



California Department of Public Health
Center for Infectious Diseases
Division of Communicable Disease Control
**Pandemic Influenza Operations
Plan (PIOP)**
August 2013



Administrative Handling Instructions

The title of this document is: California Department of Public Health (CDPH) Center for Infectious Disease (CID) Division of Communicable Disease Control (DCDC) Pandemic Influenza Operations Plan (PIOP).

Point of Contact:

Julie Vaishampayan, MD, MPH
Chief, Communicable Disease Emergency Response
Division of Communicable Disease Control
California Department of Public Health
850 Marina Bay Pkwy
Richmond, CA 94804
510.620.3431
Julie.Vaishampayan@cdph.ca.gov

Promulgation Document

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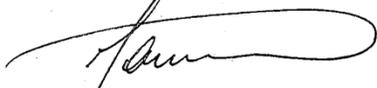
To: All Staff

The California Department of Public Health (CDPH) is committed to responding to public health incidents in a rapid, efficient and coordinated manner to reduce morbidity and mortality. CDPH has a department-wide Pandemic Influenza Operations Plan (PIOP), which delineates the roles and responsibilities of several state agencies, including Public Health. The Center for Infectious Diseases (CID) Division of Communicable Disease Control (DCDC) has developed this internal PIOP which provides specific information on the Division's responsibilities and actions in Epidemiology and Surveillance, Laboratory Operations, Vaccine Management, and Community Interventions in response to an influenza pandemic.

DCDC PIOP is hereby promulgated and will be executed under circumstances described in this Plan. It is my expectation that DCDC staff will become familiar with and take the necessary steps to carry out the provisions of this Plan.

I would like to thank the many program staff involved in the development of this Plan. Through such dedicated efforts, DCDC has a coordinated framework to proactively support public health response efforts to ensure the best possible outcomes for Californians.

Sincerely,



James Watt, MD, MPH

Chief

Division of Communicable Disease Control

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1 – Introduction

The mission of the California Department of Public Health (CDPH) Center for Infectious Diseases (CID) Division of Communicable Disease Control (DCDC) is to prevent disease and premature death and to enhance the health and well-being of all Californians.

DCDC provides statewide leadership in communicable disease surveillance, laboratory confirmation, and vaccine management. It provides recommendations for community mitigation strategies as needed for both routine and emergency public health infectious disease control activities. DCDC is positioned to be highly active in the identification and management of a pandemic influenza event and is thereby identified as the lead program to respond within CID to a pandemic of influenza.

Year round, DCDC works closely with other programs within CDPH and external programs including the federal Centers for Disease Control and Prevention (CDC), California Local Health Departments (LHDs), and other stakeholders and partners to protect the residents of California from an influenza pandemic. This DCDC Pandemic Influenza Operations Plan (PIOP) is an internal plan meant to guide an efficient and expeditious response when a pandemic influenza threatens public health in California.

2 – Purpose and Scope

2.1 – Purpose

The DCDC PIOP provides the operational guidance for DCDC's lead response to an influenza pandemic within the State of California, specifically in the areas of Epidemiology and Surveillance, Laboratory, Vaccine Management, and Non-Pharmaceutical Interventions (Community Mitigation).

2.2 – Scope

The DCDC PIOP is an Annex to the joint emergency operations plan for DCDC and the California Office of Binational Border Health (COBBH), the DCDC-COBBH Emergency Operations Plan (EORP) and is limited to pandemic influenza. The DCDC-COBBH EORP describes the general emergency management principles, structures, roles, responsibilities, and capabilities of an activated Emergency Response Program (ERP) for detecting and responding to public health emergencies, including the response for diseases other than pandemic influenza. If a pandemic influenza event should occur, both plans would be used together for responding to the event.

The PIOP is intended to support the mission of DCDC to respond to and recover from any potential or real emergency from pandemic influenza that could affect public health in the State. The PIOP applies to all DCDC staff and operations.

2.3 – Relationship to Other Plans

The DCDC PIOP is in addition to the CDPH PIOP and is consistent with all Department principles and guidelines, to include those in the CDPH Emergency Operations Manual (EOM). It also reflects the DCDC responsibilities and activities outlined in the CDPH and DCDC-COBBH EORPs.

The PIOP also conforms to the California Emergency Management Agency (Cal EMA) State Emergency Plan (SEP) and the National Incident Management System (NIMS). It follows the Standardized Emergency Management System (SEMS) philosophies and the Incident Command System (ICS) standards.

3 – Situation and Assumptions

3.1 – Situation Overview

According to the U.S. 2010 Census, California is the most populous state in the nation with over 38 million residents. California has eight of the 50 most populous U.S. cities: Los Angeles, San Diego, San Jose, San Francisco, Fresno, Sacramento, Long Beach, and Oakland. As of 2008, 80% of California's geography was designated as rural, and California's population in rural areas continues to increase more rapidly than the population of urban areas. Emergency management challenges in rural communities include limited resources, increased response times for first responders, difficulty communicating with residents due to language and cultural barriers, and limited access to emergency health care services.

California has three active seaports that support interstate and international trade and commerce: the Port of Los Angeles, the Port of Long Beach, and the Port of Oakland. California is a hub of both domestic and international air travel, and is the destination of millions of leisure as well as business travelers. The introduction of a novel influenza virus through international trade and travel could have negative consequences on California's economy and significant effect on public health.

3.2 – Hazard Overview and Pandemic Periods

California faces a variety of natural and human-caused hazards which can threaten the lives, health, safety, and property of individuals and communities, and negatively affect California's environment, economy, and infrastructure. DCDC has identified pandemic influenza as a specific hazard that would have a significant impact throughout the State.

Seasonal Influenza

Influenza is an acute viral disease characterized by fever, cough headache, myalgia, and sore throat. Seasonal influenza occurs every year. In the U. S. the influenza season typically extends from October through May, peaking in January or February with yearly epidemics of varying severity. There are also sporadic cases or outbreaks of human disease occurring outside of typical seasonal patterns. These cases are sometimes caused by new strains of influenza that can develop into a pandemic.

Pandemic Influenza

An influenza pandemic occurs when a new influenza virus, for which there is little or no human immunity, emerges and spreads on a worldwide scale, infecting a large proportion of the human population. As demonstrated historically, pandemic influenza has the potential to cause serious illness and death among people of all age groups and has a major impact on society. *See Appendix A for the case definition of novel influenza A virus infections.*

Three Periods of Pandemic Influenza

DCDC uses the pandemic curve to monitor the progression of the pandemic outbreak as it is occurring within California. The pandemic periods (Pre-Pandemic, Pandemic and Post-Pandemic) represent the sequential events that occur along the pandemic curve and are useful for communicating the statewide status of the pandemic. This approach provides the framework for guiding DCDC's response with various interventions.

These actions are general and might change given the nature of the pandemic.

- Pre-Pandemic Period: Prepare; monitor for the onset of a possible influenza pandemic. DCDC performs enhanced epidemiologic investigations and surveillance activities, and monitors circulating viruses to identify novel strains. The focus of surveillance is to identify the occurrence of a potential influenza pandemic virus in California, including location, timing, and extent of any outbreaks. During this period the first cases are identified and clusters of the pandemic virus start occurring. DCDC begins coordination efforts with local and federal partners. *See Appendix D for in-depth details on DCDC Influenza Surveillance Systems.*
- Pandemic Period: Respond; mitigate the pandemic. At this point, the pandemic influenza virus is widespread. DCDC has activated its DCDC ERP. DCDC continues coordination with partners as well as epidemiological and enhanced surveillance activities.
- Post-Pandemic Period: Recover; prepare for the next wave. Influenza disease burden is reduced to near normal seasonal influenza levels. Enhanced surveillance continues in anticipation of possible future waves. Actions are taken to “reset” capabilities by replenishing supplies, reorganizing personnel workload, etc.

3.3 – General Planning Assumptions

The DCDC PIOP is based on the following assumptions which serve as the basis of understanding how public health may be impacted in an influenza pandemic and how DCDC Programs ensure operational readiness to respond:

- A pandemic is likely to affect everyone in California; in a severe pandemic, no amount of planning will allow “business as usual” in any sector of the economy or government.
- The course of pandemic influenza is governed by factors that cannot be known in advance. Properties of the novel virus, including virulence, timing and duration of viral shedding, and attack rate in various risk groups might differ from those of previous influenza strains.

- An influenza pandemic may last from 18 months to several years with multiple waves of disease activity.
- Non-pharmaceutical interventions are the principal means of disease containment until adequate supplies of vaccine or antiviral medications are available, and continue to be significant interventions throughout the pandemic response.
- Decisions about non-pharmaceutical interventions (e.g., travel restrictions, closure of schools, and cancellation of public gatherings) are often made in an atmosphere of considerable scientific uncertainty. These decisions cannot be made lightly as they may have significant financial and social implications.
- California's extensive ethnic, cultural, and linguistic diversity may affect acceptance of community mitigation activities; communication messages may need to be adjusted to address the needs of specific populations.
- Effective vaccines or antiviral medications might be delayed or in limited supply. The ability of the federal government to support California may be limited at the onset of a pandemic and may continue to be limited for an extended period of time due to any number of factors.
- Hundreds of thousands of people cross the California-Baja California border daily. Coordination with representatives from Baja California, Mexico, and bordering California LHDs on pandemic influenza activities is essential for an effective response.
- The needs of special populations are assessed and addressed with planning, response, mitigation, and recovery processes by local, state and federal partners.
- As found through historical analysis, the likely clinical disease attack rate of a pandemic influenza may be estimated to be 30-40% of the population, with about 50% of ill persons expected to seek outpatient medical care. About 20% of working adults may be affected and illness rates may be highest among school-aged children (approximately 40%) and decline with age. An average of two secondary infections may occur per infected person, possibly resulting in increased demand for hospitalization for a large number of those who are severely ill.
- Susceptibility to the pandemic influenza virus is universal before vaccination or recovery from infection.
- Viral shedding begins 12 to 24 hours before the onset of illness.

- Shedding is heaviest during the first two days after (and if) symptoms appear;
 - Children are typically heavy viral shedders in the first few days of illness (one day before onset of illness and two days after);
 - The communicable period in adults is typically three to five days; in some children, the critically ill, and immunocompromised individuals, viral shedding may persist for several weeks.
- The modes of transmission (e.g., airborne, respiratory and surface contact) of a novel influenza virus are similar to those of seasonal influenza outbreaks.
 - After the pandemic, the novel virus is likely to continue to circulate and contribute to illness from influenza attributed to seasonal strains/variants.

3.4 – Goals

The primary goals for DCDC in planning for, responding to and recovering from an influenza pandemic are:

- Work with response partners at the local, state and federal levels to identify and characterize the novel virus.
- Monitor the severity of illness and develop control measures.
- Manage DCDC assets and staff to respond to the outbreak.
- Provide guidance and assistance to LHDs related to outbreak response.
- Support the epidemiology, surveillance, laboratory, vaccine management and community mitigation efforts.
- Coordinate with CDC on all response efforts.
- Procure resources for laboratories throughout the State, as requested.
- Refine vaccine distribution guidance documents for use by the LHDs.
- Monitor and report vaccine adverse events to CDC.
- Provide science-based community mitigation guidance for use by the LHDs.
- Capture lessons learned for the After Action Report (AAR)/Improvement Plan (IP) process.

3.5 – Period Based Pandemic Triggers

Certain events occur that signal the entry to the Pre-Pandemic (Alert) Period. Other events will signal the movement into the Pandemic and then the Post-Pandemic Periods. Activities for the DCDC response areas (epidemiology & surveillance, laboratory, vaccine management, and community mitigation) vary from one Period to the next and are delineated in subsequent chapters within this Plan.

The World Health Organization (WHO) and CDC are integral in leading world-wide surveillance efforts and in identifying the potential for an influenza pandemic. Appendix B provides the WHO definition of Influenza Surveillance Network and Pandemic Phases. Appendix C provides the CDC definition of Influenza Surveillance System and Pandemic Intervals.

Pre-Pandemic Period

- WHO confirms clusters of a human novel influenza virus occurring somewhere in the world; person-to-person transmission is non-existent or limited, and spread is localized.
- CDC and DCDC Viral & Rickettsial Disease Laboratory (VRDL) receive an increased number of specimens for testing.
- First detection of a laboratory confirmed novel influenza virus infection in humans within the United States.
- First detection of a laboratory-confirmed novel virus in humans in California.
- Two or more laboratory-confirmed cases in California that are epidemiologically linked.
- Two or more laboratory-confirmed novel influenza cases in California that are not epidemiologically linked to any previous case.
- Clusters of cases of laboratory-confirmed novel influenza virus in humans are occurring in a few select locations within California.

Pandemic Period

- Outbreaks of a novel influenza virus in humans involving multiple local jurisdictions and/or several regions within California.
- A higher than expected number of cases of unexplained severe respiratory illnesses (which may be related to a novel influenza virus) requiring hospitalization.

- A higher than expected number of deaths (which may be related to a novel influenza virus) occurring in a brief time period within a defined geographical region.
- Widespread transmission of novel influenza virus in humans throughout California.

Post-Pandemic Period

- Pandemic influenza virus transmission and severity is reduced to near normal seasonal influenza levels in California.

3.6 – Staffing

A primary concern of DCDC in maintaining a pandemic response is the threat of spread of infection to DCDC staff and their families, potentially reducing the ability of staff to work at a time when the need for public health staff with communicable disease and emergency response expertise is great. This threat is exacerbated by the extended and uncertain life cycle of the pandemic. The demand for DCDC staffing resources varies depending on the pandemic period and the presence or absence of newly detected novel viruses or strains of existing viruses. Factors that affect workload, particularly for the laboratory branch, include the virulence of the pandemic virus and the need for surveillance and seasonal testing for other communicable diseases.

Using the priorities assigned to essential functions as outlined in the DCDC Continuity of Operations Plan (COOP), DCDC Programs:

- Reduce or suspend routine workload using the defined essential functions as a guide;
- Identify the staff available for the pandemic response;
- Identify staff who can be redirected to essential non-pandemic activities with just-in-time training;
- Assign a Subject Matter Expert (SME) to participate at the CDPH Medical Health Coordination Center (MHCC);
- Activate the Richmond Campus Coordination Center (RCCC), as needed;
- Assign a designee to participate in the CDPH Joint Disaster Policy Council (JDPC) meetings to communicate DCDC priorities and capabilities to support establishing incident priorities, critical resource allocation, and information coordination;

- Restore routine DCDC functions as the demands of the pandemic allow.

3.7 – Plan Design

As DCDC responds to each of the Pandemic Periods there are separate as well as coordinated efforts amongst the DCDC branches. Chapters 4, 5, 6, and 7 of this Plan lay out the activities and considerations for Epidemiology and Surveillance, Laboratory, Vaccine Management, and Community Mitigation.

4 – Epidemiology and Surveillance

4.1 – Introduction and Program Overview

Epidemiology and Surveillance data are critical to provide timely and accurate situational awareness of evolving disease outbreaks and their impact. These data are used to assist DCDC leadership in making informed operational decisions. Routine influenza surveillance is critical to the rapid identification of novel influenza viruses originating in, or being imported into, California. Due to its international ports of entry and large population, California is likely to be one of the first states impacted by a novel influenza virus that may cause a pandemic.

