

Pandemic Influenza Tabletop Exercise

*California Department of Health Services
Division of Communicable Disease Control*

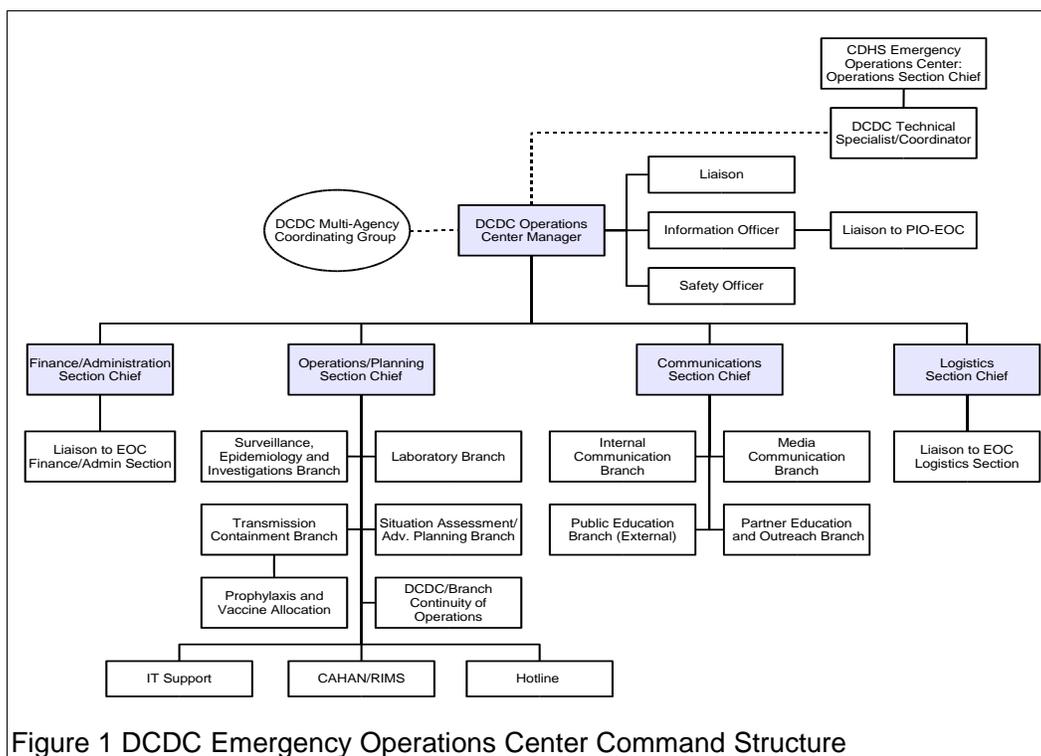


Figure 1 DCDC Emergency Operations Center Command Structure

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1 Tabletop schedule

- 10:00am – 10:15am Introductions and orientation [15 min]
Howard Backer, MD, MPH (Moderator)
Tomás Aragón, MD, DrPH
- 10:15am – 10:30am Pandemic influenza: The inevitable threat [15 min]
Janice Louie, MD, MPH
- 10:30am – 10:50am DCDC State of the Pandemic Influenza Response Plan [20 min]
Trevor Shoemaker, MPH
- 10:50am – 11:10am DHS Emergency Response Plan [20 min] (EPO Representative)
- 11:10am – 11:25am BREAK
- 11:25am – 11:55am Scenario A and problem solving [30 min]
- 11:55am – 12:40pm Lunch [45 min]
- 12:40pm – 01:00pm Scenario B and problem solving [20 min]
- 01:00pm – 01:20pm Scenario C and problem solving [20 min]
- 01:20pm – 01:40pm Scenario D and problem solving [20 min]
- 01:40pm – 02:00pm Debriefing and next steps [20 min]
Cindy Lambdin, RN, MS

2 Pre-tabletop instructions

This tabletop exercise is based on a fictitious account of a plausible outbreak of pandemic influenza. The scenarios were constructed to facilitate problem solving and to provoke honest thinking about gaps and vulnerabilities, and were not intended to reflect negatively on how a real person, department, or agency may or may not respond in a real outbreak.

- 1 Please review this document *before* the exercise¹.
- 2 If you are a tabletop **participant**, be prepared to respond or co-respond on how your program can or will contribute to a coordinated pandemic influenza public health emergency response (detection, investigation, response, and recovery). To prepare, review the Scenario, Problem Statements, and DCDC Emergency Operations Center Command Structure (Appendix A, p. 22).
- 3 If you are an tabletop **observer**, please take notes on high-priority gap and vulnerabilities that you have identified and that should be addressed in the Pandemic Influenza Response Plan.

¹ You can send any comments or questions to Dr. Tomás Aragón at aragon@berkeley.edu.

3 Needs assessment and scope

Pandemic influenza poses an imminent threat to the international community. Currently, H5N1 avian influenza is now endemic in wild birds with persistent transmission to poultry and then humans, resulting in a high case fatality risk (>60%). If the H5N1 influenza virus evolves to become human-to-human transmissible and sustainable, pandemic influenza becomes very likely. If the transmission dynamics of H5N1 pandemic influenza were to be similar to the 1918 pandemic influenza (average number of secondary cases = 2, and case fatality risk = 1-2%), the impact on California could be catastrophic. California is home to over 36,000,000 residents. If between 15% to 35% of California inhabitants develop influenza from a pandemic strain, in one season, there would be between 5.4 and 12.6 million influenza cases, and between 54,000 to 252,000 deaths. Over one million cases would require hospitalization.

di sease. ri sk	infl uenza. cases	1% deaths	2% deaths
0. 15	5, 400, 000	54, 000	108, 000
0. 25	9, 000, 000	90, 000	180, 000
0. 35	12, 600, 000	126, 000	252, 000

The California Department of Health Services (DHS), Division of Communicable Disease Control (DCDC) will have primary responsibility in developing and leading the DHS response to pandemic influenza in California. The DCDC Immunization Branch is leading in developing the Pandemic Influenza Response Plan; however, implementation of this response plan will require participation of all DCDC Branches as part of a broader Standard Emergency Management System (SEMS) response. The challenges of responding to pandemic influenza will be enormous.

In order to improve coordination and collaboration between DCDC Branches in preparing for pandemic influenza, and to better understand how the DCDC response will fit into the broader DHS emergency response (EPO, OPA), DCDC Immunization Branch is convening a problem-solving tabletop with the assistance of the UC Berkeley Center for Infectious Disease Preparedness.

