

Critical Capacity Module III

Healthcare Systems

INTRODUCTION

The ability of a healthcare system to develop a coordinated healthcare strategy to effectively prepare and provide for pandemic influenza patients is a critical capacity. The H5N1 strain of Avian Influenza has been recognized by the World Health Organization (WHO) to be at a threat level consistent with the Pandemic Alert Period. Because of the nature of influenza viruses and their natural ability to mutate and become more or less of a threat to humans, there remains uncertainty as to when and how a pandemic will evolve and its effect on local conditions that will influence decision making within the healthcare system. Healthcare facilities must be prepared for the rapid pace and dynamic characteristics of pandemic influenza.

All hospitals should be equipped to care for the following:

1. A limited number of patients infected with pandemic influenza virus, or other novel strain of influenza, as part of normal operations.
2. An overwhelming increase in the number of patients when escalating transmission of pandemic influenza occurs.

Module III of the Pandemic Influenza Plan provides healthcare medical partners with recommendations for developing plans to respond to influenza pandemic. The focus is on institutional planning in coordination with the community during the Alert Period and activation of institutional pandemic influenza response plans during the Pandemic Period.

The module is divided into three sections that provide guidelines for the following:

1. Hospitals,
2. Non-hospital settings,
3. Alternative care sites, referred to herein as Influenza Care Centers (ICC).

The primary partners responsible for this module include the Santa Clara County Public Health Department (SCCPHD) and the local healthcare system, including hospitals, skilled nursing facilities, clinics, and private providers among others. It is the responsibility of healthcare facilities to do the following:

- Identify and isolate all potential patients with pandemic influenza,
- Implement infection control practices to prevent influenza transmission,
- Provide medical treatment to patients,
- Ensure rapid and frequent communication within the healthcare facility, between healthcare facilities and with the SCCPHD.

The guidelines included in Module III are intended to be synergistic with other pandemic influenza planning efforts, including state and federal preparedness plans. Healthcare planning for pandemic influenza preparedness should address internal and external collaboration and coordination with the healthcare community. An internal, multidisciplinary planning committee should be appointed by every healthcare provider to address each of the guidelines



below. The goal is to ensure that there is a coordinated response with other healthcare facilities in the community, while including the specific needs of the individual hospital in the pandemic influenza plan. Santa Clara County hospitals are expected to use the Hospital Incident Command System (HICS) in their response to pandemic influenza.

The guidelines critical to acute care hospitals include the following:

- Decision-making structures for response,
- Hospital surveillance,
- Infection control,
- Hospital risk communications,
- Education and training,
- Patient triage,
- Clinical guidelines,
- Use and administration of vaccines and antiviral drugs,
- Surge capacity,
- Mortuary issues,
- Security/facility access,
- Occupational health,
- Recovery of operations.

Desired Outcomes

The desired outcomes of the SCCPHD pandemic influenza program for healthcare planning, which are compatible with those of the California Department of Health Services (CDHS), include the following:

1. Maintain, to the greatest extent possible, the provision of healthcare services to meet the needs of Santa Clara County during influenza pandemic.
2. Maximize Santa Clara County's ability to respond to the healthcare needs of influenza pandemic through effective planning at the local level and to collaborate with healthcare providers to address medical surge capacity and capability demands of influenza pandemic.

Planning Assumptions

1. The number of infected people requiring outpatient medical care and hospitalization will overwhelm the local healthcare system.
2. Hospitals will be expected to maximize their medical surge capacity and capability. However, when hospital capacity is exceeded, Influenza Care Centers (ICC) will be needed for patients who can safely be managed outside of the acute care setting; hospitals will be reserved for patients needing the most sophisticated care.
3. The increased healthcare demands associated with pandemic influenza cannot be managed by healthcare facilities alone. An effective pandemic response must include cooperative strategies that use a variety of healthcare entities including hospitals, clinics, long-term care facilities, private practice physicians, and home healthcare providers.
4. Hospitals and other healthcare entities will likely experience staffing shortages throughout the Pandemic Period and into the subsequent recovery period. Under specific emergency conditions, volunteers, retired healthcare professionals and trained unlicensed personnel may be used to provide patient care in a variety of healthcare settings.



5. Current resources for mass fatality care at all levels, including healthcare facilities, the county morgue and mortuaries, may be inadequate to meet the challenges posed by influenza pandemic.
6. To maximize healthcare resources and achieve the optimal benefit for the most people, traditional standards of care may need to be altered. "Sufficiency of Care," which is medical care that may not be of the same quality as that delivered under nonemergency conditions, but that is sufficient for the situation, may be the standard of care during influenza pandemic.

HOSPITAL-BASED CARE

Decision-making Structures for Response

Alert Period (refer to page 2 for an explanation of the Pandemic Alert Periods)

Each hospital in Santa Clara County should do the following:

1. Convene an internal pandemic influenza planning task force to develop or revise a pandemic preparedness plan for the facility that includes the following:
 - a. Use of the Hospital Incident Command System (HICS) for a sustained continuity of hospital operations and patient care services.
 - i. Specific pandemic influenza planning strategies that incorporate current local, state and federal guidance,
 - ii. Triggers for activating the hospital's internal pandemic emergency plan,
 - iii. Assignment of authority and responsibility for aspects of the pandemic plan and response within the facility,
 - iv. Patient triage systems.
2. Review and revise high patient census protocols specifically to prepare for the intensity and duration of patient influx during a pandemic influenza. This includes isolation capacity.
3. Develop plans for the use of overflow space to triage, transfer/ discharge and treat patients. This includes the following:
 - a. Use of suspended beds,
 - b. Converting outpatient space to inpatient space,
 - c. Using nonpatient areas,
 - d. Obtaining permission from the CDHS Licensing and Certification Division to use these spaces in an emergency.
4. Identify critical staff roles including healthcare workers, housekeepers, dietary, laundry, plant operations, security, chaplains, mental health staff, and management. Develop plans to cover these critical roles.
5. Develop standardized pandemic physician orders.
6. Develop streamlined nursing notes/patient care records.
7. Develop work force preservation protocols to minimize absenteeism, which may include the following:
 - a. Establish a staff hotline with current information,
 - b. Provide sick care services for children of hospital staff,
 - c. Develop rosters of staff teams that allow for rotation and rest over the duration of the pandemic.



8. Develop and conduct staff training on the facility's pandemic response plan.
9. Make preparations to manage volunteer personnel, which includes the following:
 - a. Granting of emergency privileges,
 - b. Establishing competency and monitoring performance of newly recruited and/or volunteer personnel,
 - c. Assigning tasks for temporary personnel,
 - d. Using retired and volunteer healthcare workers for some patient care roles,
 - e. Using community volunteers for nonclinical roles such as transporting specimens, registration and supply handling,
 - f. Training volunteers,
 - g. Developing just-in-time training and orientation modules for temporary and volunteer staff.
10. Inventory critical supplies needed for treatment of patients with pandemic influenza, including personal protective equipment (PPE).
 - a. Determine usage levels and stockpile critical supplies,
 - b. Develop MOUs with vendors for obtaining the following additional supplies:
 - i. Masks,
 - ii. Gloves,
 - iii. Gowns,
 - iv. Beds/cots,
 - v. Intravenous supplies,
 - vi. Portable high efficiency particulate air filters,
 - vii. Ventilators.
11. Test systems for obtaining and storing additional supplies and address rotational issues.
12. Repair durable equipment not currently in full working order on an expedited basis and shorten the routine maintenance cycle.
13. Ensure availability of recommended laboratory processing, testing and reporting of results to the ordering physician and infection control team.
14. Review current disaster plan for managing remains and temporary morgue overflow.
15. Modify plans to address potential need to manage contaminated remains for days.
16. Consider MOUs for surge mortuary supplies (e.g., body bags, refrigerator trucks).
17. Convene the infection control committee to review/revise infection control policies and procedures relevant to the pandemic response including the following:
 - a. Containment strategies,
 - b. Respiratory hygiene,
 - c. Isolation,
 - d. Cohorting,
 - e. Workforce issues such as training and guidelines for "fitness for duty" status,
 - f. Cleaning equipment/environment.
18. Adopt aggressive "respiratory hygiene" programs in all patient and visitor waiting areas to include signs about respiratory etiquette, hand cleaning supplies, tissues, masks, and waste receptacles. Require all coughing patients to wear a mask.
19. Inventory respiratory isolation capacity and integrity of negative pressure isolation room systems.
20. Develop strategies for expanding respiratory isolation capacity and cohorting infectious patients.
21. Review current vaccination program for pneumonia and influenza to assure that employees have access to vaccinations.