On a day-to-day basis DCDC performs routine epidemiological and surveillance investigations to identify human cases of novel influenza virus and assess the potential for sustained transmission of the disease among humans. The CID Deputy Director/State Epidemiologist is kept informed in a timely manner so that when a novel virus is identified, decisions and appropriate actions can be taken to mitigate the impact of an influenza outbreak.

4.2 – Epidemiology and Surveillance Assumptions and Planning Principles

- Statewide influenza surveillance systems are in place and functioning efficiently at all times.
- Statewide influenza surveillance is a collaborative effort between DCDC, the CDC, LHDs, the California Emerging Infections Program (CEIP), and participating California health care providers and laboratories.
- Surveillance requirements expand and change as an influenza pandemic evolves and therefore the surveillance systems must be flexible and adaptable as the epidemiological, clinical and laboratory characteristics of the pandemic change.
- Surveillance data are critical to timely decision-making during a pandemic, particularly for implementation of non-pharmaceutical interventions for disease containment (e.g. travel restrictions, closure of schools and other venues), initiating antiviral usage in target groups, and activation of health care system surge plans.
- During an influenza pandemic, decision-makers, business entities, the media, and the general public require timely information based on surveillance data.
- Due to its close ties to Mexico, communication and collaboration between the California and Mexican authorities is critical for an effective pandemic response.

Sharing of surveillance data is essential to monitor influenza activity and coordinate response strategies in the CA-Baja California border region.

- The ability to monitor detailed information at the state and local level concerning each pandemic influenza case diminishes as the pandemic progresses, requiring aggregation of data from LHDs. However, case-based surveillance of selected sentinel populations is critical for monitoring the severity of the pandemic over time and for identifying any mutations that signal increased pathogenicity or antiviral drug resistance.
- As the pandemic progresses, resources and supplies necessary for epidemiological investigations and laboratory testing will be depleted, resulting in reliance on clinical or presumptive diagnoses made by providers in call centers, pharmacies, outpatient clinics, emergency departments, inpatient wards, and ICUs.
- The day-to-day non-influenza epidemiology and surveillance activities conducted by DCDC may be significantly reduced to allow DCDC to focus resources on enhanced influenza surveillance throughout the pandemic response.

4.3 –Objectives

Pandemic influenza epidemiology and surveillance objectives are as follows:

- Detect the appearance of a novel influenza virus within human populations in California as quickly as possible.
- Identify the characteristics of the virus, its clinical presentation, and at-risk populations.
- Identify influenza outbreaks in the community that may signal person-to-person transmission and herald a pandemic.
- Provide guidance and/or information to LHDs and other state and federal agencies concerning the epidemiological and clinical features of the pandemic virus and current pandemic virus activity, including transmission characteristics.
- Monitor the pandemic throughout California and identify local or regional needs.
- Recover and maintain enhanced surveillance for the next wave of the pandemic.

4.4 – Activities by Periods

Pre-Pandemic Period

DCDC, in collaboration with LHDs, will initiate epidemiological investigations of potential or confirmed novel influenza cases to identify the source of infection (e.g. overseas travel, household contact, animal exposure, etc.), assess disease characteristics, determine the risk infected persons may pose to others, and identify whether person-to-person transmission is occurring in order to increase knowledge of viral characteristics and support disease containment decisions. DCDC also coordinates with LHDs to initiate contact investigations to prevent further transmission, identify potential new cases, and provide appropriate treatment or prophylaxis. Based on these epidemiological investigations, preventive measures (e.g. non-pharmaceutical interventions) may be implemented.

In addition to the activities listed here that are specific to Pandemic Influenza, DCDC will be conducting general emergency response activities as defined in the DCDC-COBBH EORP (e.g. assessment of staff needs, preparation for acquisition of additional supplies and equipment, etc.)

DCDC activities for Pandemic Influenza include the following:

- Continue routine year-round surveillance activities, including communicating the need to sentinel providers and LHDs to report data year-round and submit clinical specimens on influenza-like illness cases;
- Continue routine year-round surveillance for the identification of unusual clusters (those with severe morbidity or mortality, occurrence outside of the regular influenza season, those having unusual clinical presentation or those affecting a particular population) or outbreaks of ILI that may signal the need for further epidemiological and laboratory investigation;
- Identify SMEs to provide updates to senior management staff, review materials, and be available for interviews as needed;
- Develop and distribute to LHDs a case definition for the suspect human novel virus infection to guide surveillance and testing, including reporting and management of suspect cases meeting the case definition;
- Develop and distribute case report forms to LHDs;
- Provide technical assistance to LHDs (e.g. case management, expanded laboratory testing on specific cases, epidemiological investigation, etc.) as requested;
- If a suspect human novel virus case (or cases) is identified, collaborate with the LHDs on the following:

- Conduct case-based investigations and follow up.
 - Assess case contacts to determine whether human-to-human transmission is occurring.
 - Identify risk factors for infection.
 - Characterize clinical severity and assess which populations may be at risk.
 - Initiate steps to increase laboratory capacity to test a large volume of cases.
- Share initial case report information and subsequent reported cases to CDC per their directives.
 - Develop or update surveillance tools such as the California Reportable Disease Information Exchange (CalREDIE) to be used in preparation for a pandemic;
 - Use available CalREDIE database or create new databases as needed to capture information from case report forms;
 - Train surge capacity personnel with epidemiological and statistical expertise for data management and field assignments (e.g., SAS, Excel, GIS, and Access);
 - Communicate with CDC regarding national and international surveillance data so that DCDC guidance documents are developed in line with national recommendations for investigation, surveillance, containment strategies, diagnostic testing, and triaging of specimens and isolate selection;
 - Collaborate with CDC, US-Mexico Border Health Commission, Pan-American Health Organization (PAHO), Instituto de Servicios de Salud Publica de Baja California (ISESALUD), COBBH, and border LHD officials on enhanced surveillance and epidemiological investigation of cross-border influenza outbreaks;
 - Develop and distribute specific border-region related surveillance and epidemiology guidance for border LHDs using CDC, PAHO, and the U.S.-Mexico Border Health Commission;
 - Collaborate with LHDs to provide surveillance guidance for health care facilities;
 - Provide updated case definition to CDC quarantine stations in California for use in clinical screening of international travelers entering the State;
 - Establish and maintain agreements with major military facilities in the State to facilitate exchange of influenza surveillance and epidemiological data;

- Establish communication strategies using email, the California Health Alert Network (CAHAN), Epi-X, broadcast FAX and statewide conference calls to provide updates for LHDs and other state and federal partners;
- Generate weekly reports of influenza activity and make current epidemiological data available to LHDs, CDPH Emergency Preparedness Office (EPO), MHCC Public Information Officer (PIO), CDPH Office of Public Affairs (OPA), CDC, and other participating agencies as deemed appropriate by the DCDC leadership.

Pandemic Period

DCDC activates its pandemic response structure with local and federal partners and continues enhanced surveillance. In collaboration with LHDs, DCDC assesses current case-based surveillance data and identifies populations at greatest risk for severe disease. As the number of cases increases, the resources to continue epidemiologic investigation of each individual case diminish. However, monitoring of epidemiologic and clinical characteristics of certain populations (e.g. ICU or fatal cases, pregnant women, etc.) remains important to assess changing patterns of morbidity and mortality and to identify if the novel virus is becoming more pathogenic. The type of epidemiologic investigations conducted (i.e., those addressing clinical characteristics, risk factors, the probability of transmission among humans, treatment efficacy studies, and mortality levels) evolve over time as the knowledge of viral characteristics increases.

During the pandemic period, DCDC is responsible for the continuation of all applicable pre-pandemic activities plus the following actions:

- Continue to refine the case definition, as needed;
- Continue enhanced surveillance as resources allow, modifying case-based surveillance to only targeted populations at greatest risk of disease;
- Implement a change in reporting requirements when appropriate, in order to conserve resources and focus on special populations. (e.g., change from case-based to aggregate reporting);
- Review incoming surveillance data and conduct pandemic influenza-specific epidemiologic investigations. Possible investigations may include:
 - Morbidity and mortality trends
 - Geographic distribution of outbreaks
 - Transmissibility factors
 - Unusual clinical presentations
 - Antiviral resistance
 - Unusual pathologic features associated with fatal cases

- Use epidemiological and surveillance data to guide initiation of non-pharmaceutical interventions for community mitigation;
- Continue with and refine pandemic communication strategies to maintain contact with CDPH leadership and impacted programs, LHDs, key partners and stakeholders;
- Assess laboratory results and address ongoing laboratory testing needs in consultation with epidemiologists (e.g. the need for full genome sequencing in fatal cases, or antiviral resistance testing on a large scale);
- Refine support and guidance to LHDs as required. This may include focusing investigation and surveillance on specific sentinel populations.

Post Pandemic Period

In this period virus transmission and disease severity have reduced to near normal seasonal influenza levels. Focus is on recovery and preparation for the next potential wave of the pandemic. Surveillance continues and data are summarized. AARs summarizing the usefulness – and the burden - of work associated with the pandemic are developed. Actions are taken to reset and refurbish resources. While recovering from the pandemic, preparation continues for a potential next wave.

DCDC is responsible for the following activities:

- Continue to provide written guidance to LHDs for targeting of surveillance and laboratory testing, as needed;
- Continue case-based reporting of cases with severe disease;
- Continue case confirmation to verify resolution of pandemic wave;
- Continue to report cases to CDC according to national protocols;;
- Replenish supplies and conduct necessary maintenance on equipment;
- Provide a detailed retrospective characterization of the pandemic;
- Conduct a retrospective assessment of cross-border coordination with Mexican public health authorities, ISESALUD, border LHDs, CDC, and COBBH;
- Provide frequent updates on post-pandemic recovery activities to partners and stakeholders;
- Begin collecting lessons learned for an AAR.

5 – Laboratory Operations

5.1 - Introduction and Program Overview

Influenza viruses are constantly changing. Enhanced laboratory services are required to monitor disease activity, develop appropriate diagnostic tests, and ensure the availability of critical reagents to the public health laboratory network involved in identifying, diagnosing, and monitoring pandemic influenza infection. These services are critical for effective disease surveillance and epidemiological investigations, which help characterize any influenza pandemic. When combined with other disease related information, laboratory data can provide essential situational awareness and greatly aid in mitigating the overall impact of any pandemic virus, potentially saving many lives. *See Appendix E for a description of the DCDC Laboratory Surveillance and Diagnostic Support Services.*

The pre-pandemic preparedness of the VRDL, the Respiratory Laboratory Network (RLN), and other public health laboratories facilitates the timeliness of initial diagnostic testing and availability of diagnostic supplies and reagents, addresses surge staffing and facility issues, and disseminates protocols and guidelines essential to effective public health laboratory operations. Once a pandemic is fully underway, meeting the demand for laboratory testing will be critical, particularly in characterizing the virus and monitoring for any changes in the virus. Once the virus is widespread, the need for laboratory confirmation of clinical diagnoses may decrease, but continued focus on a subset of cases (e.g., severely ill, clusters of cases or cases not responding to antiviral treatments) may be needed.

5.2 – Laboratory Assumptions & Planning Principles

- Many respiratory agents can mimic the signs and symptoms of influenza; therefore a comprehensive laboratory program that can identify influenza, including novel strains, and non-influenza viruses as the cause of illness is critical to monitoring for the introduction of a novel influenza virus in California. Identifying non-influenza etiology of illness provides a more comprehensive surveillance for respiratory virus circulation in California and serves as an important check on our influenza surveillance. Confirmation of a non-influenza etiology validates negative influenza tests, and failure to identify a non-influenza etiology can trigger additional efforts to rule out novel influenza strains.
- Building strong, statewide laboratory-based surveillance in the pre-pandemic period, including strengthening of partnerships between the VRDL and local public health, private, and commercial laboratories enhances the ability to monitor for disease activity and ultimately strengthen control measures.

- During the earliest stages of a pandemic, local laboratories receive a large and potentially overwhelming volume of samples and may be unable to test all of them, requiring prioritization protocols.
- Laboratory surveillance data, such as the presence or absence of a novel influenza virus in a given geographic area, will guide implementation of non-pharmaceutical containment measures (community mitigation).
- Laboratory data identifying the possible emergence of a novel influenza virus will guide the implementation of vaccine management processes.
- Laboratory data identifying the presence or absence of antiviral drug resistance will guide recommendations on antiviral prophylaxis and treatment strategies.
- Once a pandemic is underway and sustained human-to-human transmission is established, supplies of rapid antigen tests and reagents for diagnostic assays may be depleted. At this time, laboratory testing may be reserved for unusual or severe cases, special studies, quality assurance, or other specialized situations.

5.3 – Objectives

Pandemic Laboratory Operation Objectives include:

- Identify novel influenza viruses by discriminating them as non-seasonal strains using current molecular methodologies.
- Coordinate with CDC to create appropriate laboratory tests specific to identified novel viruses.
- Conduct confirmation testing of viral samples.
- Facilitate confirmation testing of viral samples by LPHLs.
- Provide guidance and quality control testing for LPHLs.
- Provide early identification of any suspected pandemic virus mutations.
- Continue testing for other communicable diseases to the extent possible without compromising pandemic response operations. Identify other laboratories to conduct tests for viruses other than influenza.

5.4 – Activities by Period

DCDC day-to-day organizational structures perform routine laboratory surveillance to assess the potential for a novel influenza strain to cause transmission of the disease in humans. Once a suspected novel influenza virus is identified the DCDC Surveillance Program staff coordinates with the state reference laboratory, VRDL, to direct enhanced laboratory surveillance activities. Based on the 2009 H1N1 experience, the VRDL together in collaboration with LPHLs, the RLN, and CDC will prepare the network for a critical increase of testing expected during the initial phase of a potential pandemic. The VRDL staff will directly coordinate the deployment of reagents and test specimens from sentinel clinical laboratories. In addition the VRDL will emphasize the screening of antiviral resistance and antigenic profiles on those novel influenza strains altogether to support laboratory surveillance investigations and to provide accurate public health recommendations like treatment and quarantine.

Pre-Pandemic Period

- Perform routine laboratory surveillance activities to monitor influenza virus activity;
 - Implement diagnostic testing algorithms in VRDL and the RLN for detecting and characterizing influenza, including novel strains.
 - Collaborate with CDC to provide updated testing protocols for standard diagnostic tests (e.g. virus isolation, polymerase chain reaction (PCR) and serologic testing) and any new technologies for influenza testing to the RLN.
 - Provide guidance on the collection, processing and transport of clinical specimens.
- Identify SMEs to provide updates to senior management staff, review materials, and be available for interviews as needed;
- Institute surveillance for ILI among DCDC laboratory personnel working with novel influenza viruses and develop protocols for clinical assessment and management of exposed laboratory personnel (both symptomatic and asymptomatic).
- Strengthen VRDL and RLN response capabilities;
 - Provide technical guidance and supplemental training to the RLN.
 - Maintain an up-to-date inventory of current laboratory capacity, including staff, supplies, reagents and equipment, to identify and address any gaps in coverage.

