiring additional response staff. The LHJs that characterized staffing as challenging did not have some or all of the conditions listed above. For example, some LHJs found that county DSWs could not be leveraged to perform public health activities due to administrative restrictions (e.g., they were unable to work outside of their classification or a pay differential could not be established). Other LHJs did not have established contracts, MOUs, or agreements that could be leveraged to obtain staff or services from the private sector, public sector, or partners. A small number of LHJs did not have an effective MHOAC program, or faced turnover in the RDMHS position, which limited their ability to request additional staff resources through the Standardized Emergency Management System (SEMS) process.

### Training Staff in Emergency Operations

Even when supplemental personnel were available (through DSW activation, local volunteers, or CDPH initiatives such as the Pathways Fellows), the responsibility of ensuring these additional hands were properly trained and utilized often fell to LHJ staff. Training activities frequently mentioned in LHJ survey responses were emergency operations and management training and COVID-19 training.

- Emergency operations and management training involved transmitting knowledge regarding the emergency management program, ICS SEMS, National Incident Management System (NIMS), EOC, and Department Operations Center (DOC) sections and roles.
- COVID-19 training involved transmitting knowledge regarding requirements, systems, and procedures needed to respond to the pandemic. This included training DSWs and volunteers on case investigation and contact tracing; training HCC members on resource requesting procedures, training staff to respond to public questions regarding the pandemic; and training staff to use new technology required to track and report testing and vaccination activities.

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LHJs' pandemic activities mostly occurred within an emergency operations framework. A few LHJs conducted ongoing ICS, SEMS/NIMS, EOC/DOC training exercises pre-pandemic and were able to effectively deploy their operations immediately. The majority of LHJs indicated that all staff (whether they were newly hired or not) needed training in emergency operations, since many did not have this expertise before the COVID-19 pandemic. While some LHJs described successful "just-in-time" training and onboarding programs into emergency operations, many other LHJs encountered challenges. Several factors affected the success of emergency operations training:

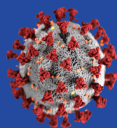
- There was not enough time for staff to be adequately trained on the emergency operations framework. ICS, SEMS/NIMS, EOC/DOC training is normally quite lengthy. Several LHJs did not have sufficient time available to train their staff in this area, due to time constraints faced during the pandemic.
- There was confusion about which LHJ staff should be trained in emergency operations. Some LHJs described not having clear expectations for who needed to be trained on the emergency operations framework—whether this included all staff, or just public health managers.
- Several jurisdictions existing EOC and DOC plans did not robustly describe public health pandemic response, which reduced the effectiveness of just-in-time training during COVID-19.

In addition, several LHJs reported that, despite staff training in emergency operations before COVID-19, the training was ineffective in preparing staff for working within the ICS and DOC, which hampered communications, coordination, and staff effectiveness. As one wrote, "even those who had ICS 100 and 700 [training] still struggled with ICS structure versus internal chain of command."

LHJs described lessons learned regarding the need to improve emergency operations training for all stakeholder groups. Acknowledging that not enough staff were properly trained in disaster response at the onset of COVID-19, several LHJs stated that regular and robust incident response training, drills, and exercises during times of normal operation was needed. These activities would need dedicated grant funding or general funds so that a stable budget could ensure annual training programs in which "all deployable staff are trained and

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exercised in basic ICS and EOC operations, with specific attention paid to continued training in areas where they may be assigned."

A few LHJs described learning the importance of cross-training to ensure important COVID-19 knowledge was not lost when key staff resigned, as well as more training for DSWs and volunteers. Respondents mentioned the need to "develop a robust volunteer plan and resources to manage volunteers effectively during emergencies." This would include developing streamlined volunteer approval, onboarding, and training processes.

### Need for Updated Plans

Several LHJs emphasized the importance of operational planning in order to reduce the impact on staff during emergency responses. As one LHJ stated, there needs to be a "culture of preparedness" across the jurisdiction through planning, training, and exercises involving all levels to ensure staff are appropriately supported once emergency plans are activated. LHJ emergency plans and county emergency plans should be updated with lessons learned from the COVID-19 response regarding emergency hiring and on-boarding extra staff during prolonged incidents.

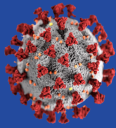
Another lesson learned was the need to update emergency response plans based on the experience of COVID-19. Several LHJs described having to draft new or significantly update existing infectious disease plans and protocols for COVID-19, and the need to ensure that these plans are updated on an ongoing basis.

## **LHJ Communications**

### Internal Communications

Many LHJs highlighted effective internal communication as a strength of their response, and indicated that a key success factor was the use of pre-existing plans and protocols for internal information sharing. When trained staff activated and followed emergency operations plans within an ICS framework, internal communication worked well. Those LHJs with comprehensive emergency operational plans and whose leadership and staff had consistently been trained in emergency response (or had participated in exercises or actual events) described having successful communications. These plans helped formalize, routinize, and make communications more coherent for LHJs by providing useful resources including templates, specifying message frequencies and structures, and identifying lead point(s) of contact. Several LHJs also

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attributed the success of internal communications to digital meeting platforms, which allowed for recording and transcription for subsequent reference.

However, not all LHJs felt that their internal communications were successful. Some LHJs described internal communications as challenging when emergency operations communication protocols were not followed, positions were vacant, county departments were siloed, and internal roles and responsibilities were unclear.

The most frequent internal communications challenge was the failure to follow communications protocols. When this happened, individuals who were not authorized within the EOC/DOC structure would sometimes respond to requests for information. In one such instance, an LHJ described a scenario in which staff shared protected personal identifiable information with the county EOC that should have been kept secure and confidential.

Department siloes also contributed to internal communication challenges, especially for those LHJs that did not activate an EOC structure. Departments like HR and procurement, which are not as familiar with emergency response operations, continued to prioritize their routine work, instead of shifting to emergency response work. As a result, pandemic response work was uncoordinated.

