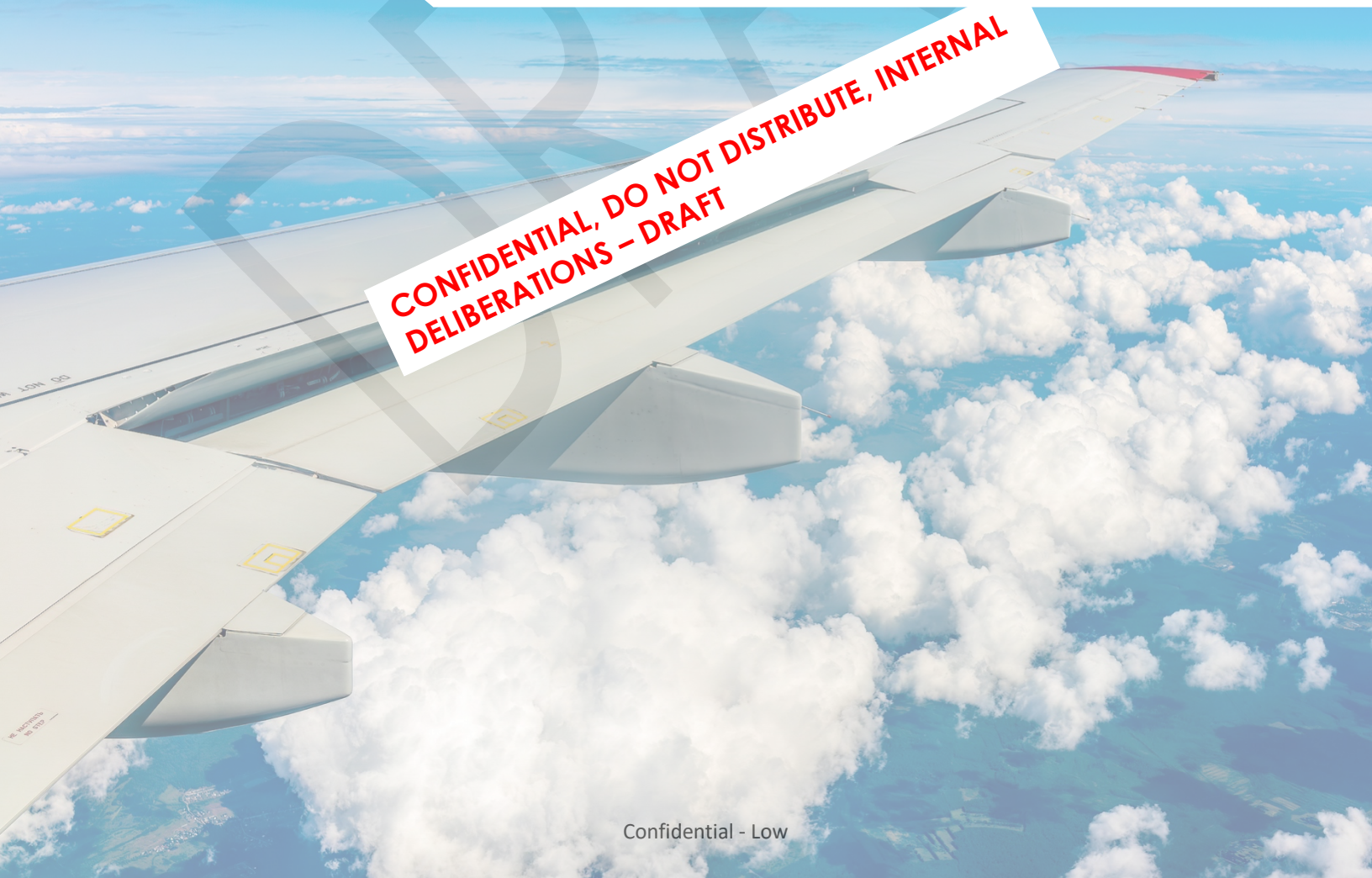
Chapter 22
Repatriation, Quarantine, and Returning Traveler Monitoring



Version History

Version #	Date	Notes
0.1	1/5/2023	First Draft submitted to CPR Team
0.2	2/8/2023	Final Draft revised per review by CPR Leadership
0.3	7/31/2023	Final Draft reformatted
0.4	1/18/2024	Final Draft revised per Expert Review and CPR Leadership review

Table of Contents

22. Repatriation, Quarantine, and Returning Traveler Monitoring

Related Public Health Emergency Preparedness and Response Capabilities: Medical Materiel Management and Distribution.

Related CDPH AAR Chapters: Resource Requesting and the Public Health Ordering System.

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

Overview

This section provides a high-level overview of milestones and activities related to this chapter.

From late January through Mid-March 2020, CDPH assumed a major role in national repatriation and quarantine efforts that unfolded in two phases: 1) receiving international flights carrying American citizens who had been on cruise ships overseas, and 2) receiving cruise ships, including the Grand Princess, that were experiencing outbreaks of COVID-19 onboard.

These efforts involved close collaboration with other State departments, numerous federal agencies, local authorities who were responsible for monitoring returning travelers, and military bases across the State, where travelers were housed during their quarantine. CDPH's role differed slightly by each location and operation, but CDPH teams consistently worked to bridge the gap between federal and local activities, whether it involved communications, arranging testing locally and with the Centers for Disease Control (CDC), transporting patients to and from hospitals, locating negative pressure rooms, monitoring travelers, and providing guidance on personal protective equipment (PPE) and other policies.

All levels of government were involved in these early efforts. The number of stakeholders involved, the extraordinary nature of the response, and the lack of relevant plans, contributed to a situation that was overwhelming. Repatriation, which is the process of returning a U.S. citizen to their home country, typically takes place within the context of war. While the State had repatriation plans and infectious disease plans, CDPH lacked a plan for repatriation during a pandemic while under a federal quarantine order—which was a highly unusual

scenario. In general, roles, responsibilities, and decision-making authorities were unclear, and many noted that it would have been helpful to have a framework around repatriation activities worked out in advance. These challenges were compounded by operational difficulties associated with limited testing availability, requirements for negative pressure hospital rooms for symptomatic return travelers, lack of knowledge of the virus (which made it difficult to develop specific disease control recommendations) and challenges with the supply and usage of PPE.

CDPH coordinated with its State, regional, and local partners (including Cal OES, EMSA, LHJs, and the California Conference of Local Health Officers [CCLHO]) to develop effective protocols and processes. These included the returning traveler monitoring program, which, as part of CDPH's containment strategy, processed over 12,000 individual travelers in six weeks despite technology and data challenges.