- Stockpile critical supplies and equipment for use during pandemic response operations and ensure a means to rapidly procure additional laboratory supplies to support testing in the RLN as needed.
 - Estimate future laboratory capacity requirements under various pandemic scenarios and identify strategies for enhancing future capacity.
 - Develop guidance materials on best practices during a pandemic response, including streamlined processing of samples, batched or prioritized testing, and quality assurance. Consider distribution of guidance in anticipation of a pandemic.
 - Assess the need for additional staffing during pandemic response operations and plan for use of cross-trained, temporary, and retired personnel to meet critical staffing requirements.
 - Maintain protocols for emergency hiring (e.g. a shortened orientation process) during pandemic response operations.
 - Prepare for increased workload, which includes specimen processing and accessioning, extracting nucleic acid and performing PCR testing.
- Monitor for the onset of a pandemic;
 - If laboratory tests for seasonal influenza fail to characterize the virus as a suspected novel strain;
 - Within 48 hours of detection, send samples to CDC to confirm with laboratory testing that the suspect case is due to a novel influenza virus;
 - Collaborate with CDC to acquire testing protocols to identify cases with novel virus infection;
 - When a confirmatory PCR assay for the novel virus is available, provide the RLN with training, supplies, assistance with assay validation, and guidelines for testing.
 - Identify communication channels that allow for rapid dissemination of information to key public health partners (e.g., website, SharePoint site).

Pandemic Period

- Continue appropriate actions from the Pre-Pandemic Period;
- Determine ongoing laboratory testing needs based on current clinical, laboratory, and epidemiologic data;
- Expand and maintain capacity for testing samples:

- Activate enhanced laboratory testing protocols in support of human surveillance protocols.
 - Redirect resources to influenza testing by discontinuing or outsourcing non-essential testing.
 - Facilitate rapid testing of suspected pandemic influenza viral samples (e.g. streamline processing of samples, batch samples, etc.).
 - Maintain expanded diagnostic testing, including antiviral resistance testing, as permitted by biosafety constraints and availability.
 - Develop and implement viral culture and neutralizing antibody assays if warranted and recommended.
 - Monitor RLN status, including: available resources and shortages of key supplies, equipment, and personnel; and, coordinate mutual support.
 - Ensure maintenance of required levels of supplies and equipment, fill all shortages and ensure triggers for reordering are carefully monitored if warranted and recommended.
 - Distribute stockpiled laboratory supplies, as needed, to LPHLs and cross-level supplies between laboratories, including appropriate reagents and primers, if warranted and recommended.
 - Ensure appropriate personnel capacity (including training) to support enhanced laboratory surveillance for influenza at state and local levels.
 - Continually review the VRDL diagnostic capacity and workload, and reallocate as needed.
- Provide rapid delivery of guidance, which may be developed in collaboration with the DCDC Immunization Branch (IZB) and Epidemiology Section, to key public health partners;
 - Provide guidance on the collection, processing and transport of clinical specimens to LPHLs, LHDs, physicians and hospitals, and other health care organizations which may provide samples for testing.
 - As it becomes available, provide detailed guidance to LPHLs on alternative diagnostic testing options, including rapid antigen detection, immunofluorescence assays, and PCR, including required biosafety levels.
 - Communicate changes to testing guidelines in a timely manner.
 - Post up-to-date guidelines for specimen collection, handling, and shipping on the VRDL website.
 - Adapt and distribute laboratory biosafety guidelines for handling and processing specimens or isolates of novel influenza strains and post them on the VRDL website.

- Distribute guidance for collection of specimens and testing without standard PPE or other safety equipment.
- Maintain contact with key laboratory partners and stakeholders by participating in DCDC pandemic communications. Use a SharePoint site for controlled two-way communication between VRDL and other laboratories, hospitals, and health care providers.
- Support special clinical and epidemiologic studies, as resources permit;
 - Store and share selected isolates and specimens to support special clinical and epidemiologic studies and maintain an inventory of current storage capacities.
 - Monitor the effects of virologic (antigenic drift, antigenic shift, changes in antiviral sensitivity) and genetic changes to the novel influenza virus.

Post-Pandemic Period

- Resume enhanced virologic surveillance to detect emergence of increased transmission;
- Continue enhanced post-event laboratory surveillance to monitor for a possible follow-on pandemic wave;
- Begin collecting lessons learned for AAR;
- Collaborate with the CDC and other partners on retrospective studies;
- Assist with retrospective validation studies of influenza illness reporting;
- Provide frequent updates for tracking and monitoring of post pandemic activities;
- Participate in a retrospective assessment of cross-border laboratory coordination with Baja California public health officials;
- Restock critical supplies and equipment to return to required levels.

6 – Vaccine and Antiviral Management Program

6.1 – Introduction and Program Overview

Every year, DCDC implements seasonal influenza vaccine programs. Once a pandemic has been identified, DCDC will expand the scope of its work.

Effective allocation of pandemic influenza vaccine will play a critical role in preventing influenza and thereby reducing the effects of a pandemic. The specific strain of influenza virus that will cause the next pandemic may not be known until transmission is established.

Since the population may be universally susceptible to the new pandemic strain, rates of illness are likely to be much higher than would be seen with seasonal influenza. The rate of severe and lethal disease may also be higher. Vaccine allocation and distribution plans must be flexible to respond to the epidemiology of the pandemic.

In past pandemics, risk for serious illness and death has differed by age and health status. During a new pandemic, guidance on any prioritization of pandemic vaccine supplies will be reassessed periodically to consider new information about the virus, changes in vaccine production capacity, and other advances in medical and public health response.

Vaccination is one of several tools used to contain the spread of influenza when a pandemic emerges. Non-pharmaceutical interventions for community mitigation and use of antiviral medications will be the initial tools of the pandemic response before vaccine is available. Use of these measures may continue throughout the pandemic.

6.2 –Vaccine Program Assumptions & Planning Principles

- Vaccine production for a novel virus may require six months or more from the time the pandemic influenza virus strain is selected.
- In the early stages of the pandemic vaccine may not be available for the first case(s) in California and vaccine production may not be sufficient for the State's entire population.
- If vaccine supplies are in limited quantity during initial production, distribution of available vaccine to states will be proportional to population or related criteria.
- State health departments will coordinate initial distribution of vaccine as has been the case in past events.

- DCDC will provide a consistent, statewide pandemic influenza vaccination prioritization policy and practice for California, ensuring transparency to all stakeholders.
- The pandemic vaccine distribution and administration system incorporates elements of existing systems for seasonal influenza vaccine administration.
- DCDC, in conjunction with the MHCC Joint Information Center (JIC), will use risk communication strategies to explain the selection of priority groups.
- Epidemiologic investigations during the pandemic will guide decisions by determining groups at highest risk for adverse health outcomes and age-specific case-fatality rates.
- DCDC acts in an advisory capacity to LHDs on local allocation, distribution and tracking strategies based on vaccine supply, disease severity, and other factors.
- Two doses of vaccine administered at an interval of at least three weeks apart might be required to develop maximal immunity to the novel virus. Further data on the relative safety and immunogenicity of one or two doses of a novel virus vaccine will result from federally-sponsored or international human clinical trials.
- Vaccine safety will be monitored.
- Pneumococcal pneumonia is one of the most common secondary infections or complications of influenza. Increasing the number of people vaccinated with pneumococcal vaccine before a pandemic may decrease the overall illness during a pandemic.
- Seasonal influenza vaccination will continue to be strongly recommended given the potential for mutation of a novel virus if a person becomes ill with both the novel and pandemic influenza at the same time.

6.3 –Objectives

Vaccine management objectives are as follows:

- Develop a vaccine allocation and distribution plan based on pandemic epidemiology and distribution of disease within California, the availability of vaccine, principles of equity, national guidance, and input from the LHDs.
- Work with CDC officials, vaccine manufacturers, LHDs, clinical care providers, and other stakeholders to effectively distribute and subsequently redistribute vaccine based on its availability and need.

- Provide consultation to LHDs and clinical care providers regarding vaccine-related issues, to include local mass vaccination efforts.
- Monitor and report adverse events to CDC via the Vaccine Adverse Events Reporting System (VAERS).
- Advise CDC of issues, opportunities and best practices identified by the California pandemic influenza vaccine management program.

6.4 – Vaccine Implementation Management Activities

The vaccine implementation management activities are not broken into Pandemic Periods since it is unknown when a pandemic vaccine might be available. Planning for the vaccination program will begin when a novel virus is characterized and will be adapted as information about the epidemiology, vaccine production, immunogenicity and other factors changes. DCDC will implement parts of the plan (e.g., provider registration) before pandemic vaccine is ready for distribution, continue once vaccine arrives and remain in effect through recovery activities. SMEs will be identified to update senior management staff, review materials, and be available for media interviews as needed. *See Appendix H for an example of vaccine guidance developed and issued to LHDs by for the 2009-10 Novel Influenza A (H1N1) pandemic.*

Vaccine Venues and Providers:

DCDC anticipates the use of a mixed model of public and private clinical care providers to administer vaccine. This model includes, but is not limited to, the following venues:

- LHD clinics
- Pediatric, family and internal medicine practices
- Obstetrical practices
- Hospitals
- Occupational Health clinics
- School-based clinics
- Pharmacies

This model allows distribution of vaccine to a broad array of providers and a larger number of venues than a single model. It also targets clinical care providers who serve the populations at greatest risk of disease. DCDC will also promote private entity participation through provider organizations, including the following:

- American Congress of Obstetricians and Gynecologists (ACOG), Region IX
- American Academy of Pediatrics (AAP), California District IX
- California Academy of Family Physicians (CAFP)
- California Medical Association (CMA)

Guidance and Registration:

If vaccine distribution is being managed by CDPH, DCDC will disseminate eligibility criteria and guidance for registering as a vaccine provider and for ordering and receipt of vaccine. DCDC will register, train, and approve providers for receipt and (after reviewing authorities) administration of the vaccine and will confirm shipping addresses and site operational hours.

Allocation

The amount of vaccine allocated to a given LHD will be based on available supplies, the population of the jurisdiction it serves, and other relevant epidemiology factors. LHDs will make local allocation decisions within their jurisdictions and will share this information with DCDC to process orders and shipment of vaccine.

Distribution

CDC orders the vaccine and administration supplies, and arranges for shipment to a federally contracted vaccine distributor.

- The federally contracted vaccine distributor ensures delivery of the vaccine directly to each participating provider.
- DCDC may arrange supplemental shipping capacity for smaller volume providers or others not supplied by the federally contracted vaccine distributor.
- DCDC may reserve a small supply of vaccine to distribute as needed depending on the epidemiology of the pandemic and particular geographic distribution to priority groups or other unforeseen factors.
- Vaccine administration fees are likely to be determined by federal policies;
- DCDC will conduct meetings with the LHDs to share information and coordinate vaccine distribution and administration.

Monitor and Report Vaccine Coverage

Providers will be required to comply with CDC and CDPH requirements to report the number of doses they administer. DCDC will report aggregate data on administered doses to CDC.

- With support from DCDC, LHDs will have primary responsibility for monitoring and evaluating local vaccine distribution and administration.
- LHDs will have primary responsibility for data entry and subsequent transfer of data to DCDC for analysis and interpretation.
- The DCDC will track vaccine distribution and administration on a statewide basis.

Track Adverse Vaccine Reactions

DCDC will initiate a system for monitoring vaccine safety. The surveillance methods will be documented and made available to providers and LHDs.

- Adverse reactions to vaccine administered should be reported through VAERS.
- Clinical care providers and patients can report to VAERS by paper form, telephone, or electronically.
- In parallel with federal review of VAERS data, DCDC, working with LHDs, will analyze VAERS and other reports of serious adverse events to determine whether such events are reported more frequently than expected. DCDC will analyze signals of potential vaccine-associated events and may conduct epidemiological studies to assess possible causation.
- DCDC may supplement VAERS with additional surveillance and studies (e.g., active surveillance for specific adverse events, special studies of a sample of the vaccinated population).

Develop Communication and Training Materials

DCDC will use a range of communication strategies to inform partners and providers about the pandemic virus vaccine. DCDC will develop immunization training materials that:

- Help providers assess their storage capacity, their ability to provide the vaccine to children, and other special requirements for vaccine administration;
- Assist providers in preparing to, store and handle vaccine, implement standard immunization practices, administer vaccine, and document all activities;
- Include patient promotional and educational materials.

DCDC will communicate with providers about vaccine safety and mechanisms for reporting adverse events. Information will be updated as knowledge about the pandemic virus evolves.

Promote Pneumococcal Vaccine and Seasonal Influenza Vaccine

Consistent with current practice, DCDC will encourage clinical providers, home health agencies, visiting nurse associations, LHDS, and others to distribute and administer the following before, during and after the pandemic:

- Pneumococcal vaccine
- Seasonal influenza vaccine

Demobilize

During demobilization of the vaccine administration process, DCDC will confer with CDC about appropriate vaccine disposal processes and will promulgate guidance to pandemic partners on disposal or redistribution of residual vaccine and supplies.

6.5 – Role of DCDC in Use & Distribution of Antivirals

For pandemic influenza, CDPH EPO is responsible for antiviral distribution to LHDS as well as written policies and procedures for the local distribution and dispensing of the antivirals. LHDS are responsible for antiviral dispensing within their jurisdictions. While EPO has the lead role for this activity, DCDC staff serve as clinical SMEs, providing technical advice and guidance on the use of antivirals.

DCDC SMEs will:

- Collaborate with other CDPH entities such as the EPO Emergency Pharmaceutical Services Unit (EPSU) to develop antiviral guidance documents;
- Provide technical advice and guidance on the use of antiviral medications to LHDS and provider groups;
- Provide consultation with LHDS and clinical care providers regarding antiviral medication related issues.
- Provide updates to senior management staff and be available for media interviews as needed.

7 – Non-Pharmaceutical Interventions for Community Mitigation

7.1 – Introduction and Program Overview

Non-Pharmaceutical Interventions (NPIs) can be used to mitigate a pandemic, serving as one component of a comprehensive disease containment strategy. Most pharmaceutical interventions (vaccines and antivirals) may not be immediately available and there may be both short-term and long-term shortages. NPIs can and should be initiated early before an explosive growth of an epidemic. In the case of severe pandemics, they may be maintained consistently in communities during the pandemic and to a lesser extent during the time between pandemic waves.

Examples of NPIs for community mitigation strategies include:

- Case containment measures: case isolation and quarantine of members of households with ill persons (voluntary or involuntary).
- Social distancing measures: dismissal of students from schools and other congregate venues, increase distance between persons in the workplace, and cancelation of community events.
- Infection control measures: hand hygiene and cough etiquette in the public, and use of PPE in health care settings.

Implementing these intervention strategies in a timely and coordinated fashion will require advance planning. Each of these NPIs may be only partially effective in limiting transmission as stand-alone efforts. Decisions about what and when interventions should be used during a pandemic will be based on the observed severity of the event, its impact on specific subpopulations, the expected benefit of the interventions, the feasibility of the efforts, the direct and indirect costs, and the consequences on critical infrastructure.

7.2 – NPI Assumptions and Planning Principles

- NPIs will be the principal means of mitigating the progression and impact of the pandemic until adequate supplies of vaccine and antiviral medications are available.
- NPIs will delay the exponential increase in incident cases and shift the epidemic curve to the right, decreasing the pandemic peak and reducing the total number of incident cases and, thus, reducing morbidity and mortality in the community.