3.1 Agencies and personnel

- Division of Communicable Disease Control Branches
 - Immunization Branch
 - Infectious Diseases Branch
 - Tuberculosis Control Branch
 - Sexually Transmitted Disease Control Branch
 - Viral and Rickettsial Disease Laboratory (VRDL)
- Emergency Preparedness Office (EPO)

- Office of Public Affairs (OPA)

Table 1 Tabletop participants and observers

<i>Affiliation</i>	<i>Participants</i>	<i>Email</i>
Immunization Branch	Janice Louie Lisa Benton Kate Cummings Trevor Shoemaker Howard Backer Celia Woodfill Rob Schechter Mike Ciarelo Erica Boston Mara Torres Janet Yuen Nisha Gandhi Nora Madrigal Norman Jackson Kerdlyn Henry Myan Nguyen	JLouie@dhs.ca.gov LBenton@dhs.ca.gov KCumming@dhs.ca.gov TShoemak@dhs.ca.gov HBacker@dhs.ca.gov CWoodfil@dhs.ca.gov RSchecht@dhs.ca.gov MCiraolo@dhs.ca.gov EBoston@dhs.ca.gov MTorres@dhs.ca.gov JYuen@dhs.ca.gov NGandhi@dhs.ca.gov NMadrig1@dhs.ca.gov NJackson@dhs.ca.gov KHenry@dhs.ca.gov MNguyen@dhs.ca.gov
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4 Statement of purpose

The purpose of the Pandemic Influenza Tabletop Exercise is to improve the CDHS Division of Communicable Disease Control's planning, preparation, and readiness to detect, investigate, and respond to pandemic influenza by

- 1 Supporting the development of a SEMS-based functional DCDC pandemic influenza response plan;
- 2 Clarifying state response system;
- 3 Clarifying roles, responsibilities, and expectations of DCDC Branches in responding to pandemic influenza;
- 4 Promoting participation, collaboration, and coordination by DCDC Branches in implementing a SEMS-based response;
- 5 Testing components of this pandemic influenza response plan, and identifying gaps and vulnerabilities; and
- 6 Ensuring that response plans are adequate to achieve goals.

5 Tabletop objectives

The objectives for this tabletop are the following:

- 1 Orient DCDC participants and DHS partners to the draft DCDC Pandemic Influenza Response Plan and functional roles and responsibilities;
- 2 Establish consensus on process for establishing and maintaining command, communication, and control;
- 3 Identify how key response measures will be implemented by DCDC;
- 4 Identify gaps and vulnerabilities in DCDC pandemic influenza preparedness and make specific recommendations for plan revisions;
- 5 Identify readiness assessments and training needs;
- 6 Promote inter-program collaboration and coordination;
- 7 Enlist commitment from DCDC Branches to test components of emergency operations plans during the conduct of routine disease control activities; and
- 8 Encourage participants to promote emergency response planning within their own program.

6 Scenarios: Background

6.1 Background (as of April 1, 2005)²

Influenza pandemics have occurred every 10 to 60 years, with three occurring in the twentieth century (1918, 1957-1958, and 1967-1968). Influenza pandemics occur when there is a notable genetic change (termed genetic shift) in the circulating strain of influenza. Because of this genetic shift, a large portion of the human population is entirely vulnerable to infection from the new pandemic strain.

Outbreaks of highly pathogenic avian influenza A (H5N1) occurred among poultry in 8 countries in Asia (Cambodia, China, Indonesia, Japan, Lao, South Korea, Thailand and Vietnam) during late 2003 and early 2004. At that time, more than 100 million birds either died from the disease or were culled.

From December 30, 2003 to March 17, 2004, 12 confirmed human cases of avian influenza A (H5N1) were reported in Thailand and 23 in Vietnam, resulting in a total of 23 deaths.

By late February, however, the number of new human H5 cases being reported in Thailand and Vietnam slowed and then stopped. Within a month, countries in Asia were reporting that the avian influenza outbreak among poultry had been contained. No conclusive evidence of sustained human-to-human transmission was found.

6.2 Recent Developments

Beginning in late June 2004, however, new lethal outbreaks of avian influenza A (H5N1) infection among poultry were reported by several countries in Asia: Cambodia, China, Indonesia, Malaysia (first-time reports), Thailand and Vietnam. In late March 2005, state media in the Democratic People's Republic of Korea (North Korea) officially reported the country's first outbreak of avian influenza in poultry. There has not been a resurgence of avian influenza in South Korea and Japan, and the outbreaks are reported to have been controlled in those countries. It is unknown to what extent H5N1 outbreaks in the other countries may be ongoing. For more information about outbreaks in poultry, visit the World Organization for Animal Health website (<http://www.oie.int/>).

During August to October 2004, sporadic human cases of H5N1 were reported in Vietnam and Thailand. Of particular note is one isolated instance of probable limited human-to-human transmission occurring in Thailand in September 2004. Since December 2004, a resurgence of poultry outbreaks and human cases have been reported in Vietnam. On February 2, 2005, the first human case of avian influenza A H5 infection from Cambodia was reported.

² Adapted from Recent Avian Influenza Outbreaks in Asia, February 17, 2005, Available at <http://www.cdc.gov/flu/avian/outbreaks/asia.htm>; Accessed March 1, 2005

As of March 31, 2005, there have been 74 human cases of avian influenza A (H5N1) in Vietnam (55), Thailand (17), and Cambodia (2) resulting in 49 deaths. For more information about H5N1 infections in humans, visit the World Health Organization (WHO) website (<http://www.who.int/en/>).

6.3 Assessment of Current Situation

The avian influenza A (H5N1) epizootic outbreak in Asia is not expected to diminish significantly in the short term. It is likely that H5N1 infection among birds has become endemic to the region and that human infections will continue to occur. So far, no sustained human-to-human transmission of the H5N1 virus has been identified, and no evidence for genetic reassortment between human and avian influenza virus genes has been found; however, the epizootic outbreak in Asia poses an important public health threat.

If these H5N1 viruses gain the ability for efficient and sustained transmission between humans, there is little preexisting natural immunity to H5N1 infection in the human population, and an influenza pandemic could result, with high rates of illness and death. In addition, genetic sequencing of influenza A (H5N1) virus samples from human cases in Vietnam and Thailand shows resistance to the antiviral medications amantadine and rimantadine, two of the medications commonly used for treatment of influenza. This would leave two remaining antiviral medications (oseltamivir and zanamivir) that should still be effective against currently circulating strains of H5N1 virus. Efforts to produce a vaccine that would be effective against this strain of influenza A (H5N1) virus are under way. Vaccine reference virus strains already have been made and provided to manufacturers to produce pilot lots for human clinical trials as well as to produce a larger quantity of H5N1 vaccine, but mass production and availability of such a vaccine is some time off.