The first reported case of community transmission of COVID-19 occurred on February 26, 2020, precipitating CDPH's pivot from containment to mitigation strategies. The Returning Traveler Monitoring program ended three weeks later on March 17, 2020. However, some returning traveler monitoring continued longer than needed, using resources that could have been redirected to other response activities. The fundamental strategic question of when to shift from containment to mitigation remains critical for any future pandemic response.

Even with little planning, CDPH and California assumed a leadership role to receive thousands of returning American travelers in an uncertain time during which very little was known about COVID-19. "We just moved in the direction of making our own decisions with our resources and authorities, and everyone came together," one SME noted.

Timeline and Key Milestones

	2020
Winter 2020	▶ **January 26** First two confirmed COVID-19 cases in CA ▶ **January 30:** U.S. travelers from China arrived and quarantined at military base in Riverside, CA ▶ **January 31:** U.S. issued an Executive Order that limited travel from China ▶ **February 3:** U.S. Department of Homeland Security directed all flights from China to 11 U.S. airports, including SFO and LAX ▶ **February 3**: CDPH formed the Returning Traveler Monitoring Team using redirected staff ▶ **February 5:** Additional U.S. evacuees from China arrived and quarantined at military bases in Southern and Northern California ▶ **February 26:** First COVID-19 case through community transmission identified in California
Spring 2020	▶ **March 8:** Grand Princess cruise ship docked in Oakland ▶ **March 16:** Multiple California counties issued shelter-in-place orders ▶ **March 17:** CDPH Returning Traveler Monitoring program discontinued

Main Strengths and Successes

This section describes the Main Strengths and Successes, including findings and corrective actions, related to this chapter. Further elaboration and a more detailed discussion of these strengths and successes can be found in the Analysis of Activities section.

1. Taking ownership of early repatriation, quarantine, and returning traveler efforts during a time of ambiguity, CDPH and its federal and local partners developed processes and protocols to successfully receive returning U.S. citizens, including arranging testing, transportation, and care.

At a time when almost nothing was known about COVID-19 and fear was widespread, California took on a national leadership role. In the absence of clear guidance and protocols, CDPH and its federal and local partners rose to the occasion to initiate repatriation, quarantine, and returning traveler monitoring. Of the 11 U.S. airports that received early returning travelers, California possessed two of them—SFO and LAX. Hundreds of U.S. citizens returning on these repatriation flights were quarantined at military bases run by federal partners. Later, CDPH established a Returning Traveler Monitoring program and helped local partners, who fed, cared for, and monitored individuals that were unable to isolate or quarantine on their own. Weeks later, when the Grand Princess cruise ship was experiencing an outbreak of COVID-19 on board, State officials and the City of Oakland agreed to receive the ship after many entities had rejected it. This entailed successfully managing testing, medical care, and transportation for thousands of passengers. Increasing numbers of government partners as well as private entities such as cruise ship operators began to look to CDPH for guidance on a number of topics, including PPE, masking, and other policies. CDPH's early leadership on these efforts remain a source of pride for leaders and team members who worked around the clock in a time of great uncertainty to bring citizens back into the country.

Finding/Corrective Action: CDPH should be prepared to take a leadership role related to repatriation and traveler management in future pandemic responses in partnership with federal, state, and local partners (where appropriate) and apply its lessons learned to

continuously improve its response. *(ID: Repatriation & Traveler Monitoring – 1)*

Main Challenges and Lessons Learned

This section describes the Main Challenges and Lessons Learned, including findings and corrective actions, related to this chapter. Further elaboration and a more detailed discussion of these challenges and lessons learned can be found in the Analysis of Activities section.

2. Early repatriation, quarantine, and travel monitoring activities required coordination between federal, state, and local governments. The lack of advance planning and communication around roles, responsibilities, and authorities created confusion and delayed decision-making.

During the early flight repatriations, there was initial confusion due to the number of local, state, and federal stakeholders involved and the lack of advanced planning, protocols, and communication channels for this type of situation. With different authorities and jurisdictions represented, but no standard protocols or plans to follow, CDPH and its partners struggled to make basic decisions—such as who had jurisdiction, how to make decisions about docking, who should get tested, how to determine adequate hospital and isolation space, how to transport passengers, and how to obtain timely passenger lists. Other logistical challenges involved developing protocols around passenger transportation, care, and feeding at the quarantine sites. Ultimately, the lack framework around partner roles and responsibilities required State leaders to make decisions as the response was unfolding. Since multiple conversations were taking place at multiple levels of government, this produced confusion and duplication of effort. As one leader noted, "it would have been helpful to have those decisions, especially about roles and responsibilities, made and communicated in advance." Others felt that the State needs to think more critically about different travel modalities and make sure that there are more robust plans and protections in place for travelers returning by land, air, and sea.

Finding/Corrective Action: CDPH should work with its federal, state, and local partners to define roles, responsibilities, and authorities in advance,

and create and communicate a playbook for decision-making around mass isolation and quarantine. *(ID: Repatriation & Traveler Monitoring – 2)*

3. Initially, inconsistent communications among different levels of government deviated from established channels, resulting in duplication of effort and information-sharing delays.

During initial repatriation and quarantine efforts, communication between the various levels of government involved was challenging. Instead of following established protocols (e.g., from local to regional to State to federal), similar conversations were happening at different levels of government, resulting in duplication of effort and multiple teams being tasked with the same responsibilities. Simultaneously, decisions made at executive levels did not always reach those on the ground. Communications and the information-sharing situation improved with establishment of the Incident Command System (ICS) structure as well as conference calls that included all stakeholders. However, communication challenges still persisted. During the second phase of repatriation (which involved returning cruise ships), CDPH would sometimes learn of a ship's plans to dock in California from the news media.

Finding/Corrective Action: The State should establish ICS structures early to ensure consistent communication between local, State, regional, and federal stakeholders. *(ID: Repatriation & Traveler Monitoring – 3)*

4. While CDPH pivoted its response from containment to mitigation relatively quickly, returning traveler monitoring efforts went on longer than were useful.

During initial containment of a disease, returning traveler monitoring to screen travelers for symptoms is often used to reduce the number of new infections and delay the onset of community transmission. In the first week of February 2020, following the federal Executive Order limiting traveling from China, CDPH established a returning traveler monitoring team as part of its containment strategy. For six weeks CDPH staff worked long hours receiving, processing, and distributing traveler notifications to LHJs for local follow-up. However, the first California case of community transmission was reported on February 26, 2020, initiating the State's pivot from containment to mitigation response efforts, which focused on slowing down the spread of infections rather than preventing them entirely. Once community transmission occurs, "the cat

is out of the bag" and containment efforts are not the best use of limited resources. SMEs wondered why the returning traveler monitoring program continued through March 17, 2020, even though community transmission had already begun. Leaders agreed that some activities went on longer than necessary, although CDPH did move to mitigation relatively rapidly. Ultimately, a key lesson learned was the importance of keeping the fundamental strategic question (of when to shift from containment to mitigation) at the "front and center" of the response, developing criteria of when to pivot, being ready to pivot, and reassigning resources as soon as containment is no longer viable.