- Decisions about initiating NPIs will be made in an atmosphere of considerable scientific uncertainty.
- NPIs must be adapted to the epidemiologic context of each pandemic period, and recommendations regarding specific measures will change over the course of the pandemic.
- The effectiveness of NPIs are unknown and depend on characteristics of the evolving virus, its pathogenicity (including infectious dose), principal mode of transmission (droplet or aerosol), onset and duration of viral shedding, attack rate in different risk groups, the proportion of asymptomatic infections, clinical presentation, and compliance among the targeted populations.
- Initiating early, targeted layered interventions may be more effective than using a single NPI.
- In addition to effectiveness, the selection of NPIs is influenced by feasibility (e.g., cost and availability of resources and supplies), potential for implementation within existing infrastructures, expected impact, and acceptance by the public.
- Compliance from the public to LHD requests for NPIs is likely the biggest challenge due to a variety of social, economic, cultural, personal need, and political issues. An unpredictable percentage of people may not believe the reality and/or severity of the threat posed by a pandemic event, and may take no action or may take actions counterproductive to the government efforts to quarantine, control, and treat people who are infected with the disease.
- In an attempt to achieve full cooperation of the public, health education will be needed on multiple levels and at various times throughout the response and recovery.

7.3 – Objectives

Community Mitigation objectives for disease containment include:

- Utilize available surveillance data to determine which NPI strategies will be most effective for slowing and/or containing the ensuing pandemic.
- Use surveillance data to collaborate with LHDs, CDC, and other state agencies to assess and recommend the need and timing for initiating NPIs within LHJs.
- Provide written guidance on NPI strategies that can be implemented by LHDs, the medical community and the public.

- Disseminate NPI guidance and public health education messages statewide through emergency networks and publicly accessed websites.

7.4 – Intervention Strategies

Prior to the first case in California, DCDC will prepare and distribute documents for LHDs (e.g., case report form, infection control measures, and laboratory testing procedures). After the novel virus has arrived and it is determined to be highly transmissible and/or more clinically severe than seasonal influenza, the Community Mitigation Branch of the DCDC Operations Section in the response structure will be activated.

The Community Mitigation Branch will work with DCDC SMEs to facilitate development of guidance documents once it is determined that social, business, educational, faith-based or other community activities need to be altered to reduce spread of disease.

The recommended period-specific interventions for community mitigation by severity are presented in Table 7.1. The Pandemic Severity Index uses fatality ratio as the critical driver for categorizing the severity of a pandemic. “The Index is designed to enable estimation of the severity of a pandemic on a population level to allow better forecasting of the impact of a pandemic and to enable recommendations to be made on the use of mitigation interventions that are matched to the severity of future influenza pandemics.” (CDC, Interim Pre-Pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States, February 2007).

As emphasized by CDC in the footnotes following the Table, these interventions should be used in combination with other infection control measures such as campaigns for hand hygiene, cough etiquette, and PPE for health care professionals.

Table 7.1. Summary of the Community Mitigation Strategy by Pandemic Severity (See Appendix F for more detailed information on non-pharmaceutical interventions).

Interventions* by Setting	Pandemic Severity Index		
	1	2 and 3	4 and 5
Home Voluntary isolation of ill persons at home (adults and children); combine with use of antiviral treatment as available and indicated	Recommend ^{oΩ}	Recommend ^{oΩ}	Recommend ^{oΩ}
Voluntary quarantine of household members in homes with ill persons [#] (adults and children); consider combining with antiviral prophylaxis if effective, feasible, and quantities sufficient	Generally not recommended	Consider ^{**}	Recommend ^{**}
School Child social distancing - dismissal of students from schools and school based activities, and closure of child care programs - reduce out-of-school social contacts and community mixing	Generally not recommended Generally not recommended	Consider: ≤4 weeks [‡] Consider: ≤4 weeks [‡]	Recommend: ≤12 weeks [‡] Recommend: ≤12 weeks [‡]
Workplace/Community Adult social distancing - decrease number of social contacts (e.g., encourage teleconferences, alternatives to face-to-face meetings) - increase distance between persons (e.g., reduce density in public transit, workplace) - modify, postpone, or cancel selected public gatherings to promote social distance (e.g., postpone indoor stadium events, theater performances) - modify work place schedules and practices (e.g., telework, staggered shifts)	Generally not recommended Generally not recommended Generally not recommended Generally not recommended	Consider Consider Consider Consider	Recommend Recommend Recommend Recommend

Generally Not Recommended = Unless there is a compelling rationale for specific populations or jurisdictions, measures are generally not recommended for entire populations as the consequences may outweigh the benefits.
 Consider = Important to consider these alternatives as part of a prudent planning strategy, considering characteristics of the pandemic, such as age-specific illness rate, geographic distribution, and the magnitude of adverse consequences. These factors may vary globally, nationally, and locally.

Recommended = Generally recommended as an important component of the planning strategy.

* All of these interventions should be used in combination with other infection control measures, including hand hygiene, cough etiquette, and personal protective equipment such as face masks. Additional information on infection control measures is available at www.flu.gov

◇ This intervention may be combined with the treatment of sick individuals using antiviral medications and with vaccine campaigns, if supplies are available.

Ω Many sick individuals who are not critically ill may be managed safely at home.

The contribution made by contact with asymptotically infected individuals to disease transmission is unclear. Household members in homes with ill persons may be at increased risk of contracting pandemic disease from an ill household member. These household members may have asymptomatic illness and may be able to shed influenza virus that promotes community disease transmission. Therefore, household members of homes with sick individuals would be advised to stay home.

** To facilitate compliance and decrease risk of household transmission, this intervention may be combined with provision of antiviral medications to household contacts, depending on drug availability, feasibility of distribution, and effectiveness; policy recommendations for antiviral prophylaxis are addressed in a separate guidance document.

✕ Consider short-term implementation of this measure – that is, less than 4 weeks.

¥ Plan for prolonged implementation of this measure – that is, 1 to 3 months; actual duration may vary depending on transmission in the community as the pandemic wave is expected to last 6 – 8 weeks.

7.5– Activities by Period

The applicability of specific NPIs will vary, depending on the characteristics of the novel influenza virus, the assessment of risk, availability of resources, financial impact, and public acceptance. As stated by CDC in the *Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States* (February 2007), “The timing of initiation of various NPIs will influence their effectiveness. Implementing these measures prior to the pandemic may result in economic and social hardship without public health benefit and over time, may result in “intervention fatigue” and erosion of public adherence. Conversely, implementing these interventions after extensive spread of pandemic influenza illness in a community may limit the public health benefits of employing these measures. Identifying the optimal time for initiation of these interventions will be challenging because implementation needs to be early enough to preclude the initial steep upslope in case numbers and long enough to cover the peak of the anticipated epidemic curve while avoiding intervention fatigue.”

Guided by laboratory, epidemiologic, and clinical surveillance data, DCDC and the LHDs will identify and implement the most appropriate measures at each period of the pandemic to maximize impact on disease transmission and minimize impact on individual freedom of movement.

Pre-Pandemic Period

At the onset of this period, DCDC will identify SMEs for infection control, communications, vaccine management, antiviral distribution and use, and laboratory activities to work with the Community Mitigation Branch in developing guidance documents for LHDs and messages for the public.

DCDC activities include the following:

- Establish regular communications with CDC regarding international and national surveillance data;
- Identify SMEs to provide updates to senior management staff, review materials, and be available for interviews as needed;

- Develop and distribute NPI guidance documents;
- Establish and maintain regular communications with LHDs and other stakeholders regarding surveillance data, guidance, and any issues of concern;
- Provide technical assistance to LHDs regarding initiation of case containment NPIs;
- Provide technical guidance and information for LHDs to initiate and maintain aggressive NPI infection control measures, including transition from case-based containment to community-wide NPI efforts;
- If human-to-human transmission of cases is suspected or confirmed, provide guidance to LHDs regarding isolation and monitoring of the cases, quarantine of contacts, and chemoprophylaxis, if appropriate and in accordance with CDC guidance;
- Provide technical assistance to MHCC to form policies for managing limited resources (e.g. negative pressure isolation rooms, N95 masks, and antiviral agents);
- Provide technical information and SMEs for OPA to be used in informational hotlines, press releases, etc.;
- Participate in the development of multiple-language educational messages regarding risk and prevention.

Pandemic Period

In addition to continuing the Pre-Pandemic activities, DCDC will:

- Continue to update guidance documents for LHDs and clinicians with regard to clinical management, laboratory testing, antiviral treatment and prophylaxis of at-risk populations as needed;
- Recommend to DCDC leadership the need for jurisdictional, regional, or statewide activation of specific NPIs, as needed;
- When appropriate, collaborate with LHDs to assess, plan for, and implement targeted cessation of NPIs.

Post-Pandemic Period

During this period, staff will return to routine operations.

- Continue collaboration with CDC, LHDs, and other state agencies as needed;

- Continue reviewing surveillance data and if needed, recommend continuing or re-start of NPIs in preparation for a possible second wave;
- Actively participate in the development of an AAR.

Appendix A – Novel Influenza A 2013 Case Definition

Clinical Presentation

An illness compatible with influenza virus infection.

Laboratory Evidence

A human case of infection with an influenza A virus subtype that is different from currently circulating human influenza H1 and H3 viruses. Novel subtypes include, but are not limited to, H2, H5, H7, and H9 subtypes. Influenza H1 and H3 subtypes originating from a non-human species or from genetic reassortment between animal and human viruses are also novel subtypes. Novel subtypes will be detected with methods available for detection of currently circulating human influenza viruses at state public health laboratories (e.g., real-time reverse transcriptase polymerase chain reaction [RT-PCR]). Non-human influenza viruses include avian subtypes (e.g., H5, H7, or H9 viruses), swine and other mammalian subtypes. Confirmation that influenza A virus represents a novel virus will be performed by CDC's influenza laboratory.

Criteria for epidemiologic linkage: a) the patient has had contact with one or more persons who either have or had the disease and b) transmission of the agent by the usual modes of transmission is plausible. A case may be considered epidemiologically linked to a laboratory-confirmed case if at least one case in the chain of transmission is laboratory confirmed.

Case Classification

Confirmed: A case of human infection with a novel influenza A virus confirmed by CDC's influenza laboratory.

Probable: A case meeting the clinical criteria and epidemiologically linked to a confirmed case, but for which no laboratory testing for influenza virus infection has been performed.

Suspected: A case meeting the clinical criteria, pending laboratory confirmation. Any case of human infection with an influenza A virus that is different from currently circulating human influenza H1 and H3 viruses is classified as a suspected case until the confirmation process is complete.

Comment: For additional information about influenza or influenza surveillance, refer to the CDC Influenza web site: <http://www.cdc.gov/flu/professionals/acip/clinical.htm>

Appendix B – World Health Organization Influenza Surveillance Network and Pandemic Phases

Global Influenza Surveillance and Response System (GISRS)

Global influenza virological surveillance has been conducted through WHO's Global Influenza Surveillance and Response System (GISRS) for over half a century.

Formerly known as the Global Influenza Surveillance Network (GISN), the new name came into effect following the adoption of the Pandemic Influenza Preparedness (PIP) Framework in May 2011.

- WHO GISRS monitors the evolution of influenza viruses and provides recommendations in areas including laboratory diagnostics, vaccines, antiviral susceptibility and risk assessment.
- WHO GISRS also serves as a global alert mechanism for the emergence of influenza viruses with pandemic potential.
- Inside the GISRS, WHO Collaborating Centres and Essential Regulatory Laboratories are crucial elements of influenza surveillance and vaccine response.
- Currently there are six WHO Collaborating Centres (CCs) and four Essential Regulatory Laboratories (ERLs) within GISRS.

Excerpts from: "Pandemic Influenza Risk Management WHO Interim Guidance," WHO 2013.

http://www.who.int/influenza/preparedness/pandemic/GIP_PandemicInfluenzaRiskManagementInterimGuidance_Jun2013.pdf

"The influenza A(H1N1) 2009 pandemic was the first to occur since WHO had produced preparedness guidance. Guidance had been published in 1999, revised in 2005 and again in 2009 following advances in the development of antivirals and experiences with influenza A(H5N1) infections in poultry and humans. The emergence of the influenza A(H1N1)pdm09 virus provided further understanding of influenza pandemics and requirements for pandemic preparedness and response."

"The Review Committee recommended that WHO should revise its pandemic preparedness guidance to support further efforts at the national and subnational level. Revisions recommended included: simplification of the pandemic phases structure; emphasis on a risk-based approach to enable a more flexible response to different scenarios; reliance on multisectoral participation; utilization of lessons learnt at the country, regional and global level; and further guidance on risk assessment."

WHO Pandemic Phases

Excerpts from: “Pandemic Influenza Risk Management WHO Interim Guidance,” WHO 2013.

http://www.who.int/influenza/preparedness/pandemic/GIP_PandemicInfluenzaRiskManagementInterimGuidance_Jun2013.pdf

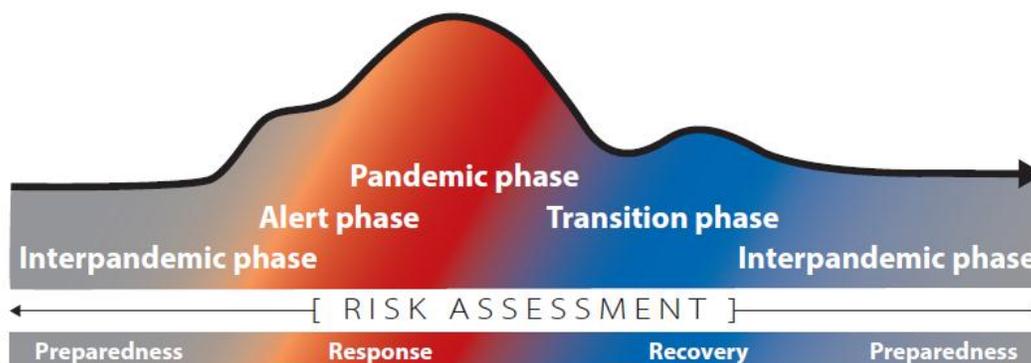
“The pandemic influenza phases reflect WHO’s risk assessment of the global situation regarding each influenza virus with pandemic potential that is infecting humans. These assessments are made initially when such viruses are identified and are updated based on evolving virological, epidemiological and clinical data. The phases provide a high-level, global view of the evolving picture.

The global phases – interpandemic, alert, pandemic and transition – describe the spread of the new influenza subtype, taking account of the disease it causes, around the world. As pandemic viruses emerge, countries and regions face different risks at different times. For that reason, countries are strongly advised to develop their own national risk assessments based on local circumstances, taking into consideration the information provided by the global assessments produced by WHO. Risk management decisions by countries are therefore expected to be informed by global risk assessments, but based on local risk assessments.”

“The risk-based approach to pandemic influenza phases is represented in **Figure 1** as a continuum, which also shows the phases in the context of preparedness, response and recovery, as part of an all-hazards approach to emergency risk management.”

“The global phases will be used by WHO to communicate the global situation. They will be incorporated into IHR (2005) related communications to National IHR Focal Points, in Disease Outbreak News releases and various other public and media interactions, including through social media channels.

Figure 1. The continuum of pandemic phases^a



Interpandemic phase: This is the period between influenza pandemics.

Alert phase: This is the phase when influenza caused by a new subtype has been identified in humans.⁵ Increased vigilance and careful risk assessment, at local, national and global levels, are characteristic of this phase. If the risk assessments indicate that the new virus is not developing into a pandemic strain, a de-escalation of activities towards those in the interpandemic phase may occur.