22. Develop procedures to identify high-risk patients for vaccine/antiviral distribution, according to SCCPHD guidelines.
23. Identify critical hospital personnel for vaccination and antiviral medication; collaborate with SCCPHD on an allocation plan for vaccine and antivirals.
24. Adopt any treatment guidelines distributed by the Centers for Disease Control and Prevention (CDC), California Department of Health Service (CDHS) and SCCPHD.
25. Develop standard operating procedures to ensure rapid and consistent application of medical treatment guidelines (refer to Module V- Clinical Guidelines and Disease Management).
26. Train medical staff on treatment priorities, allocating limited resources and “sufficiency of care” standard.
27. Drill staff on the Pandemic Response Plan.
28. Develop systems for quick distribution of updated guidance to clinical staff. Revise policies and standard operating procedures accordingly.

Pandemic Period (refer to page 2 for an explanation of the Pandemic Alert Periods)

Hospitals should implement their Pandemic Response Plan upon either the notification of SCCPHD, or the awareness of a sudden surge of influenza patients during the initial phases of the pandemic within the United States. Coordination between levels of government, in California, will be accomplished through utilization of SEMS, as defined under the California Office of Emergency Services, State Emergency Plan (May 1998).

Hospital Surveillance

Refer to Module II – Surveillance for information about surveillance for influenza-like illness (ILI) in outpatients.

Pandemic influenza surveillance includes detecting influenza viruses (virologic surveillance) and detecting influenza-associated illnesses and deaths (disease surveillance). Locally, the goal of virologic surveillance is to detect the introduction of a novel or pandemic strain into Santa Clara County and to detect any changes in the virus (including development of resistance to antivirals) that might necessitate a change in clinical or public health management. The goal of influenza disease surveillance is to serve as an early warning system to detect increases in influenza-like illnesses in Santa Clara County, to monitor the pandemic’s impact on health (e.g., by tracking hospitalizations and deaths) and to track trends in influenza disease activity and identify populations that are severely affected.

A patient with Influenza-Like Illness (ILI) generally has the following ailments:

1. Temperature greater than 100.4 degrees (F),
2. At least one upper respiratory symptom such as cough, rhinorrhea or pharyngitis.

Alert Period

Hospitals play an important role in the surveillance process by assuring that requested data are collected and reported on a consistent and timely basis to SCCPHD. During the Alert Period, the purpose of surveillance is to detect and confirm cases of novel or pandemic influenza.

1. SCCPHD uses the following mechanisms for surveillance:
 - a. Emergency department visits.
 - i. Syndromal Surveillance – 11 hospital emergency departments in Santa Clara County participate in a manual “tally sheet” of chief complaint data collected from patients presenting to the emergency departments. This information is forwarded daily to the SCCPHD where the data is evaluated for unusual spikes in specific patient symptoms related to ILI and to potential high-risk bioterrorism diseases.
 - ii. ESSENCE is a syndromic surveillance system, which automatically extracts and analyzes ICD9 and chief complaint data from emergency departments and other sources.
 - b. Hospital admissions.
 - i. Pediatric and Neonatal Intensive Care Units in Santa Clara County voluntarily report severe pediatric influenza and deaths to SCCPHD during the October – April influenza season.
 - ii. The Kaiser influenza surveillance system tracks hospitalizations due to influenza-like illness by tracking admission diagnoses for a subset of ICD9 codes that act as a proxy for influenza.
 - c. Discharge of suspected or laboratory-confirmed pandemic influenza patients.
 - i. During Phases 4 and 5 of the Alert Period, SCCPHD will consider adding laboratory-confirmed influenza-associated hospitalizations to the list of reportable diseases.
 - ii. Developing a protocol for active hospitalization surveillance, including specimen collection and virologic testing from a subset of hospitalized patients in Santa Clara County.
2. To ensure the quality and safety of specimens, Santa Clara County hospitals must utilize the most current guidelines for hospital laboratory testing and submission of specimens to the Santa Clara County Public Health Laboratory. Refer to Module II – Surveillance for further explanation.
 - a. Santa Clara County Public Health Laboratory (SCCPHL) is part of the national Laboratory Response Network (LRN), so it participates in identifying new strains of influenza.
 - b. Santa Clara County is currently in Phase 3 of a Pandemic Alert Period. The Public Health Department has sent a Health Alert (Tool M2-1) to all physicians requesting that respiratory specimens from patients meeting the case definition for suspect Avian Influenza H5N1 infection be sent directly to the SCCPHL.
 - c. During Phases 4 and 5 of a Pandemic Alert, the CDC, the California Department of Health Services (CDHS) and SCCPHD may require that specimens from patients meeting certain case definitions be sent to the SCCPHL. Refer to Module II – Surveillance.

- d. Hospital laboratories should NOT conduct laboratory testing for new strains of influenza. Attempts to isolate viruses from these cases must only be conducted in a Biosafety Level 3 (BSL-3) enhanced laboratory (the Santa Clara County Public Health Laboratory or the State Viral and Rickettsial Disease Laboratory). See Tool M2-2, SCCPHL Informational No. 2005-4: Instructions for when to suspect infection with a novel influenza strain (such as H5N1).
3. Santa Clara County hospitals and clinics must ensure that they have current written procedures and criteria in place to facilitate specimen transport to SCCPHL.
4. Santa Clara County hospitals and clinics need to make certain that they have a mechanism for monitoring employee absenteeism for increases that might indicate early cases of pandemic influenza. Such information should be shared with the local Health Officer. Laboratory staff on all shifts should be trained in these procedures.

Pandemic Period

If no cases of pandemic influenza have been identified in Santa Clara County when the World Health Organization declares a worldwide pandemic, vigorous enhanced surveillance by individual healthcare providers must take place. This will require aggressive testing of suspect cases to identify infections with the pandemic strain and control its spread. Once a pandemic strain has been identified in Santa Clara County and widespread person-to-person transmission is occurring, the goals of surveillance will change to the following:

1. Monitor the pandemic's impact on the healthcare system and the community at large.
2. Identify populations severely affected by influenza that might require extra resources or additional public health interventions.

The Public Health Department Emergency Operations Center (DEOC) will be activated and hospitals will be expected to communicate and provide status reports through the Emergency Medical Systems messaging. Hospitals should consider early activation of HICS to manage the pandemic's impact on their organization. Santa Clara County hospitals need to notify the DEOC when their Hospital Command Center (HCC) is activated. Two types of pandemic influenza reporting may occur:

1. Case-level reporting **and**
2. Batch reporting, with batch reporting more likely as disease transmission increases and the pandemic spreads.

See Module II – Surveillance for complete instructions about reporting.

Infection Control

The specific characteristics of a novel pandemic influenza virus will remain unknown until the pandemic occurs. Therefore, SCCPHD, in agreement with CDHS, recommends that healthcare institutions include the use of airborne precautions for patients with pandemic influenza along with droplet and contact precautions. Once additional information becomes available regarding the novel virus, less stringent control measures may be adequate. SCCPHD will provide updated guidance at that time.

The goals of infection control measures in the healthcare setting include the following:

1. Limit transmission from infected patients to noninfected healthcare staff.
2. Limit transmission from infected patients to noninfected patients.

3. Provide infection control guidance to healthcare facilities about managing pandemic influenza outbreaks.
4. Prevent spread of pandemic influenza in healthcare settings.

The following infection control principles apply in any setting where individuals with pandemic influenza might seek and receive healthcare services (e.g., hospitals, emergency departments and outpatient facilities).

Alert Period

Healthcare facilities should be ready to implement engineering or administrative controls, as well as use PPE, to prevent all possible modes of transmission including airborne transmission. This level of preparedness includes the following:

1. Have a respirator program in place, including appropriate fit testing.
2. Pre-designate employees who may be required to wear respiratory protection.
3. Ensure that potential respirator-wearing employees are medically cleared, have a suitable respirator model through individual fit testing and are trained in respirator use.
4. Have adequate supplies of respirators and other PPE on-site.
5. Have plans in place to acquire additional equipment on short notice.
6. Educate healthcare workers about the importance of containing respiratory secretions to prevent the transmission of influenza.
7. Complete planning for actions described in the Pandemic Alert Period below.