Finding/Corrective Action: CDPH should develop and document its criteria for when to shift its response strategy from containment to mitigation, including triggers for when to discontinue returning traveler monitoring. *(ID: Repatriation & Traveler Monitoring – 4)*

5. Inconsistent PPE usage at quarantine sites created challenges.

With so many different groups represented at the repatriation sites (including travelers, LHJs, multiple State departments, and multiple federal entities), there was varying knowledge and awareness about the importance of using PPE. This contributed to both inconsistent usage of PPE, as well as wastage. CDPH developed guidance on the proper use of PPE and, in some instances, supplied PPE to other partners at the repatriation sites. Questions also arose regarding if workers who were supporting operations (such as handling food or luggage) were eligible for PPE, which was in short supply.

Finding/Corrective Action: CDPH should work with its federal, State, and local partners to document proper PPE protocols, roles, and responsibilities at multi-jurisdictional sites. *(ID: Repatriation & Traveler Monitoring – 5)*

6. Testing difficulties led to challenges with isolating, transporting, and caring for returning travelers.

During this early phase of the pandemic response, there were many testing challenges. Initially, all testing in the U.S. could only be conducted by the CDC. This soon changed, and some tests could be performed at the local and State level and then confirmed by the CDC. During these two phases, there were significant delays in obtaining test

results and test confirmations from the CDC. Another issue was the lack of clarity around who was processing or "running" tests and which tests could be considered final. Additionally, some travelers had been tested before returning to the U.S., but there were different criteria and conditions on which tests would be accepted. While travelers waited for their test results and confirmations, they were not allowed to leave the military bases—and in some cases, the airborne isolation rooms, which were in scarce supply. These isolation rooms typically only exist in hospitals and prevent potentially contaminated air from circulating outside the room and infecting others. Very few negative pressure rooms exist across the State and CDPH spent much time trying to locate them for patients who needed hospitalization.

Finding/Corrective Action: CDPH should develop a plan for limited testing scenarios, including identifying criteria for testing and using airborne isolation rooms. *(ID: Repatriation & Traveler Monitoring – 6)*

7. Technology limitations made it difficult to receive, process, and disseminate traveler data to local authorities in a timely manner.

The business processes and technology systems to conduct returning traveler monitoring were antiquated and led to incomplete, poor-quality data. The CDPH team devoted much of its time to standardizing and correcting the data it received from federal authorities, which created delays in disseminating this information to locals for traveler monitoring and follow-up. While it would have helped to receive traveler data in a more standardized format, the team acknowledged the challenges associated with CDC's responsibility to funnel data to all 50 states. Although some of the technology challenges associated with returning traveler monitoring are beyond the State's control, internal improvement efforts are underway. In December 2022, CDPH released the pilot Generic Symptom Monitoring Record (GenX) tool. Housed within the State's contact tracing system (CalCONNECT), the GenX tool automates certain traveler monitoring functions and is designed to be flexible enough to be used for any future disease that requires traveler monitoring.

Finding/Corrective Action: CDPH should continue to develop and expand the GenX tool to further automate and improve returning traveler monitoring. *(ID: Repatriation & Traveler Monitoring – 7)*

Analysis of Activities

This section elaborates and provides more detail on the findings, corrective actions, and lessons learned that are presented in the Main Strengths and Successes and the Main Challenges and Lessons Learned sections.

CDPH Worked with Federal Partners to Count Passengers and Receive Flights of Repatriated U.S. Citizens from Overseas

- In January 2020, California assumed a leadership role in the repatriation of American citizens who were on cruise ships in Asia at the time that the federal quarantine order took effect. These ships included the Diamond Princess, which was a cruise ship anchored off the coast of Japan with Americans on board. While federal partners oversaw the operation, California received five (5) flights carrying American citizens who were evacuated from these cruise ships docked overseas. Managing the repatriation flights was a very focused, intensive, and time-limited effort. The initial repatriation flight came into Riverside County, and CDPH worked with the county to set up Ontario airport to receive the repatriated citizens, who were then transported to the March Air Reserve military base.
- Repatriation typically takes place in the context of wars and unsettled areas and had not "really been thought about in the context of a pandemic." According to one leader, the State had a repatriation plan and infectious disease plans, but "we've never had to repatriate while experiencing an infectious disease under a federal quarantine—there was no plan for that."
- One of the main challenges was simply keeping track of the number of passengers. CDPH was reliant upon numbers provided by its federal partners and had to count every person on the repatriation flights. However, due to last minute changes and corrections it was nearly impossible to maintain an accurate headcount. It was also difficult to communicate constantly changing information between federal, state, and local partners.

- Many SMEs noted that there will always be passengers who change their minds and do not board the plane. This renders "100% accounting" impossible despite the pressure to provide accurate numbers. Ultimately, SMEs felt that the energy spent on counting passengers was not always worthwhile: "the amount of time we spent trying to get the numbers to add up were just ridiculous and distracted from the response," one respondent stated. For the Riverside repatriation flight, it took several days after the flight had landed to get an accurate passenger count.
- The challenges associated with rostering made it difficult to develop appropriate protocols, especially for those American citizens who had tested positive for COVID-19. For COVID-19-positive passengers, CDPH often had to wait for more additional information from federal partners, which delayed decision-making. CDPH was responsible for determining what types of PPE passengers and crew should wear, where to seat COVID-19 positive patients, and developing safety protocols for boarding and disembarking from the planes.
- Additionally, the State was also challenged by the unpredictability of flight paths. Flight paths, timing, and landing locations could be changed while a plane was en route. In one instance, a plane bound for San Francisco Airport was re-routed directly to Travis Air Force Base, over 60 miles away, creating confusion on the ground amongst local coordinators who were already scrambling to prepare for the repatriated passengers.
- In general, during this time period "the intelligence was so minimal that no one really knew what the true stories were," according to one SME. This information vacuum led to conjecture and hypothesizing around the actual circumstances regarding the flights and passengers, exacerbating an already-stressful situation.
- Following the initial Riverside repatriation flight, CDPH and local authorities conducted a debrief, which yielded many detailed lessons learned:
  - Travelers need to be briefed on what to expect before they get to the base (e.g., via a provided handout).
  - Perimeter control around the quarantine area should be established and enforced.
  - Local health care workers should wear wristbands indicating they are allowed to go in and out of the quarantine area.

- Specimen collection needs to start as soon as possible after arrival.
- Emergency room nurses should be utilized for fast blood draws.
- Locals should provide PPE, N95s, lab supplies, and blood draw supplies.
- Establish a process to count travelers each day.
- Bring on mobile cellular service ("cell on wheels") to increase cellular network capacity.
- Monitor social media for communications and potential misinformation.
- Clarify reimbursement and cost arrangements and document them in writing.
- Arrange for a hospital mobile clinic to provide non-COVID-19 medical operations to travelers in need of medical care.