Other internal communication difficulties were produced by prolonged EOC vacancies, and the creation of multiple internal email distribution lists, which distributed inconsistent information to different audiences.

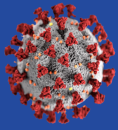
Lastly, during the long course of the pandemic, there was often confusion about who would be responsible for unanticipated tasks. For example, there was a lack of clarity in one LHJ regarding who would be supporting "business recovery" tasks to help local companies reopen after vaccination rates increased. In addition, some LHJs described that it was a challenge to determine within their organizations who would work on "routine" public health activities during the pandemic.

### Partner Communications

Partner communications between LHJs, HCCs, MHOACs, and RDMHSs were characterized as successful when meetings routinely occurred and were fully attended by knowledgeable representatives. Under these conditions, information could be shared, decisions made, and actions taken to respond to the pandemic. Several LHJs described communication with these organizations

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as challenging when key positions were vacant, when regular meetings had not been held before the pandemic and updated contacts could not be identified, and when representatives were too busy to participate. The lesson learned regarding partner communications activities was to cultivate relationships and maintain communication channels with HCCs, MHOACs, and RDMHSs during routine operations to foster successful information sharing during emergencies.

### Public Communications

The majority of LHJs reported success in their public communications. Numerous LHJs credited their Public Information Offices/Officer or Health Officer for being effective spokespeople during the pandemic. At the same time, LHJs worked with community-based organizations (CBOs) to identify trusted messengers to communicate with specific linguistic and cultural sub-populations. LHJs also reported success using multiple public communication channels, including local call centers, traditional print and broadcast media, social media, broadcast emails and text messaging applications, face-to-face communications, and site-specific messaging at schools and health facilities.

Many LHJs also reported that they focused their external communications on reaching vulnerable or under-represented populations. This included conducting door-to-door check-ins for rural residents, developing culturally and linguistically diverse communication content, and accommodating the needs of people with access and functional needs. Several LHJs expressed appreciation for CDPH's public communication toolkits, which they leveraged and adapted. LHJs who mentioned public communication as a success also described the importance of translating messages into multiple languages, and tailoring messages and communication channels to different audiences, entities, and groups.

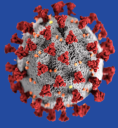
One LHJ described using "messaging templates" that they could quickly use to disseminate information to the public about pandemic-related events, such as the "first case, first death, etc." Numerous LHJs wrote that their public communications were successful when CDPH gave notification that new information was being released so that the LHJ could craft a local response to coincide with the state's public announcement.

For some LHJs in rural areas, public communications were challenging because some Californians had been exposed to mis- and dis-information about COVID-19. Once "mistrust became prevalent" due to mal-, mis-, and dis-

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information being broadly disseminated, it was difficult for LHJs to respond with corrective messaging due to lack of staff or staff expertise in public communications. In some counties, opposition to pandemic guidelines resulted in LHJ staff being “harassed, followed, and threatened in the course of their work,” one respondent reported. Several LHJs highlighted the political climate surrounding COVID-19 as a major challenge for public communications. One respondent captured the sentiment of several rural LHJs that CDPH-provided messaging was not “meaningful for the residents of our county.”

To address mis- and dis-information, one LHJ developed a communication strategy specifically to address “false or harmful disinformation in an expedited timeframe.” This lesson learned could be broadly shared with other LHJs confronting similar communication challenges.

### Inter-governmental Communications

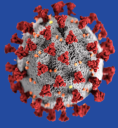
Communicating and explaining changing COVID-19 guidance from the CDC and CDPH to the public was the LHJs' most frequently cited communications challenge. This was often the case when State and federal guidance changed, and the LHJ had to respond to their local community's confusion. Numerous LHJs identified constantly changing guidance from State and federal agencies as the primary challenge to inter-governmental communications.

A number of specific, recurrent scenarios made it especially difficult for LHJs to navigate changing guidance. For instance, it was hard for LHJs when State and federal updates were provided verbally first, and written guidance was slow to be disseminated. As one LHJ explained, “residents would hear or read something on the news feeds and then look to the County to confirm or clarify and we would look to the State who wasn't ready to provide guidance.” While LHJs understood these delays, it placed them in “an awkward position and caused further distrust with the public,” according to one respondent.

An additional challenge involved the speed and frequency of changes in guidelines and requirements. In these cases, emerging information and findings sometimes conflicted with previous directions and guidance, and it was difficult for LHJs to keep up. As one LHJ stated, “frequently changing State guidance challenged local efforts to rapidly distribute accurate health information.” Sometimes, guidance issued by CDPH was stricter than federal guidance. When CDPH guidance diverged from CDC guidance, it produced confusion about

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whose guidance should be followed. Sometimes it also resulted in political challenges at the local level.

Lastly, LHJs struggled when the Governor's Office or CDPH made announcements without notifying or alerting them in advance. When this occurred, it "made things very difficult" for several LHJs, according to one respondent. A common sentiment among LHJs was that the State would announce to the public "program, services, and restrictions of movement" with no advance notice to LHJs. This often led to "extremely chaotic and reactionary response operations" and "disorganization, confusion, and distrust for staff and residents throughout the duration of the incident," according to one respondent. As another respondent noted, "communication across all levels of government could have been improved during the crisis, with the most notable issue being that state communications often took [the LHJ] by surprise." A lesson learned from respondents regarding communicating COVID-19 guidance was the need for consistent, timely, and unified communications across all governmental agencies.

Despite these inter-governmental communications challenges, numerous LHJs felt that CDPH was very successful in its communications, which is discussed in the CDPH Activities section of this chapter.

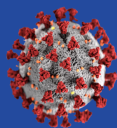
### LHJ Resource Acquisition

The process of obtaining resources and supplies for LHJs' COVID-19 response was frequently mentioned as both successful and challenging.