Pandemic phase: This is the period of global spread of human influenza caused by a new subtype. Movement between the interpandemic, alert and pandemic phases may occur quickly or gradually as indicated by the global risk assessment, principally based on virological, epidemiological and clinical data.

Transition phase: As the assessed global risk reduces, de-escalation of global actions may occur, and reduction in response activities or movement towards recovery actions by countries may be appropriate, according to their own risk assessments.

The global phases and their application in risk management are distinct from (1) the determination of a PHEIC under the IHR (2005) and (2) the declaration of a pandemic. These are based upon specific assessments and can be used for communication of the need for collective global action, or by regulatory bodies and/or for legal or contractual agreements, should they be based on a determination of a PHEIC or on a pandemic declaration.

Determination of a PHEIC: The responsibility of determining a PHEIC lies with the WHO Director-General under Article 12 of the IHR (2005).”

“Declaration of a pandemic: During the period of spread of human influenza caused by a new subtype, and appropriate to the situation, the WHO Director-General may make a declaration of a pandemic.”

Appendix C – CDC Influenza Surveillance System and Pandemic Intervals

U.S. Influenza Surveillance System

The Epidemiology and Prevention Branch in the Influenza Division of CDC collects, compiles, and analyzes information on influenza activity year round in the U.S. The U.S. influenza surveillance system (<http://www.cdc.gov/flu/weekly/overview.htm>) is a collaborative effort between CDC and its partners in state, local and territorial health departments; public health and clinical laboratories; vital statistics offices; and healthcare delivery settings. CDC is an active participant in this system through DCDC.

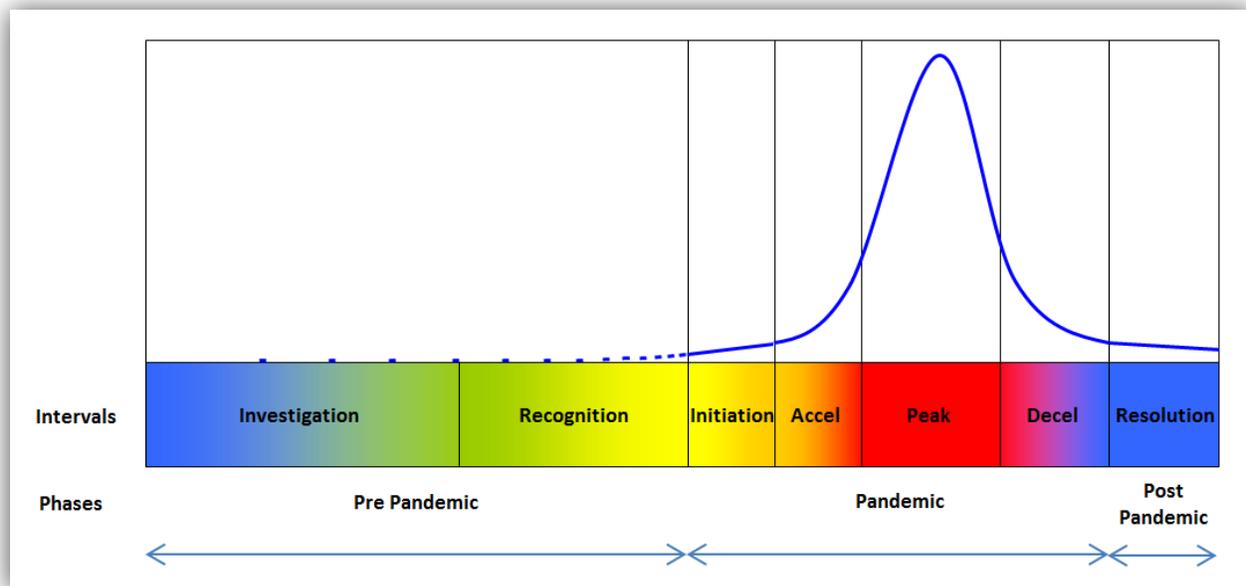
- CDC collects information in five categories from nine data sources to:
- Identify when and where influenza activity is occurring
- Track influenza-related illness
- Determine what influenza viruses are circulating
- Detect changes in influenza viruses
- Assess the impact of influenza on health systems and the public's health by tracking influenza-related hospitalization and death rates in the U.S.

The **intervals** are designed to guide the range of interventions to consider and/or implement given the epidemiological characteristics of the pandemic.

Pandemic Severity Index and Intervals

In 2008 the *Federal Guidance to Assist States in Improving State-Level Pandemic Operating Plans* was released by the U.S. Government, outlining the concepts of Pandemic Severity Index (PSI) and Pandemic Intervals.

The Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States (February 2007) features the PSI which uses case fatality ratios as critical drivers for categorizing the severity of a pandemic. Interventions, recommended based on the severity of pandemic, include: isolation and treatment of ill persons with antiviral drugs; voluntary home quarantine of members of households containing confirmed or probable cases; school closures; closure of childcare facilities, and use of social distancing measures to reduce contacts between adults in the community and workplace.



CDC's Pandemic Intervals are designed to inform and complement the use of PSI for choosing appropriate community mitigation strategies. PSI guides the range of interventions to be considered and/or implemented given the epidemiological characteristics of the pandemic. The intervals are more closely aligned with **triggers** to indicate *when* to act, while the PSI is used to indicate *how* to act.

Definitions of the Different Pandemic Intervals:

- **“Investigation” Interval – Investigation of Novel Influenza Cases:** This pre-pandemic interval represents the time period when sporadic cases of novel influenza may be occurring within or outside of the United States. During this interval, public health authorities will use routine surveillance and epidemiologic investigations to identify human cases of novel influenza and assess the potential for the strain to cause significant disease in humans. Investigations of animal outbreaks also will be conducted to determine any human health implications. During this interval, pandemic preparedness efforts should be developed and strengthened. Case-based control measures (i.e., antiviral treatment and isolation of cases and antiviral prophylaxis of contacts) are the primary public health strategy for responding to cases of novel influenza infection. [The 2007 CDC national case definition for novel influenza is available for reference in Appendix A.]
- **“Recognition” Interval – Recognition of Efficient and Sustained Transmission:** This interval occurs when clusters of cases of novel influenza virus in humans are identified and there is confirmation of sustained and efficient human-to-human transmission indicating that a pandemic strain has emerged overseas or within the United States. During the recognition interval, public health officials in the affected country and community will attempt to contain the outbreak and limit

the potential for further spread in the original community. Case-based control measures, including isolation and treatment of cases and voluntary quarantine of contacts, will be the primary public health strategy to contain the spread of infection; however, addition of rapid implementation of community-wide antiviral prophylaxis may be attempted to fully contain an emerging pandemic.

- “Initiation” Interval – Initiation of the Pandemic Wave: This interval begins with the identification and laboratory-confirmation of the first human case due to pandemic influenza virus in the United States. If the United States is the first country to recognize the emerging pandemic strain, then the “Recognition” and “Initiation” intervals are the same for affected states. As this interval progresses, continued implementation of case-based control measures (i.e., isolation and treatment of cases, voluntary prophylaxis and quarantine of contacts) will be important, along with enhanced surveillance for detecting potential pandemic cases to determine when community mitigation interventions will be implemented.
- “Acceleration” Interval – Acceleration of the Pandemic Wave: This interval begins in a state when public health officials have identified that containment efforts have not succeeded, onward transmission is occurring, or there are two or more laboratory-confirmed cases in the State that are not epidemiologically linked to any previous case. It will be important to rapidly initiate community mitigation activities such as school dismissal and childcare closures, social distancing, and the efficient management of public health resources. Isolation and treatment of cases along with voluntary quarantine of contacts should continue as a key mitigation measure. Historical analyses and mathematical modeling indicate that early institution of combined, concurrent community mitigation measures may maximize reduction of disease transmission (and subsequent mortality) in the affected areas.
- “Peak/Established Transmission” Interval – Transmission is Established and Peak of the Pandemic Wave: This interval encompasses the time period when there is extensive transmission in the community and the state has reached its greatest number of newly identified cases. The ability to provide treatment when the healthcare system is overburdened will be particularly challenging. To reduce the societal effects of the pandemic, available resources must be optimized to maintain the critical infrastructure and key resources in the face of widespread disease.
- “Deceleration” Interval – Deceleration of the Pandemic Wave: During this interval, it is evident that the rates of pandemic infection are declining. The decline provides an opportunity to begin planning for appropriate suspension of community mitigation activities and recovery. State health officials may choose to rescind community mitigation intervention measures in selected regions within their jurisdiction, as appropriate; however mathematical models suggest that

cessation of community mitigation measures are most effective when new cases are not occurring or occur very infrequently.

- “Resolution” Interval – Resolution of the Pandemic Wave: In this interval, pandemic cases are occurring only sporadically. The primary actions to be taken during this interval include discontinuing all community mitigation interventions, facilitating the recovery of the public health and healthcare infrastructure, resuming enhanced surveillance protocols to detect possible subsequent waves, and preparing for next waves of infection should they occur.

Appendix D – DCDC Influenza Surveillance Systems

Routine Influenza Surveillance

Routine influenza surveillance in California is a collaborative effort between DCDC, CDC, California LHDs, participating California health care providers and sentinel laboratories. Mandatory reporting is limited to laboratory confirmed influenza-associated fatalities that occur in persons under age 65 years. However, DCDC collaborates with academic, public, and private institutions to obtain information from multiple sources about influenza activity. During the influenza season (MMWR Week 40 through MMWR Week 20) the DCDC Influenza Program and Laboratory staff collaborate to monitor influenza activity using the following surveillance systems:

- Hospitalizations for pneumonia and influenza (Northern and Southern California Kaiser Permanente):

The Kaiser Permanente health care system provides medical care throughout the State to over one sixth of California residents. Inpatient discharge diagnoses of "pneumonia" and "influenza" (ICD-9 480-487, ICD-10 J09-J18) have been used to examine influenza trends in California; however, these data cannot be obtained in real time. In contrast, inpatient admission diagnoses are entered daily by text string and can be accessed the following day. Admission diagnoses of "flu", "pneumonia", and "influenza" ("influenza admits") serve as surrogate markers for the more accurate discharge diagnoses. Influenza activity is tracked by dividing the number of influenza admits by the total number of hospital admissions for the same day, thereby obtaining a percentage of influenza admissions. Admissions for pregnancy, labor and delivery, birth, and outpatient procedures are excluded from the denominator. Influenza admissions that have subsequent laboratory confirmation for influenza are also tracked; however, there is a delay in reporting of approximately 3 - 4 weeks due to time required for testing.

- Antiviral prescription data (Northern and Southern California Kaiser Permanente):

The number of prescriptions for drugs active against influenza, such as zanamivir and oseltamivir are used to serve as indicators of influenza activity. This component of the project assesses the number of influenza antiviral prescriptions filled weekly by all Kaiser Permanente outpatient pharmacies in California.

California Emerging Infection Program (CEIP)

The California Emerging Infections Program (CEIP), Influenza Surveillance Network (FluSurv-NET) conducts active, population-based surveillance for laboratory-confirmed influenza-associated hospitalizations in all ages in Alameda, Contra Costa and San Francisco counties.

CEIP is funded by the Centers for Disease Control and Prevention (CDC). FluSurv-NET is a national network which covers over 80 counties in the 10 Emerging Infections Program (EIP) states (CA, CO, CT, GA, MD, MN, NM, NY, OR, and TN) and five additional states (IA, MI, OH, RI, and UT). The network represents approximately 9% of US population (~28 million people). Weekly updates of influenza hospitalizations in FluSurv-NET sites can be found on the CDC's website, FluView: <http://www.cdc.gov/flu/weekly>

Hospital and reference laboratory reports of positive influenza tests are received on a weekly or biweekly basis. CEIP staff determines whether patients meet the following criteria for inclusion in FluSurv-NET:

- (1) resident of the catchment area (Alameda, Contra Costa, or San Francisco counties);
- (2) admitted to a catchment area hospital between October 1 and April 30;
- (3) admitted to hospital 3 days before or within 14 days after a positive influenza test; and
- (4) evidence of a positive influenza test

Once an individual is determined to meet the case definition, an initial case report is logged into the surveillance data. Medical record abstractions are also conducted to collect the following information for each case patient: demographics, laboratory data, underlying conditions, vaccination status, antiviral administration, discharge diagnoses, and outcome.

- Outpatient Illness Surveillance (CDC Influenza Sentinel Providers):

In collaboration with the CDC, DCDC works with clinicians throughout the state to conduct year-round surveillance for influenza-like illness (ILI) in outpatients. Physicians, nurse practitioners, and physician assistants from any specialty are eligible to participate as sentinel providers. Participating providers are asked to report on a weekly basis the number of patients with ILI by age group and the total number of patients seen for any reason. ILI is defined as any illness with (1) fever ($\geq 100^{\circ}\text{F}$ or 37.8°C) and (2) cough and/or a sore throat, in the absence of a known cause other than influenza. Sentinel providers are also encouraged to submit a subset of respiratory specimens to the DCDC Viral and Rickettsial Diseases Laboratory (VRDL) or a participating local public health laboratory for influenza testing. The information obtained from the sentinel providers is used to assess the timing, location, and impact of influenza viruses, as well as identify the influenza virus strains that are circulating in the community.

- Mandatory reporting of all influenza-associated deaths in persons under age 65 years;
- Voluntary reporting of all severe cases of influenza requiring intensive care in persons under age 65 years;

Public health monitoring of severely ill cases of all types and subtypes of influenza is important for monitoring for the circulation of novel influenza viruses that may cause future pandemics and to characterize populations at risk for complications. Information gathered from surveillance can lead to new prevention measures, education campaigns, and strategies for vaccine and antiviral use that will help protect the public.

- Mandatory reporting of respiratory outbreaks in communities, schools and congregate settings;
- Collaboration with ILI surveillance along the California-Baja California border through COBBH and Border Infectious Disease Surveillance (BIDS) Programs.

Appendix E – DCDC Laboratory Surveillance and Diagnostic Support Services

VRDL Influenza Laboratory Surveillance

VRDL's influenza laboratory surveillance involves the use of data from hospital, academic, private, and public health laboratories located throughout California. These laboratories report the number of laboratory-confirmed influenza and other respiratory virus detections and isolations on a weekly basis. Reporting laboratories are divided into the following networks:

- The Respiratory Laboratory Network (RLN) is composed of LPHLs that offer PCR testing for influenza A and B, and subtyping.
- California Sentinel Laboratories are a network of clinical, commercial, academic, and hospital laboratories located throughout California that provide weekly data on the number of laboratory-confirmed influenza and other respiratory virus detections and isolations. These labs use various testing methods, including rapid test, direct fluorescent assay, viral culture, and PCR.
- Sentinel Physicians is a network of physicians located throughout California. They submit specimens from patients with ILIs for respiratory testing and strain typing at VRDL.

VRDL Diagnostic Support Services

- VRDL serves as the State of California reference laboratory offering diagnostic testing for influenza as well as numerous other diseases. A fraction of the influenza viruses isolated at participating laboratories are forwarded to VRDL for further antigenic and genetic characterization. The VRDL testing capabilities include viral culture, PCR, serologic testing, sub-typing, strain characterization, and antiviral resistance testing. VRDL works closely with the RLN and the CDC to develop and adapt new assays for novel influenza viruses and other emerging pathogens. It should be noted that viral culture and serologic testing may be intentionally limited due to biosafety concerns, contributing to a potential inability to grow a novel virus. Antiviral resistance testing is performed on a subset of specimens tested to monitor for changing resistance patterns.