Recent research findings give further cause for concern. New research suggests that currently circulating strains of H5 viruses are becoming more capable of causing disease (pathogenic) for mammals than earlier H5 viruses and are becoming more widespread in birds in the region. One study found that ducks infected with H5N1 are now shedding more virus for longer periods of time without showing any symptoms of illness. This has implications for the role of ducks in transmitting disease to other birds and possibly to humans as well. Additionally, other findings have documented H5 infection among pigs in China and H5 infection in felines (experimental infection in housecats in the Netherlands and isolation of H5N1 viruses from infected tigers and leopards in Thailand), suggesting that cats could host or transmit the infection. These findings are particularly worrisome in light of the fact that reassortment of avian influenza genomes is most likely to occur when these viruses demonstrate a capacity to infect multiple species, as is now the case in Asia.

Notable findings of epidemiological investigations of human H5N1 cases in Vietnam during 2005 have suggested transmission of H5N1 viruses to two persons through

consumption of uncooked duck blood. Possible person-to-person transmission of H5N1 viruses is being investigated in several clusters of cases in Vietnam.

One atypical fatal case of encephalitis in a child in southern Vietnam in 2004 was identified retrospectively as H5N1 influenza through testing of cerebrospinal fluid, fecal matter, and throat and serum samples. Further research is needed to ascertain the implications of such findings.

7 Scenarios: Instructions

Please review the following instructions

- 1 This is a problem-solving tabletop exercise. This is not a test.
- 2 Be prepared to respond to problem statements in a constructive, collaborative manner from the perspective of the program you represent.
- 3 Identify high-priority gaps and vulnerabilities that should be addressed in the plan. Please write these down; your input will be collected and incorporated into the plan.
- 4 Your answers should be concise. There will not be enough time to flesh out all the details.

8 Scenario A:

8.1 Narrative

On Friday, April 1, 2005, reports continue appearing on ProMed Mail (<http://www.promedmail.org>) of outbreaks of severe respiratory infections in Vietnam among persons with no history of contacts to poultry. The World Health Organization dispatches a local team to investigate the outbreaks. On Sunday, April 3rd, the Centers for Disease Control and Prevention (CDC) issue a Health Advisory to state health officials to implement enhanced passive surveillance for acute respiratory syndromes consistent severe acute respiratory syndrome (SARS) and to include testing for influenza A virus.

8.2 Problem statements

8.2.1 Command and control

- 1 Who needs to be notified at this point?
- 2 What coordinating group needs to be assembled? (What group of DCDC managers meets (or will be meeting) on a regular basis to address emerging infectious disease issues and threats such as influenza?)
- 3 How would involved DCDC Branches communicate, coordinate, and collaborate to implement this CDC advisory?
- 4 What is the role of EPO at this point?
- 5 What is the role of other programs at this point?

8.2.2 Operations/Planning Section functions

Surveillance, Epidemiology, and Investigations Branch functions

(Case definition, screening criteria, reporting guidelines; Active case finding, passive case finding strategies; Data collection instruments/report forms; Statistical analysis; Epidemiological investigation)

- 6 What DCDC Branches implement enhance passive surveillance for possible SARS and pandemic influenza?
- 7 How will this coordination look like?

Transmission Containment Branch functions

(Diagnosis, treatment, prophylaxis group; Case & contact investigation, management, and monitoring; Infection control; Isolation and quarantine; Prophylactic vaccine and antivirals strategy; Animal and vector control)

- 8 Who is in charge of infection control and hospital guidelines at this point?
(assessment, review evidence, preparing guidelines)

Laboratory Branch functions

- 9 What is the role of Lab Branch in implementing the CDC Advisory?

Situation Assessment/Advance Planning Branch functions

- 10 Who will be fulfilling planning/intelligence functions at this point?

8.2.3 Communications Section functions

(Internal communications (DHS and others); Partner communications (local health agencies, hospitals, infection control professionals); Public communications)

- 11 How do DCDC Branch leadership communicate after hours and weekends?
12 How will internal communications be conducted at this point?
13 How will communications to local health agencies be conducted?
14 How will decisions be made on content creation, approval, and dissemination?
15 Who is in charge of non-medical containment measures at this point (assessment, preparing public messages)?

8.2.4 Logistics Section functions

- 16 Who is in charge of vaccine logistics and antivirals? (delivery, transport, distribution)

8.2.5 Miscellaneous

- 17 Do DCDC leadership and/or staff meet on a regular basis to communicate, coordinate, or collaborate on communicable disease control activities?

8.2.6 Notes

9 Scenario B:

9.1 Narrative

On Wednesday, April 6th, WHO confirms that outbreaks of H5N1 human-to-human influenza occurring in Southeast Asia. Of patients presenting to health care facilities, about 1/3 of them are hospitalized for a severe respiratory illness, 1/3 of these develop respiratory failure, and 1/3 of these die. The overall mortality rate appears to be about 5%. No apparent cases have been reported outside of Asia. Drs. Howard Backer and Janice Louie of the DCDC-Immunization Branch meet and decide to convene a DCDC management team to decide next steps. Introduction of H5N1 influenza into the United States appears imminent.

9.2 Problem statements

9.2.1 Command and control

- 1 Describe how this happens?
- 2 Who has the authority to convene DCDC Branches?
- 3 Who should be on this DCDC management team? Where will they meet?
- 4 What steps need to be taken (and by whom) to prepare for activation of the Pandemic Influenza Response Plan?
- 5 If the previously assigned DCDC commander is not available who is the alternate? If there is no alternate, how is one selected?
- 6 You are the management team. Review DCDC Emergency Operations Center Command Structure (Appendix A, p. 22). How and when should these functional roles be filled?
- 7 Should selected DCDC Branches have primary responsibility for selected response activities? For example, TB Control staff leading and training others to conduct contact investigations.

9.2.2 Operations/Planning Section functions

Surveillance, Epidemiology, and Investigations Branch³ functions

(Case definition, screening criteria, reporting guidelines; Active case finding, passive case finding strategies; Data collection instruments/report forms; Statistical analysis; Epidemiological investigation)

- 8 Who⁴ would be in charge of the Surveillance, Epidemiology, and Investigations

3 “Branch” in this context refer to incident command system terminology.

4 “Who” refers to role and/or program, and not necessarily a specific person.

Branch? Who is the alternate? How will this role be selected?

- 9 How many DCDC epidemiologists are available for participation in surveillance and epidemiological activities? How many non-DCDC epidemiologists are available to assist?
- 10 What database and information management challenges need to be addressed to support surveillance, investigative, and response activities?
- 11 What “just-in-time” surveillance and epidemiology training is available to incoming staff?
- 12 What are the major challenges in implementing a pandemic influenza surveillance and investigation response? What current gaps and vulnerabilities exist today? How can they be addressed?