Acquiring and deploying equipment and supplies sufficient to meet the challenges of COVID-19 represented an unprecedented challenge for the LHJs. Numerous LHJs described how they successfully rose to the challenge to obtain these resources. For the majority of LHJs, this success relied on relationships with the MHOAC/RDMHS program and the support of CDPH.

Effective relationships between LHJs, their partner MHOAC/RDMHS, and CDPH was frequently identified as a success factor in obtaining additional staff resources. Even the LHJs that described being independently able to obtain additional staff—through activation of DSWs, hiring contractors, mutual aid agreements, volunteers, and emergency hiring—also requested personnel through their MHOAC/RDMHS and CDPH. Several respondents described how the MHOAC program was an important way to obtain technical assistance expertise for their region's medical facilities. MHOACs also provided some LHJs

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with administrative and logistics personnel. Like the MHOACs, CDPH was a source of additional staff in hard-to-fill functions like contact tracing and investigation teams, nurses, and public health laboratory functions.

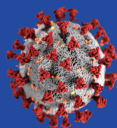
In addition to staff, LHJs also needed supplies and equipment. While a few LHJs reported independently achieving success in this area—by having their own warehouse with preexisting stockpiles, inventory and logistics staff and information systems, effective emergency procurement policies, and partnerships with private sector entities—most LHJs relied on partner relationships. Just as with accessing additional staff, MHOACs/RDMHSs, and CDPH contributed to LHJs' success with obtaining supplies and equipment. Many respondents reported that their MHOAC was especially helpful in acquiring and distributing PPE, test kits, and vaccine supplies. The scope of this effort was enormous, with one LHJ describing how its "MHOAC program received, processed and deployed more than 10 million units of PPE to healthcare coalition members." During shortages caused by supply chain issues, LHJs turned to MHOACs and CDPH to successfully access "greatly needed" supplies like testing reagents.

The LHJs that felt successful in obtaining supplies and equipment attributed their positive outcomes to the following factors:

- Having effective emergency operations plans, policies, and procedures that enabled emergency procurements and allowed alternative sourcing of supplies and equipment.
- In addition to PPE and laboratory supplies, emergency procurements and alternative sourcing enabled LHJs to obtain non-standard resources such as hotel rooms for isolation and quarantine as well as meal preparation and delivery.
- Maintaining well-stocked public health emergency supply caches as part of normal operations before COVID-19.
- Productive collaboration with the MHOAC, RDMHS, and CDPH to obtain supplies and equipment.

When obtaining resources was challenging, LHJs often attributed the cause to supply chain issues, an inability to activate emergency procurement procedures, a lack of a warehouse, or issues with their MHOAC or RDMHS.

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Most LHJs described difficulty obtaining needed PPE and testing supplies early in the pandemic, as medical and health operations statewide faced severe supply chain challenges. These same LHJs described how the involvement and activities of partners like the MHOAC/RDMHS program, and CDPH alleviated these resource constraints. However, in addition to confronting challenges in acquiring needed supplies and equipment during the pandemic, LHJs experienced challenges in the subsequent tracking, distribution, and reporting of these items. Once items were obtained, LHJs needed to warehouse and store, manage inventory, distribute, and report on usage. Several LHJs reported that these functions represented a “substantial expansion of medical health warehousing capacity and operations,” which required additional staff, new skills, and additional technology, all of which were challenging to obtain during the pandemic.

As LHJs reflected on their lessons learned in this area, several themes emerged:

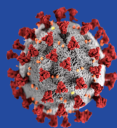
- Having state-level, centrally coordinated capacity to obtain critical equipment and supplies early in the pandemic response would reduce the LHJs' initial scramble to source items.
- Having streamlined local emergency procurement protocols (such as cost-plus-fixed fee contracts, MOUs, and other agreements) within the LHJ would enable faster equipment and supply acquisition.
- Standardizing the data needed from inventory management systems to provide reports requested by the State would reduce workload for LHJ staff.

### LHJ Technology

LHJs highlighted the use of technologies that enabled advances and success in communication, resource management, laboratory operations, data management, and reporting.

Technology was a key enabler of internal and external communication. LHJs across the state identified telework, virtual meeting, and collaborative workspace technologies as a critical enabler for their internal public health efforts. Numerous LHJs mentioned virtual meeting and collaborative workspace tools as being central to their successful external communication with stakeholders and the public. In addition, as addressed earlier in the communication successes section, technology in the form of external-facing mass communication tools (broadcast email and text messaging systems, social

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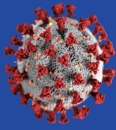
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media, smart phone “push” notifications and other technologies) innovated their public communication strategies and were important to many LHJs’ outreach efforts.

In terms of resource management, some LHJs were well-positioned by having preexisting warehouse, logistics, and inventory tracking systems and tools within their jurisdiction that supported their pandemic response. Many that did not have their own resource management tools credited CDPH’s equipment and supply systems (including CalREDIE, CalCONNECT, CAIR2, and the Public Health Ordering System) as contributing to the success of their COVID-19 response. A few jurisdictions that operated their own PH lab credited having a laboratory information management system as a critical success factor in managing the surge in testing and reporting necessitated by the pandemic.

Several LHJs mentioned using new data management tools that were used to track epidemiological information, aid decision making, guide local response efforts, and generate reports. These included geographic information systems (GIS) and data visualization software that could be used to create internal data dashboards for the LHJ and the local response organization, and external data dashboards were created for public websites to promote transparency.

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### CDPH Activities

This section summarizes LHJs' responses to their perceived strengths and weaknesses of CDPH's activities. The comments are categorized into communications, staffing support, resource provisioning, testing and vaccination, and technology activities.

#### CDPH Communications

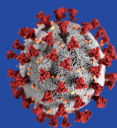
Many LHJs found aspects of CDPH's communications efforts very successful. CDPH weekly LHJ webinars where all participants "could hear the same information at the same time was helpful," according to one respondent. Several LHJs commented on how much they appreciated one-on-one weekly calls with CDPH "to check on the County's successes and challenges." An LHJ stated that having frequent contact with CDPH "provided a sense that we had someone at the State level listening to the issues in [the county]." As one respondent wrote, establishing "weekly 'check ins' where every LHJ could hear the same information at the same time was helpful." In addition, several LHJs stated that CDPH's communication toolkits were useful.