Repatriated Citizens Were Isolated and Quarantined at Military Bases and Other Locations Across the State

- Once the flights had landed, the repatriated citizens were isolated and quarantined at various bases across the State usually operated by the federal government. These bases included March Air Reserve Base in Riverside, Marine Corps Air Station Miramar in San Diego, and Travis Air Force Base in Fairfield. There were also State-run sites located in Asilomar (Pacific Grove) run by Cal OES. At each site, CDPH had a different operational role. All the sites had many federal entities involved including the Centers for Disease Control (CDC), U.S. Marshals, and the Administration for Strategic Preparedness and Response (ASPR) within the U.S. Department of Health and Human Services (HHS). In addition, there were numerous State and local stakeholders.

- In most cases, federal representatives managed the operations at the repatriation sites. However, if quarantined individuals became sick or left the base, they became the State's responsibility. In these instances, CDPH's clinical team became involved and provided medical expertise and coordination when much was unknown about the virus. Many passengers who were quarantining at Miramar and Travis became ill and needed to go to a hospital. In these instances, CDPH helped coordinate with health care providers regarding where to send patients and the protocols for transporting them safely. While EMSA was responsible for patient transportation, CDPH medical officers devised protocols and plans for how patients should be transported. These efforts included advising ambulance teams and health care providers on the usage of PPE, arranging testing capabilities for exposed persons (in a time of limited testing), and working with LHJs to track potential exposures. Every movement of a patient had to be carefully coordinated to avoid having ill patients potentially expose others as they were cared for.
- The State faced unique transportation challenges related to getting patients to hospitals safely. While EMSA was responsible for patient transport, CDPH collaborated with EMSA and helped develop guidance and safety protocols related to patient movement. Due to the unknown risk of the virus, ambulance workers involved in patient transport wore full-body PPE. However, there were many other questions that CDPH leadership had to think through and coordinate, such as how to manage the ambulance operations, how to transport patients without exposing others, how to track and follow-up with any individuals who had been potentially exposed, and how to arrange testing for those individuals at a time when testing was incredibly limited and only being offered through the CDC. As one leader summarized, it was incredibly challenging to coordinate: "if someone is getting into an ambulance, you need to coordinate so the ambulance goes somewhere that is ready to receive them, and that everyone has PPE on. You don't want them to show up and sit in the emergency room."
- Additionally, CDPH and EMSA faced ambulance transportation challenges. Existing contracts with certain ambulance companies prevented them from crossing county lines, which proved problematic when patients needed to be transferred to a hospital in another local

jurisdiction. Ultimately the State executed a Statewide ambulance contract to be able to move patients as needed.

CDPH Arranged Testing and Located Negative Pressure Rooms and other Facilities for Passengers Who Needed to Isolate and Quarantine

- In early Spring 2020, testing for the virus was incredibly limited and presented many operational challenges. As one leader noted, "testing had a lot of layers of issues and was a struggle." For the repatriation flights of returning travelers, some travelers had been tested in Japan, but once they returned to the U.S. there was different criteria and conditions on which tests would be accepted. For instance, if a traveler tested positive initially but then tested negative, CDPH had to develop guidance and "multiple different pathways" for transportation and movement of that individual.
- Another issue was simply the lack of clarity around who was processing or "running" tests and which tests could be considered final. Early on, the CDC was initially tasked with running all tests for COVID-19, which required specimens to be sent to Atlanta. However, some tests were being first run by LHJs or the State, and then sent to CDC for confirmation, which created confusion between federal partners regarding test results.
- For symptomatic repatriated individuals, the lack of timely testing and the fact that much was unknown about the virus created complex scenarios. At this early stage, while CDPH knew very little about the virus, they had to assume that it was very likely airborne. Based on this assumption, CDPH focused on containment strategies for symptomatic individuals to limit the spread of the virus.
- This meant that any time a repatriated citizen experienced a symptom, they were immediately transported to negative pressure rooms, also known as "airborne isolation" rooms. These isolation rooms typically only exist in hospitals and prevent potentially contaminated air from circulating outside the room and infecting others. Very few negative pressure rooms exist across the State and CDPH spent much time trying to locate them for patients who needed hospitalization. When the negative pressure rooms were full, the State had to locate alternative facilities for passengers to quarantine in, including hotel rooms.

- Lastly, one of the significant challenges with patients in negative pressure rooms was testing difficulties. Repatriated citizens with mild signs or symptoms of illness were required to quarantine for two weeks. Since little was known about how long people were infectious, CDPH also required a negative test result to leave the base.. However, before citizens were allowed to leave, CDPH had to receive confirmation from the CDC for each test result, which was significantly delayed. In some circumstances, individuals with very mild symptoms were housed in airborne isolation rooms "for weeks at a time," according to leadership, unable to leave until their negative result was confirmed. This prevented the scarce isolation rooms from being used by patients with more severe symptoms. Once these individuals were released, CDPH needed to communicate and coordinate with the appropriate LHJ to let them know they were returning home to their county.

Repatriation and Quarantine Required Intensive Coordination Between Federal, State, and Local Authorities

- Generally, repatriation is a federal responsibility since it involves U.S. citizens crossing an international border. For the repatriation flights that ended up at various military and air bases throughout California, there was a strong federal presence, including representatives from the CDC, the Office of Human Services Emergency Preparedness and Response for the Administration of Children and Families (ACF), ASPR, and the military. Most sites were federal quarantine sites, but there were also State-run sites, which were run by Cal OES. CDPH's role varied by site, as did the role of the LHJs.
- For the first flight that landed in Riverside County, the coordination and communication between federal, State, and local partners was difficult. "There were a lot of uniforms, and no one knew their function or who was the lead" one SME noted. Another added that with so many stakeholders, "it was unclear who was making the decisions." With federal, State, and local representatives established in different rooms on the base, information sharing was initially poor. One of the consequences of this confusion was a lack of accountability for the repatriated citizens—initially, there was no head count each morning to make sure all passengers were accounted for. Perimeter control was loose, tired travelers had not been briefed on what to expect, and the use of PPE was

inconsistent and haphazard (discussed further below). Communication and coordination improved over time, but it took three days to establish an Incident Command System and Incident Management Team (ICS/IMT) structure.

