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# A Checklist of Immediate Actions for Addressing COVID-19 as Part of Evacuation Planning

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Well planned and coordinated evacuations are critical to saving lives during natural disasters (e.g., hurricanes, wildfires) and human-caused disasters (e.g., chemical spills, terrorism). To complicate matters, recent wildfires in the western United States (U.S.) and multiple hurricanes in the Gulf Coast have coincided with the novel coronavirus (COVID-19) pandemic. As of mid-October 2020, the COVID-19 pandemic has led to over 7.9 million positive cases and over 217,000 deaths in the U.S. alone.[1] Stay-at-home orders and social distancing measures that were introduced to address COVID-19 may conflict with evacuation orders that employ high-capacity evacuation vehicles (e.g., buses), congregate shelters, and resource sharing (e.g., carpools, relief supplies, food distribution). Evacuations may become spreading events for the virus if destinations (or origins) have high transmission rates, compounding the risks of COVID-19 and the disaster.[2] The COVID-19 pandemic has also highlighted the risks to vulnerable populations, who may have limited mobility and lack access to essentials such as jobs, food, healthcare, and COVID-19 testing.[3]

In addition to existing challenges related to evacuation compliance, traffic congestion, and social equity (i.e., ensuring all people have access to resources to evacuate), key stakeholders and responsible agencies involved in evacuation planning (including transportation agencies, public transit operators, private mobility operators, emergency management agencies, fire services, law enforcement, metropolitan planning organizations [MPOs], community based organizations [CBOs], non-governmental agencies [NGOs], social service agencies, public health agencies, and health facilities) must now incorporate the following pandemic-related considerations:

- Minimize the spread of COVID-19;

- Communicate COVID-19 risks to evacuees; and

- Notify evacuees of new plans and procedures for COVID-19.

## Immediate Actions for Addressing COVID-19 as Part of Evacuation Planning

Between June and August 2020, University of California, Berkeley researchers interviewed 17 high-ranking California experts from 13 organizations to identify immediate actions (presented as a series of checklists below) to address the dual crisis of managing the COVID-19 pandemic and large-scale evacuations. Interviewees were chosen based on their knowledge of disaster preparedness, response, and recovery related to key challenges and strategies for evacuating people during the COVID-19 pandemic. A list of the organizations of the experts interviewed is provided at the end of this document. Table 1 maps key stakeholder groups to strategic response areas in disasters (1-6), drawing from responsibility mapping for emergency support functions (ESFs) from the California Emergency Plan.[4] While multiple stakeholders will likely address the same topic area, lead actors are designated in Table 1 in blue. Key response areas include:

1. **Transportation and Evacuations:** Evacuating affected persons;

2. **Care and Shelter:** Providing shelter/housing for those displaced;

3. **Emergency Management:** Preparing and responding to emergencies;

4. **Public Communication:** Communicating disaster-related information and directives to the public;

5. **Access and Functional Needs (AFN):** Identifying and assisting individuals with special needs, such as people with disabilities or limited mobility; and

6. **Public Health:** Setting health protocols in disasters.

Table 1: Responsibility Mapping of Emergency Response Areas to Key Stakeholders (Lead Actors Highlighted in Blue)

| | Transportation and Evacuations | Care and Shelter | Emergency Management | Public Communication | Access and Functional Needs (AFN)* | Public Health |
|---|---|---|---|---|---|---|
| **California Emergency Support Function (ESF) Alignment** | 1 &13 | 6** | 5 | 2 & 15 | Note | 8 |
| **Key Stakeholders** | | | | | | |
| Transportation Agencies | X | | X | X | X | |
| Public Transit Operators | X | | X | | X | |
| Private Mobility Operators | X | | X | | X | |
| Emergency Management Agencies | X | X | X | X | X | X |
| Fire Services | X | | X | X | X | |
| Law Enforcement | X | | X | X | X | |
| MPOs | X | | X | X | X | |
| CBOs/NGOs | X | X | X | | X | X |
| Social Service Agencies | | X | X | | X | X |
| Public Health Agencies | | X | X | | X | X |
| Health Facilities | X | X | X | | X | X |