Although numerous LHJs viewed CDPH's communication efforts as successful, several felt that CDPH was unsuccessful in communicating guidance and policy. The primary challenge, as LHJs expressed, "was the ever-changing beast" of new information leading to changes in guidance, which was "no agency's fault" but created a "trickle-down" series of impacts that could lead to "loss of public trust."

However, there were several factors regarding how changes to guidance were communicated by CDPH that LHJs felt undermined public trust in their efforts. Several LHJs described belatedly learning about changes to pandemic response policy and guidance—after a Governor's Office press conference, CDPH announcement, news report, or social media posting.

According to respondents, each time that CDPH issued information to the public prior to notifying the LHJs, the LHJs had less time to react and determine how to translate the changed guidance into their local context. LHJs wanted CDPH to get "buy-in" from LHJs "prior to information sharing" with the public, as well as "a moment to craft a local response for when the public was notified." This was particularly important because several LHJs felt that CDPH guidance did not address what was occurring with their local COVID-19 caseloads. One LHJ reported being challenged when CDPH wanted public health officers to

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enforce business restrictions even in its low-case count jurisdiction, which resulted in public distrust. This made it difficult for a number of LHJs to align their county's response efforts with guidelines, and "put public health in conflict with the community."

Communication was also challenging when CDPH broadcasted state guidance that was more restrictive than CDC's approach, or when CDPH delayed guidance. This resulted in public "confusion" and "surprise" as well as "extra and unnecessary work for LHJs" in having to explain and reconcile two sets of guidance for their communities. In the words of one respondent, "Guidance was often released late. This caused us to have to create our own guidance. Then when the CDPH version came out, those following the guidance would be confused and angry at the differences."

The key lesson learned on this point was that all levels of government—federal, state, and local—need to "improve communication channels to ensure that guidance is consistent, clear, and easy to follow." This lesson appears to have already taken hold, as some LHJs described CDPH's coordination and communication improving through the course of the pandemic, with proactive outreach from CDPH seeking input from LHJs becoming more standard practice.

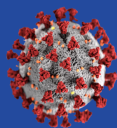
See also the discussion of Inter-governmental communications within the LHJ Activities section in this chapter.

### CDPH Staffing Support

Many LHJs described CDPH's ability to provide staff as successful, mentioning CDPH's ability to develop contracts for staff (such as nurses, clinical, and administrative staff), as well as redirect State staff for contact tracing/case investigation activities. These were critical for LHJs' local response to COVID-19. As one LHJ wrote, "critical COVID -19 initiatives were accelerated with state support, including CDPH providing teams for case investigation (CI) and contact tracing (CT) outreach."

CDPH also provided additional funding to LHJs. A few LHJs reported successfully utilizing CDPH's available funding mechanisms to obtain staff. As one respondent put it, "ELC funding allowed our very small Public Health program to hire limited term staff and contractors to expand capacity for contact tracing, public messaging, coordination and staffing of mass vaccination clinics, and epidemiology."

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## CDPH Resource Provisioning

Just as LHJs had different perceptions regarding CDPH's communication activities, they also diverged in how they perceived CDPH's resource provisioning activities. Many LHJ considered CDPH's resource provisioning as a strength, citing CDPH's ability to fill supply chain gaps to provide critically needed supplies. Numerous LHJs credited CDPH's warehouse as being "extremely efficient" and able to fulfill their resource requests. Another LHJ identified several aspects of CDPH's resource provisioning activities as successful, including funding of OptumServe sites and the SnapNurse program; allocation and distribution of PPE, hand sanitizer, specimen collection kits, and rapid antigen test kits; and providing technology to support resource requesting, allocation, and distribution.

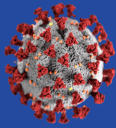
LHJs also appreciated CDPH's responsiveness to MHOAC resource requests. As one LHJ wrote, "CDPH assisted our local rural jurisdiction by quickly approving MHOAC requests for testing resources via Verily and later on OptumServe and approving requests for vaccine support via CalMAT and Prolink teams."

However, these sentiments are contradicted by some LHJs that felt CDPH's resource requesting process was ineffective. Such comments clustered around the length of time to access vaccinators. As one LHJ put it, "requesting state resources for vaccinating took far too long to implement and the effort was poorly organized from the state." The respondent elaborated that "by the time the resource request process was understood, completed, and staff started arriving, the demand for vaccinations had come to almost a standstill."

Additionally, some LHJs expressed challenges communicating with CDPH regarding resource requesting. A few LHJs described confusion or inaccuracies regarding what resources were available from CDPH. For example, in some instances CDPH communicated that specific resources were available to the LHJ. However, "the MHOAC would request [it] through the RDMHS only to find out that the resource didn't exist" or "there were variables that [were not] relayed to the RDMHS that made the request unapplicable to the county." LHJs also described CDPH unexpectedly changing resource allocations, making unexpected deliveries of some supplies, and sending supplies that were "short dated, making it difficult to get supplies to partners and [the] public prior to some of the items expiring." A lesson learned for a number of LHJs regarding communication with CDPH regarding resource requesting was to exclusively use the Public Health Ordering System to track resource requests.

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## CDPH Testing and Vaccination

Many respondents felt that CDPH's provision of testing supplies, staff training on testing, and transporting medical samples was critical to their ability to "standup testing resources" and that "state testing sites, which later transitioned into vaccination sites, [were] a huge success and greatly increased local capacity, as were the contracted vaccination promotion activities." A few LHJs expressed contrary sentiments about CDPH's testing activities, describing how CDPH testing contractors suffered from "staffing instability" and how their "no notice departure" was "problematic and eventually not worth the effort."