- Another area of confusion related to navigating the different federal, State, and local authorities for isolation and quarantine. At times, isolation orders needed to be issued to passengers. While the CDC has the authority to issue such orders, in some instances this decision was deferred to the State or local level. There were numerous conversations and in some cases disagreements about which authority would issue the isolation order and quarantine, and "there were some times and places where it was not always clear," according to one SME. This led to many confusing scenarios: in one example, a traveler left the Air Station Miramar site without the jurisdictional LHJ being aware of it, and locals had to run after the car to issue the isolation order. At Travis Air Force Base (AFB), State and local representatives were not made aware when travelers who had been transported to hospitals were returned to the base the next day.
- Navigating these different authorities was especially complex at Travis AFB, because multiple jurisdictions and counties were involved. Instead of having one federal order applied to all passengers, local health officers scrambled to issue orders for each passenger—and sometimes had to issue multiple orders in multiple counties. In contrast, at Air Station Miramar in San Diego, there was just one local jurisdiction involved, and representatives were able to participate in the command center and track the whereabouts of citizens very closely and more successfully.
- In the future, SMEs noted that it is critical to have "consistency and clarity around who is still under a federal authority and who can be released to a local authority," which was lacking throughout the repatriation flight efforts. To achieve more consistency and clarity would require advance planning and coordination with the federal government, including making decisions about roles and responsibilities ahead of time. As another leader noted, "it would have been helpful to have those decisions made in advance."

CDPH Established PPE Protocols and Guidance in Addition to Providing PPE to Some Partners

- With so many different local, State, and federal entities represented at the sites for repatriated citizens, there was little consistency when it came to wearing PPE. "We had lot of issues with PPE in general with folks not knowing what and how to wear it," one leader noted. At the Air Station Miramar site, there was no consistency of PPE in the quarantine area. Federal authorities as well as travelers did not wear masks consistently in the quarantine area. However, county representatives wore PPE and had to "don/doff" where they would sign in and out of the area. It was reported that contractors and vendors were unwilling to come into the quarantine area as a result of this inconsistency.
- At the Travis AFB site, passengers wore N95 masks, but very few other federal representatives or base staff did. At both locations, it was also unclear who was responsible for providing PPE, including N95 masks. CDPH provided N95s for some federal entities, but there was also an expectation that local representatives would provide PPE for other stakeholders to use.
- In addition to the inconsistent use of PPE and N95 masks, another issue was the wastage of N95s, which started to occur along with early discussions regarding N95 shortages. At this point, CDPH recognized the need to develop guidance about how to correctly wear and conserve N95s.
- Shortly thereafter, the State started receiving requests for guidance on PPE protocols in homeless shelters and alternate care sites. CDPH found itself in a "balancing act" of trying to answer and advise on incoming requests, while also waiting for CDC to issue federal guidance. New issues would come up daily, such as safety protocols for housing and feeding the repatriated citizens at the bases, which would present complex operational challenges. For instance, CDPH had to develop protocols for handling utensils so that staff could avoid touching the handles used to serve food.
- Very little was known about COVID-19 and many were still worried about contact transmission. "Every day, there was some sort of issue because we didn't have clear information on how the virus spread," one leader noted; "we were doing the best we could to prevent further spread."

CDPH and its Partners Managed the Grand Princess Cruise Ship's Docking in Oakland, including Arranging Testing, Medical Care, and Transportation for Thousands of Passengers

- In addition to the groups of repatriated citizens arriving on flights from cruise ships overseas, in early March 2020 California also received the Grand Princess cruise ship in Oakland, which has numerous passengers on board who had tested positive for COVID-19. The Grand Princess docked on March 8 after several days spent anchored offshore in the port and began to disembark its 3,000 passengers, approximately 1,000 of which were Californians. Similar to the repatriation flights, the Grand Princess operation involved representatives from all levels of government, including FEMA, HHS, Cal OES, EMSA, and CDPH. Cal OES led the State side of the operation, while EMSA was responsible for coordinating the transportation of passengers to nearby medical facilities. CDPH coordinated with EMSA on patient transportation, such as making sure that family members could stay together, and responded to inquiries from the public.
- Over five days, approximately 130 patients were transported to hospitals, nearby medical facilities, and Travis AFB to receive medical attention and/or to quarantine. Many Grand Princess passengers were sent to Travis, but if they tested positive for COVID-19 they were transported to a local area hospital. Local hospitals, however, were reluctant to receive these patients, and finding a hospital that was willing to accept passengers with COVID-19 was challenging. For each passenger, the process included identifying the hospital facility, coordinating ambulance transportation, ensuring proper PPE protocols, and keeping family members together. As one leader noted, "130 patients in five days doesn't sound like a lot, but it was a long process of getting them off the ship. It seemed more like a thousand—every one was a challenge." EMSA led the patient transportation effort and faced difficulties regarding the ability of ambulances to cross jurisdictional lines.
- Moreover, arranging testing for the Grand Princess passengers and crew also presented new operational and logistical hurdles. In early March 2020, testing was still scarce and primarily controlled by the CDC. In addition to dealing with this scarcity of testing capacity, CDPH confronted the challenge how to conduct testing on the cruise ship. Ultimately, the

State had to airdrop tests onto the ship and then send a small boat of health care workers to the ship to perform the tests.

- Government coordination amongst the various entities was more successful for the Grand Princess than for the repatriation flights. The operation was run by Cal OES out of the State Operations Center (SOC), with representatives from Cal OES, CDPH, and EMSA all onsite in Oakland. SMEs mentioned that it was "helpful and effective" to have local representatives at the Oakland HHS FEMA site, and that "being able to use those ICS structures and have representatives embedded as much as possible was very helpful."
- Additionally, Cal OES brought cruise ship representatives into the operation. These representatives were stationed at the SOC and were a helpful asset, especially when many passengers were still "stuck onboard the ship and required medication." In such cases, the State was able to talk to the boat captain or physician and arrange to have medication brought to the ship. "We developed good relationships with the cruise ship companies," one SME noted. "We started to realize they had medical personnel that we could contact directly to get a better sense of what was happening on board."
- Overall, the CDPH team and its partners worked around the clock in a 24-hour operation for almost a week to disembark and manage passengers. "California and Oakland really stepped up to take in that cruise ship because a lot of places rejected it," one leader noted; "people should be proud that CDPH and the State of California welcomed these people back; it was huge."

CDPH Provided Guidance and Assistance to Other Cruise Ships with Outbreaks and Exposures

- The Grand Princess cruise ship was not the only ship in need of State assistance. In Spring 2020, as outbreaks started occurring on other cruise ships and more Californian travelers returned home, CDPH found itself advising multiple cruise ship operators on protocols. With multiple cruise ship incidents occurring simultaneously, one SME noted "everyone was doing things differently and there were no standard protocols." While the CDC had jurisdiction on the ships and can make final decisions regarding global migration and quarantine, "things were moving so fast with

multiple events," according to one leader, that sometimes the State was directed to work with cruise ship operators directly. Before the pandemic, CDPH had been working on a project to clarify working relationships and protocols with CDC's Global Migration and Quarantine to avoid having to "reinvent the wheel" for every incident. But this project was still in progress when the COVID-19 pandemic hit.