Transmission Containment Branch functions

(Diagnosis, treatment, prophylaxis group; Case & contact investigation, management, and monitoring; Infection control; Isolation and quarantine; Prophylactic vaccine and antivirals strategy; Animal and vector control)

- 13 Who would be in charge of the Transmission Containment Branch? Who is the alternate? How will this role be selected?
- 14 How many DCDC physicians are available for participation in diagnosis, treatment, prophylaxis group? How many non-DCDC physicians are available to assist?

Laboratory Branch functions

- 15 Who would be in charge of the Laboratory Branch? Who is the alternate? How will this role be selected?
- 16 What is the VRDL influenza virus testing capacity?
- 17 If key staff become sick, what plan is in place to continue testing?

Situation Assessment/Advance Planning Branch functions

- 18 Who would be in charge of the Planning Branch? Who is the alternate? How will this role be selected?
- 19 What should be the priorities of the Planning Branch at this point?

9.2.3 Communications Section functions

(Internal communications (DHS and others); Partner communications (local health agencies, hospitals, infection control professionals); Public communications)

- 20 Who would be in charge of the Communications Section? Who is the alternate?

How will this role be selected?

9.2.4 Logistics Section functions

- 21 Who would be in charge of the Logistics Section? Who is the alternate? How will this role be selected?
- 22 What vaccine and/or anti-viral activities need to take place now?

9.2.5 Notes

10 Scenario C:

10.1 Narrative

It is now Friday, April 8th. Suspect cases have been identified in New York City, Texas, and Washington state. No cases have been reported in California (yet). No vaccine will be available for at least 6 months. WHO is reporting numerous confirmed outbreaks of severe influenza in Asia. There are numerous Press requests for interviews with state and local public health officials. Local health departments are requesting guidelines regarding control and use of antivirals.

10.2 Problem statements

10.2.1 Command and control

- 1 The Press asks, is the state of California prepared for pandemic influenza?

10.2.2 Operations/Planning Section functions

Surveillance, Epidemiology, and Investigations Branch functions

(Case definition, screening criteria, reporting guidelines; Active case finding, passive case finding strategies; Data collection instruments/report forms; Statistical analysis; Epidemiological investigation)

- 2 How will data from local health departments be managed and analyzed?
- 3 What “just in time” training do you have available for epidemiologists not familiar with communicable diseases?

Transmission Containment Branch functions

(Diagnosis, treatment, prophylaxis group; Case & contact investigation, management, and monitoring; Infection control; Isolation and quarantine; Prophylactic vaccine and antivirals strategy group; Animal and vector control)

- 4 Please assign members to the Diagnosis, Treatment, Prophylaxis Group. What key issues do they need to anticipate and address now?
- 5 Please assign members to the Isolation and Quarantine Group. What key issues do they need to anticipate and address now?
- 6 Please assign members to the Prophylactic Vaccine and Antivirals Strategy Group. What key issues do they need to anticipate and address now?

Laboratory Branch functions

- 7 Local health departments want to know if there are specific specimen collection protocols for H5N1 influenza?

8 Local public health labs want to know if about lab protocols for handling these specimens.

9 What is the role of local labs at this point?

Situation Assessment/Advance Planning Branch functions

10 What should be the priorities of the Planning Branch at this point?

10.2.3 Communications Section functions

(Internal communications (DHS and others); Partner communications (local health agencies, hospitals, infection control professionals); Public communications)

11 How will tactical information flow work?

12 How will requests for resources be processed, communicated, and tracked?

13 Since all practicing physicians are licensed by the state (California Medical Board), the Press wants to know how DHS communicates to physicians about pandemic influenza?

14 What pre-prepared messages do we need for partners and public?

10.2.4 Logistics Section functions

15 What should be the priorities of the Logistics Section at this point?

10.2.5 Notes

11 Scenario D:

11.1 Narrative

It is now Sunday, April 11th. The DHS Duty Officer of the Day receives calls from Los Angeles and San Francisco about severe pneumonia in patients that recently traveled to Asia. Two cases are hospitalized in Los Angeles County Medical Center and two cases are hospitalized at San Francisco General Hospital. The SFGH medical residents reports that these patients were contacts to family members that died with a similar illness last week. On Monday morning, San Francisco Public Health, under activation of their Infectious Disease Emergency Response Plan, dispatch TB Control Investigators to assess close contacts and identify and isolate cases. By Monday afternoon, Santa Clara County reports a case severe pneumonia in a previously health young adult.

11.2 Problem statements

11.2.1 Command and control

- 1 Who will be the DCDC technical specialist/coordinator assigned to the departmental EOC in Sacramento?
- 2 How is DHS coordinating activities with Federal partners under SEMS?

11.2.2 Operations/Planning Section functions

Surveillance, Epidemiology, and Investigations Branch functions

(Case definition, screening criteria, reporting guidelines; Active case finding, passive case finding strategies; Data collection instruments/report forms; Statistical analysis; Epidemiological investigation)

- 3 How are evolving surveillance guidelines (e.g., case definitions) being coordinated with and communicated to local health departments?

Transmission Containment Branch functions

(Diagnosis, treatment, prophylaxis group; Case & contact investigation, management, and monitoring; Infection control; Isolation and quarantine; Prophylactic vaccine and antivirals strategy; Animal and vector control)

- 4 What is the scope and limitations of county health officer authority to isolate suspected cases and quarantine close contacts?
- 5 Who at DHS reviews and addresses questions on legal authorities?

Laboratory Branch functions

- 6 Is there a plan to augment local supplies of rapid influenza A testing?

Situation Assessment/Advance Planning Branch functions

7 What should be the priorities of the Planning Branch at this point?

11.2.3 Communications Section functions

(Internal communications (DHS and others); Partner communications (local health agencies, hospitals, infection control professionals); Public communications)

8 Should there be a Call Center and who is the target population? Who will staff the Call Center? How will they be trained?

9 What non-medical containment measures need to be assessed, developed, and disseminated?

11.2.4 Logistics Section functions

10 What should be the priorities of the Logistics Section at this point?

11.2.5 Notes

12 Scenario E: (optional – time permitting)

12.1 Narrative

It is now mid-July, and emergency departments are overwhelmed with patients with influenza. Hospital intensive care units are short of beds. About 1/3 of hospital staff are not coming to work because of illness or fear of getting infected. Twenty percent of health department staff, including DHS staff, are not reporting to work because of illness. The DCDC command is diverting all available to work on pandemic influenza control. The CDC reports that 100,000 H5N1 vaccine doses will be available in October for California. Two doses are required to confer immunity. Because of staff diversions and shortages, DCDC TB and STD Control Branches have been suspended non essential activities. Likewise, MDL and VRDL have suspended non-essential laboratory services due to severe staff shortages. The Governor's office is requesting a copy of the vaccine distribution plan to review who will be vaccinated first. Pharmacies are reporting no availability of antiviral medications.