## CDPH Technology

Numerous LHJs credited CDPH's technology advances as key to their successful response. In particular, myCAvax and My Turn, which incorporated input from LHJs during development, were often mentioned. However, a few LHJs described how these systems were modified too frequently, were difficult to access, or were not user-friendly.

CDPH's expansion of technology represented a third challenge area for several LHJs, which felt that too many systems were required during the COVID-19 response. LHJs reported having to use multiple systems for case investigation/contact tracing, resource requesting, test and vaccine scheduling, and information. One LHJ was particularly frustrated by the pace of CDPH's technology changes related to its vaccination systems, describing the challenge of keeping up with system changes "while rolling out/administering vaccination to the community."

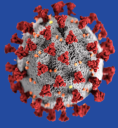
While many respondents appreciated CDPH's automation efforts, they found it challenging when these systems were developed without adequate consultation from LHJ end users and then initially deployed without adequate functionality. This LHJ's lesson learned speaks to all jurisdictions that felt challenged by CDPH's technology efforts: they desired "early communication" from CDPH to LHJs regarding planned technology projects and more engagement with LHJs during requirements gathering and system testing.

## MHOAC/RDMHS Activities

According to one respondent, the MHOACs and RDMHSs were "essential" in responding to COVID-19, and "the system in place through the local MHOAC

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program was an easy process and very helpful for local hospitals and other health care providers."

Many LHJ survey responses credited the MHOAC as contributing to successful communication, resource requesting, and hospital "level loading" (capacity balancing). One LHJ described how it frequently collaborated with its MHOAC to clarify guidance and obtain educational materials for proper PPE storage and safety of its field staff. Also, many LHJs stated that their RDMHS was essential in provisioning staff, providing test kits, and PPE. One LHJ described that its RDMHS was "highly responsive" throughout the pandemic, and it was timely to communicate what resources were "able to be requested and what was unavailable."

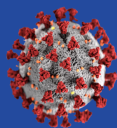
When a LHJ differentiated between the MHOAC and RDMHS roles, respondents credited the MHOAC as contributing to successful communication, resource acquisition and management, and hospital level loading, while specific RDMHS representatives provisioned staff, supplies, and equipment within the formal emergency operations command structure.

Within survey responses that discussed the MHOAC separately from the RDMHS, the MHOAC was more frequently cited as a success factor. Responses indicate several reasons for this feedback. MHOACs appeared to be able to obtain resources from a larger variety of entities. For example, one large county LHJ described how its MHOAC was able to obtain resources from not just CDPH, but also from the U.S. Navy, the National Health Corps, the Department of Veterans Affairs, and the National Guard. Several respondents expressed the need to further support the MHOAC program, with one writing that it "saw the MHOAC change from an occasional need/demand" to an essential allocation, reporting, and meeting forum that could not be supported "by the current mandated, but not funded model."

However, some LHJs reported that their MHOAC and RDMHS programs were less successful than they could have been because they had been inactive and/or under-resourced. One respondent wrote, "pre-COVID no one knew what the MHOAC program was, and stakeholder awareness was low." Another reported that, due to staff turnover, "there was no back up for the MHOAC through most of the response," which limited its effectiveness.

The LHJ surveys described several challenges associated with the MHOAC/RDMHS programs during the pandemic. While LHJs with active MHOAC

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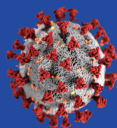
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programs and existing relationship networks were successful in securing resources and coordinating responses with other agencies and stakeholders, not all LHJs had this experience. A small number of LHJs reported a gap in its MHOAC program. As one LHJ reflected, its MHOAC had not been formalized and was “without guidance or a budget line.” Another small, rural LHJ described that it “has not had a designated MHOAC recently which results in delayed response times during emergencies.” Other LHJs had MHOAC programs staffed by individuals who “were new to their positions and needed to be trained about the role of the MHOAC,” which “created a great deal of confusion and disruption in some instances.” LHJs reported less knowledgeable MHOACs experiencing challenges during the bed leveling hospital patient transfer processes, making “unreasonable” resource requests, and being “too slow” in submitting resource requests.

Lack of a knowledgeable RDMHS was the most frequently cited challenge. One LHJ noted that “turnover in the RDMHS position led to a loss of information and delayed communication.” Even without turnover, the RDMHS was not always knowledgeable. Some LHJs reported that their RDMHS would occasionally receive and disseminate incorrect information about available resources, which resulted in several LHJs experiencing challenges in obtaining supplies and equipment in a timely manner. A few LHJs described that questions submitted to the RDMHS “were met almost without exception with, ‘we can push that up the chain and will get back to you.’” The answer to the question took “days, if not longer.”

In response to these challenges, some LHJs described lessons learned such as clarifying which facilities were within scope of the MHOAC and RDMHS activities. Other improvement recommendations included better defining the roles and responsibilities of the MHOAC (especially in relationship to other supporting agencies) by developing a MHOAC Plan, updating the MHOAC and RDMHS Situation Report template, providing funding to the programs so they can hire staff (rather than just being an unfunded mandate), and being flexible enough to change processes and procedures based on facts on the ground. As many jurisdictions discovered during the pandemic response, the MHOAC and RDMHS systems will be important going forward. As one LHJ wrote, after COVID-19 “the MHOAC and RDMHS will never be the same.”

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## Health Care Coalition Activities

Communication was the key strength and success factor in LHJs' relationship with HCCs. As one respondent wrote, "the established HCC was a great way to share information and provide medical/health resources for the agencies that met the medical/health group definition." LHJs relied on HCC members to share information throughout the community by issuing press releases, testing site information, vaccine clinic information, and isolation and quarantine orders.

HCC challenges included insufficient staff resources to respond to the pandemic. Many LHJs reported that HCC members were overwhelmed with COVID-19 emergency tasks. With HCC members constantly pulled into their facilities' direct responses, it became difficult for members to attend HCC meetings to plan and exchange needed information.

