

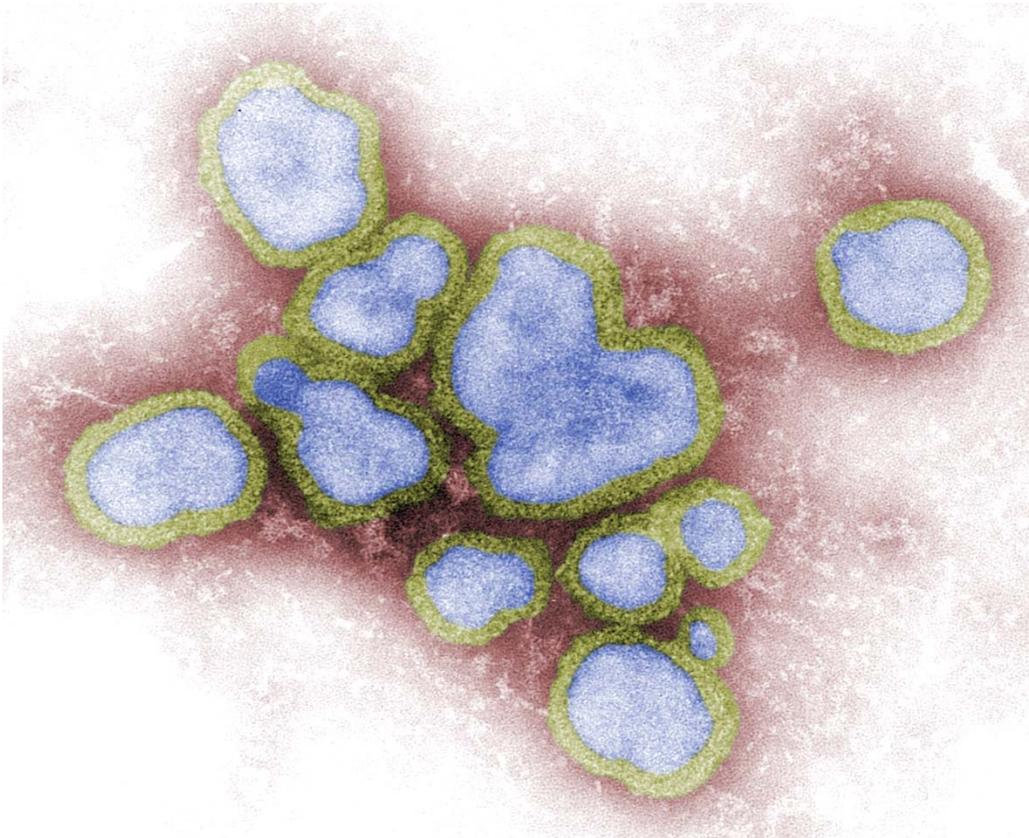


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## **H1N1 INFLUENZA SPRING 2009**

### **After Action/Corrective Action Report**

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February 2010

**Arnold Schwarzenegger**  
**Governor**

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**Secretary**  
**California Emergency Management Agency**

# **CALIFORNIA EMERGENCY MANAGEMENT AGENCY**

## **H1N1 INFLUENZA SPRING 2009 AFTER ACTION / CORRECTIVE ACTION REPORT**

### **EXECUTIVE SUMMARY**

In California, as part of the Standardized Emergency Management System (SEMS), statute requires the California Emergency Management Agency (Cal EMA) to produce an After Action Report (AAR) within 120 days after each declared disaster indicating that, “This report shall review public safety response and disaster recovery activities.” The supporting SEMS regulations require jurisdictions “declaring a local emergency for which the governor proclaims a state of emergency, and any state agency responding to that emergency, shall complete and transmit an after action report to Cal EMA within ninety (90) days of the close of the incident period.” In addition, federal law under the National Incident Management System (NIMS) requires states to prepare an AAR and Corrective Action Report following a disaster or federally funded exercise. As of October 30, 2009, the incident period for the H1N1 Influenza Spring 2009 response has not officially been closed by the lead state public health agency, the California Department of Public Health (CDPH).

The purpose of completing this AAR prior to the conclusion of the response phase is to capture response and recovery efforts, lessons learned, and corrective action recommendations so California can utilize critical data to make corrective actions before the expected resurgence during the fall/winter influenza season. The Centers for Disease Control and Prevention (CDC) was expecting an upsurge in H1N1 Influenza as part of a series of infection waves that was expected to occur in the fall/winter of 2009.