12.2 Problem statements

12.2.1 Command and control

- 1 What are the implications of an official state of emergency?
- 2 Who is in charge now?

12.2.2 Operations/Planning Section functions

Surveillance, Epidemiology, and Investigations Branch functions

(Case definition, screening criteria, reporting guidelines; Active case finding, passive case finding strategies; Data collection instruments/report forms; Statistical analysis; Epidemiological investigation)

- 3 How will Continuity of Operations be achieved for all DCDC Branches that are also participating in pandemic influenza response?

Transmission Containment Branch functions

(Diagnosis, treatment, prophylaxis group; Case & contact investigation, management, and monitoring; Infection control; Isolation and quarantine; Prophylactic vaccine and antivirals strategy; Animal and vector control)

- 4 How will vaccine priority groups be finalized and implemented?
- 5 What is the role of hospital licensing and certification?

Laboratory Branch functions

- 6 What “just in time” lab training is available to rapidly train replacement staff in order to continue operations?

Situation Assessment/Advance Planning Branch functions

7

12.2.3 Communications Section functions

(Internal communications (DHS and others); Partner communications (local health agencies, hospitals, infection control professionals); Public communications)

- 8 What “just in time” lab training is available to rapidly train replacement staff in order to continue operations?
- 9 How do you explain to stakeholders, partners, and public the rationale for determining vaccination priority groups.
- 10 What communications channels have been established to reach special populations, public health and medical professionals, and other target populations?

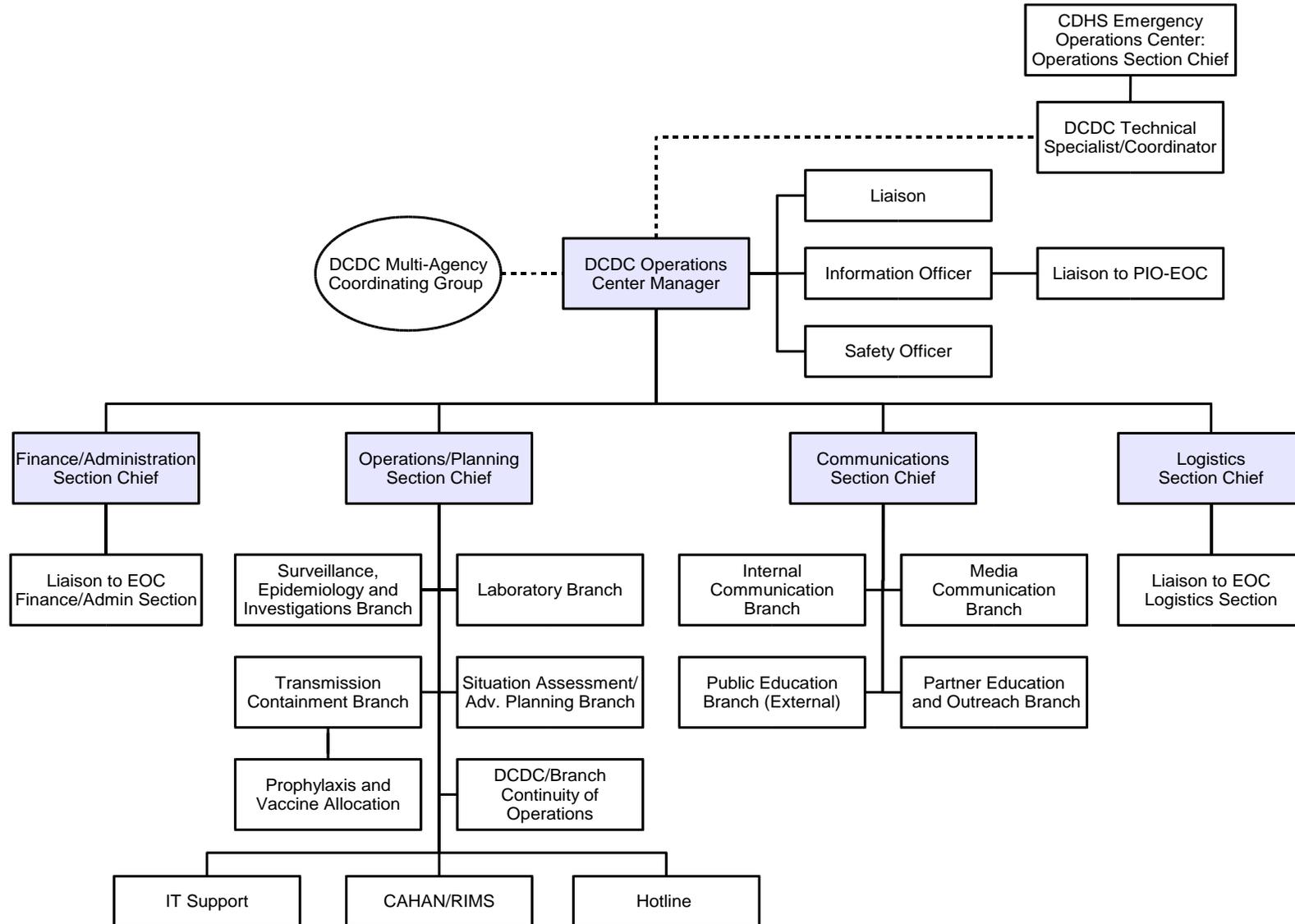
12.2.4 Logistics

12.2.5 Notes

13 References

- 1 State of California Pandemic Influenza Plan,
<http://www.dhs.ca.gov/ps/dcdc/izgroup/pdf/pandemic.pdf>
- 2 United States Pandemic Influenza Response and Preparedness Plan ,
<http://www.hhs.gov/nvpo/pandemicplan/>
- 3 Influenza Pandemic Preparedness State Plans,
<http://www.cste.org/specialprojects/Influenza%20Pandemic%20State%20Plans/Influenza%20Pandemic%20Preparedness%20State%20Plans.htm>
- 4 World Health Organization (WHO) Pandemic preparedness
<http://www.who.int/csr/disease/influenza/pandemic/en/>
- 5 Public Health Guidance for Community-Level Preparedness and Response to Severe Acute Respiratory Syndrome (SARS),
<http://www.cdc.gov/ncidod/sars/guidance/index.htm>
- 6 National Vaccine Program Office Pandemic Influenza Web Page
<http://www.dhhs.gov/nvpo/pandemics/>