- In managing the cruise ships, one of the biggest challenges for CDPH was getting timely access from the CDC to passenger lists for follow-up. As a result, the State often had to locate passengers after they had already disembarked to notify them of a possible exposure. This was especially challenging because cruise ship incidents are usually multi-jurisdictional: once passengers disembark, they do not return to just one county but rather start dispersing across the State. As a result, the State had to work with multiple counties to identify and contact passengers. According to one SME, "ideally we would've liked to have that done in advance before they got off the ship, so we can give them resources and contacts." Another leader added, "there were no standard protocols for a cruise ship that had potential cases, so we had to scramble." SMEs indicated that in the future, it would be beneficial to complete the project that was suspended during the pandemic and create a pre-defined plan that outlines roles, responsibilities, approvals, and protocols surrounding such incidents.

Returning Traveler Monitoring Program Initiated in February 2020 to Screen and Monitor Travelers for COVID-19

- On January 31, 2020, the U.S. issued an Executive Order that limited travel from China in order to mitigate the threat of SARS-CoV-2. U.S. citizens and lawful permanent residents and their families who had been in China in the past 14 days were allowed to enter the United States. To facilitate screening of these persons upon arrival, starting on February 3, 2020 the U.S. Department of Homeland Security directed all flights from China to 11 U.S. airports (called "F11" airports). Two of these major airports—San Francisco International (SFO) and Los Angeles International (LAX) —were in California.
- Beginning February 3, 2020, CDPH redirected public health medical officers, epidemiologists, and other personnel to the CDPH Return Traveler Monitoring (RTM) team. The team initially started to think about

resurrecting the returning traveler monitoring program that had been used for Ebola in 2014-2015, and was beginning to explore this option. However, just a few days later, the "onslaught of notifications" from the CDC started coming in. In less than a week, the team realized that resurrecting the program as conceived for the Ebola response would not be successful due the enormous volumes that needed to be processed. The team determined that any manual processing would not be tenable, and that it needed to quickly figure out how to automate the process that would allow them to receive thousands of notifications, standardize them, process them, distribute them to LHJs, manage any follow-up, and distribute guidance. The RTM team developed its own custom SAS and SQL-based system, which is discussed further in the Data and Technology section of this chapter.

- The processing of returning traveler notifications involved multiple steps and information systems, and was published in the CDC journal by the CDPH RTM team. First, Customs and Border Protection agents interviewed arriving travelers regarding their signs and symptoms compatible with COVID-19 and. Then, in collaboration with the Department of Homeland Security and CDC, agents collected traveler demographic and contact information and provided travelers with instructions for self-monitoring.[1]
- Customs and Border Protection transmitted demographic and contact information for all arriving travelers to CDC, which forwarded this information securely to state public health authorities for follow-up through CDC's Epi-X network. Before sending to local health jurisdictions, CDPH staff members reviewed individual records to identify the destination jurisdiction for each traveler and any possible demographic and contact information errors.
- State and local public health officials were requested, if resources permitted, to contact travelers, interview them to ascertain signs or symptoms of illness and additional risk exposures, and oversee 14 days of

[1] Myers JF, Snyder RE, Porse CC, et al. Identification and Monitoring of International Travelers During the Initial Phase of an Outbreak of COVID-19 — California, February 3–March 17, 2020. MMWR Morb Mortal Wkly Rep 2020;69:599–602. DOI: https://www.cdc.gov/mmwr/volumes/69/wr/mm6919e4.htm

quarantine, self-monitoring, or both, based on CDC risk assessment criteria for COVID-19.

- From February 5, 2020 when CDPH first received CDC traveler notifications, through the decommission of CDPH's traveler monitoring program on March 17, 2020 CDPH processed 2,266 Epi-X notifications of arriving travelers, representing 12,061 individual travelers. During the 7-week period of the program, CDPH staff members devoted an estimated 1,694 person-hours. CDPH discontinued the traveler monitoring program on March 17, 2020.
- The team published a paper in the CDC Morbidity and Mortality Weekly Report in May 2022, Identification and Monitoring of International Travelers During the Initial Phase of an Outbreak of COVID-19—California, February 3-March 17, 2020.

CDPH Processed and Transmitted Returning Traveler Information from Federal Authorities to Local Authorities

- CDPH found itself in the middle upon receiving traveler information from federal authorities, cleaning it up and putting it into a standardized format, and then passing it on to local authorities for further investigation. The team was reliant on information collected much earlier in the traveler screening process, much of which contained errors and was incomplete. As the team worked to write code that could automate some of the processing, the file formats of incoming messages were constantly changing. "It was a huge hurdle for us – in addition to getting piecemeal, missing data, the format was constantly changing," one SME noted. This created extra work for CDPH who had to spend time reconciling data and filling in gaps from incoming spreadsheets and datasets. Instead, one SME noted, it would have been much easier "if we had just received the airline manifests directly."
- In addition to the poor data quality, dealing with the large volume of notifications was problematic. Ultimately, once the State reconciled the traveler notifications and passed it on to LHJs, local health officials were asked to conduct the follow-up work but also communicate to the State about it. CDPH provided locals with "hundreds of names every day to follow up," and following CDC's requests, asked LHJs to communicate

back to the State when they received the lists, when they followed up with travelers, and if travelers had symptoms.

- According to SMEs, "too much was being asked of locals" in terms of communicating and reporting back to the State, which was asking for this information to fulfill CDC's requests. As another noted, "there wasn't that realization from leadership that we were asking for too much." It would have been easier if CDPH was providing lists of travelers simply for information purposes and allowing LHJs to do what they wanted with the lists. But this did not occur until the very end of the program.
- For a more detailed discussion related to returning traveler monitoring data and technology issues, see the Data and Technology section in this chapter.

CDPH Pivoted from Disease Containment to Disease Mitigation

- California and its LHJs grew increasingly overwhelmed with returning traveler monitoring at the same time that resources needed to shift from containment to mitigation efforts. In California, the first confirmed case of COVID-19 without known exposure to a traveler or a patient with COVID-19 was reported to CDPH on February 26, 2020. This was the first case of community transmission in the State.
- In a pandemic, the very early stages of containment are critical. As SMEs explained, if robust traveler monitoring systems are in place early on (including isolation and quarantine systems), these systems "buy you some time to prepare and respond better" even if they do not prevent transmission of a virus. However, once community transmission begins, "the cat is out of the bag" and pandemic response strategies need to shift from containment to mitigation. Yet this shift cannot be made instantaneously and it is difficult to determine how and when it should be effected.
- Many framed the conundrum in terms of resource usage and at what point the investment in containment strategies is no longer worthwhile. For returning travelers, the team devoted considerable time and energy to "all kinds of detailed counting of things and people." For repatriation and quarantine efforts, it was costly and resource-intensive to house, feed, and monitor hundreds of people on airbases for 14 days, as well as arrange testing and disembarking for returning cruise ships. Yet, according

to one SME, "all that work makes no sense at all if you have people in the community who are being exposed at the grocery store." The key question, according to another leader, "is when do you pivot and change your approach from containment to mitigation so that you can optimize your resources?"