Appendix F – Non Pharmaceutical Intervention Community Mitigation Strategies

Measure	Definition	Examples and Considerations
Isolation (Individual containment measures)	<p>The separation of infected persons from other persons for the period of communicability in such conditions as will prevent transmission of the agent. Strict isolation is confinement of the isolated individual to a room with a separate bed, with direct and room contact only with persons taking care of the individual caregivers.</p> <p>Appropriate disinfection and disposal of bodily excretions, secretion, garments, and objects in contact with the isolated individual must be assured. Persons caring for the isolated individual must take prescribed precautions to prevent the spread of infectious material from the individual's room.</p>	<p>Persons who meet the criteria for a case of novel influenza and who do not require hospitalization should be isolated in their homes. During the earliest stages of a pandemic, when it is feasible, the home being considered should be evaluated by an appropriate authority or by the application of accepted criteria when appropriate authorities are not available to ensure that minimum standards (infrastructure, accommodations, resources for patient care and support) are met.</p>
Quarantine	<p>Quarantine is the separation or restriction of activities of persons who are not ill but who are believed to have been exposed to a communicable disease and are therefore at highest risk of becoming infected (e.g., close contacts of influenza patients).</p>	<p>These people have been exposed but are not symptomatic or infectious. May include family members, co-workers, airline passengers, schoolmates, and health care workers. Quarantine may be appropriate in situations in which the risk of development of disease is high and the risk of delayed recognition of symptoms is moderate. Persons in quarantine who experience fever, respiratory, or other early influenza symptoms require immediate evaluation by a health care provider.</p>

Measure	Definition	Examples and Considerations
Community based activity restrictions to increase social distancing and decrease social interactions	Measures applied to specific groups, businesses, neighborhoods, or whole communities (as opposed to individuals), designed to reduce personal interactions and thereby transmission risk. Measures apply to groups or persons in these specific settings, most but not necessarily all of who are at risk of exposure.	<p>Measures that may be beneficial and practical when there are a larger number of cases and more extensive viral transmission. This may include cancellation of public events; closure of office buildings, schools, shopping malls, closure of public transportation such as subways or bus lines.</p> <p>Would require coordinated effort of the community and businesses. All non-essential service personnel and community members are urged to stay at home.</p>
Community wide quarantine	Consists of closing community borders or the erection of a real or virtual barrier around a geographic area with prohibition of travel into or out of the area. Movement of people in and out of the area would be restricted.	May be applicable to all members of a group in which extensive transmission is occurring, a substantial number of cases lack an epidemiologic link at the time of evaluation, and restrictions placed on persons known to be exposed are considered insufficient to prevent further spread. May be unnecessary, as less restrictive measures, such as coordinated community and business closures, may be equally effective.
Infection control measures	Use of physical barriers and hygiene measures to limit the risk of transmission.	Includes respiratory hygiene, cough etiquette, hand washing and hand hygiene, use of gloves, masks, and general hygiene and disinfection.

Appendix G – Period-Based Activity Reference Tables

	Pre-Pandemic	Pandemic	Post-Pandemic
Epidemiology & Surveillance			
Continue year-round surveillance and testing on ILIs	X	X	X
Continue year-round surveillance for identification of clusters or outbreaks of ILI	X	X	X
Identify SMEs to update management, review materials, be available for interviews	X	X	X
Develop and distribute Case Definition	X		
Update and refine Case Definition as needed		X	X
Develop and distribute case report forms to LHDs	X	X	X
Provide technical assistance to LHDs	X	X	X
Collaborate with LHDs on: case-based investigations; assessment of case contacts; determination of human-to-human transmission; identification of risk factors for infection; characterization of clinical severity and assessment of at-risk populations; increasing laboratory capacity where necessary	X	X	X
Provide case information to CDC	X	X	X
Recommend isolation, quarantine and prophylaxis measures to LHDs as appropriate		X	X
Develop or update surveillance tools (e.g. Cal-REDIE)	X	X	X
Create database for information from case report forms	X	X	
Train surge capacity personnel	X	X	
Assess staffing needs and plan for increases where necessary	X	X	
Manage critical supplies and equipment	X	X	X
Continue communications with CDC for guidance documents, investigations, surveillance, containment strategies, diagnostic testing, triaging of specimens and isolate selection	X	X	X
Collaborate with CDC, US-Mexico Border Health Commission, Baja California, COBBH and LHDs on enhanced surveillance and epidemiological investigation of cross-border outbreaks	X	X	X
Develop and distribute guidance for border LHDs	X	X	X
Collaborate with CDC quarantine stations in California and LHDs for screening of international travelers	X	X	X
Establish and maintain agreements with military facilities to exchange information	X	X	X
Establish and maintain communication strategies (statewide conference calls, etc.)	X	X	X
Generate weekly reports to all partners	X	X	X
Continue enhanced surveillance, transition from case-based to targeted populations		X	X
Change reporting requirements as needed		X	X
Continue epidemiologic investigations to track morbidity and mortality trends, geographic outbreaks, transmissibility factors, unusual clinical presentations, antiviral resistance, unusual pathologic features in fatal cases		X	X
Work with VRDL to assess lab results and address ongoing lab testing needs	X	X	X
Refine support and guidance to LHDs as needed		X	X

Provide detailed retrospective characterization of the pandemic			X
Conduct retrospective validation studies of ILI reporting			X
Conduct retrospective assessment of cross-border coordination			X
Provide updates on recovery activities			X
Collect lessons learned for AAR			X
Laboratory Operations			
Perform routine lab surveillance activities: implement diagnostic testing; collaborate with CDC on testing protocols and new technologies; provide guidance on collection, processing and transport of specimens	X	X	X
Identify SMEs to update management, review materials, be available for interviews	X	X	X
Provide guidance and training to RLN	X	X	X
Maintain inventory of laboratory capacity (supplies, reagents and equipment)	X	X	X
Stockpile critical supplies and equipment	X	X	X
Estimate future lab capacity requirements and identify strategies for increasing lab capacity	X	X	X
Provide guidance on best practices for processing samples, prioritizing testing, and quality assurance	X	X	X
Ensure means to rapidly procure lab supplies	X	X	X
Assess need for additional staffing and plan for use of cross-trained personnel. Maintain protocol for emergency hiring.	X	X	X
Prepare for increased workload to include specimen processing and accessioning, extracting nucleic acid and performing PCR testing	X	X	X
Monitor for the onset of a pandemic: characterize virus as a suspected novel virus as appropriate; send samples to CDC within 48 hours of detection; collaborate with CDC to acquire testing protocols; provide RLN with training, supplies, assistance and guidelines as appropriate	X		
Identify communication strategy for key partners	X	X	X
Determine ongoing lab testing needs		X	X
Activate enhanced lab testing protocols		X	X
Discontinue or outsource non-essential testing		X	
Facilitate rapid testing of suspected viral samples	X	X	
Maintain expanded diagnostic testing, including antiviral resistance testing	X	X	X
Develop and implement viral culture and neutralizing antibody assays, if necessary		X	
Monitor RLN status and coordinate mutual support		X	X
Ensure maintenance of supplies and equipment	X	X	X
Distribute stockpiled supplies as needed	X	X	X
Institute surveillance for ILI among lab personnel and develop protocols for management of exposed personnel		X	
Review diagnostic capacity and workload and reallocate resources as needed	X	X	X
Provide guidance on alternative diagnostic testing options		X	
Post up-to-date guidelines on VRDL website at http://www.cdph.ca.gov/programs/vrdl/Pages/default.aspx	X	X	X
Distribute guidance for collection of specimens and testing without standard PPE or other safety equipment		X	

Store and share selected isolates and specimens to support special studies		X	X
Monitor the effects of virologic and genetic changes to the virus		X	X
Resume enhanced virologic surveillance to detect emergence of increased transmission			X
Continue surveillance to monitor for possible second pandemic wave			X
Collect Lessons Learned for AAR			X
Collaborate with CDC and other partners on retrospective studies			X
Assist with retrospective validation studies of influenza illness reporting			X
Participate in retrospective assessment of cross-border lab coordination			X
Restock and refurbish critical supplies and equipment			X
Vaccine Management			
NOTE: Vaccine Management activities are not associated with the Pandemic Periods but are driven by the availability of vaccine			
Identify SMEs to update management, review materials, be available for interviews			
Disseminate vaccine eligibility criteria and guidance for registering as a vaccine provider			
Register, approve and train vaccine providers			
Monitor vaccine distribution from distributor to providers			
Arrange for supplemental shipping for smaller volume providers			
Reserve small supply of vaccine to distribute as needed			
Conduct meetings with LHDs to coordinate vaccine distribution and administration			
Report aggregate data on administered doses of vaccine to CDC			
Monitor and evaluate vaccine distribution and administration			
Track vaccine distribution and administration on a state-wide basis			
Initiate and manage system for monitoring vaccine safety			
Insure reporting of adverse reactions through VAERS			
Supplement VAERS with additional surveillance studies			
Develop and maintain communication strategies			
Develop and distribute training materials for vaccine storage, administration and documentation			
Develop and distribute patient promotional and educational materials			
Promote pneumococcal vaccine and seasonal influenza vaccine throughout pandemic			
Plan for and execute demobilization of the vaccine administration process, to include vaccine disposal and redistribution of residual vaccine/supplies			
Collaborate with EPO on antiviral guidance documents			
Provide technical advice on use of antiviral medications to LHDs and provider groups			
Collect Lessons Learned for AAR			
Community Mitigation			
Establish regular communications with CDC regarding international and national surveillance data	X	X	X

Identify SMEs to update management, review materials, be available for interviews	X	X	X
Develop and distribute NPI guidance documents	X	X	X
Establish and maintain communications with LHDs and other stakeholders regarding surveillance data, guidance, etc.	X	X	X
Provide technical assistance to LHDs regarding initiation of case-based containment NPIs	X		
Provide technical assistance to LHDs to initiate and maintain aggressive NPI infection control measures, including transition from case-based containment to community-side NPI efforts	X	X	X
Provide technical assistance to MHCC for policies on resource management	X	X	X
Provide technical information to OPA for press releases, hotlines, etc.	X	X	X
Participate in the development of multiple-language educational messages regarding risk and prevention	X	X	X
Update guidance documents for LHDs as needed		X	X
Recommend to DCDC leadership the need for jurisdictional, regional or statewide activation of specific NPIs, as needed		X	
Collaborate with LHDs to plan for and implement targeted cessation of NPIs		X	X
Review surveillance data and recommend continuing or re-start of NPIs in preparation for a possible second wave			X
Collect Lessons Learned for AAR			X

Appendix H – Vaccine Guidance Documents

The example in this appendix shows page 1 of vaccine guidance documents used during the H1N1 Influenza response. For complete and current documents, contact DCDC IZB.

**CDPH H1N1 Vaccine Distribution System Procedures
PHASE ONE
September 1– November 30, 2009**

Ordering	Allocation	Assignment	Transmission	Shipping	Reporting
Call Center	Mark	Nisha	Steve	Nisha	Maria
Mark	Rob	Mae	Maria	Ervic	Melissa
Ervic	Nisha	Betty	Don	Mark	
	Steve	Steve	Claudia		

ORDERING

1. Medical providers register and place vaccine orders on CalPanFlu.gov

- CDPH call center answers provider calls and troubleshoots problems with registration or ordering using a script. Main issues addressed:
 - Pin/zip errors
 - Status of orders (whether pending or shipped)
 - Verifying & deleting rejected medical license numbers
 - Address changes in CalPanFlu.
- Vaccine Status front-end database allows for tracking of vaccine shipments
- Mark & Andre troubleshoot CalPanFlu & Access database to respond to provider calls

ALLOCATION OF DOSES

2. CDPH exports provider orders from CalPanFlu.gov

- Daily, Mark exports provider names and contact information from CalPanFlu to a csv file on providers, [G:\Vaccineorderprocessing\website_data](#), file name: "Date_time downloaded_panProviders"
- Daily, Mark exports all provider orders from CalPanFlu from CalPanFlu to a csv file on orders, [G:\Vaccineorderprocessing\website_data](#), file name: "Date_time downloaded_panOrders"
- Mark imports both files into Access database [G:\VaccineOrderProcessing\Vaccine Processing.mdb](#). (user needs to have a front-end copy of the database on their desktop).
- Mark runs two queries to compare updated provider information from CalPanFlu to existing information:
 - 1) to identify and add new providers into the database and
 - 2) to update existing provider information with any changes to address, city, zip, county, verified MD license, and provider type.

Appendix I – H1N1 Guidance Documents

The examples in this appendix show page 1 of several guidance documents used during the H1N1 Influenza response. For complete and current documents, go to: <http://www.cdph.ca.gov/HealthInfo/discond/Pages/H1N1CDPHGuidances.aspx>



State of California—Health and Human Services Agency
California Department of Public Health

MARK B HORTON, MD, MSPH
Director



ARNOLD SCHWARZENEGGER
Governor

Infection Control Guidance for 2009 H1N1 Influenza in Outpatient Settings

February 4, 2010

Revision History: Supersedes "California Department of Public Health (CDPH) recommendations for 2009 H1N1 influenza in outpatient settings."

Originating Programs: Healthcare Associated Infections Program, Center for Health Care Quality, and Division of Communicable Disease Control, Center for Infectious Diseases.

Introduction

This document provides updated guidance on revised case definitions for H1N1 and guidance regarding implementation of the Centers for Disease Control and Prevention (CDC) revised infection control recommendations of October 14, 2009 in the outpatient setting: http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm.

Highlights

- Revised CDC recommendations
- CDPH/ Cal/OHSA Joint statement of February 4, 2010
- CDPH Revised Case Definitions of 2009 H1N1 Influenza for Infection Control Purposes (February 4, 2010)
- Summary of CDPH Infection Control Recommendations for 2009 H1N1 Influenza in Outpatient Settings
 - Case Definitions
 - Patient Triage
 - Infection Control Precautions
 - Health Care Personnel
 - Patient/ Family Instructions
 - Additional Resources

Current Recommendations

CDC Infection Control Recommendations (revised October 14, 2009)

The revised CDC recommendations (http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm) emphasize a hierarchy of controls designed to minimize health care worker exposure and decrease transmission in the health care setting. Revised isolation precautions include:

California Department of Public Health
1615 Capitol Ave, Sacramento, CA 95814
Internet Address: www.cdph.ca.gov



**2009 H1N1 Influenza
Infection Control Guidance For Hospitalized Patients
February 4, 2010**

Revision History: Supersedes "Pandemic (H1N1) 2009 Influenza Infection Control Recommendations For Hospitalized Patients. (8/20/09)"

Originating programs: Healthcare Associated Infections Program, Center for Health Care Quality, and Division of Communicable Disease Control, Center for Infectious Diseases

Current Recommendations

Hospitals should refer to the following documents for the most recent recommendations on infection control in hospitalized patients:

- CDPH and Cal/OSHA joint statement "Guidance for Infection Control for 2009 H1N1 Influenza in Health Care Settings" issued on February 4, 2010 (<http://www.cdph.ca.gov/HealthInfo/discond/Documents/H1N1-ICGuidanceHealthCareSettings.pdf>)
- CDPH "Guidance on Case Definitions to be Used for Infection Control in California Health Care Settings" issued on February 4, 2010. (<http://www.cdph.ca.gov/HealthInfo/discond/Documents/H1N1-IC-CaseDefinitions.pdf>)
- The Centers for Disease Control and Prevention "Interim Guidance on Infection Control Measures for 2009 H1N1 Influenza in Healthcare Settings, Including Protection of Healthcare Personnel," issued on October 14, 2009 (http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm)
- The Cal/OSHA Aerosol Transmissible Disease Standard, which is available at (<http://www.dir.ca.gov/title8/5199.htm>). The Cal/OHSA Interim Enforcement, Policy and Appendix A: Respiratory Supply Documentation can be found at <http://www.dir.ca.gov/dosh/SwineFlu/SwineFlu.htm>.