Pandemic Period

1. Detect persons entering the facility who may have pandemic influenza.
 - a. Post visual alerts at the entrances to hospital and outpatient facilities in languages appropriate to the population served with instructions to implement the following “source control” measures:
 - i. Immediately report symptoms of respiratory infection to the healthcare provider,
 - ii. Use source control measures,
 - iii. Wash hands with soap and water or alcohol-based hand gel after contact with respiratory secretions.
 - b. Keep symptomatic patients separated (ideally by at least three feet) from other people in common waiting areas.
2. Triage patients calling for medical appointments for influenza symptoms in order to identify patients who need emergency care and those who can be referred to a medical office or other nonurgent care facility.
3. Implement “Access Screening and Control” to triage symptomatic individuals.
 - a. Use Clinical Triage Guidelines during Critical Pandemic Resources Stage provided by SCCPHD (see Module V – Clinical Guidelines and Disease Management Tool M5-7).
 - b. Limit the number of entrances to the healthcare facility, based on the ability to provide appropriate screening.
 - c. Provide security at entrances.
 - d. Establish a “triage officer” to manage flow; including deferring or redirecting patients after it is determined they do not require emergency care.

- e. Consider designating a separate entrance and waiting area for patients with influenza-like symptoms.
 - f. Implement a system to screen all healthcare personnel for influenza-like symptoms before coming on duty.
4. Implement “source control” measures to limit dissemination of influenza virus from respiratory secretions. These measures include the following actions:
- a. Require patients to cover their mouth and nose with a tissue when they cough or sneeze,
 - b. Dispose used tissue in contained receptacles,
 - c. Place a surgical or procedure mask on a coughing individual, if he or she can tolerate it.
5. Management of infectious patients.
- a. Respiratory hygiene/cough etiquette:
 - i. This is a strategy to contain respiratory viruses at the source and to limit their spread in areas where infectious patients might be awaiting medical care (e.g., ambulatory care clinics; emergency departments).
 - ii. The impact of covering sneezes and coughs and/or placing a mask on a coughing patient on the containment of respiratory secretions or on the transmission of respiratory infections has not been systematically studied. In theory, however, any measure that limits the dispersal of respiratory droplets should reduce the opportunity for transmission. Masking may be difficult in some settings, e.g., pediatrics, in which case the emphasis will be on cough hygiene.
 - b. The elements of respiratory hygiene/cough etiquette include the following:
 - i. Education of healthcare facility staff, patients and visitors about the importance of containing respiratory secretions to help prevent the transmission of influenza and other respiratory viruses.
 - ii. Source control measures (e.g., covering the mouth/nose with a tissue when coughing and disposing of used tissues; using masks on coughing individuals when they can be tolerated and are appropriate).
 - iii. Hand hygiene after contact with respiratory secretions.
 - iv. Spatial separation, ideally more than three feet, of individuals with respiratory infections from other people in common waiting areas.
 - c. Droplet precautions and patient placement guidelines:
 - i. Patients with known or suspected pandemic influenza should be placed on droplet precautions for a minimum of five days and up to 14 days, from the onset of symptoms. Because immunocompromised patients may shed virus for longer periods, they may be placed on droplet precautions for the duration of their illness. Healthcare personnel should wear appropriate PPE. The placement of patients will vary depending on the healthcare setting (see setting-specific guidance).
 - ii. If the pandemic virus is associated with diarrhea, contact precautions (i.e., gowns and gloves for all patient contact) are to be added.
6. Personal Protective Equipment (PPE) is used to prevent direct contact with the pandemic influenza virus. PPE that may be used to provide care includes surgical or procedure masks (as recommended for droplet precautions), gloves and gowns (as recommended for standard precautions by the CDC). Healthcare staff should be instructed in use of the following equipment:



- a. Airborne precautions - N95 respirators.
 - i. It may not be clear that a patient with severe respiratory illness has pandemic influenza in the early stages of the Pandemic Period. Therefore precautions consistent with all possible etiologies, including a newly emerging infectious agent, should be implemented. This may involve the combined use of airborne and contact precautions, in addition to standard precautions, until a diagnosis is established.
 - ii. The addition of airborne precautions, including respiratory protection (an N95 filtering face piece respirator or other appropriate particulate respirator), should be used for strains of influenza exhibiting increased transmissibility. This is important during the initial stages of an outbreak of an emerging or novel strain of influenza and as determined by other factors such as vaccination/immune status of personnel and availability of antivirals. As the epidemiologic characteristics of the pandemic virus are more clearly defined, CDC and SCCPHD will provide updated infection control guidance.
 - iii. Healthcare personnel should wear gloves, gown, face/eye protection, and an N95 respirator or other appropriate particulate respirator during procedures that may generate increased small-particle aerosols of respiratory secretions (e.g., endotracheal intubation, nebulizer treatment, bronchoscopy, suctioning). Remember, respirators should be used within the context of a respiratory protection program that includes fit-testing, medical clearance and training. If possible and when practical, use of an airborne isolation room may be considered when conducting aerosol-generating procedures. NOTE: Nebulizer treatments should be avoided whenever possible.
 - iv. Wear an N95 respirator when entering a patient's room. Ideally, a mask should be worn once and then discarded. When supplies of respirators become scarce or N95 respirators are no longer required, SCCPHD will issue updated guidelines.
 - v. If pandemic influenza patients are cohorted in a common area or in several rooms on a nursing unit and multiple patients must be visited over a short time, it may be practical to wear one respirator for the duration of the activity. However, other PPE (e.g., gloves, gown) must be removed between patients and hand hygiene performed.
 - vi. Change respirators when they become moist.
 - vii. Do not leave respirators dangling around the neck.
 - viii. Upon touching or discarding a used respirator, perform hand hygiene.
- b. Gloves.
 - i. A single pair of patient care gloves should be worn for contact with blood and body fluids, including during hand contact with respiratory secretions (e.g., providing oral care; handling soiled tissues). Gloves made of latex, vinyl, nitrile, or other synthetic materials are appropriate for this purpose. If possible, latex-free gloves should be available for healthcare workers who have latex allergy.
 - ii. Remove and dispose of gloves after use on a single patient; do not wash gloves for subsequent reuse.

- iii. Perform hand hygiene after glove removal.
 - iv. If gloves are in short supply (i.e., the demand during a pandemic exceeds the supply), priorities for glove use might need to be established. In this circumstance, reserve gloves for situations where there is a likelihood of extensive patient or environmental contact with blood or body fluids, including during suctioning.
 - v. Use other barriers (e.g., disposable paper towels, paper napkins) when there is only limited contact with a patient's respiratory secretions (e.g., to handle used tissues). Hand hygiene should be strongly reinforced in this situation.
- c. Gowns.
- i. Most patient interactions do not necessitate the use of gowns. However, procedures such as intubation and activities that involve holding the patient close (e.g., in pediatric settings) are examples of when a gown may be needed when caring for pandemic influenza patients. Wear an isolation gown, if soiling of personal clothes or uniform with a patient's blood or body fluids, including respiratory secretions, is anticipated.
 - ii. Gowns should be worn only once and then placed in a waste or laundry receptacle, as appropriate. Perform hand hygiene after removing a gown.
 - iii. If gowns are in short supply (i.e., the demand during a pandemic exceeds the supply) priorities for the use of gowns may need to be established. Other coverings (e.g., patient gowns) could be used in some situations. It is doubtful that disposable aprons would provide the desired protection in the circumstances where gowns are needed to prevent contact with influenza virus. There are no data upon which to base a recommendation for reusing an isolation gown on the same patient. To avoid possible contamination, it is prudent to limit this practice.
- d. Goggles or face shield.
- i. In general, wearing goggles or a face shield for routine contact with patients with pandemic influenza is not necessary. If sprays or splatter of infectious material could happen, goggles or a face shield should be worn as recommended for standard precautions.
7. Hospitalization of pandemic influenza patients.
- a. Patient placement.
- i. Patients with suspected or laboratory-confirmed illness caused by a novel pandemic influenza virus must be placed into negative-pressure isolation rooms.
 - ii. Patients early in pandemic influenza must be placed on airborne precautions.
 - iii. Cohort patients as necessary.
 - iv. Negative pressure rooms or procedure rooms must be used to decrease the risk of transmission within the hospital during aerosol generating procedures (i.e., bronchoscopy, endotracheal intubation).
 - v. Contact precautions must be used for patients with symptoms of diarrhea.
 - vi. Immunocompromised patients may shed virus for longer periods and must be placed on airborne precautions for the duration of their illness.