- Leadership grappled with this incredibly difficult question, which was influenced by many variables. While the CDC was promoting returning traveler monitoring at the national level, State leadership was trying to determine the best strategy for California, which had one of the earliest locally acquired cases in the nation and was receiving a large amount of migration from China, where COVID-19 was prevalent. While the first confirmed case of community transmission occurred on February 26, 2020, returning traveler monitoring did not cease.
- Most SMEs agreed that this monitoring, with its inherent focus on containment, went on longer than was useful and was a distraction when the State and locals needed to be investing more heavily in mitigation. "We did continue some things longer than was valuable," one SME noted. However, others felt California was relatively successful in pivoting away from containment strategies in a timely manner given that these efforts cannot be simply turned off immediately. Public attitudes also played a role in continuing some containment strategies. According to SMEs, the Californian public wanted to be assured that the State was taking steps to protect public health, and it was hard for the public to hear and understand why actions such as monitoring travelers were not worth it. Communicating to the public that "the risk you have in your community is no greater than what might be contributed by people coming from airplanes" was difficult.
- After the first community-acquired case of COVID-19 in late February, CDPH pivoted its response strategy away from containment towards a strategy focused on slowing down the spread of the virus. According to one leader, "we knew we weren't going to stop and contain transmission in California." However, with the knowledge that vaccines and treatments were in development, "if we could slow things down as much as possible, that would buy some time for those technologies to come online." This rationale was behind the shelter in place orders that went into effect in March 2020. Multiple California counties declared shelter-in-place orders

on March 16; CDPH discontinued the traveler monitoring program on March 17, 2020.

- Opinions on the timeliness of the State's pivot from containment to mitigation strategies were mixed. Some SMEs felt that this took place "fairly timely" and that "we did a pretty good job of it at a high level." Others, on the other hand, wondered why it took three weeks before the returning traveler monitoring team was discontinued following the first case of community transmission.
- However, there was agreement on the importance of this pivot and the need to develop criteria that can help future leaders decide when it needs to occur.

Equity

This section discusses equity considerations specific to this chapter.

- During the very early stages of the pandemic, as California officials focused on repatriation, quarantine, and travel monitoring, equity considerations were not yet at the forefront. However, equity issues still arose that were related to the scarcity of PPE. Fear of contact transmission was very prevalent and the dock workers in Oakland who were providing operational services, such as luggage handling for the Grand Princess cruise ship, desired a certain level of PPE.
- It was not clear who was going to provide this for them, or if port workers, who were predominantly from communities of color, would be eligible to receive as much PPE as other workers. According to one leader, "there were equity perceptions around what was being provided to different levels of staff." These optics were largely the result of lack of advance planning and a lack of consistency related to both the guidelines and the provisioning of PPE. Leadership indicated this was an area that would need to be more carefully considered in the future.

Data and Technology

This section discusses data and technology specific to this chapter.

- In the very early days of the returning traveler monitoring program, CDPH staff would receive email notifications from CDC's Epidemic Information Exchange (Epi-X) system, notifying them that a new "line list" of returning travelers was available. Each returning flight would generate these notifications, which required CDPH to download the traveler information in MS Excel form. The Excel file contained basic screening and symptom information that was being collected by border agents. However, these files were not standardized, which created significant delays in passing information along to LHJs.
- The CDPH team was receiving between 150 to 200 Epi-X notifications per day and then having to download each file, standardize it, and automate processing of the data. This task was made even more challenging by the fact that the Excel formats being sent to the State were constantly changing, leading to data inaccuracies.
- CDPH often struggled to receive, process, and then disburse the traveler data to locals in a timely fashion, with the team working regularly until 4 am. The State was dependent upon the data being sent by the CDC, which was in turn occupied with funneling information to all 50 states. According to one SME, "we had no control over the data, and it felt like we never had an opportunity to deliver the data in a fashion that wouldn't send alarms off at local levels." Some LHJs, who had already stood up call centers to handle returning traveler monitoring, were frustrated with the unpredictability of when traveler data would be sent.
- After several weeks, CDPH was able to more fully automate the processing of line lists. The team developed a custom SAS-and SQL-based script, named the *Returning Traveler Batch Notification MasterScript for CSVs*. The primary objective of the system was to efficiently identify and read all files within a network file location that were downloaded from Epi-X for processing. The script was designed for rapid processing, allowing for the compilation of extensive travel notifications into a consolidated list. Additionally, the system was configured to automatically generate email notifications to the respective LHJs. Initially, a script template provided was employed for generating email notifications to a single LHJ for a

single flight contact within their jurisdiction. However, the sheer volume of notifications received during the early response days necessitated the development of an automated process capable of operating at scale. The team enhanced the system by adding a masterfile encompassing all notifications and travelers, to which subsequent data was automatically appended.

- The system also brought about significant improvements in the team's file storage practices, nomenclature, and use of directories. One critical modification was the restructuring of file storage practices and directories to accommodate the automated workflow efficiently. The new system ultimately generated a single list per LHJ with all the travelers received for a specific date. This was a departure from the previous approach where each flight generated a list, resulting in LHJs receiving a potentially overwhelming number of notifications daily, with only one to two travelers per list. By consolidating the information into a single list per LHJ, per day, the system ensured that LHJs could manage their respective travelers and workflows more efficiently. The system, therefore, not only automated the processing of travel notifications but also significantly improved the usability and manageability of the information for the end-users. This system remained in place until the program was disbanded.
- Despite the improvements enabled by the custom in-house system, the lack of data standardization ultimately created bottlenecks and delays that could have been avoided. In the future, SMEs recommended that line list files be sent not in Excel but in a language-agnostic, text-based format to expedite processing. According to one SME, such standardization "would help us ramp up more quickly" and establish new pipelines, programs, and notifications. However, there is a recognition that federal, State, and local authorities all have different data needs.
- CDPH SMEs also reinforced the importance of investment in technology infrastructure. While the State has made large gains over the course of the pandemic, building new systems and bolstering legacy systems, there have been instances in which teams have found themselves back at "square one." For instance, when Mpox emerged in 2022, CDPH initially kept track of cases in Excel – something "that we learned not to do a long time ago."