The H1N1 Influenza Spring 2009 emergency tested California’s response to a potential pandemic due to a novel strain of Influenza A virus (H1N1 Influenza) of swine origin beginning in late April 2009. The CDPH, in conjunction with the California Department of Health Care Services (CDHCS), and the Emergency Medical Services Authority (EMSA), activated the Joint Emergency Operations Center (JEOC) to coordinate and support local health departments respond to H1N1 Influenza cases. Cal EMA also activated the State Operations Center (SOC) to support the JEOC and the three Regional Emergency Operations Centers (REOCs) to support the impacted Operational Areas in response to the H1N1 Influenza. The CDPH also activated its Richmond Campus Coordination Center (RCCC) to coordinate testing samples for H1N1 Influenza. In addition, the Strategic National Stockpile (SNS) Receipt, Storage and Staging (RSS) warehouse, coordinated and supported by CDPH, was operated to receive, store, and distribute the SNS antivirals. The RSS warehouse also distributed pharmaceuticals and medical supplies purchased by the State in response to this emergency.

As the potential for a pandemic increased, Governor Schwarzenegger proclaimed a State of Emergency on April 28, 2009. All state agencies and departments were directed to provide assistance to CDPH and EMSA as a means of preventing or alleviating illness and death due to the H1N1 virus.

### **Description of Event**

The April-May 2009 H1N1 Influenza response was the first statewide public health response in memory and the largest response undertaken by CDPH, EMSA, and CDHCS. The H1N1 Influenza virus was first detected in California in Imperial and San Diego Counties. The CDPH was already working closely with the CDC because this was a novel strain of swine flu. As a result of the confirmation of H1N1 cases in California and the anticipated rapid increase in H1N1 cases, the CDPH, EMSA, and CDHCS jointly activated the JEOC on April 21, 2009, to begin surveillance and investigation of probable and confirmed H1N1 cases throughout California. Due to the nature of this medical/health emergency, the CDPH was the lead state agency for handling this event. Cal EMA activated the SOC and deployed staff to the JEOC in support of this emergency.

Local Health Departments (LHDs) began to activate their Department Operations Centers (DOCs) to assist with surveillance and investigation of the spread of the H1N1 Influenza virus. It should be noted that due to the nature of this emergency, many LHDs initially activated their DOCs without the corresponding activation of their Operational Area (OA) EOC. With the rapid spread of H1N1 Influenza and the resulting need to have a large number of samples tested for the spread of the H1N1 virus, CDPH activated their RCCC to coordinate testing samples to identify suspected H1N1 Influenza cases.

To meet the LHD's need for medical assistance, CDPH obtained antivirals from the CDC through the SNS. CDPH also activated its SNS RSS warehouse in order to receive, store, and distribute the antivirals. The California Highway Patrol (CHP) assisted CDPH by providing site security for the SNS RSS warehouse and by escorting nearly 70 deliveries of the antivirals to the requesting counties. As a result, CDPH was able to deliver 1,760,087 courses of Tamiflu and 218,041 courses of Relenza (antivirals) to the 50 counties that requested antivirals.

On May 3, 2009, CDPH's Viral and Rickettsial Disease Laboratory (VRDL) became one of the first public health laboratories in the nation to perform confirmatory testing for the H1N1 Influenza virus. This new ability meant that California was no longer reliant on CDC to confirm cases of H1N1 and allowed LHDs to implement health interventions quicker. However, due to the large number of samples that were being forwarded for testing, CDPH changed the emphasis on testing all suspected H1N1 cases to focusing on cases of extreme illness to identify significant changes in the H1N1 virus.

While CDPH was primarily coordinating with LHD's to ensure their needs were met, EMSA's primary responsibility was to provide support and coordination to Local Emergency Medical Service Agencies (LEMSAs). EMSA staff conducted and compiled research on existing materials regarding the management of a pandemic outbreak and precautionary measures for first responders and healthcare providers.

One of the primary issues addressed early in the activation was school closures. The CDPH worked with the California Department of Education (CDE) to establish guidelines for school closure that were in line with CDC guidelines and which also met the needs of both the public

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and the many school districts within California. The JEOC ensured that the CDC guidelines for limiting the spread of the H1N1 virus and for determining when to close schools were distributed to LHDs and school districts. As more became known about the H1N1 virus, CDC changed its policy recommendations on school closures and these policy changes were shared with local governments and school districts. Cal EMA's SOC Planning and Intelligence staff initiated monitoring of school closures and posted school closures on Cal EMA's website on a daily basis.