- b. During a pandemic, other respiratory viruses may be circulating concurrently in the community. To prevent cross-contamination of respiratory viruses, whenever possible, hospitals should assign only patients with confirmed pandemic influenza to the same room. Hospitals should consider the following regarding cohorting:
 - i. Implement cohorting early in the course of a local outbreak to accommodate an anticipated surge of patients.
 - ii. Designate units or areas of the facility for cohorting patients with pandemic influenza that preferably include negative pressure isolation rooms.
 - iii. Consult with facility engineers when determining areas to use for cohorting patients. The goal is to make certain that ventilation systems in those areas are not shared with other areas or rooms.
 - iv. Ensure that personnel assigned to the cohorted patient care units do not “float” or get assigned to other patient care areas.
 - v. Limit the number of personnel entering the cohorted areas to those necessary for patient care and support.
 - vi. Ensure that healthcare personnel adhere to infection control practices to prevent nosocomial transmission.
- c. Patient transport.
 - i. Hospitals should limit patient movement and transport outside of the isolation areas to medically necessary purposes.
 - ii. Hospitals should use portable equipment (e.g., portable x-ray equipment) in the isolation areas and clean the equipment after each use.
 - iii. If transportation is necessary, patients should wear a surgical or procedure mask, if tolerated. If a patient cannot tolerate a surgical mask, apply the most practical measure to contain respiratory secretions such as placing a sheet or towel loosely over the nose/mouth or head during transport.
- d. Visitors.
 - i. Use “Access Screening and Control” to screen visitors for signs and symptoms of influenza before allowing them to enter the facility. Exclude persons who are symptomatic from entry.
 - ii. Utilize visitors who provide the patient emotional support and are able to assist in caring for the patient.
 - iii. Provide a surgical or procedure mask for visitors to wear while in the patient’s room.
 - iv. Educate people who visit pandemic influenza patients about the importance of wearing surgical or procedure masks, using proper respiratory and cough etiquette and practicing good hand hygiene.
 - v. Post instructions about respiratory and cough etiquette and hand hygiene methods in patient rooms and make necessary supplies and disposal cans available.

8. Post Mortem Care.
 - a. Hospitals will follow standard facility practices for the care of the deceased. These practices must include standard precautions for contact with blood and body fluids (i.e., gloves).
 - b. If autopsy or procedures are performed on a deceased person with suspected or confirmed influenza and the procedures involve generating higher concentration of aerosols (e.g., cutting through bone), a powered air purifying respirator (PAPR) with an N, P, or R-100 cartridge must be worn.
9. Control of nosocomial pandemic influenza.
 - a. Once patients with pandemic influenza are admitted to the hospital, nosocomial surveillance should be heightened for evidence of transmission to other patients and healthcare personnel. (Once pandemic influenza is firmly established in a community this may not be feasible or necessary – SCCPHD will advise).
 - b. Appropriate control measures should be implemented to limit nosocomial transmission. These include the following:
 - i. Use “Access Screening and Control” to screen visitors for signs and symptoms of influenza before allowing them to enter the facility. Exclude persons who are symptomatic from entry.
 - ii. Cohort patients and staff on affected units.
 - iii. Restrict new admissions (except for other pandemic influenza patients) to the affected unit(s).
 - c. Standard precautions for contact with blood and body fluids (i.e., gloves) are required for handling and disposal of biohazardous waste. There are no special precautions that are recommended for disposal of respiratory secretions.
 - d. Healthcare facilities should use standard precautions for handling linen and laundry.
 - e. Standard precautions are recommended for handling dishes and eating utensils used by a patient with known or possible pandemic influenza. Infection control policies and procedures must address proper cleaning and use; disposable products are not required.
 - f. Follow standard practices for handling and reprocessing used patient care equipment including medical devices.
 - i. Hospital personnel should wear gloves when handling and transporting contaminated patient care equipment.
 - ii. Hospital personnel should decontaminate patient care equipment with an EPA approved hospital disinfectant before removing it from the patient’s room; clean, disinfect or sterilize reusable patient care equipment as appropriate.
 - iii. Hospital personnel should decontaminate external surfaces of portable equipment used to perform x-rays and other procedures in the patient’s room. Use an EPA-approved hospital disinfectant for cleaning once the equipment is removed from the patient’s room.

Hospital Risk Communication

Pandemic influenza risk communication strategies are critical and necessary components of pandemic influenza preparedness. To be effective, these strategies should be based on scientifically derived risk communications principles and are critical before, during and after

influenza pandemic. Effective communication guides the public, the news media, healthcare providers, and other groups in responding appropriately to outbreak situations and adhering to public health measures. ¹

Information regarding a pandemic and the planning for it comes from a number of sources. The federal government provides background information and frequent updates for healthcare professionals through the Web site, www.pandemicflu.gov and Centers for Disease Control and Prevention (CDC) Emergency Communication System. At the state level, the California Department of Health Services (CDHS) provides clinician alerts using the California Health Alert Network (CAHAN) and convenes regular conference calls with the Local Health Officer (LHO) and other partners. Information is also provided by the LHO through the SCCPHD. To reduce the likelihood of conflicting or confusing messages across the healthcare system, every effort should be made to coordinate media content between SCCPHD and the hospitals. This is true during both the Alert Period and the Pandemic Period.

The Santa Clara Valley Health & Hospital System Public Information Officer (SCVHHS PIO) will collaborate with the Santa Clara County Public Information Officer, taking the lead in development of public health and medical risk communication materials for release to the public, business community, schools, and critical infrastructure including healthcare facilities. Public Information Officers (PIOs) from area hospitals should initiate and maintain a close working relationship with the SCVHHS PIO, if they have not already done so. Refer to Module VI – Public Education & Emergency Risk Communication.

Alert Period

During the Alert Period it is important for hospitals to establish systems for assuring that the most current information is being received from and provided to the SCCPHD PIO. Information received should be shared with those appropriate individuals within the organization. Risk communications strategies must be included in the hospital pandemic plan and preparation for implementing the following strategies should occur.

1. External Communication.
 - a. The SCCPHD PIO will maintain a single source of contact with each hospital. Each hospital needs to provide current contact information and develop a plan to make sure the information is updated whenever necessary.
 - b. Hospital PIOs should participate in the PIO network, which will be the established mechanism for external communication with the media.
 - c. Hospitals should prepare their own message, or utilize messages provided by SCCPHD, for use in call centers, Web sites, hotlines, recordings, etc. These messages should be differentiated for patients, the community and employees.
 - d. Hospitals should identify and train individuals who may be expected to support the hospital PIO during periods where there is increased communication flow related to pandemic flu.
2. Internal Communication.
 - a. Hospitals will develop mechanisms for sharing pandemic influenza planning with employees.

¹ DHHS Pandemic Plan, Supplement 10 – Public Health Communications, Nov. 11, 2005.



- b. Hospitals will develop frequently asked questions (FAQs), or utilize those provided by SCCPHD, which target hospital personnel. Other sets of FAQs should be developed that target patients, as well as the community.

Pandemic Period

During the Pandemic Period, hospital PIOs will do the following:

1. Maintain a single source of contact with the SCVHHS PIO; ensuring this information is updated, as needed.
2. Use established mechanisms for external communication with the media and the PIO network.
3. Determine how to keep administrators, personnel, patients, and visitors informed of the ongoing impact of pandemic influenza on the facility and the community.
4. Ensure capacity for increases in communication flow related to pandemic influenza.