Resources

CDPH 2009 H1N1 Influenza Homepage:
<http://www.cdph.ca.gov/HealthInfo/discond/Pages/H1N1Home.aspx>

Thank you for your ongoing commitment to the 2009 H1N1 Influenza response.



Infection Control Guidance for 2009 H1N1 Influenza in Long-Term Care Facilities February 4, 2010

Revision History: Supersedes "California Department of Public Health (CDPH) recommendations for 2009 H1N1 influenza in long-term care facilities (8/20/09)."

Originating programs: Healthcare Associated Infections Program, Center for Health Care Quality, and Division of Communicable Disease Control, Center for Infectious Diseases.

Introduction

This document provides updated guidance on revised case definitions for H1N1 and guidance regarding implementation of the Centers for Disease Control and Prevention (CDC) revised infection control recommendations of October 14, 2009: http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm.

Highlights

- Revised CDC Recommendations
- CDPH / Cal/OSHA Joint Statement of February 4, 2010
- CDPH Revised Case Definitions of 2009 H1N1 Influenza for Infection Control Purposes (February 4, 2010)
- Summary of CDPH Infection Control Recommendations for 2009 H1N1 Influenza in Long-Term Care Facilities
 - Case Definitions
 - Infection Control
 - Health Care Personnel
 - Visitor Recommendations

CDC Infection Control Recommendations (revised October 14, 2009):

The revised CDC recommendations (http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm) emphasize a hierarchy of controls designed to minimize health care worker exposure and decrease transmission in health care settings. The recommendations include:

- continuation of the recommendation to use respiratory protection that is at least as protective as a fit-tested N95 disposable respirator for health care personnel who are in close contact with patients with suspect, probable or confirmed 2009 H1N1 influenza;



MARK B HORTON, MD, MSPH
Director

State of California—Health and Human Services Agency
California Department of Public Health



ARNOLD SCHWARZENEGGER
Governor

May 19, 2009

**Interim Guidance for State of California Facilities on
Novel Influenza A (H1N1) Virus also known as “Swine Flu”**

Novel influenza A (H1N1) virus (“swine influenza”) is a new virus. To date, it has mainly caused mild illness; but because it is new, health officials need to take precautionary measures to limit the spread of infection, until we have more information about the risks of this virus as the outbreak evolves.

This guidance provides recommendations on protection of employees and other individuals for State of California facilities that house people (e.g., developmental centers, state hospitals, prisons, veterans’ homes). As we learn more about this emerging virus, updated guidance will be issued.

Many of these recommendations are no different than routine good infection control in the workplace, and are valuable for preventing illness for the yearly seasonal influenza, which can cause serious illness. Even though the novel influenza A (H1N1) virus does not appear to be very severe, right now, it is still important that all State of California facilities take steps to help slow the spread of the disease. This is important because:

- It is a new virus, so no-one has immunity to it
- There is no vaccine for this virus yet
- Many people in the community have medical conditions that make them more likely to have serious illness if they do get the flu virus.

The recommendations below will help slow the spread of novel influenza A (H1N1) virus. Please do what you can to protect those co-workers, staff, and residents (clients, consumers, and inmates) who may be at risk of more serious illness.

This guidance will be updated as policy and recommendations change. For information about the treatment of novel influenza A (H1N1) virus and for additional guidance, please consult the CDPH and Centers for Disease Control and Prevention (CDC) websites listed at the end of this document.

California Department of Public Health, P.O. Box 997377, Sacramento, CA 95899-7377
Internet Address: www.cdph.ca.gov



MARK B HORTON, MD, MSPH
Director

State of California—Health and Human Services Agency
California Department of Public Health



ARNOLD SCHWARZENEGGER
Governor

**2009 H1N1 and Seasonal Influenza
CDPH Guidance for School (K-12) Responses to Influenza
During the 2009-2010 School Year
December 7, 2009**

Revision History: Supercedes:

"CDPH Guidance for School (K-12) Responses to Influenza During the 2009-2010 School Year (8/24/09)"

"CDPH Health Alert: H1N1 Influenza Update for Schools and Local Health Departments (School portions only; 8/13/09)"

"CDPH Interim Novel Influenza A (H1N1) Virus Student Dismissal Guidance (5/19/09)"

Introduction

This California Department of Public Health (CDPH) Interim Guidance for K-12 Schools is intended as a practical supplement to World Health Organization (WHO), U.S. Centers for Disease Control and Prevention (CDC) and California Department of Education (CDE) guidance documents referenced below. The CDPH document will not repeat much of the information from the material referenced, but will try to focus on specific responses people in California might consider. The background guidance documents include:

- WHO Measures in school settings (Sept 11, 2009):
http://www.who.int/csr/disease/swineflu/notes/h1n1_school_measures_20090911/en/index.html
- CDC Guidance for State and Local Public Health Officials and School Administrators for School (K-12) Responses to Influenza during the 2009-2010 School Year (Oct 21, 2009):
<http://www.cdc.gov/h1n1flu/schools/schoolguidance.htm>
- CDC Recommendations for the Amount of Time Persons with Influenza-Like Illness Should be Away from Others (Oct 23, 2009):
<http://www.cdc.gov/h1n1flu/guidance/exclusion.htm>
- California Department of Education: Pandemic Flu Checklist for Local Educational Agencies in California (May 2009):
<http://www.cde.ca.gov/ls/he/hn/documents/leapfluchecklist.doc>

Center for Infectious Diseases
1616 Capitol Ave, Sacramento, CA 95814
Internet Address: www.cdph.ca.gov



MARK B HORTON, MD, MSPH
Director

State of California—Health and Human Services Agency
California Department of Public Health



ARNOLD SCHWARZENEGGER
Governor

May 19, 2009

Interim Guidance for Temporary Emergency Shelters: Policies to Mitigate Spread of Novel Influenza A (H1N1) Virus Infections

Novel influenza A (H1N1) virus (“swine influenza”) is a new virus. To date it has mainly caused mild illness; however, health officials need to take precautionary measures to limit the spread of infection until more is known about the risks of this virus.

The California Department of Public Health (CDPH) recognizes that temporary emergency shelters will be opened as a result of disasters such as fires, earthquakes, or other traditional disasters that may occur during the novel influenza A (H1N1) virus outbreak. This guidance provides recommendations for protection of shelter staff and clients to mitigate the spread of novel influenza A (H1N1) virus infection. This guidance will be updated as policy and recommendations change. For information about the treatment of this infection and for additional guidance, please consult the websites listed at the end of this document.

Many of these recommendations are the same as routine good infection control for shelter operations, and also applicable for preventing illness for the yearly seasonal influenza. It is still important that all shelter facilities take steps to help slow the spread of the disease because:

- It is a new virus, so no-one has immunity to it.
- There is no vaccine for this virus yet.
- Many people in the community have medical conditions that make them more likely to have serious illness if they do get influenza.

GENERAL GUIDANCE FOR STAFF

There are a few important and simple things that every staff member can do:

- If you have influenza symptoms [fever $\geq 37.8^{\circ}\text{C}$ (100°F) plus a cough, sore throat and/or runny nose]
 - **Do not come to work** at the shelter for 7 days or until symptoms have resolved, whichever is longer. If you have onset of illness at work, notify your

California Department of Public Health, P.O. Box 997377, Sacramento, CA 95899-7377
Internet Address: www.cdph.ca.gov



MARK B HORTON, MD, MSPH
Director

State of California—Health and Human Services Agency
California Department of Public Health



ARNOLD SCHWARZENEGGER
Governor

**Interim CDPH Guidance for Public Gatherings:
Policies to Mitigate Spread of
Novel Influenza A (H1N1) Virus Infections
May 19, 2009**

Introduction

Novel influenza A (H1N1) virus ("swine influenza") is a new virus. To date it has mainly cause mild illness; however, health officials need to take precautionary measures to limit the spread of infection until more is known about the risks of this virus. At public gatherings such as weddings, graduation ceremonies and other events where people have close contact (like handshaking and hugging) there may be increased risk for spread of novel of novel influenza A (H1N1) virus.

Objective and Scope

The objective of this document is to provide guidance on preventing the transmission of novel influenza A (H1N1) virus during public gatherings, including large public gatherings and assemblies or groupings of many people in one place. Examples of such gatherings can include college and university commencement exercises, church services, sporting events, concerts, social and cultural celebrations, weddings, conferences, and other similar activities attended by relatively large groups of people. This interim guidance does not attempt to define such events in terms of numbers of people in attendance; rather, the focus is on community situations in which crowding is likely to occur. In addition, these recommendations do not distinguish between public gatherings held indoors and those held outdoors, because differences in novel influenza A (H1N1) virus transmission patterns in these two settings are not known. Please monitor CDPH, CDC, and your local health department websites for updated recommendations regarding novel influenza A (H1N1) virus.

Current Recommendations

Decisions regarding large public gatherings during this time of novel influenza A (H1N1) virus outbreak should be made based on local influenza activity. Given the current information on disease severity and spread, CDPH recommends that:

1. Persons with influenza-like illness (ILI) (i.e., fever with either cough or sore throat) should stay home and refrain from attending any public gatherings for 7

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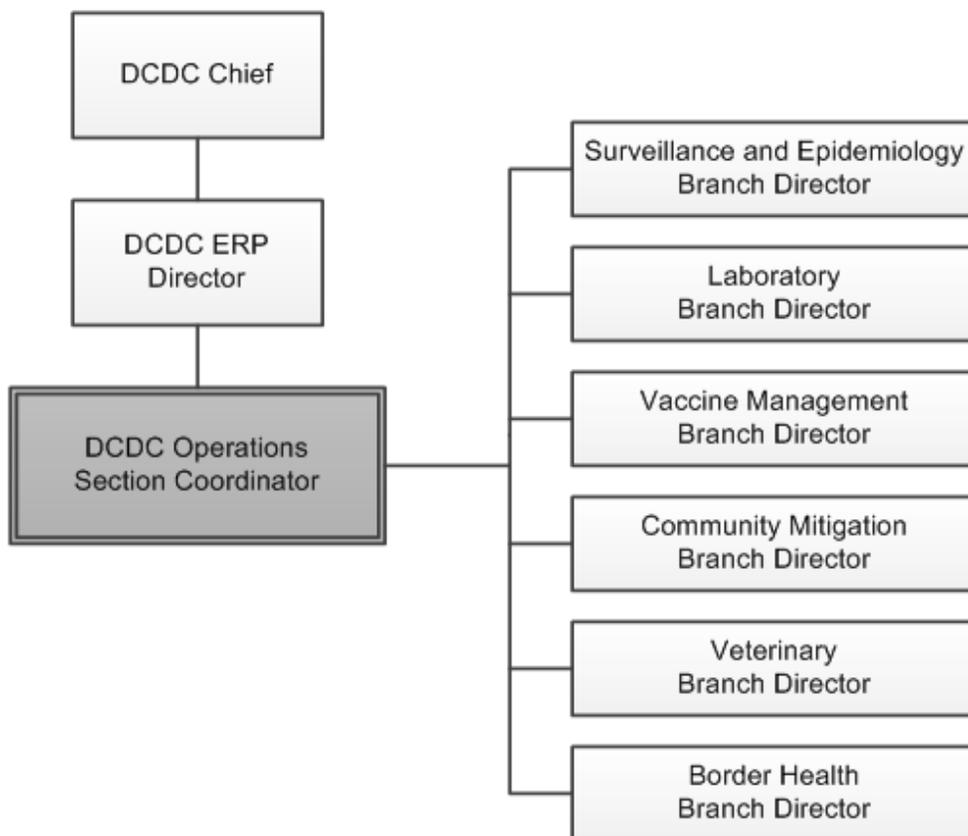
Appendix J – Organization Charts & Staff Positions/Activities

DCDC ERP Activation

According to CDPH EORP principles and guidelines, when the work demands exceed the ability of DCDC to respond to the influenza outbreak using the normal day-to-day operating structure, the DCDC Chief activates the DCDC ERP. The DCDC Chief appoints the DCDC ERP Director, who in turn appoints the Section Coordinators. The Section Coordinators appoint their subordinate positions, which may be dedicated full-time to the influenza pandemic response. *See Figure 1 for General Organization Chart for DCDC ERP.*

In addition to the activities of the Surveillance & Epidemiology, Laboratory, Vaccine Management and Community Mitigation Branches found on the following pages, the DCDC ERP will activate, as needed, additional specialty branches:

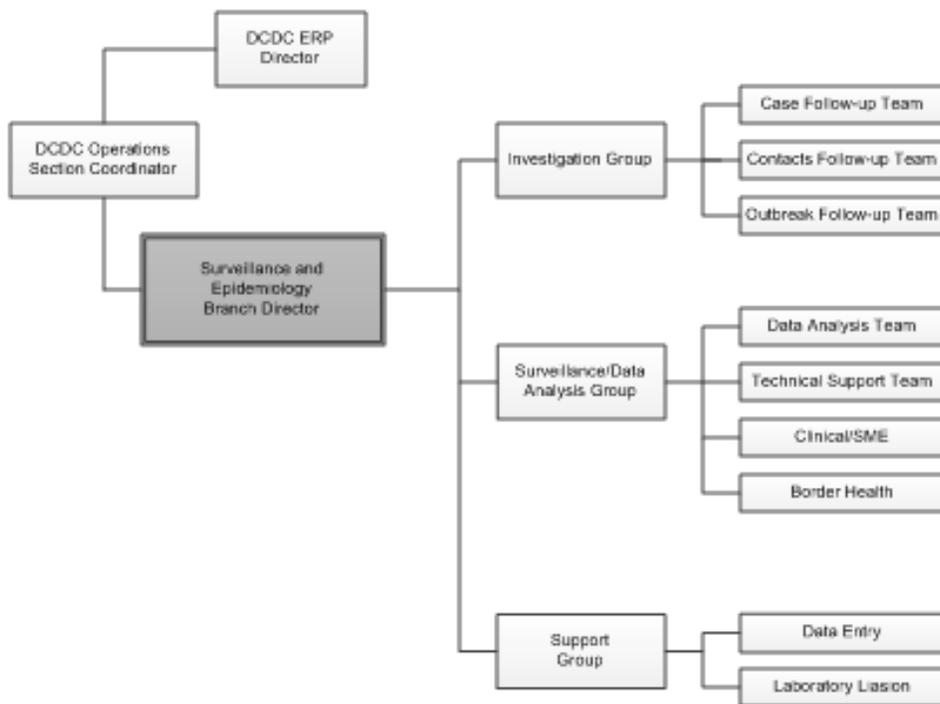
- Veterinary Branch: Focuses on the potential transmission of influenza between animals and humans. If cross-species transmission is detected, the Veterinary Branch Director works with other state and federal agencies to recommend public health measures to reduce the resulting risk.
- Border Health Branch: Works with public health agencies on the United States/Mexico border including the San Diego Health & Human Services Agency (Epidemiology and Immunization Services), the Imperial County Public Health Department, the CDC Division of Global Migration and Quarantine, the COBBH, the Naval Health Research Center, and the Baja California jurisdictional public health departments in Tijuana and Mexicali to ensure communication and facilitate influenza response efforts.
- DCDC Pandemic Influenza Point of Contact: Responsible for questions related to the pandemic that arise during the hours the RCCC is not staffed. Communicates urgent information to the ERP Director or the Operations Section Coordinator. This position does not replace the DCDC Duty Officer as the single point of contact for non-pandemic communicable disease issues.