Appendix A DCDC Emergency Operations Center Command Structure



Appendix B Goals overview

Section	Phase 1 Goals	Phase 2 & 3 Goals
OPERATIONS/PLANNING SECTION		
Surveillance, Epidemiology, and investigations Branch	<ul style="list-style-type: none"> • Detect entry of the novel virus in the U.S. • Be prepared for first case to appear and be able to contain further spread 	<ul style="list-style-type: none"> • To identify first pandemic strain in a California community/so that containment measures can be initiated • Monitor epidemiology and impact of novel virus infection, including measuring • Coordinate epidemiological investigations and provide support to LHDs • Monitor morbidity and mortality in all populations and defining who is at risk (age, SES, ethnicity, underlying medical conditions, geographic location) • Establish regular and frequent communication with CDC • Establish and regular and frequent communication with LHDs and other stakeholders
Transmission Containment Branch	<ul style="list-style-type: none"> • Implement screening and treatment guidelines and protect themselves • Finalize vaccine strategy approach mechanisms • Contain transmission from first case • Communicate strategy 	<ul style="list-style-type: none"> • Minimize further spread of novel virus from confirmed cases • Minimize severe illness and death due to the novel virus • Maintain social order/essential services • Continue to minimize further spread of novel virus from confirmed cases • Continue to minimize severe illness and death due to the novel virus • Continue to maintain social order/essential services
Laboratory Branch		
Situation Assessment/Advance Planning Branch	<ul style="list-style-type: none"> • Set priorities for next steps of pandemic response (draft incident action plans) • Anticipate internal policy needs and provide support (data, materials, guidance) • Ensure communications between all levels of response is established and maintained 	<ul style="list-style-type: none"> • Set priorities for next steps of pandemic response (draft incident action plans) • Anticipate internal policy needs and provide support (data, materials, guidance) • Ensure communications between all levels of response is established and maintained
COMMUNICATIONS SECTION	<ul style="list-style-type: none"> • Communicate effectively with the public and with partners. • Ensure optimal coordination, decision-making and communication between IZ Branch, state agencies, and local levels. • Minimize panic and ensure that the public takes appropriate action to protect themselves 	<ul style="list-style-type: none"> • Communicate effectively with the public and with partners. • Ensure optimal coordination, decision-making and communication between IZ Branch, state agencies, and local levels. • Minimize panic and ensure that the public takes appropriate action to protect themselves
LOGISTICS SECTION	<ul style="list-style-type: none"> • Insure overall preparedness of logistics section for a possible outbreak 	<ul style="list-style-type: none"> • Deliver or provide for delivery of the personnel and materiel to support needs of the Operations, Finance, and Planning sections.

14 DCDC EOC Command Structure in more detail (DRAFT)

14.1 Operations/Planning Section

- Surveillance, Epidemiology, and Investigations Branch
 - Case definition, screening criteria, reporting guidelines
 - Case finding (active and passive) strategies
 - Data collection instruments
 - Data entry / management
 - Statistical analysis
 - Reports for gov, JEOC, etc.
 - Epidemiologic investigations to assess source, at risk populations
 - Field-based assessment teams
 - IT/IS support
- Transmission Containment Branch
 - Diagnosis and treatment guidelines Group
 - Case/Contact investigation/Management/Monitoring Group
 - Infection control
 - Facility-based
 - Community-based
 - Animal/vector control
 - Isolation/quarantine
 - Prophylaxis guidelines
 - Vaccine strategy (handling & allocation)
 - Anti-viral strategy (handling & allocation)
- Laboratory Branch
 - Specimen receiving/coordination
 - VRDL
 - Isolation
 - PCR
 - Serology

- Interpretation/Reports to CDHS/LHDs
- Technical guidance
 - Specimen collection guidelines
 - Analysis of results from VRDL/Local PH labs
 - Revised testing protocols
 - Technical assistance to local PH labs
- MDL
- Communication Liaison
 - Media
 - Public education
 - External outreach
 - Translation support
 - Communication channels
 - Internal communications
 - Evaluation
 - Information processing
- Continuity of DCDC operations

14.2 Planning Section

14.3 Logistics Section

- Fulfillment coordinator
- Personnel coordinator
 - Occupational health and safety
- Sourcing and procuring
- Shipping and warehousing
- Transportation coordinator
- Customer receiving
- Security coordinator
- Facilities coordinator
- Communication and IT coordinator

15 Appendix C Pandemic Influenza Response Goals and Objectives

15.1 Phase I:

15.1.1 Operations/Planning Section

Surveillance and Investigations Branch

Goals:

- 1 Detect entry of the novel virus in the U.S.
- 2 Be prepared for first case to appear and be able to contain further spread

Objectives:

- 1 Case definition, screening criteria, reporting guidelines:
 - 1.1 Obtain current case definition from WHO
 - 1.2 Review current influenza epidemiology in Asia
 - 1.3 Develop draft infection control guidelines
 - 1.4 Review initial situation assessment of what's happening in Asia
 - 1.5 Revise and prepare draft of reporting guidelines for LHDs, Hospitals,
 - 1.5.1 Press Release, CD Brief, BT Update
- 2 Active case finding, passive case finding strategies
 - 2.1 Review current influenza epidemiology in Asia
 - 2.2 Review current epidemiological investigation strategies from WHO/CDC reports
 - 2.3 Determine if active/passive case finding strategies are effective and feasible given current situation
 - 2.4 Revise and prepare draft of case finding guidelines for DHS, LHDs
- 3 Data collection instruments/report forms
 - 3.1 Review and revise current forms to account for current epidemiology and case definition
 - 3.2 Review current data entry plan and ensure adequate personnel and equipment
 - 3.3 Revise database to match current variables
 - 3.4 Test database and generate summary reports

- 4 Statistical analysis
 - 4.1 Review and revise analysis tools/programs/code based on current data entry and collection strategy
 - 4.2 Meet with data entry and epidemiological team to ascertain which analysis will be of priority during first few cases and/or onset of pandemic
 - 4.3 Review current analysis plan and ensure adequate personnel and equipment
- 5 Epidemiological investigation
 - 5.1 Review current WHO/CDC epidemiological investigation techniques for cases occurring in Asia
 - 5.2 Develop epidemiological plan to identify and track first cases
 - 5.3 Implement active surveillance in hospitals, LHDs, etc
 - 5.4 Enhanced surveillance at airports, ports of entry, borders
 - 5.5 Identify, recruit, train personnel for anticipated surveillance activities

Transmission Containment Branch

Goals:

- 1 Implement screening and treatment guidelines and protect themselves
- 2 Finalize vaccine strategy approach mechanisms
- 3 Contain transmission from first case
- 4 Communicate strategy

Objectives:

- 1 Diagnosis, treatment, prophylaxis group
 - 1.1 Finalize vaccination and antiviral guidelines
 - 1.2 Identify sources of antivirals
 - 1.3 Make sure Contracts and MOUs are in place
 - 1.4 Monitor progress on vaccine development and production (CDC/FDA/)
 - 1.5 Communicate with CDC about vaccine availability
 - 1.6 Confirm vaccine logistics with EPO
 - 1.7 Update inventory of PPE, contact vendors, etc.
 - 1.8 Review and update laboratory specimen collection guidelines
 - 1.9 Prepare draft communications and submit to OPA