- For returning traveler monitoring, a project is currently underway to use CalCONNECT (the State's new contact tracing platform) to automate this process. In October 2022, the CalCONNECT team was asked to support symptom monitoring for travelers returning from regions experiencing outbreaks of Ebola. Rather than developing an Ebola-specific solution, CDPH worked with consultants to develop a "generic disease record" with the goal that the tool can be quickly reused to support other needs and emergency responses. Key functionality of this generic symptom monitoring record ("GenX") includes the ability to bulk upload a line list and create generic and investigation forms. According to one SME, "we're trying to keep it flexible enough for any new disease that would require folks to be monitored."
- GenX was released as a pilot in December 2022 to LHJs participating in Ebola returning traveler monitoring.

Communications

This section discusses communications specific to this chapter.

- With the number of government stakeholders involved in early repatriation and quarantine efforts, communication was initially poor and challenging. This was especially true regarding communication that involved the military bases. According to one leader, "different conversations were happening at different levels" instead of following the traditional ICS communication channels. For instance, local authorities were communicating directly with the State instead of regionally, and federal representatives were communicating directly with the locals. This resulted in numerous communication problems, including "duplication and quadruplication of effort," as multiple entities were tasked with obtaining the same information. Other consequences included information gaps and delays. Often, CDPH representatives would think they had solved a problem at the State level, only to the learn that the information had not been received by staff working on the ground. Additionally, sometimes CDPH received outdated and inaccurate information.
- These initial communication problems improved with the establishment of early morning conference calls that included leadership from CDPH, CalHHS, the Governor's Office, CDC, and Cal OES. Once federal stakeholders began participating in those meetings with State leadership, "we had a good sense of when issues were coming up, and we could go right up to the top to get answers," one SME noted.
- In addition to these morning meetings, formal ICS structures were established at repatriation sites, improving communication. This took several days and required a "learning process," but once stakeholders were made aware of these already-established channels, information-shared was streamlined and redundancies were minimized.
- When it came to communications regarding the various cruise ships docking in California, CDPH also struggled to obtain accurate information in advance. CDPH would often learn about arriving cruise ships in the news media: "we'd hear about a ship coming from Mexico to San Diego, but had yet to hear from CDC on what their plans were, which was a challenge," according to one leader. CDPH found itself in the role of middleman, trying to obtain as much information as possible from the

federal government so it could pass information along to local representatives in a process described as "chaotic." Since ultimately ships docked in a port managed by a local health officer, CDPH worked to make sure that locals had the right information so they could prepare for the surge of passengers. Eventually, CDC required that cruise operators develop Memoranda of Understanding (MOUs) with local health departments that described communications and responsibilities for passenger management. Future plans could utilize elements of those MOUs to clarify communication pathways.

Workplan

This section is designed to be used as a workplan for future pandemics.

Definitions:

- **Phase**: The phase of the response in which the major tasks should be conducted (Planning; Initial start-up, Ongoing operations, or Close-out).
- **Major Tasks:** The tasks and activities that have to be conducted as part of the public health emergency response to a respiratory pandemic.
- **Success Criteria:** Criteria used to assess whether a task has been achieved successfully.
- **Considerations Based on COVID-19 Response:** Things to consider, including pitfalls, risks, and lessons learned, based on the COVID-19 response.
- **Finding ID:** The ID(s) from the related Finding/Corrective Action (where applicable).
- **Lead:** The lead person(s) responsible for task completion.

Phase	Major Tasks	Success Criteria	Considerations	Finding ID	Lead
Planning	Create plans and playbooks in advance	• Roles, responsibilities, and authorities for stakeholders are identified in advance, mitigating confusion.	• Develop scenario-specific plans. • Work out details for quarantine sites, including reimbursement, perimeter control, medical	• Repatriation & Traveler Monitoring 2	

Phase	Major Tasks	Success Criteria	Considerations	Finding ID	Lead
			operations, cellular service, traveler accounting, specimen collection, and traveler care, feeding, and transportation. • Consider the relationship between different levels of government authority. • Develop plans and frameworks for mass isolation and quarantine (which could apply to repatriation as well as other scenarios).		
Planning, Initial Start-Up, Ongoing Operations	Initiate ICS structure early	• Communication and information-sharing between partners is consistent and accurate.	• Establish conference calls with federal representatives early on.	• Repatriation & Traveler Monitoring 3	

Phase	Major Tasks	Success Criteria	Considerations	Finding ID	Lead
			• Establish ICS structure at the earliest indication that a major outbreak could impact the State.		
Planning, Initial Start-Up, Ongoing Operations	Develop criteria for pivoting from containment to mitigation response strategies	• Keep this fundamental strategic question "front and center." • Start talking early about when and how to pivot from containment to mitigation.	• Classify and resources based on response phase to make it easier to turn things on/off. • Identify timeframes and triggers for when returning traveler monitoring should be discontinued (Note: this went on longer than useful during the COVID-19 pandemic response).	• Repatriation & Traveler Monitoring 4	
Planning, Initial Start-Up, Ongoing Operations	Establish number of negative pressure rooms and	• Number and location of negative pressure rooms are identified in advance.	• Identify and document the number and location of negative pressure	Repatriation & Traveler Monitoring 5, 6	

Phase	Major Tasks	Success Criteria	Considerations	Finding ID	Lead
	criteria for their use	• Rooms can be allocated appropriately to maximize resources.	rooms in the State. • Develop criteria for their use (e.g., for severely ill or high-risk patients). • Document other suitable isolation locations for individuals who are not as ill (e.g., hotel rooms). • Develop a strategy for locating negative pressure rooms and transporting patients.		
Planning, Initial Start-Up, Ongoing Operations	Communicate PPE best practices early on	• PPE usage at quarantine sites is consistent amongst stakeholders. • PPE is used correctly.	• Have guidance on PPE best practices prepared and ready to go. • Assume varying levels of familiarity with correct usage of PPE. • Set expectations regarding how much PPE the	Repatriation & Traveler Monitoring 5	

Phase	Major Tasks	Success Criteria	Considerations	Finding ID	Lead
			State will provide and to which partners.		
Planning, Initial Start-Up, Ongoing Operations	Initiate and conduct returning traveler monitoring program	• Returning traveler data is processed and disseminated in a timely manner. • Data is complete and high-quality.	• Identify staff roles for redirection to returning traveler monitoring team in advance. • Establish criteria for when monitoring activities should be discontinued (e.g., shift from containment to mitigation). • Continue to develop the Generic Symptom Monitoring Record (GenX) tool. • Work with federal partners on ways to standardize data. • Work with federal partners on ways to enhance	Repatriation & Traveler Monitoring 2, 7	

Phase	Major Tasks	Success Criteria	Considerations	Finding ID	Lead
			communications and clarify roles regarding specific events, such as cruise ship arrival. • Leverage elements of COVID-19 cruise ship MOUs for passenger management. • Be prepared for initial high data volumes and staff accordingly.		