Education and Training

Each hospital must develop an education and training plan that addresses the needs of staff, patients, family members, and visitors. Hospitals will need to assign responsibility for coordination of the pandemic influenza education and training program and identify training materials. These materials should be developed in different languages and at different reading levels, as needed.²

The following guidelines, taken from the U.S. Department of Health and Human Services (DHHS) Pandemic Influenza Plan, provide a basis for what information to include regarding education and training in the hospital's Pandemic Influenza Plan. SCCPHD will provide current information that should be used in developing education and training content.

Alert Period

Each hospital should develop a plan to provide staff education. Topics for staff education should include infection control strategies for the control of influenza, including respiratory hygiene/cough etiquette, hand hygiene, standard precautions, droplet precautions, and airborne precautions.

1. Hospital-specific topics for staff education should include the following:
 - a. Policies and procedures for the care of pandemic influenza patients, including how and where pandemic influenza patients will be cohorted.
 - b. Pandemic staffing contingency plans, including how the facility will deal with illness among personnel.
 - c. Policies for patient visitation.
 - d. Reporting suspected cases of infection caused by novel influenza strains during the Interpandemic and Alert Periods to SCCPHD.
 - e. Measures to protect family and other close contacts from secondary occupational exposure.
2. Hospitals should also do the following:

² DHHS Pandemic Plan, Supplement 3 – Healthcare Planning, Nov. 11, 2005.



- a. Establish a schedule for training and education of clinical staff and a mechanism for documenting participation. Consider using annual infection control updates and meetings, medical Grand Rounds and other educational gatherings as opportunities for training about pandemic influenza.
 - b. Cross-train clinical personnel, including outpatient healthcare providers, who can provide support for essential patient-care areas (e.g., emergency department, ICU and medical units).
 - c. Train intake and triage staff to detect patients with influenza symptoms and to implement immediate containment measures to prevent virus transmission.
 - d. Supply social workers, psychologists, psychiatrists, and nurses with guidance for providing psychological support to patients and hospital personnel during influenza pandemic. Hospitals should also provide psychological-support training to appropriate individuals who are not mental health professionals (e.g., primary-care clinicians, leaders of community and faith-based organizations).
 - e. Develop a strategy for “just-in-time” training of nonclinical staff who might be asked to assist clinical personnel (e.g., help with triage, distribute food trays and transport patients), students, retired health professionals, volunteers who might be asked to provide basic nursing care (e.g., bathing; monitoring of vital signs), and other potential inhospital caregivers (e.g., family members of patients).
3. Education of patient, family members and visitors means that patients and others should know what they can do to prevent disease transmission in the hospital, as well as at home and in community settings. Hospitals will need to do the following:
 - a. Identify and utilize language-specific and reading-level appropriate materials, provided by SCCPHD to educate patients, family members and hospital visitors during influenza pandemic. Refer to Module VI – Public Education and Emergency Risk Communication for further description.
 - b. Develop a plan for distributing information to all individuals who enter the hospital. Identify staff members who will have the ability to answer questions about procedures for preventing influenza transmission.

Pandemic Period

Hospitals will implement mechanisms to distribute updated informational and educational materials to hospital visitors, patients and the community on a continuous basis. It will be essential that the PIO and HICS Communication Unit leader work closely together to assure that the assigned Education and Training staff members receive the most current information to use in their training.

Patient Triage

During the peak of a pandemic, hospital emergency departments and outpatient offices will be overwhelmed with patients seeking care. Therefore, triage will be required to do the following:

1. Identify persons who might have pandemic influenza.
2. Separate infected patients from others to reduce the risk of disease transmission (refer to Section 3 - Infection Control).



3. Identify the type of care infected individuals require (i.e., home care or hospitalization) using admission and triage guidelines provided by SCCPHD. Refer to Module V – Clinical Guidelines and Disease Management.

Alert Period

SCCPHD has developed these clinical guidelines to be used by hospitals in planning the triage component of their hospital Pandemic Influenza Plan. The following elements are to be included in the hospital planning:

1. Develop a strategy for triage of possible pandemic influenza patients including specific locations within and during peak waves, outside the hospital. Refer to Clinical Triage Guidelines during Critical Pandemic Resources Stage in Module V (Tool M5-7).
Implement the following triage mechanisms:
 - a. Use phone triage to identify patients who need emergency care and those who can be referred to a medical office or other nonurgent facility.
 - b. Assign separate waiting areas for individuals with respiratory symptoms.
 - c. Assign a separate triage evaluation area for people with respiratory symptoms.
 - d. Assign a “triage coordinator” to manage patient flow, including deferring or referring patients who do not require emergency care to medical offices.
2. Review current procedures for the clinical evaluation of patients in the emergency department and in outpatient medical offices to facilitate efficient and appropriate disposition of patients.
3. Review current admission procedures and streamline them as needed to limit the number of patient encounters in the hospital (e.g., direct admission to an inpatient bed).
4. Identify a “trigger” point at which screening for signs and symptoms of pandemic influenza in all people entering the hospital will escalate from passive (signs at the entrance) to active (access screening and control).

Pandemic Period

Implement the triage plans developed during the Alert Period and ensure that clinicians and staff receive and implement any updated information or guidance provided by SCCPHD or CDHS.

Clinical Guidelines

Refer to Module V – Clinical Guidelines and Disease Management for a complete description of guidelines for healthcare providers.

The CDHS “Pandemic Influenza Preparedness and Response Plan” acknowledges:

“The management of influenza is based primarily on sound clinical assessment and management of individual patients as well as an assessment of locally available resources such as rapid diagnostics, antiviral drugs, vaccines, and hospital beds.”

Healthcare providers play an essential role in detecting an initial case of novel or pandemic influenza in a community. Early detection through heightened clinical awareness of disease and swift action for isolation and initiation of treatment can benefit the individual patient and may slow the spread of influenza within the community.

Rapid diagnosis and intervention with clinical care can potentially avert severe complications.”³

The SCCPHD distributed a Health Alert dated December 9, 2005 (Tool M2-1), which addresses the diagnosis of novel influenza infections. Additionally, the SCCPHD Laboratory has provided information about criteria for influenza A (H5N1) diagnostic testing, who to contact regarding clinical consultation, procedures for safe handling and collection of clinical specimens (as well as submittal and case history forms), where to send specimens, and resources for additional information that may be useful to clinicians (Tool M2-2).

Alert Period

1. Hospital Pandemic Influenza Plans should include a defined process for assuring that clinical guidance provided by SCCPHD and CDHS are shared with all clinicians.
2. SCCPHD has developed “Figure 1: Clinical Algorithm for Case Management - Alert Period (Tool M5-4),” that should be used by all Santa Clara County clinicians in evaluating and diagnosing a novel influenza. This includes both clinical criteria and epidemiological criteria.

Pandemic Period

Santa Clara County hospitals should implement plans to ensure that clinical guidance provided by SCCPHD and CDHS are shared with all clinicians.

Use and Administration of Vaccines and Antiviral Drugs

Refer to Module V - Clinical Guidelines and Disease Management for a complete description of the use and administration of vaccines and antiviral drugs during influenza pandemic.

Once the characteristics of a new pandemic influenza virus are identified, the development of a vaccine will begin. There may be benefits to immunization with a vaccine prepared before the pandemic against an influenza virus of the same subtype. Efforts are underway by the federal government to stockpile vaccines for subtypes with pandemic potential. As supplies of these vaccines become available, it is possible that the federal government will recommend that some healthcare personnel and others critical to a pandemic response should be vaccinated to provide partial protection or immunological priming for a pandemic strain. DHHS has not finalized policies for the use of pre-pandemic vaccine. During a pandemic, these recommendations will be updated, taking into account populations that are most at risk.

Antiviral drugs effective against the circulating pandemic strain can be used for treatment and possibly prophylaxis during influenza pandemic. Decisions regarding whether to prioritize use of antivirals for treatment over prophylaxis, or for prophylaxis over treatment, will be determined on the basis of the effectiveness of the antiviral agents against novel and pandemic influenza strains.

³ California Department of Health Services Pandemic Influenza Preparedness and Response Plan, Draft: Appendix 5. January 2006.

Alert Period

Santa Clara County hospitals will do the following:

1. Monitor updated DHHS information and recommendations about the development, distribution and use of a pandemic influenza vaccine (<http://www.pandemicflu.gov>).
2. Work with SCCPHD on plans for distributing pandemic influenza vaccine.
3. Provide estimates of the quantities of vaccine needed for hospital staff and patients using SCCPHD criteria.
4. Develop a hospital pandemic influenza vaccination plan.