DCDC ERP Operations Section

The following positions are recommended to carry out the Operations Section activities during the pandemic response. The branches and groups will expand or contract, as needed, according to principles of the Incident Command System (ICS). Where individual positions, groups, or branches are not staffed, the position above on the organization chart is responsible for all activities.

Surveillance and Epidemiology Branch



Surveillance and Epidemiology Branch Organization Structure

Surveillance & Epidemiology Branch Director: Reports directly to the Operations Section Coordinator. Manages all Branch Activities.

Investigation Group Supervisor: Reports directly to Surveillance & Epidemiology Branch Director. Provides oversight of the following:

Case Follow-up: Retrieves county-submitted Case Report Forms (CRFs) from various sources (FAX, email, CalREDIE, etc.). Checks for case definition criteria and completion of required information, following up with counties as needed.

Contacts Follow-up: Checks reports of contacts and follows up with counties as needed.

Outbreak Follow-up: Retrieves county-submitted reports of outbreaks/clusters from various sources (FAX, email, CalREDIE, etc.) and follows up with counties as needed.

Surveillance/Data Analysis Group Supervisor: Reports directly to Surveillance & Epidemiology Branch Director. Provides oversight of the following:

Data Analysis: Analyzes and prepares reports on:

- Individual cases
- Outbreaks
- Syndromic surveillance data (e.g., sentinel providers, Kaiser Permanente, pharmacy data, etc.),
- Lab data (e.g., sentinel labs, RLN, other sources as available)

Technical Support: Receives, answers, or triages questions from the LHDs. Updates databases and provides database technical support.

Clinical/SME: Responsible for:

- Updates to Case Definition as appropriate
- Development/updates to Epi/Surveillance Guidance documents
- Technical assistance to LHDs
- Collaboration with other branches or stakeholders
- Monitoring of internet for Epi/Surveillance information from CDC and other stakeholders

Border Health: Responsible for:

- Monitoring and analyzing border health data
- Collaboration with border health liaison and other border health partners

Support Group Supervisor: Reports directly to Surveillance & Epidemiology Branch Director. Provides oversight of the following:

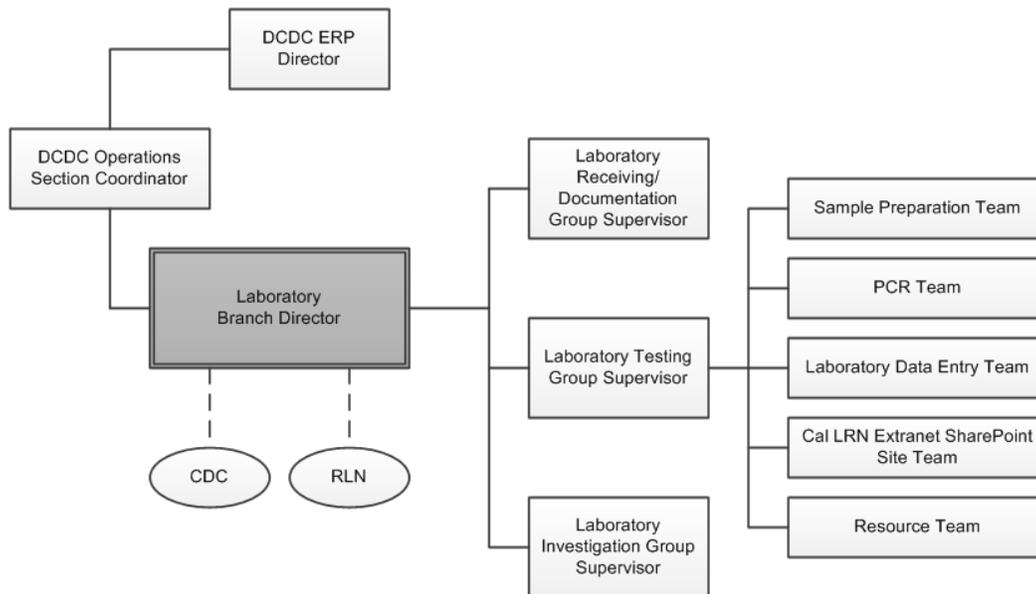
Data Entry: Responsible for entering the following into database:

- County-reported cases
- County-reported case contacts.

- Data from syndromic surveillance sources, sentinel labs, RLNs, etc.

Laboratory Liaison: Responsible for follow-up with VRDL on specimen test results and other lab-related issues.

Laboratory Branch



Laboratory Branch Organization Structure

Laboratory Branch Director: Reports directly to the Operations Section Coordinator. Manages all Branch activities. In coordination with CDC, oversees development, adoption, and/or validation of tests for typing of new strains.

Laboratory Receiving/Documentation Group Supervisor: Located in Laboratory Central Services (LCS), reports directly to Laboratory Branch Director. Responsible for:

- Receipt and logging specimens
- Package safety analysis
- Directing of specimens to appropriate laboratory

Laboratory Testing Group Supervisor: Reports directly to the Laboratory Branch Director. Responsible for:

- Coordination and oversight of all VRDL testing activities
- Supervision of sample processing, PRC testing, and data entry

- Reporting and distribution of lab results
- Oversight of the following:

Sample Preparation Team: Responsible for:

- Examination and preparation of all samples for testing
- Reporting of all non-acceptable samples to the Laboratory Data Entry Team

PCR Team: Responsible for oversight of all PCR testing, including validation studies, quality assurance/quality control, and accurate testing results.

Laboratory Data Entry Team: Responsible for data entry management (sample log in, report generation, report distribution)

Cal LRN Extranet SharePoint Site Team: Ensures current sample tracking information. Posts specimen collection guidance and other laboratory information for VRDL and/or RLN partners.

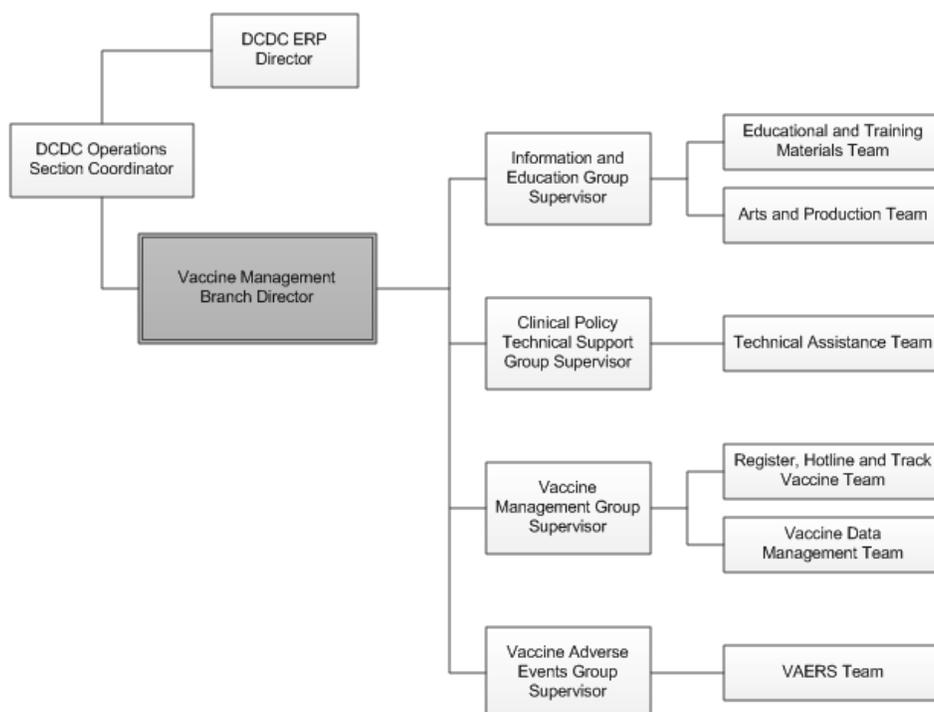
Resource Team: Oversees laboratory resource ordering and tracking. Monitors vendor or Logistics Section testing of reagents.

Laboratory Investigation Group Supervisor: Reports directly to the Laboratory Branch Director. Responsible for:

- Tracing late-reported sample results
- Tracking of lost samples
- Coordinating with the Epi/Surveillance Branch Laboratory Liaison for specimen test results and other lab-related issues
- Reporting, tracking, and mitigating laboratory exposures

This group should include or have access to individuals in LCS and the laboratory.

Vaccine Management Branch



Vaccine Management Branch Organization Structure

Vaccine Management Branch Director: Reports directly to the Operations Section Coordinator. Manages all Branch Activities.

Information and Education Group Supervisor: Reports directly to the Vaccine Branch Director. Provides oversight of the following:

Education and Training Materials Team: Responsible for:

- Development of scientific and technical content for training materials (e.g. vaccine storage capacity, provision of vaccine to children, vaccine administration requirements)
- Development of speaking points and scripts for Pandemic Hotline staff

Arts and Production Team: Creates final products of the materials developed by the Education and Training Materials Team.

Clinical, Policy and Technical Support Group Supervisor: Reports directly to the Vaccine Branch Director. Represents CDPH on a vaccine task force (CDC, LHDs, vaccine manufacturers and healthcare providers) to develop a vaccine allocation and distribution plan for California. Remains available as a SME for vaccine and antiviral clinical guidance. Provides oversight of the following:

Technical Assistance Team: Provides guidance to LHDs regarding vaccine issues (e.g., administration, vaccination schedules, vaccine compatibility); participates in LHD technical calls.

Vaccine Management Group Supervisor: Reports directly to the Vaccine Management Branch Director. Provides oversight of the following:

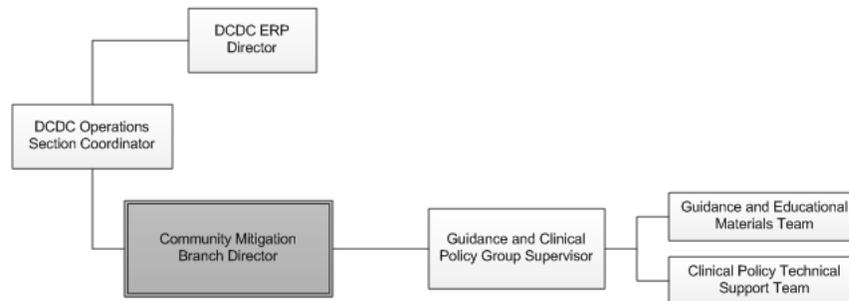
Register, Hotline and Track Team: Responsible for registering and tracking health care providers who receive vaccine; answers Pandemic Hotline.

Vaccine Data Management Team: Responsible for entering and analyzing vaccine data.

Vaccine Adverse Events Group Supervisor: Reports directly to the Vaccine Branch Director. Provides oversight of the following:

VAERS Team: Analyzes California vaccine adverse events data from local health providers and the national VAERS database.

Community Mitigation Branch



Community Mitigation Branch Organization Structure

Community Mitigation Branch Director: Reports directly to DCDC Operations Coordinator. Manages all Branch Activities.

Guidance and Clinical Policy Group Supervisor: Reports directly to the Community Mitigation Branch Director. Oversees the writing and peer review of guidance and clinical policy documents. Provides oversight of the following:

Guidance Development and Educational Materials Team: Prepares fact sheets, hotline scripts, public messages, and general guidance documents.

Clinical Policy and Technical Support Team: Prepares clinical guidance for vaccine and antiviral dispensing.

Appendix K – Acronyms

AAFP	American Academy of Family Physicians
AAP	American Academy of Pediatrics
AAR	After Action Report
ACOG	American Congress of Obstetricians & Gynecologists
AERS	(Food & Drug Administration) Adverse Event Reporting System
AHDRA	Aggregate Hospitalization & Death Reporting System
AMA	American Medical Association
BIDS	Border Infectious Disease Surveillance
CalEMA	California Emergency Management Agency
CCR	California Code of Regulations
CAHAN	California Health Alert Network
CalEMA	California Emergency Management Agency
CalREDIE	California Reportable Disease Information Exchange
CDPH	California Department of Public Health
CDC	Centers for Disease Control & Prevention
CID	Center for Infectious Disease
COBBH	California Office of Binational Border Health
COOP	Continuity of Operations Plan
CRF	Case Report Forms
DCDC	Division of Communicable Disease Control
DFA	Direct Fluorescent Antibody
DHHS	Department of Health & Human Services
DHS	Department of Homeland Security
EIP	Emerging Infections Program
EOM	Emergency Operations Manual
EORP	Emergency Operations Response Plan
EPO	Emergency Preparedness Office
EPSU	Emergency Pharmaceutical Services Unit
ERP	Emergency Response Program
EWIDS	Early Warning Infectious Disease Surveillance
FAERS	Food & Drug Administration Adverse Event Reporting System
FluSurvNet	Influenza Hospitalization Network
GISN	Global Influenza Surveillance Network
ICS	Incident Command System
ICU	Intensive Care Unit
IFA	Indirect Fluorescent Antibody
ILI	Influenza Like Illness
ILINET	ILI Surveillance Network
IP	Improvement Plan
IZB	Immunization Branch
JDPC	Joint Disaster Policy Council
JIC	Joint Information System
LCS	Laboratory Central Services
LHD	Local Health Department
LHO	Local Health Officer
LPHL	Local Public Health Laboratory

MCM	Medical Countermeasures
MHCC	Medical Health Coordination Center
NIC	National Influenza Centers
NIMS	National Information Management System
NPI	Non Pharmaceutical Intervention
NREVSS	National Respiratory and Enteric Virus Surveillance System
OA	Office of AIDS
OES	(Governor's) Office of Emergency Services
OPA	Office of Public Affairs
PCR	Polymerase Chain Reaction
PIOP	Pandemic Influenza Operations Plan
PIO	Public Information Officer
PPE	Personal Protective Equipment
PSI	Pandemic Severity Index
RCCC	Richmond Campus Coordination Center
RIDT	Rapid Influenza Diagnostic Test
RLN	Respiratory Laboratory Network
RT-PCR	Reverse Transcription-Polymerase Chain Reaction
SEMS	Standardized Emergency Management System
SEP	State Emergency Plan
SME	Subject Matter Expert
SNS	Strategic National Stockpile
USDHHS	U.S. Department of Health & Human Services
USG	U.S. Government
VAERS	Vaccine Adverse Event Reporting System
VRDL	Viral & Rickettsial Disease Laboratory
WHO	World Health Organization