As a result of Lessons Learned during the response to the H1N1 Influenza Spring 2009 outbreak, the CDE issued new guidance in September 2009 for schools related to handling children/students suspected of having H1N1 Influenza. This guidance emphasizes the use of isolation and extended home care as well as other preventive measures in lieu of automatic school closure. School officials were urged to balance the risk of flu within their communities with the disruption, potential safety risks, and other consequences that school closures could cause in education and the wider community.

The actual impact of the H1N1 Influenza virus on infected individuals was not as severe as originally expected; however, it clearly impacted a population younger than is usually affected by seasonal influenza. Persons at an increased risk of complications included pregnant women and the very obese. It should also be noted that 75 percent of those hospitalized or who died were known to have chronic health conditions.

The operation of three large activation centers stretched CDPH to its limits and required assistance from CDHCS and other state agencies. Based on this experience, the ability to sustain further H1N1 response operations over a longer period of time must be carefully planned. An extended activation will also require the continued support and coordination of CDHCS, EMSA, and other state agencies.

The H1N1 outbreak remains widespread in California and the JEOC and RCCC, after a brief demobilization in late May and June, were reactivated at low levels over the summer to coordinate response activities. CDPH continues to maintain surveillance with special attention to hospitalized patients, institutional settings, and healthcare workers. The April-May 2009 response proved to be satisfactory given the unknown nature of the event at the start, the magnitude of response activities, and the many functions involved. Clearly, pre-planning efforts paid off and no major course corrections are necessary at present. Some changes to current operations may add efficiencies while an accelerated after-action review and corrective action process may better prepare the agency for a potential re-emergence of H1N1 and in future response efforts. CDPH must now focus on its ability to maintain response over a significant period of time.

NOTE: The CDPH received a portion of California's share of H1N1 vaccine from the CDC on October 5, 2009, for distribution by CDPH. To expedite the distribution of the H1N1 vaccine to local health departments, on October 5, 2009, Governor Schwarzenegger issued Executive Order S-22-09 to assist CDPH and EMSA with distributing H1N1 vaccine, administering and monitoring vaccinations, and taking other actions these agencies deem necessary to carry out an

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effective vaccination program. This Executive Order also continued the temporary suspension of normal contract laws and regulations related to carrying out an effective H1N1 vaccination program.

Incident Period:	April 21, 2009 through report date (October 30, 2009)
Counties Reporting H1N1 Cases:	22 counties reported Confirmed and Probable H1N1 cases
Operational Areas Activating EOC:	29 counties activated OA's EOC
Local Public Health DOCs	43 local public health department activated their DOC
Total Hospitalized H1N1 Cases*	4,047 hospitalizations, ICU cases, and Deaths (Reported through October 24, 2009)
Total Deaths Caused BY H1N1	249 deaths (Reported through October 24, 2009)

\* (NOTE: Testing of new potential H1N1 cases beginning on May 4, 2009, decreased because emphasis was placed on studying cases of extreme illness to identify significant changes in the H1N1 virus rather than testing all potential cases of H1N1.)

**Proclamations and Declarations**

Local Proclamation: As of May 6, 2009, (the last day the SOC was activated), the following counties declared a Local Emergency: Imperial, Kings, Los Angeles, Orange, Marin, Riverside, San Bernardino, San Diego, San Francisco, San Mateo, Santa Clara, Sonoma, Tulare, and Ventura. The City of Corona also proclaimed a Local Emergency

Governor's Proclamation: Proclaimed a State Of Emergency on April 28, 2009, to support the California Department of Public Health.

Governor's Executive Order: The Governor issued Executive Order S-22-09 on October 5, 2009, to address the spread of the H1N1 influenza virus by renewing the ability of state departments to provide support to the CDPH.

Federal Declarations: A public health emergency was declared by the United States Department of Health and Human Services on April 26, 2009.

Presidential Declaration: On October 23, 2009, the President of the United States declared a national emergency as a result of the potential impact on health care resources due to the H1N1 Influenza pandemic. The declaration of a national public health emergency freed up federal assets, such as the SNS and vaccines, for expedited delivery to states requesting these assets. However, no federal funding was made available to states for responding to this emergency.