Pandemic Period

Santa Clara County hospitals will do the following:

1. Follow SCCPHD guidelines for use and administration of antiviral drugs for prophylaxis measures and treatment, if available.
2. Implement the hospital pandemic influenza vaccination plan as directed by SCCPHD.

Surge Capacity

Medical surge capacity is “the ability to evaluate and care for a markedly increased volume of patients that challenges or exceeds normal operating capacity.” Medical surge capability is “the ability to manage patients requiring unusual or very specialized medical evaluation of care.”⁴ Hospitals are to include surge capacity planning as a part of their hospital Pandemic Influenza Plan.

Healthcare facilities are to plan ahead to address emergency staffing needs and increased demand for isolation beds, ICUs, assisted ventilation services, and consumable and durable medical supplies.

Staffing

Alert Period

CDHS has acknowledged the need for hospitals to set aside current nurse-to-patient ratios, in response to an emergency. Current guidelines provided by CDHS recommend planning for a 1:5 ratio for critical care level patients and a 1:20 ratio for medical-surgical level patients.⁵

Santa Clara County hospitals are to include the following in their Hospital Pandemic Influenza Plan:

1. Activate HICS Unit Leader to coordinate shift-to-shift staffing during waves of surge admissions.
2. Estimate the minimum number and categories of personnel needed to care for patients with influenza complications in each patient care area that is activated.

⁴ Medical Surge Capacity and Capability. The CAN Corporation, 2004. California Department of Health Services Pandemic Influenza Preparedness and Response Plan, Draft: Appendix 3, pg. 11. January 2006.

⁵ Surge Hospitals: Providing Safe Care in Emergencies, Joint Commission on Accreditation of Healthcare Organizations, 2006. California Department of Health Services Pandemic Influenza Preparedness and Response Plan, Draft: Appendix 3, pg. 12. January 2006.



3. Determine how the hospital will meet staffing needs as the number of patients with pandemic influenza increases and/or healthcare and support personnel become ill or remain at home to care for infected family members.
4. Determine when any changes in shift hours, i.e., 12-hour shift rotations will be implemented.
 - a. Assign patient-care responsibilities to clinical instructors, case management nurses, or administrators,
 - b. Use medical volunteers,
 - c. Use trainees (e.g., medical and nursing students),
 - d. Use patients' family members who are capable of providing basic healthcare needs.

Pandemic Period

Santa Clara County hospitals will do the following:

1. Implement Hospital Medical Surge – Staffing Plans.
2. Consult with SCCPHD regarding the changes in patient-nurse ratio recommendations.
3. Create a list of essential-support personnel titles that are needed to maintain hospital operations. Create a list of nonessential positions that can be reassigned to support critical hospital services.
4. Consult with SCCPHD for recruitment and deployment of local personnel, including medical volunteers.

Bed Capacity

Alert Period

Santa Clara County hospitals are to include the following in their Pandemic Influenza Plan:

1. Develop a Rapid Discharge Plan for expediting the discharge of patients who no longer require higher levels of medical/surgical inpatient care.
2. Develop criteria or “triggers” for temporarily canceling elective surgical procedures and determining what and where emergency procedures will be performed during a pandemic.
3. Develop plans for use of overflow space to triage, transfer/discharge and treat patients. This includes the following:
 - a. Using suspended beds,
 - b. Converting outpatient space to inpatient space,
 - c. Using nonpatient areas and obtaining permission from CDHS Licensing and Certification Division to use these spaces in an emergency.
4. Develop plans for shifting patients between nursing units to free up bed space in critical-care areas and/or to cohort pandemic influenza patients.
5. Identify areas of the facility that could be vacated for use in cohorting influenza patients in response to an influx of a high number of infected individuals.

Pandemic Period

During waves of patient surge in the Pandemic Period, Santa Clara County hospitals will do the following:

1. Implement plans for enhancing bed capacity, as appropriate.
2. Review and revise admissions criteria, as provided by SCCPHD, when bed capacity is limited.

Consumable and Durable Supplies

Alert Period

During extended waves of an Influenza Pandemic, consumable and durable patient supplies will be in short supply and high rates of illness will impact the supply chain. To prepare for such a possibility each Santa Clara County hospital must do the following:

1. Inventory critical supplies anticipated for use in treating pandemic influenza patients.
2. Determine usage levels and stockpile enough consumable resources for the duration of a pandemic wave (12 weeks).
3. Develop a strategy for acquiring additional equipment (e.g., ventilators).
4. Determine usage levels and stockpile enough food and water to care for patients and staff for the duration of a pandemic wave.
5. Develop a strategy for acquiring additional food and water supplies.
6. Test systems for procuring and storing additional supplies and address stockpile rotation issues.
7. Repair durable equipment, such as beds and cardiac monitors, not currently in working order on an expedited basis and plan ways to shorten the maintenance cycle.

Pandemic Period

Santa Clara County hospitals will do the following:

1. Implement components of the hospital Pandemic Influenza Plan related to consumable and durable supplies.
2. Activate the HICS Supply Unit Leader position to monitor critical supplies inventories, activate appropriate MOUs with vendors and keep the HICS Command Team informed of potential shortages.
3. Contact the SCCPHD DEOC using resource request forms when supplies are needed that the hospital can no longer obtain.
4. Activate the HICS Staff Food and Water Unit Leader position to monitor critical supplies of food and water inventories, activate appropriate MOUs with vendors and keep the HICS Command Team informed of potential shortages.

Continuation of Essential Medical Services

Alert Period

Hospitals must continue to provide essential medical care to patients requiring trauma care, labor and delivery, emergency surgery (e.g., cardiac; stroke), and emergency medical care (e.g., asthma, diabetic acidosis, chest pain, etc.).

Santa Clara County hospitals must do the following:

1. Address how essential medical services will be maintained for persons with chronic medical problems served by the hospital (e.g., hemodialysis patients; cancer therapy patients).



2. Develop a strategy for ensuring uninterrupted provision of critical medicines to outpatients. Consider dispensing a 60 to 90 day supply.

Pandemic Period

Each hospital must implement plans for continuation of essential medical services and review and revise admission criteria, as provided by SCCPHD, when bed capacity is limited.

Mortuary

Alert Period

To prepare for the possibility of mass fatalities during influenza pandemic, Santa Clara County hospitals must do the following:

1. Assess current capacity for refrigeration of deceased individuals.
2. Review current disaster plan for managing remains and temporary morgue overflow.
3. Modify plans to address potential need to manage contaminated remains for days.
4. Determine the scope and volume and create a stockpile of supplies (e.g., body bags) needed to handle an increased number of deceased individuals.

Pandemic Period

Each Santa Clara County hospital will do the following:

1. Activate overflow morgue capacity plans.
2. Receive and use guidance from the Coroner regarding disposition of deceased (morgue sites).

Security/Facility Access

Healthcare facilities must plan for additional security. This will be required given the increased demand for services and the possibility of long wait times for people who need treatment. Law enforcement cannot be relied upon for assistance. Also, triage or treatment decisions may result in people not receiving the care they think they require. As the pandemic progresses, it may be necessary to lockdown healthcare facilities and limit entrance only to those patients who meet admission criteria.

Alert Period

Hospitals must determine in advance the criteria and procedures they will use to enhance hospital security and limit access to the facility if pandemic influenza spreads through the community. This includes the following:

1. Define “essential” and “nonessential” visitors with regard to the hospital and the population served. Develop protocols for limiting nonessential visitors.
2. Develop criteria or “triggers” for temporary closing of the hospital to new admissions and transfers. The criteria should consider staffing ratios developed by CDHS, isolation capacity and risks to noninfluenza patients. As part of this effort, hospital administrators should determine who will make decisions about temporary closings and how and to whom these decisions will be communicated, including SCCPHD.



3. Implement controls necessary to assure that the hospital is able to physically secure all entrances.
4. Plan for additional security personnel during a critical pandemic wave.
5. Assess the viability of the security contract during times of high demand.
6. Determine how to assist hospital security services in enforcing access controls. Consider meeting with local law enforcement officials in advance to determine what assistance, if any, they can provide. Note that local law enforcement might be overburdened during a pandemic and have limited ability to assist healthcare facilities with security services.