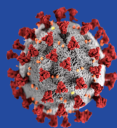
When HCC members were available, some LHJs found that their requests for information and support were time-consuming. As one wrote, "every member of the HCC required 1:1 consultation throughout the pandemic. We did not have the staff available to provide this level of support. We did what we could to divide the liaison efforts, but this was an ongoing challenge."

Another HCC challenge was leveraging resources across the coalition. Some respondents described how HCCs were successful in leveraging staff and PPE within the coalition early in the pandemic, but once all coalition members were impacted coalition resources were no longer available. As one LHJ noted, it was "difficult to procure medical resources, supplies and equipment through the HCC because every facility in the coalition was requesting the same resources."

Even well-functioning HCCs presented challenges, as some members lacked familiarity with protocols, requiring extra support from LHJs. For example, members often made ambiguous resource requests, such as asking for Registered Nurses without specifying skill sets or considering alternative staffing like Licensed Vocational Nurses, necessitating further clarification from LHJs.

In a few instances, the HCC did not operate during the COVID-19 response. One LHJ reported that the HCC was never activated during the pandemic and a second mentioned that "HCC members were not included in the initial response" because the coalition had been dormant and there was no current list of coalition members with their job titles, positions, and contact information. This resulted in a lesson learned for the HCC to be strengthened, its membership to be current and active, and that there be a clear plan for its roles and

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responsibilities. As one LHJ observed, “a stronger partnership between the County and the healthcare coalition would have streamlined processes and better served the community at large.”

### Public Health Laboratory Activities

Funding to obtain additional staff, space, and equipment were critical success factors for LHJs that operated public health laboratories (PH labs). Additional funds allowed several LHJ PH labs to add space and purchase necessary equipment to test for COVID-19. This expanded local testing capacity to meet the demands of the pandemic. When additional funding was unavailable, respondents resorted to workarounds and alternatives, including leveraging a state contract with the University of San Francisco (UCSF) and private companies to perform COVID-19 testing and lab processing. According to one respondent, staffing for PH labs became easier when the CDC declared emergency status so that lab interns and other non-certified personnel could perform COVID-19 testing.

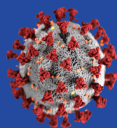
Even when staff, space, equipment, and supplies were obtained, PH labs encountered training and policy challenges. During COVID-19, PH labs had to develop and approve standard operating procedures for each new additional testing method and train staff on each method. PH labs with Clinical Laboratory Improvement Amendment (CLIA) status also had to validate every test.

A few PH labs used their Laboratory Information Management System (LIMS) to further automate their testing and reporting. However, when using LIMS, data entry errors were difficult to correct. According to one respondent, their LIMS did not allow for updates to patient accounts, which necessitated the time-consuming creation of new patient accounts with any change to demographic information. Billing testing fees to patient insurance also increased data entry time since additional fields had to be manually entered into the system and insurance eligibility had to be verified.

LHJs identified several lessons learned and recommendations for PH labs. With regard to staffing, LHJs recommended scheduling a rotation of PH lab staff to cover weekdays and weekends to prevent staff burnout and identifying qualified lab technicians from the Medical Reserve Corps to increase lab capacity, as needed. Regarding PH lab technology, LHJs recommended implementing Electronic Lab Reporting (ELR) capability with all local hospital partners to streamline testing, purchase high throughput testing equipment to

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increase testing capacity, and increase the variety of instruments, specimen collection, and processing capabilities. In addition, LHJs recommended establishing and maintaining a list of alternate lab services.

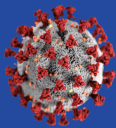
While some LHJs had successes when it came to PH labs, numerous LHJs identified contracting for testing as a challenge. Smaller LHJs often did not have their own PH lab and relied on contracts with private testing companies, an area hospital, another LHJ, a local university, and/or CDPH to perform testing. These LHJs described their major PH lab challenges as delays in test results and having to adjust requirements for each contractor. Even LHJs that operated their own PH labs contracted out testing, as the need to perform COVID-19 tests overwhelmed existing county staff, lab facilities, and supplies. Several LHJs reported being unable to perform all the different testing methods for the specimens received, which also necessitated testing contracts. These LHJs also reported challenges in testing delays and having to adjust to the needs of different testing service providers. In addition, these efforts were further complicated by regulatory requirements associated with testing, which further extended processing times. One respondent described how its PH lab had to validate every test to maintain its Clinical Laboratory Improvement Amendment (CLIA)-waived status. For further discussion of CLIA, see the Testing chapter in this AAR.

Fulfilling PH lab support tasks—such as shipping, answering phone calls, data entry, and billing—were also challenging. Several respondents described how packing and shipping lab specimens exceeded their own abilities and contracted with private couriers. LHJs with their own PH labs described how the volume of inquiries regarding test results created tremendous stress to staff while taking time away from testing and reporting. The volume of tests also generated a significant number of administrative tasks, including checking and correcting test requisitions, entering patient and test result data, and entering billing testing fees. This workload further stretched PH lab staff and resulted in delays from data entry errors and the need for correcting records.

LHJs identified several lessons learned to increase capacity for PH labs, including identifying additional lab staff and developing staffing schedules to allow weekend rotations; equipping PH Labs with the necessary testing equipment and storage supplies; contracting with laboratory testing partners and support function providers for shipping, data entry, and other tasks; and implementing LIMS and electronic lab reporting with all hospital partners.

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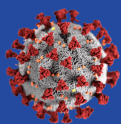
According to one respondent, "lab capacity and turn-around time for results was ineffective during the early stages of the response. We need to ensure our public health laboratories are sufficiently staffed and resourced for emergencies."