MPOs: Metropolitan Planning Organizations; CBOs: Community Based Organizations; NGOs: Non-Governmental Organiza-tions; PSPS: Public Safety Power Shutoff

*Access and Functional Needs (AFN): Individuals who need additional assistance in disasters including but not limited to individuals who are or have: 1) physical, developmental, or intellectual disabilities; 2) chronic conditions or injuries; 3) lim-ited English proficiency; 4) older adults; 5) children; 6) low-income, homeless and/or transportation disadvantaged; and 6) pregnant women.[5]

** Care and Shelter is often handed over to NGOs/CBOs (e.g., American Red Cross) by social service agencies, which often fall under public health agencies in California.

Note: Access and Functional Needs (AFN) are not specifically mapped to an ESF in the California Emergency Plan. The Office of Access and Functional Needs at the California Office of Emergency Services (i.e., state-level) aims to integrate needs and resources for AFN populations across emergency management systems. Consequently, emergency management is consid-ered the lead actor.

## COVID-19 Specific Strategies

The following checklists summarize key strategies in each of the six response areas (described above) in emergencies. These checklists are followed by a list of other urgent, but not COVID-19-specific, strategies.

**1. Transportation and Evacuations**: *Led by Transportation Agencies and Law Enforcement*:

❑ **Develop Private Vehicle Evacuation Plans:** Create/bolster evacuation plans and response measures for private vehicle travel (i.e., a transportation mode that reduces COVID-19 exposure by isolating households) that decrease congestion (e.g., phased evacuation plans; signal priority; restricted turns) and encourage resident to leave early and quickly (e.g., via preparedness campaigns).

❑ **Implement Standardized COVID-19 Protocols:** Implement standardized COVID-19 response and protocols (based on Centers for Disease Control and Prevention, American Public Transportation Association guidelines) for vehicles across public transit across modes (e.g., bus, rail, air, ferry) for those who cannot evacuate with a private vehicle. Protocols could include: 1) increasing sanitation (e.g., cleaning, disinfectant fog at the end of the day/route); 2) supporting social distancing (e.g., vehicle capacity reduction); 3) mandating mask wearing; and 4) distributing health information (e.g., billboards, flyers).

❑ **Implement COVID-19 Mitigation Efforts:** Implement barriers (e.g., plastic sheets), new protocols (e.g., socially distanced boarding), contactless information systems, and/or new procedures (e.g., safe protocols for helping individuals with disabilities) to protect operators from COVID-19.

❑ **Supply Personal Protective Equipment (PPE) to Employees:** Supply transportation workforce with PPE including masks, face shields, and gloves, and other key supplies (e.g., hand sanitizer).

❑ **Leverage Existing Information Resources:** Leverage changeable message signs and traveler information systems (e.g., 511, Highway Advisory Radio) to inform people of evacuations from disasters and events related to COVID-19.

**2. Care and Shelter:** *Led by Public Health Agencies, Social Service Agencies, CBOs, and NGOs*:

❑ **Implement Screening:** Implement pre-shelter screening (e.g., COVID-19 positive, access and functional needs), checking for key symptoms and critical care needs. A protocol will need to be in place for COVID-19 positive evacuees to be directed to quarantined spaces or non-congregate shelters.

❑ **Designate Separated and Quarantine Space:** Create separate quarantine space for COVID-19 positive evacuees and sufficient partitions around beds, space beds six feet or more apart for COVID-19 positive and negative evacuees, and provide isolated rooms/tents to reduce exposure.

❑ **Consider Non-Congregate Shelters:** Consider and pre-plan for providing non-congregate sheltering options (e.g., hotels, motels, dorms, fairgrounds, college dorms, stadiums, peer-to-peer sharing (such as Airbnb) in disasters and access to transportation for functional needs populations to reduce COVID-19 exposure.