- 1.10 Activate communication mechanisms to LHDs and hospitals
- 1.11 Activate content groups within Transmission Containment Branch
- 2 Case/Contact Investigation/Management/Monitoring (?STD/TB)
 - 2.1 Review current epidemiology and assess feasibility of contact tracing strategies
 - 2.2 Review WHO/CDC case contact protocols
 - 2.3 Draft protocol based on first few cases appearing and intensive case/contact management
- 3 Infection Control (?IDB)
 - 3.1 Finalizing infection control guidelines
 - 3.2 Distribute to hospitals, LHDs, other agencies
 - 3.3 Continue to monitor for new guidelines based on changing disease transmission
- 4 Isolation/Quarantine (?IDB/TB)
 - 4.1 Review and revise current iso/quar guidelines
 - 4.2 Revise draft iso/quar orders for LHDs and distribute
 - 4.3 Assess effectiveness of iso/quar to containment of influenza in Asia
 - 4.4 Update guidelines as necessary
- 5 Prophylaxis Vaccine/Antivirals Strategy Group
 - 5.1 Confirm vaccine/antiviral availability and projected production schedule
 - 5.2 Review and convene JAC to confirm priority groups bases on epidemiology
 - 5.2.1 Make revisions as necessary
 - 5.3 Ensure communication mechanisms to established priority groups
 - 5.4 Implement content production for communications
 - 5.5 Verify vaccine storage and handling capacity at LHDs
 - 5.5.1 Assist in requests for additional storage
 - 5.6 Verify vaccine receipt location and distribution mechanism
 - 5.7 Verify vaccine administration protocols
 - 5.7.1 2 doses vs. 1
 - 5.7.2 IND protocol
 - 5.8 Risk communication strategy to non target groups

- 5.9 Finalize organization of content groups
 - 5.9.1 Testing algorithms
 - 5.9.2 Clinical and epidemiologic surveillance criteria
 - 5.9.3 Vaccine and antiviral guidelines
 - 5.9.4 Infection control guidelines
- 5.10 Surveillance of vaccines
- 6 Animal and vector control
 - 6.1 Brief and verify animal surveillance control strategy

Communications Section (both Phase I and II/III)

Goals:

- 1 Communicate effectively with the public and with partners.
- 2 Ensure optimal coordination, decision-making and communication between IZ Branch, state agencies, and local levels.
- 3 Minimize panic and ensure that the public takes appropriate action to protect themselves

Objectives:

- 1 Address the situation proactively as much as possible
- 2 Engage in timely communications
- 3 Determine what information can be released and share with the partners, public, and media as much information as possible
- 4 Maintain consistent messages internally and with CDC and LHDs as much as possible
- 5 Collaborate and communicate with appropriate partners effectively
- 6 Incorporate mental health issues into all communications
- 7 Develop communication resources and educational materials (multi-lingual, culturally sensitive)
- 8 Issues to address:
 - 8.1 Infection control
 - 8.2 Priority groups and rationale for why those groups were chosen
 - 8.3 Explanation of what to expect

8.4 Signs/symptoms to look for and what to do

15.1.2 Planning and Intelligence Section

Planning and intelligence group

Goals:

- 1 Set priorities for next steps of pandemic response (draft incident action plans)
- 2 Anticipate internal policy needs and provide support (data, materials, guidance)
- 3 Ensure communication between all levels of response is established and maintained

Objectives:

- 1 Ensure lines of communication and the appropriate authorities are contacted at CDC
- 2 Ensure lines of communication and the appropriate authorities are contacted at LHDs, and with other stakeholders
- 3 Review revised surveillance criteria, case definition, specimen collection, testing algorithms, etc. for pandemic response and make sure they are adequate to control disease
- 4 Review current surveillance data and provide guidance on which groups might be set for priority vaccination and/or prophylaxis
- 5 Review current surveillance data and advise on when to switch from individual case reporting to summary reports from LHDs
- 6 Provide guidance on infection control guidelines to LHDs/hospitals/clinics/other stakeholders, including isolation/quarantine strategies
- 7 Provide guidance on diagnosis and treatment guidelines for antivirals and 2° bacterial infections (treatment of confirmed cases only? Flu A)
- 8 Provide guidance on laboratory testing guidelines and when to continue testing for Flu A and H5, or when to downgrade testing to certain groups (hospitalized, high risk, pediatric, “sentinel outpatients”)

15.1.3 Logistics Section

Logistics Branch

Goals:

- 1 Insure overall preparedness of logistics section for possible outbreak

Objectives:

- 1 Insure specific mechanisms and agreements (MOUs, etc.) are in place prior to outbreak, including plans with EPO, SNS, etc.
- 2 Review anticipated needs with section leads and EPO Logistics.
- 3 Implement communication channels (including stationing staff in Sacto) to test (or maintain) system for obtaining materiel and personnel.

15.2 Phase II/III:

15.2.1 Operations/Planning

Surveillance and Investigations Branch

Goals:

- 1 To identify first pandemic strain in a California community/s so that containment measures can be initiated
- 2 Monitor epidemiology and impact of novel virus infection, including measuring
- 3 Coordinate epidemiological investigations and provide support to LHDs
- 4 Monitor morbidity and mortality in all populations and defining who is at risk (age, SES, ethnicity, underlying medical conditions, geographic location)
- 5 Establish regular and frequent communication with CDC
- 6 Establish and regular and frequent communication with LHDs and other stakeholders

Objectives:

- 1 Case definition, screening criteria, reporting guidelines
 - 1.1 Update current case definition from assessment of cases in California
 - 1.2 Review current epidemiology and revise reporting guidelines
 - 1.3 Distribute updated infection control guidelines based on current situation
- 2 Active case finding, passive case finding strategies
 - 2.1 Initiate active surveillance for ILI at hospitals/clinics/ERs
 - 2.2 Continue to assess if active/passive case finding strategies are effective and feasible given current situation
 - 2.3 Revise and distribute case finding guidelines for DHS, LHDs
- 3 Data collection instruments/report forms