Pandemic Alerts: The World Health Organization (WHO) raised the influenza pandemic alert level from Phase 4 to Phase 5 on April 29, 2009, and advised all countries to immediately activate their Pandemic Preparedness Plans. On June 11, 2009, the WHO raised the influenza pandemic alert to Phase 6 where it remains as of October 23, 2009.

### **Summary of Successes**

Successful operations were highlighted in the following areas: efficient resource deployment, very effective notification and alert, and well organized and rapid communications with coordination between state agencies and local governments, public/private partners, and the state/federal partnership.

- CDPH was able to coordinate with Cal EMA to adjust procedures for resource requesting of all medical and health staff, supplies, and equipment. Initially, resource requests for medical and health supplies were coordinated through the JEOC rather than the SOC. By mutual agreement, on October 1, 2009, Cal EMA began coordinating these resource requests through the normal SEMS structure so CDPH is issued missions to provide the necessary medical/health supplies to local government.
- There was a strong inter-agency coordination and relationship between local, state, and federal agencies that played an instrumental role in responding to this emergency. Access to all key agencies in one location (JEOC) was extremely valuable.
- The CDPH was able to effectively and quickly implement their MOU with the CHP which allowed for a prompt escort for the deployment of SNS assets (Tamiflu tablets) as well as providing site security for CDPH's RSS warehouse.
- State and local agencies throughout California responded in a very timely and efficient manner.
- The CDCR's DOC, the California Prison Health Care System, and CDCR sites coordinated with local health departments. This represents a major breakthrough in CDCR planning and response efforts.
- CDPH was able to activate the Viral and Rickettsial Disease Laboratory to begin confirmatory testing for the H1N1 Influenza virus.
- CDPH and the CDE worked well together to resolve school closure related issues. Local health departments reported that communications and coordination between the LHDs and the local school districts in their jurisdiction worked well to provide the public with guidance on preventing the spread of the H1N1 Influenza virus and when to close schools, if necessary. A new approach to preventing school closures by containing the spread of H1N1 Influenza was developed based on isolation of sick students and extended home care rather than automatically closing a school when a student(s) is identified as having contracted H1N1 Influenza.
- The CDE posted a link on its website to the School Dismissal Monitoring System reporting form that was jointly developed by the United States Department of Education and CDC to capture school closure information on both private and public schools due to H1N1 Influenza. The Superintendent of Public Instruction encourages private and public schools to complete this form when a school is closed due to H1N1 Influenza. CDE maintains school closure information on its website based on completion of this reporting form.
- Public health nursing staff routinely fielded calls from the public and health providers which provided triage for a wide variety of inquiries over the phone. This particular health service prevented people from swamping medical offices and prevented the unnecessary exposure of the public to potentially infected patients.

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- CDPH in conjunction with EMSA, the California Conference of Local Health Officers (CCLHO), and the County Health Executives Association of California (CHEAC) developed and distributed an Interim California Disaster Health Operations Manual (CDHOM) to provide direction and establish procedures for two key response priorities: Information Management and Resource Management. The purpose of the CDHOM is to provide guidance to local health departments on responding to disasters that require resources outside the response capability of the Operational Area.

**Summary of Areas Needing Improvements**

In general, the management of this disaster went very well, especially considering the number of counties that were impacted by H1N1 Influenza cases. However, as in any disaster, improvements can be made to bolster California's future response to disasters. Improvements are recommended in the following areas:

- The SEMS structure was not used effectively at the beginning of the event. Many OAs did not activate their EOCs to support the local health departments that were engaged in the H1N1 response. It took some time for the EOC/REOC/SOC to activate to support the response efforts. The local health departments had a hard time figuring out the resource request process since only part of the system was activated (JEOC).
- Although CDPH was able to manage internal communications and incident documentation, existing communications technology is insufficient to monitor, track, and document operations on a timely basis at the three activation sites that are physically separated by over 75 miles.
- CDPH encountered a significant bottleneck when attempting to respond efficiently to local requests. Resource request delays occurred when local health DOCs were activated, but their representative mutual aid agency (OA EOC or REOC) was not activated or when local providers were requesting resources from their non-activated OA EOCs. This led to adjusting normal procedures for resource requesting of all medical and health staff, supplies, and equipment, including antivirals, N95 respirators, and laboratory supplies. NOTE: The CDHOM was developed to address this issue.
- The private market supply chain was unable to provide antivirals, N95 respirators, and laboratory reagents in sufficient quantities to meet the needs of laboratories and LHDs.
- Cal EMA needs to consider when to activate the REOCs and SOC in conjunction with the JEOC's activation to support their medical response efforts by coordinating emergency management issues.
- Several state and local agencies reported a shortage of trained staff, which would have made it difficult to sustain operations, i.e., necessary staffing levels for an extended period of time.
- Some LHDs did not have a distribution plan in place for distributing and storing vaccines and antivirals.
- Numerous guidance documents, updates, reports and plans were issued and reissued multiple times per day by different sources. The multitude of documents and emails caused some confusion because it was not always clear what changes had been made or which documents were new or revised.