### Matrix of LHJ Lessons Learned Conveyed in the A-AARs

*This section provides a summary of the LHJs' most frequently cited lessons learned.*

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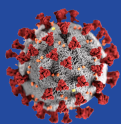
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## Matrix of LHJ Lessons Learned Conveyed in the A-AARs

Topic	CDPH	LHJs	Other Entities
Coordination with the LHJs	<ul style="list-style-type: none"><li>• Coordinate public health guidance across federal, state, and local agencies by involving LHJs in decision-making and contact LHJs regarding public health guidance before issuing any communication to the media.</li><li>• Standardize the data needed from LHJ inventory management systems to efficiently provide reports to CDPH.</li><li>• Before deploying a system that CDPH will require LHJs to use, involve LHJs during development and testing.</li></ul>		
MHOAC/RDMHS Operations	<ul style="list-style-type: none"><li>• Provide additional training on the MHOAC program, which facilities are within the scope of the MHOAC, and the roles and responsibilities of MHOAC program participants</li><li>• Ensure MHOAC program participants are fully trained</li></ul>	<ul style="list-style-type: none"><li>• Consider funding the MHOAC program/position</li><li>• Follow incident command structure and procedures so that communication is consistent across CDPH, LHJs, MHOACs, and RDMHSs.</li></ul>	<ul style="list-style-type: none"><li>• MHOAC/RDMHS: Follow incident command structure and procedures so that communication is consistent across CDPH, LHJs, MHOACs, and RDMHSs.</li></ul>

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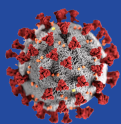
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Topic	CDPH	LHJs	Other Entities
	<p>and positions are always staffed.</p> <ul style="list-style-type: none"><li>• Ensure the timely hiring and training of personnel for the RDMHS position.</li><li>• Provide ongoing exercises and activities for the MHOAC/RDMHS so that familiarity with their procedures and operations remains high among stakeholders.</li></ul>		
Staffing		<ul style="list-style-type: none"><li>• Maintain comprehensive public health emergency plans, update these plans after every public health incident, and fully train staff on emergency roles and functions.</li><li>• Expedite emergency hires to expand the public health workforce.</li><li>• Work with HR to monitor the impact of emergency response on staff, proactively provide mental health counseling and other support to prevent staff burnout.</li></ul>	

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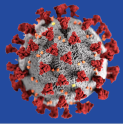


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Topic	CDPH	LHJs	Other Entities
		<ul style="list-style-type: none"><li>• Enforce time off for staff who have exceeded a certain hour worked threshold during public health emergencies.</li><li>• Ensure the LHJ's DSW program can provide just-in-time training and quickly assign additional personnel to critical public health activities.</li><li>• Identify additional staff resources that can be activated during a public health emergency, such as through mutual aid agreements with other jurisdictions, as-needed contracts with private sector service providers, MOUs with local nonprofit organizations, and arrangements with local first responders.</li><li>• Strengthen public health volunteer networks, such as with the Medical Reserve Corps.</li><li>• Develop robust volunteer management plans to streamline onboarding and training of volunteers during an emergency.</li></ul>	

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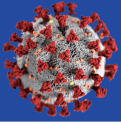
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Topic	CDPH	LHJs	Other Entities
Communications	<ul style="list-style-type: none"><li>Differentiate communications toolkit materials and strategies between urban and rural jurisdictions.</li></ul>	<ul style="list-style-type: none"><li>Include an internal communication plan, organizational structure, and process in comprehensive public health emergency plans.</li><li>Develop communication toolkits and strategies to quickly address dis-, mal-, and mis-information being disseminated to the public.</li><li>Deliver public health messages by a messenger who is highly trusted by the target community.</li><li>Translate public health messages into multiple languages and tailor for different organizational entities (such as businesses, schools, and health care facilities).</li><li>Utilize communication channels that are most relevant and accessible to different audiences.</li></ul>	
Resources		<ul style="list-style-type: none"><li>Establish as-needed contracts, alternative sourcing options, and emergency procurement procedures for critical public</li></ul>	

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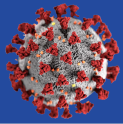


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Topic	CDPH	LHJs	Other Entities
		health supplies and equipment. <ul style="list-style-type: none"><li>• Maintain an active MHOAC program and RDMHS so that resource requesting through these channels can occur smoothly during emergencies.</li><li>• Provide sufficient budget to warehouse or stockpile essential public health supplies in the event of emergencies.</li></ul>	
HCC			<ul style="list-style-type: none"><li>• HCC: Exercise the existing HCC Plan.</li><li>• HCC: Ensure HCC stakeholders are fully participating in the program by regularly convening HCC meetings, maintaining an up-to-date roster, and training stakeholders.</li></ul>

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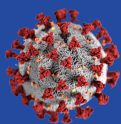


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Topic	CDPH	LHJs	Other Entities
LHJs Operating Public Health Labs		<ul style="list-style-type: none"><li>• Equip PH labs with necessary testing equipment (such as high-throughput testing equipment) and supplies.</li><li>• Implement laboratory information management systems and electronic lab reporting with all hospital partners.</li><li>• Identify supplemental resources to surge PH lab capacity. Develop as-needed contracts with alternative laboratory services and support providers for functions such as shipping specimens, data entry, and billing. Identify Medical Reserve Corps volunteers who could be qualified lab technicians.</li><li>• Hire additional staff for the PH lab and develop staffing schedules to allow weekend rotations.</li></ul>	

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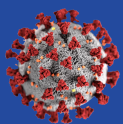
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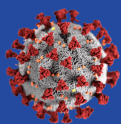
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Staffing		<ul style="list-style-type: none"><li>• Maintain comprehensive public health emergency plans, update these plans after every public health incident, and fully train staff on emergency roles and functions.</li><li>• Expedite emergency hires to expand the public health workforce.</li><li>• Work with HR to monitor the impact of emergency response on staff, proactively provide mental health counseling and other support to prevent staff burnout.</li></ul>	

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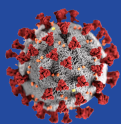