Pandemic Period

Implement the Security/Facility Access component of the Hospital Pandemic Influenza Plan.

Occupational Health

Healthcare personnel are at risk for pandemic influenza through community and healthcare-related exposures. Once pandemic influenza has reached a community, healthcare facilities must implement systems to monitor for illness in the facility workforce and manage those who are symptomatic or infected.

Alert Period

Each Santa Clara County hospital must do the following:

1. Implement a system to educate personnel about occupational health issues related to pandemic influenza.
2. Promote annual influenza vaccination among hospital employees. Increased vaccination coverage during the Interpandemic Period might help increase vaccine acceptance during a pandemic and will limit the spread of seasonal influenza.
3. Ensure that a system is in place for documenting influenza vaccination of healthcare personnel.
4. Establish a strategy for rapidly vaccinating or providing antiviral prophylaxis or treatment to healthcare personnel as recommended by DHHS and CDHS. Preliminary recommendations on the use of antiviral drugs and vaccination have been established but will need to be tailored to fit the epidemiology of the pandemic. Refer to Module V – Clinical Guidelines and Disease Management.
5. Complete planning needed to implement the actions noted below during the Pandemic Period.

Pandemic Period

Each Santa Clara County hospital will do the following:

1. Screen all personnel for influenza-like symptoms before they come on duty, using criteria provided by SCCPHD. Symptomatic personnel should be sent home until they are physically ready to return to duty.
2. Personnel who are at high risk for complications of pandemic influenza (e.g., pregnant women; immunocompromised persons) should be informed about their medical risk and offered an alternate work assignment, away from influenza patient care, or considered for administrative leave until pandemic influenza has abated in the community.



3. Ensure that employees receive guidance or training about home care preparation.
4. Healthcare personnel who have recovered from pandemic influenza should develop protective antibody against future infection with the same virus and therefore may be prioritized for the care of patients with active pandemic influenza and its complications. These workers would also be well suited to care for patients who are at risk for serious complications from influenza (e.g., transplant patients and neonates).
5. Provide access to mental health and faith-based resources for counseling of healthcare personnel, coordinated by the HICS Employee Health & Well-being Unit Leader.
6. Implement a strategy for supporting healthcare workers' needs for rest and recuperation, coordinated by the HICS Employee Health & Well-being Unit Leader.
7. Implement a strategy for housing and feeding healthcare personnel who might be on-site for prolonged periods, coordinated by the HICS Employee Health & Well-being Unit Leader.
8. Implement the hospital Dependent Care Plan to provide assistance to staff that have child care or elder care responsibilities so the staff may remain available to work. The HICS Family Care Unit Leader coordinates this.

Recovery

Pandemic Influenza is anticipated to arrive in two to three waves over the course of several years, with a trough between the waves. These troughs – substantial decreases in new cases – offer opportunities for recovery similar to the return to the interpandemic phase that would occur after the cessation of the pandemic. This is a chance to regroup, learn and prepare for the next wave.⁷ Healthcare facilities will need to do the following:

- Complete documentation of costs associated with the pandemic influenza response.
- Identify and disseminate best practices related to information dissemination, clinical management, infection control, coordination of patient management, etc.
- Compile reports of shortages and restock supply cache.
- Evaluate the use of volunteers, expanded scope, alternative treatment sites, etc.
- Adjust emergency plans for the use of personnel, supplies and facilities. Review and update plans to include guidance and recommendations issued during the previous phases in accordance with current evidence and available resources.

NONHOSPITAL HEALTHCARE FACILITIES

Nonhospital healthcare settings will serve an important role during pandemic influenza. It is anticipated that acute care hospitals will be unable to admit all acute care level patients.

1. Surgical centers must prepare to alter their usual activities so they may provide care to pandemic influenza patients with an acute medical/surgical level of acuity.
2. Skilled nursing facilities must prepare to not only care for their normal clientele but must plan their ability to add beds to be able to admit and care for medical/surgical level patients that need supplemental oxygen and intravenous fluids.

These facilities must also prepare for care of infected patients that may need droplet and contact precautions.

3. Community ambulatory clinics and urgent care centers must prepare for a surge of patients requiring medical screening and ensure their clinicians maintain an awareness of the following:
 - a. The SCCPHD triage process,
 - b. Appropriate communication guidelines for admission of the seriously ill to acute care hospitals or immunization care centers,
 - c. Changes in practice protocols or standards of care.

The hospital planning recommendations included in Section 1 can serve as a model for planning nonhealthcare settings including surgical centers, urgent care settings, skilled nursing facilities, other residential care facilities and primary care health centers. All healthcare facilities must do the following:⁶

- Create a planning team and develop a written plan for continued operation of the specific facility during pandemic influenza.
- Establish a decision-making and coordinating structure that can be tested during the Interpandemic Period and will be activated during influenza pandemic.
- Determine how to conduct surveillance for pandemic influenza in healthcare personnel; and, for residential facilities, in the population served.
- Develop policies and procedures for managing pandemic influenza in patients and staff.
- Educate and train healthcare personnel about pandemic influenza, appropriate levels of infection control precautions, wearing appropriate PPE, and the healthcare facility's response plan.
- Determine how the facility will communicate and coordinate with healthcare partners and public health authorities during a pandemic.
- Determine how the facility will communicate with patients and help educate the public regarding prevention and control measures.
- Develop a plan for procuring the supplies (e.g., personal protective equipment [PPE]) needed to manage influenza patients.
- Determine how the facility will participate in the community plan for distributing either vaccine or antiviral drugs, including possibly serving as a point of distribution and providing staff for alternative community points of distribution.

INFLUENZA CARE CENTERS

Note: An operational plan for Influenza Care Centers will be completed by May 31, 2007, to be published as an annex to the Medical Mass Care Plan. The section that follows provides an overview of Influenza Care Centers.

⁶ DHHS Pandemic Plan; Supplement 3 – Healthcare Planning, Nov. 11, 2005.



Definition and Role of Influenza Care Centers

An Influenza Care Center (ICC) is a location not purpose-built as a setting for the delivery of healthcare. At an ICC, basic services – food, shelter and healthcare – will be provided at a standard well below that of institutional settings. Individuals with presumed influenza can be cohorted with others also exposed to influenza at an ICC. Concentrating resources and staffing at an ICC may facilitate the ability to provide services to larger numbers of ill patients.

The primary noninstitutional setting for care of people infected with pandemic influenza will be the patient's home, whenever possible, and not an ICC.

An ICC can provide care for individuals who have insufficient home-based resources (i.e., lack of caregiver, lack of permanent address, etc.), who cannot be admitted to a hospital setting, or to those directly discharged from a hospital who would have anticipated problems with self-care activities.

The standard of healthcare will be commensurate with the available level of resources at an ICC. Oxygen therapy (without ventilators) and intravenous fluids and antibiotics may be provided at an ICC. Absent sufficient staff and equipment – a likely scenario during a pandemic – service levels will be minimal, with a focus on supportive care. The standard of care will be adjusted upward when staff and supplies allow.

Admission to and Discharge from an ICC

Controlled access to ICCs will be in place for admission of patients, staff and visitors. Patients will be limited to those admitted through hospital referral or from triage settings designated by the Health Officer.

Refer to Module V - Clinical Guidelines and Disease Management (Tool M5-5) for a description of the clinical algorithm for admission to an ICC.

Three broad categories of patients may be admitted to an ICC:

1. Individuals with medical conditions similar to those admitted to hospitals but unable to gain admission because of capacity issues.
2. People less ill but who have insufficient home-based resources for proper care.
3. Adults and teens with a score less than 90 on the clinical algorithm, or children age 12 or less with breathing difficulties and toxic appearance.

Individuals may be transferred between hospitals and ICCs based on changes in condition after admission. Patients may be discharged to home-based care upon improvement in condition or identification of a home-based caregiver.

Command and Control

All activities at the Influenza Care Center will be under the supervision of an on-site ICC Administrator who will report to the Operations Section of the Public Health Department

Emergency Operations Center. The administrator of the ICC will ensure compliance with disease reporting responsibilities.