❑ **Supply and Require Personal Protective Equipment:** Provide PPE (e.g., masks, gloves) and sanitizing supplies (e.g., hand sanitizer) to all evacuees and volunteers at shelters and require masks be worn at all shelter facilities.

❑ **Reduce Food Sharing:** Offer pre-packaged food.

**3. Emergency Management:** *Led by Emergency Management Agencies:*

❑ **Engage with Public Health Departments:** Engage with public health officials and designate key liaisons in public health departments for assistance throughout disaster response (e.g., transportation, sheltering, etc.).

❑ **Update Plans:** Continually update evacuation and emergency plans (e.g., in response to COVID-19 and other evolving threats).

❑ **Adapt Emergency Operation Centers:** Rethink emergency operations centers (EOCs) to abide by COVID-19 requirements (e.g., social distancing/sanitation) or create/maintain a virtual emergency operations center with necessary Internet-based technologies (e.g., hotspots, secure Virtual Private Network [VPN] connections) and equipment (e.g., generators, satellite phones).

❑ **Develop Online Training Programs:** Develop online training programs (e.g., for public transit operators, shelter workers, volunteers) to learn how to safely move and shelter vulnerable populations (e.g., people with disabilities, houseless population), reduce COVID-19 exposure, and provide high quality assistance.

❑ **Bolster Supply Stockpiles:** Increase stockpiles of critical supplies, especially PPE (e.g., masks, gloves), identify storage facilities, and designate a lead agency for bulk ordering and building resource partnerships (e.g., state-to-state aid; county-to-county aid) through memoranda of understanding and mutual aid agreements.

❑ **Develop and Revisit Mutual Aid Agreements:** Develop/enhance rapidly-deployable mutual aid agreements (e.g., state-to-state), memoranda of understanding with companies (e.g., private sector resources), and community-based programs (e.g., neighbor-to-neighbor programs) along with revisiting contracts with large resource suppliers of hygiene equipment (e.g., for trailers, washing stations, toilets, showers), PPE providers, and paratransit operators.

**4. Public Communication:** *Led by Emergency Management Agencies:*

❑ **Standardize COVID-19 Guidelines:** Coordinate COVID-19 requirements and directives (developed by health departments) between jurisdictions (e.g., mask requirement) and provide messaging to the public.

❑ **Change Frontline Communication Systems:** Rethink how frontline workers and personnel receive information (e.g., apps, smartphones, loudspeakers) to improve situational awareness and reduce the spread of COVID-19.

❑ **Enhance Public Messaging:** Develop clear, direct, truthful, and frequent messaging and communication regarding COVID-19 and evacuations that employs visual aids, graphics, and information delivery in multiple languages, accessibility formats, and by trusted information providers (such as those who provide COVID-19 information such as the governor, social media influencers, local officials).

**5. Access and Functional Needs (AFN):** *Led by Emergency Management Agencies:*

❑ **Identify Needs and Improve Assistance:** Identify people with disabilities (e.g., through comprehensive lists of baseline needs that maintains privacy) so that further assistance can be distributed and people can be protected from COVID-19 exposure. This identification and needs assessment process will need to occur prior to a disaster and associated evacuation.

❑ **Conduct Outreach Activities:** Create and sustain active outreach to disability communities and disability experts to increase emergency preparedness and identify needs as they related to disasters and COVID-19.

❑ **Protect Vulnerable Populations:** Enforce/develop laws and regulations (e.g., Americans with Disabilities Act, alert systems, planning requirements) and provide critical assistance (e.g., transportation, sheltering, reentry, settlement, supplies) to protect people during evacuations from the disaster and COVID-19.

**6. Public Health\*:** *Led by Public Health Agencies:*

❑ **Develop Facility Plans:** Develop hospital/medical facility patient movement plans and evacuation plans (e.g., leveraging public transit, transportation network companies or ridehailing, paratransit, and/or old ambulances) to other hospitals/ medical facilities that reduce the spread of COVID-19 and exposure.