- 3.1 Revise forms to account for current epidemiology and case definition
- 3.2 Implement data entry plan and ensure adequate personnel and equipment
- 3.3 Initialize database and begin data entry
 - 3.3.1 Continue to test and monitor database for errors/bugs
- 4 Statistical analysis
 - 4.1 Finalize analysis tools/programs/code based on current data entry and collection strategy
 - 4.2 Based on current situation, begin analysis and meet regularly with Epi team and P&I group for revised reporting requirements
 - 4.3 Revise analysis plan as needed to ensure accuracy and completeness of reports
- 5 Epidemiological investigation
 - 5.1 Assess current surveillance system for gaps and implement new influenza surveillance systems , e.g. MICU, hospitalized high risk adults/kids, airport travelers
 - 5.2 Continue existing surveillance systems year-round (e.g. PICU, school based clinics and long term care facilities)
 - 5.3 Initiate ILI surveillance in health care workers (fever monitoring twice daily)
 - 5.4 Review current WHO/CDC epidemiological investigation protocols and adapt investigation if necessary
 - 5.5 Stay in contact with epi teams in LHDs to assess burden of disease and spread
 - 5.6 Implement full active surveillance at airports, ports of entry, borders
 - 5.7 Identify, recruit, train additional personnel for surveillance activities as needed

Transmission Containment Branch

Goals:

- 1 Minimize further spread of novel virus from confirmed cases
- 2 Minimize severe illness and death due to the novel virus
- 3 Maintain social order/essential services
- 4 Continue to minimize further spread of novel virus from confirmed cases
- 5 Continue to minimize severe illness and death due to the novel virus
- 6 Continue to maintain social order/essential services

Objectives:

- 1 Containment Group
 - 1.1 Assess need for and provide surge capacity/hospital beds/ventilators/antibiotics/pneumococcal vaccine to LHDs
 - 1.2 Inform LHDs of regional activity and where cases are occurring within California
 - 1.3 Monitor all containment strategies being implemented
 - 1.4 Maintain good risk communication in light of limited vaccine now available
- 2 Diagnosis, treatment, prophylaxis group
 - 2.1 Implement screening and treatment guidelines
 - 2.2 Implement vaccination and antiviral guidelines
 - 2.3 Confirm sources and date of arrival for vaccine and antivirals
 - 2.4 Continue to monitor progress on vaccine development and production (CDC/FDA/)
 - 2.5 Communicate with CDC about vaccine availability
 - 2.6 Confirm vaccine logistics with EPO
 - 2.7 Make sure inventory of PPE, contact vendors, etc. is in place
 - 2.8 Implement laboratory specimen collection guidelines
 - 2.9 Continue communication mechanisms to LHDs and hospitals
- 3 Case/Contact Investigation/Management/Monitoring
 - 3.1 Continue to provide guidance to LHDs on case contact investigation and monitoring
 - 3.2 Review current epidemiology and assess effectiveness of contact tracing as pandemic progresses
 - 3.3 Continue to review WHO/CDC case contact protocols
- 4 Infection Control
 - 4.1 Finalize infection control guidelines and distribute to hospitals, LHDs, other agencies
 - 4.2 Monitor efficacy of infection control guidelines and change as needed
 - 4.3 Maintain contact with health agencies and report on current containment of spread within facilities

4.3.1 Develop stricter/more effective recommendations to decrease transmission if needed

5 Isolation/Quarantine

5.1 Confirm/disseminate CDHS legal authority guidelines to support local decision making with regard to isolation and quarantine, canceling of public meetings, closing schools, etc.

5.2 Assess efficacy of isolation and quarantine strategies

5.3 Revise isolation/quarantine guidelines as needed

5.4 Distribute isolation/quarantine orders to LHDs

6 Prophylaxis Vaccine/Antivirals Strategy Group

6.1 Finalize vaccine delivery strategy and mechanisms for administration

6.2 Confirm vaccine/antiviral availability and delivery schedule

6.3 Distribute available vaccine to pre-designated groups via SNS/CHP/local police and LHDs

6.4 Initialize vaccine usage and inventory monitoring

6.5 If Vaccine direct from vendor to either:

6.5.1 SNS depots or

6.5.2 LHDs

6.5.2.1 Coordinate shipping/receiving

6.5.2.2 Target difficult to reach populations

6.5.2.3 Provide Technical assistance on vaccine handling/storage

6.6 Reconvene JAC to review priority groups and if current epidemiology suggests revision

6.6.1 Risk communication strategy to non target groups

6.6.2 Communication any changes to established priority groups

6.7 Verify vaccine receipt location and distribution mechanism

6.8 Monitor vaccine storage and handling at LHDs

6.8.1 Assist in requests for additional storage

6.9 Revise and distribute vaccine administration protocols

6.9.1 2 doses vs. 1

6.9.2 IND protocol

7 Animal and vector control

7.1 Coordinate with vector control that current animal surveillance strategies are underway

7.2 Determine if animal population are affected

7.2.1 If so, convene special vector control subgroup to develop zoonotic containment strategies and further spread

15.2.2 Planning and Intelligence Branch

Planning and intelligence group

Goals:

- 1 Set priorities for next steps of pandemic response
- 2 Anticipate internal policy needs and provide support (data, materials, guidance)
- 3 Ensure communication between all levels of response is established and maintained

Objectives:

- 1 Provide guidance on vaccine and antiviral prophylaxis strategy (review data)
- 2 Review priority groups for vaccination and provide guidance on revising target groups based on current data
- 3 Review current guidelines issued to LHDs and suggest revised criteria for:
 - 3.1 Monitoring of adverse reactions
 - 3.2 Follow-up of second dose
 - 3.3 Help with reaching difficult to reach target groups
 - 3.4 Technical assistance on vaccine handling/storage
 - 3.5 Monitoring vaccine/antiviral coverage: who is getting vaccine?
 - 3.5.1 Age groups
 - 3.5.2 Ethnicity
- 4 Review data on which groups are at highest risk during each stage of pandemic and recommend surveillance activities, interventions, or special studies
- 5 Review data and diagnostic testing algorithms and advise on narrowing testing guidelines for specific groups (i.e. hospitalized/ICU, HCWs, etc) for Flu A/H5N1
 - 5.1 If resources available, advise on expanded flu A testing for groups under surveillance (ERs, outpatients, etc.)

15.2.3 Logistics Section

Logistics groups

Goals:

- 1 Deliver or provide for the delivery of the materiel and personnel to support needs of the Operations/Planning, and Finance Sections, at the right time, right place, etc.

Objectives:

- 1 Establish routine communication channels with EPO Sacramento
- 2 Initiate mechanism for receiving requests for materiel and personnel (including to the level of detail of which LHDs need how much drug).
- 3 Insure those requests are met.
- 4 Identify infrastructure tools necessary to facilitate logistics and work of other sections (e.g., databases, contact lists, etc).
- 5 Continue and scale up activities of previous phase.
- 6 Institute measures to routinize logistics coordination.

Logistics Phase: Post-outbreak

Goals:

- 1 Successfully debrief and demobilize

Objectives:

- 1 Conduct standard debriefing and demobilization work.
- 2 Identify logistics needs to support the closing of supply chains, including disposition of drugs.
- 3 Review and update plans, agreements, work practices; identify lessons learned, etc.