Infection Control Measures

The following will be required at Influenza Care Centers:

1. Prevention of disease transmission through standard, respiratory and droplet precautions.
2. The appropriate use of PPE for standard, droplet and airborne precautions.
3. Proper disinfection procedures.

Refer to the infection control recommendations in the hospital section above.

Selection of Influenza Care Centers

The November 2005 federal guidance recommends that ICC selection be related to the following desirable characteristics:

1. Bed capacity and spatial separation of patients, including adequate room to place equipment and to enable movement of patients on gurneys and wheelchairs,
2. Facilities and supplies for hand hygiene,
3. Lavatory and shower capacity for large numbers of people,
4. Food services (refrigeration, food handling and preparation),
5. Medical services,
6. Staffing for patient care and support services,
7. PPE supplies,
8. Cleaning/ disinfection supplies,
9. Environmental supplies (linen, laundry, waste),
10. Safety and security.

The following two desirable characteristics supplement the federal guidelines:

1. Space for collection of deceased bodies,
2. Proximity to hospitals to facilitate transfer of patients and supplies between facilities.

Currently in Santa Clara County only hospitals and skilled nursing facilities meet all desirable characteristics. Therefore, selection of an ICC must be drawn from hotels, sports facilities convention centers, recently closed and unoccupied hospitals that are sufficiently equipped with beds and other supplies typically found in operational facilities, school facilities, armories and other buildings that best match the list of desirable characteristics. The selection of specific sites that will be used as ICCs will be developed by May 31, 2007. Sufficient capacity to serve at least 2,500 individuals per day in ICCs will be identified. The Health Officer has power during a declared emergency to commandeer private property. The Public Health Department will work proactively to maintain annually updated lists of ICC locations and work toward Memoranda of Understanding with facilities managers.

Sites that may be designated as Influenza Care Centers may change over time based on need and epidemiological data, staff and supply status and Health Officer directives. The public and providers will be informed about Influenza Care Centers via hotlines, press releases and provider bulletins.

The plan emphasizes the selection of the fewest possible sites to recognize the tactical and strategic issues associated with staffing and supplying the selected sites. The plan prioritizes proximity to larger hospitals over geographic distribution throughout the county in recognition of the burden on transport services during the pandemic.

Influenza Care Centers for Acutely Ill People

The selected facilities will enable health professionals to care for larger numbers of individuals in high-capacity rooms. Health professionals will be able to move quickly among the patients and maximize the ratio of patients to healthcare professionals. Equipment can also be moved quickly between patients.

Influenza Care Centers for Less Acutely Ill People

The guest rooms of hotels or other facilities that enable dividing patients into smaller groups, or additional sites commandeered by the Health Officer, may be used to place less acutely ill individuals. Because they have more self-care capability, the ratio of patients to healthcare professionals will be adjusted accordingly.

One or two locations may be selected as pediatric sites or serve as an ICC dedicated to a target population such as people with behavioral health issues, based on need epidemiological data.

The “dual use” of the larger hotels – “acute-care” patients in the ballrooms and “self-care” patients in guest rooms – enables centralizing staff, supply, security, and associated issues at a limited number of sites.

Staff at Influenza Care Centers

A daunting challenge and perhaps the limiting factor in the use of Influenza Care Centers will be the number of able-bodied and competent healthcare professionals to oversee their operations. Healthcare professionals will be needed at ICCs to manage care of patients and to provide direction to the other Disaster Service Workers assigned to assist at the ICC. To the extent that insufficient numbers of healthcare professionals are in attendance, the standard of care will degrade to basic sheltering level.

For “acute-care” patients, at least one physician/practitioner per 60 patients and one licensed nurse per every 20 patients are recommended per 8-hour shift. One pharmacist or pharmacist technician will be needed at each ICC at all times. One skilled person (psychiatric social worker, counselor, or other worker) will be assigned to address mental health and emotional issues among patients and staff. Ancillary health professionals (respiratory therapists, physical therapists, occupational therapists, etc.) are desirable, although few may be available. Healthcare professionals will be assigned from the Medical Volunteer Corps and from outpatient or clinic-based settings. Unlicensed staff and staff with no background in providing direct patient care will be drawn from among Disaster Service Workers provided by the Department Emergency Operations Center. An orientation and just-in-time training for Influenza Care Centers will be provided upon assignment of these staff members (Tool M3-1).

Schematics of the physical set-up for the Influenza Care Centers, for 3-Nurse Station (Tool M3-2) and for Nurse Station for 20 (Tool M3-3) are included in the appendices.

Arrangement for translators and interpreters should be made. Requests for bilingual staff go to the DEOC.

A suite of rooms at the hotels serving as Influenza Care Centers will be reserved as staff accommodations. This will enable some staff to be maintained at the ICC on a 24/7 basis. Command and control staff will be allocated sleeping quarters to maintain operational continuity of direction.

Law enforcement, supplemented by other Disaster Service Workers as requested through the Department Emergency Operations Center, will provide security and links to the Coroner's Office.

Hotel and facility staff normally assigned to janitorial duties, food preparation duties and housekeeping duties will be expected to facilitate these functions during such time when the hotel serves as an ICC. Additional workers for these tasks will be assigned through requests to the Department Emergency Operations Center. Duty statements for Influenza Care Center staff are included in the appendices (Tool M3-4).

Supplies at Influenza Care Centers

The Influenza Care Centers under consideration have commissary/kitchen facilities and may have limited on-hand foodstuffs and janitorial/housekeeping supplies. These items will need to be restocked over time. This is the responsibility of the Public Health Department Emergency Operations Center during a pandemic. A list of supplies needed at ICCs is included in the appendices (Tool M3-5).

Medical supplies such as personal protective equipment, gurneys, cots/beds, durable medical equipment, etc., may be commandeered from medical supply companies or redirected from caches under the control of the American Red Cross. Some of the supplies may overlap with American Red Cross warehoused supplies typically used for sheltering displaced individuals after earthquakes, floods and other disasters. The local Red Cross chapters will make available a cache of more than 6,000 cots and blankets, upon request. The Red Cross will also provide staff to deliver and set up cots and other materials.

Prescription and over-the-counter medications will be in high demand, not only those medications specific for influenza, but also medications for pre-existing conditions. A list of influenza-related and other medicines is pending development. A table of Empiric Antibiotics Regimens for Community-Acquired Pneumonia During an Influenza Pandemic is included in the appendices (see Module V - Tool M5-10).

The Finance Section at the Department Emergency Operations Center will work with hotels and other commandeered facilities to retain adequate records for FEMA-reimbursable payments.

SPECIAL CONSIDERATIONS

The following issues will be taken into consideration as preparedness and response actions are implemented:

1. Consider prioritizing hospitalization versus assignment to an Influenza Care Center for some special populations. Refer to Module V – Clinical Guidelines and Disease Management for admissions criteria to levels of care, which includes hospitals, ICCs and home-care settings.
2. Consider the assistive care needs of special populations at Influenza Care Centers.
 - a. The assistive care needs of special populations such as persons with impaired mobility or those with acute mental/emotional illness must be taken into account at the time of the triage decision. Based upon need, some Influenza Care Centers may be designated for particular target populations.
 - b. Influenza Care Centers designated for a special population group require staffing (e.g., mental health professionals for a center catering to people with mental illness), equipment (e.g., hydraulic lifts for individuals who are unable to assist with transfers) and other considerations (e.g., wide aisles to enable wheelchair access). Absent proper staffing, supplies or infrastructure, special populations may be deemed inappropriate for Influenza Care Center admission. The on-site ICC Administrator is responsible for informing the DEOC Operations Section Chief regarding limiting factors at the ICC.
3. Ensure multilingual staff capacity at Influenza Care Centers.
4. Consider optimal location of care for patients who are incarcerated.

Module III - Healthcare Systems Tools

Tool M3-1: Just-in-Time Influenza Care Center Orientation

Tool M3-2: Schematic of Physical Set-up of Influenza Care Center 3-Nurse Station

Tool M3-3: Schematic of Physical Set-up of Influenza Care Center Nurse Station for 20 patients

Tool M3-4: Duty Statements for Influenza Care Center Staff

Tool M3-5: Checklist of Supplies for Influenza Care Centers