❑ **Support COVID-19 Needs and Social Distancing:** Ensure social distancing measures are maintained and encouraged (e.g., markings on the ground, visual and audio reminders, continuous instructions from volunteers and employees, reduced capacity in shelters and vehicles) and provide an adequate supply of PPE (e.g., masks, gowns, shields) to medical facilities for use in all disaster phases.

\* Public health will likely need to create a triage protocol for where to send COVID-19 positive and negative evacuees and patients, including those with specific medical needs (e.g., dialysis).

## Other Urgent Non-COVID-19 Strategies

### Transportation

❑ **Strengthen Evacuation Plans:** Develop/strengthen statewide and regional transportation plans (e.g., defined evacuation routes, evacuation destinations, lead agencies, transportation assets, emergency procedures, coordination processes) and mutual aid agreements that can pull resources from non-impacted areas.

❑ **Identify Vehicle Fleets for Evacuations:** Identify a supply of vehicles (e.g., public transit vehicles) to assist the evacuation of vulnerable populations (e.g., people with disabilities, transit-dependent households).

### Sheltering

❑ **Provide In-Shelter Assistance:** Provide translators, interpreters, medical professionals, functional assessment service teams (FAST), and financial resources (e.g., vouches, disaster assistance, bank access) at shelters.

### Emergency Management

❑ **Reevaluate Emergency and Evacuation Planning and Preparedness Measures:** Hold regular meetings and exercises pre-disaster (e.g., tabletop exercises, workshops, full-scale exercises, drills, games) and post-disaster (e.g., hot washes, research) to reevaluate existing planning and preparedness measures.

❑ **Develop Multi-Jurisdictional Relationships:** Build early relationships across local jurisdictions, states, and Tribal Nations using the 5 C's (e.g., communication, coordination, cooperation, collaboration, and connection), establishing

clear methods for working together and key liaisons between agencies and levels of government.

❑ **Identify and Bolster Power Sources:** Develop plans and legislation for alternative power sources and resources (e.g., generators, batteries, solar panels, microgrids, infrastructure hardening) for transportation, sheltering, and medical care for Public Safety Power Shutoff mitigation and disaster response.

## Organizations Interviewed by Topic Area

| Topic Area | Organization |
|---|---|
| Accessibility | World Institute on Disability (WID) |
| Communications | Brain & Bullish |
| Emergency Management | San Diego County Office of Emergency Services<br>California Office of Emergency Services (CalOES)<br>American Red Cross (ARC) |
| Fire Services | California Department of Forestry and Fire Protection (CAL FIRE) |
| Public Health | California Hospital Association (CHA) |
| Social Services | California Department of Social Services (CDSS) |
| Public Transit | California Transit Association<br>Golf Coast Transit District (GCTD) |
| Transportation | California Department of Transportation (Caltrans) |
| | Contro Costa Transportation Authority (CCTA) |
| | Metropolitan Transportation Commission (MTC) |

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[1] Johns Hopkins University (2020). COVID-19 Dashboard. Center for Systems Science and Engineering (CSSE). Re-trieved 10 October 2020. https://coronavirus.jhu.edu/map.html

[2] Pei, S., Dahl, K. A., Yamana, T. K., Licker, R., & Shaman, J. (2020). Compound risks of hurricane evacuation amid the COVID-19 pandemic in the United States. medRxiv.

[3] Blumenberg, E. and Brozen, M. (2020). Op-Ed: You shouldn't need a car to get tested for COVID-19. Los Angeles Times. July 7, 2020. https://www.latimes.com/opinion/story/2020-07-07/op-ed-drive-through-walk-up-covid-19-coronavirus-testing-sites

[4] California Office of Emergency Services (2017). State of California Emergency Plan. https://www.caloes.ca.gov/PlanningPreparednessSite/Documents/California_State_Emergency_Plan_2017.pdf

[5] California Office of Emergency Services (2020). Access and Functional Needs Division. https://www.caloes.ca.gov/cal-oes-divisions/access-functional-needs

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