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- The sustainability of JEOC operations need to be addressed by considering broadening training to support JEOC operations.
- State agencies need overall state guidance regarding employee travel, office closures and use of leave time during activations. Absent overall state guidance, each department will need to develop policies which may lead to inconsistencies and result in labor management challenges.
- Cal EMA needs to work with CDPH and other state operational entities to develop the Business and Utilities Operations Center (BUOC) to facilitate private/public coordination.
- Cal EMA needs to consider when an event should be elevated so that it requires the SOC to take on a more key coordination role.

**Summary of Corrective Action Recommendations**

Recommendations to address some of these needed improvements may require legislative actions and budget change proposals to address additional staffing, equipment, and funding. Training is critical at both the state and local levels in part due to turnover in emergency management staff that results in the continual need for training new staff. The following are examples of some of the recommended measures that need to be taken to resolve problems identified by staff deployed to the SOC, REOC, JEOC, EOC, or local health DOC during the initial response to this emergency to help California improve response capabilities in future disasters:

- Emergency management training, including SEMS/National Incident Management System (NIMS)/Incident Command System (ICS), at all levels of state and local government needs to be enhanced and provided on a regular basis to ensure new staff are trained and to refresh previously trained staff. The enhanced training should include position training for operations center personnel.
- Cal EMA, in conjunction with CDPH, should develop trigger points for activation of the REOCs and SOC in support of the JEOC responding to an emergency. These trigger points should define roles and responsibilities of the responding agency personnel.
- Cal EMA should coordinate with the OAs to develop trigger points for activating an OA's EOC in order to support LHDs responding to an emergency.
- CDPH should collaborate with Cal EMA and the Emergency Partnership Advisory Workgroup (EPAW) to access and use public/private partnerships in order to rapidly procure resources during an emergency. Cal EMA and CDPH should also work together to develop the Business Utilities Operations Center (BUOC) to facilitate private/public coordination.
- CDPH should track the dissemination of guidance/information to ensure it is shared with all impacted entities. CDPH should provide a once daily synopsis of clarifications to RDMHSs so they can then share it with Medical Health Operational Area Coordinator (MHOAC).
- LHDs should identify storage sites and develop a distribution plan for vaccine and antivirals.
- CDPH needs to develop a comprehensive CDPH/JEOC Communications Plan that includes key public messages which are needed for the ongoing H1N1 2009 response.
- State and local agencies should review and revise their COOP/COG plans to address pandemic emergencies prior to the expected fall increase in H1N1 cases.

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- CDPH should work with the California Department of Personnel Administration to develop standards and guidance for state agencies that deal with employee travel, office closures, telework arrangements, and use of leave time during a pandemic outbreak.
- CDPH needs to develop guidance for local government to improve resource management at the local level to facilitate the receipt of resources from sources outside the Operational Area. NOTE: The CDHOM guidance document was developed and issued to local health departments to provide guidance/procedures on obtaining resources from outside sources.

**ORGANIZATIONS CONTRIBUTING TO THIS REPORT**

**State Agencies and Departments**

California Department of Corrections and Rehabilitation  
California Department of Developmental Services  
California Department of Fish and Game  
California Department of Food and Agriculture  
California Department of Forestry and Fire Protection (CAL FIRE)  
California Department of Health Care Services  
California Department of Mental Health  
California Department of Public Health  
California Department of Rehabilitation  
California Department of Social Services  
California Department of Transportation  
California Emergency Management Agency  
California Highway Patrol  
California National Guard  
California Volunteers  
Department of Veterans Affairs  
Emergency Medical Services Authority

**Local Government/Operational Areas (OAs)**

Imperial County  
Lake County  
Los Angeles County  
Marin County  
Monterey County  
Napa County  
Riverside County  
San Benito County  
San Mateo County  
Santa Clara County  
Sierra County  
Solano County  
Sonoma County  
Stanislaus County