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Topic	CDPH	LHJs	Other Entities
		<ul style="list-style-type: none"><li>• Enforce time off for staff who have exceeded a certain hour worked threshold during public health emergencies.</li><li>• Ensure the LHJ's DSW program can provide just-in-time training and quickly assign additional personnel to critical public health activities.</li><li>• Identify additional staff resources that can be activated during a public health emergency, such as through mutual aid agreements with other jurisdictions, as-needed contracts with private sector service providers, MOUs with local nonprofit organizations, and arrangements with local first responders.</li><li>• Strengthen public health volunteer networks, such as with the Medical Reserve Corps.</li><li>• Develop robust volunteer management plans to streamline onboarding and training of volunteers during an emergency.</li></ul>	

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## CDPH COVID-19 After Action Report

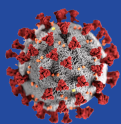
### Chapter 7 – Local Response

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Topic	CDPH	LHJs	Other Entities
Communications	<ul style="list-style-type: none"><li>Differentiate communications toolkit materials and strategies between urban and rural jurisdictions.</li></ul>	<ul style="list-style-type: none"><li>Include an internal communication plan, organizational structure, and process in comprehensive public health emergency plans.</li><li>Develop communication toolkits and strategies to quickly address dis-, mal-, and mis-information being disseminated to the public.</li><li>Deliver public health messages by a messenger who is highly trusted by the target community.</li><li>Translate public health messages into multiple languages and tailor for different organizational entities (such as businesses, schools, and health care facilities).</li><li>Utilize communication channels that are most relevant and accessible to different audiences.</li></ul>	
Resources		<ul style="list-style-type: none"><li>Establish as-needed contracts, alternative sourcing options, and emergency procurement procedures for critical public</li></ul>	

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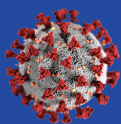


## CDPH COVID-19 After Action Report Chapter 7 – Local Response

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Topic	CDPH	LHJs	Other Entities
		health supplies and equipment. <ul style="list-style-type: none"><li>• Maintain an active MHOAC program and RDMHS so that resource requesting through these channels can occur smoothly during emergencies.</li><li>• Provide sufficient budget to warehouse or stockpile essential public health supplies in the event of emergencies.</li></ul>	
HCC			<ul style="list-style-type: none"><li>• HCC: Exercise the existing HCC Plan.</li><li>• HCC: Ensure HCC stakeholders are fully participating in the program by regularly convening HCC meetings, maintaining an up-to-date roster, and training stakeholders.</li></ul>

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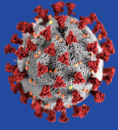


## CDPH COVID-19 After Action Report Chapter 7 – Local Response

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Topic	CDPH	LHJs	Other Entities
LHJs Operating Public Health Labs		<ul style="list-style-type: none"><li>• Equip PH labs with necessary testing equipment (such as high-throughput testing equipment) and supplies.</li><li>• Implement laboratory information management systems and electronic lab reporting with all hospital partners.</li><li>• Identify supplemental resources to surge PH lab capacity. Develop as-needed contracts with alternative laboratory services and support providers for functions such as shipping specimens, data entry, and billing. Identify Medical Reserve Corps volunteers who could be qualified lab technicians.</li><li>• Hire additional staff for the PH lab and develop staffing schedules to allow weekend rotations.</li></ul>	

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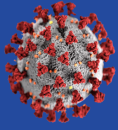
## Appendix: Data Gathering Approach

CDPH distributed a COVID-19 Abbreviated After Action Report (A-AAR) form to the 61 Local Health Jurisdictions (LHJs) including the health departments for the cities of Berkeley, Long Beach, and Pasadena in spring 2023. This served as CDPH's data gathering mechanism to obtain information from LHJs on their key successes, identify lessons learned, and identify improvements to prepare for a future public health event. The A-AAR requested information from LHJs in six areas:

1. Executive Summary
2. Key Successes
3. Advances
4. Key Lessons Learned
5. Corrective Actions
6. Successes and challenges specific to the work of:
  - a) Health Care Coalition members
  - b) Public health laboratory
  - c) Medical Health Operational Area Coordinator / Regional Disaster Medical Health Specialist

The Abbreviated AAR also provided an opportunity for LHJs to provide additional comments and suggestions. CDPH received responses from all of the LHJs except from Alpine and Monterey counties. In addition, several LHJs submitted longer COVID-19 retrospective reports to CDPH including Los Angeles, Marin, Modoc, Orange, Shasta, and Solano. In some instances, the surveys were completed by a single individual representing the entire LHJ. The representativeness of this individual's responses for the opinions and sentiments of the entire LHJ cannot be determined.

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## CDPH COVID-19 After Action Report Chapter 7 – Local Response

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### Responses Received by Health Officer Region

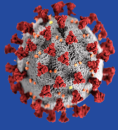
LHJs are organized into five larger regional entities to coordinate public health responses.

**Figure 1: Health Officer Regional Entities**



As part of the analysis of Abbreviated AARs and related documents, each LHJ's response was categorized into their regional entity. The following list summarizes the responses by region.

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## Regional Differences

We analyzed the responses identified as strengths, successes, or advances in the LHJ responses to determine when a specific organization was mentioned as part of the success. We then calculated the frequency that CDPH, HCC/healthcare entities, MHOAC, and RDMHS were identified as key contributors to LHJ success. Figure 2 summarizes this distribution.

**Figure 2: Percentage of Comments Identified as a Success Factor**

	CDPH	HCC/Entities	MHOAC	RDMHS
RANCHO	11.6%	<b>19.4%</b>	14.5%	14.5%
ABAHO	5.8%	<b>14.9%</b>	11.7%	1.3%
GREATER SACRAMENTO	12.3%	13.9%	<b>14.8%</b>	10.6%
SJVC	<b>16.4%</b>	13.4%	13.4%	4.5%
SOUTHERN CAL HO	<b>13.1%</b>	8.0%	10.9%	10.2%

Because the survey responses are subjective and qualitative, this data represents frequency distributions and not expressions of intensity.