

**SUBMITTAL TO THE BOARD OF SUPERVISORS  
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**

236



**FROM:** Community Health Agency

**SUBMITTAL DATE:**  
October 13, 2005

**SUBJECT:** Avian Flu Update Report

**RECOMMENDED MOTION:** Receive and File the Avian Flu update report.

**BACKGROUND:** At the September 27, 2005, Board of Supervisors' meeting, Supervisor Jeff Stone requested the Department of Public Health to provide the Board of Supervisors an update on the Avian Flu. Attached is the report.

Departmental Concurrence

GMF:ar

Gary M. Feldman, M.D., Director  
Community Health Agency

<b>FINANCIAL DATA</b>	Current F.Y. Total Cost:	\$ 0	In Current Year Budget:	N/A
	Current F.Y. Net County Cost:	\$ 0	Budget Adjustment:	N/A
	Annual Net County Cost:	\$ 0	For Fiscal Year:	N/A

<b>SOURCE OF FUNDS:</b> N/A	Positions To Be Deleted Per A-30	<input type="checkbox"/>
	Requires 4/5 Vote	<input type="checkbox"/>

**C.E.O. RECOMMENDATION:**

**APPROVE**

County Executive Office Signature

- Consent
- Policy
- Consent
- Policy

Dep't Recomm.:  
Per Exec. Ofc.:

Prev. Agn. Ref.:

District:

Agenda Number:

3.10

# Preparing for Pandemic Influenza

## BACKGROUND

According to the Centers for Disease Control and Prevention (CDC), the worst natural disaster in modern times was the infamous “Spanish flu” of 1918-1919, which caused 20 million deaths worldwide and over 500,000 deaths in the U.S. Although the Asian influenza pandemic of 1957 and the Hong Kong influenza pandemic of 1968 were not as deadly as the Spanish influenza pandemic, both were associated with high rates of illness and social disruption.

Influenza is a highly contagious viral disease. Pandemics occur because of the ability of the influenza virus to change into new types, or strains. People may be immune to some strains of the disease either because they have had that strain of influenza in the past or because they have recently received influenza vaccine. However, depending on how much the virus has changed, people may have little or no immunity to the new strain. Small changes can result in localized epidemics. But, if a novel and highly contagious strain of the influenza virus emerges, an influenza pandemic can occur and affect populations around the world. Avian influenza (bird flu) has the potential of causing pandemic influenza.

An influenza pandemic is a global outbreak of disease that occurs when a new influenza A virus appears or “emerges” in the human population, causes serious illness, and then spreads easily from person to person worldwide. Pandemics are different from seasonal outbreaks or “epidemics” of influenza. Seasonal outbreaks are caused by subtypes of influenza viruses that are already in existence among people, whereas pandemic outbreaks are caused by new subtypes or by subtypes that have never circulated (spread) among people or that have not circulated among people for a long time.

## CURRENT STATUS OF AVIAN INFLUENZA

Beginning in late June 2004, 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 A H7 in poultry. In late July 2005, both Russia and Kazakhstan reported outbreaks of avian influenza in poultry. Outbreaks in both countries have been attributed to contact between domestic birds and wild water fowl via shared water sources.

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 N1) infection from Cambodia was reported. On July 21, 2005, the first laboratory-confirmed human case of avian influenza A (H5N1) in Indonesia was reported.

As of August 5, 2005, there have been 112 human cases of avian influenza A (H5N1) in Vietnam (90), Thailand (17), Cambodia (4), and Indonesia (1), resulting in 57 deaths.

To date no cases have been reported in the United States. However, the California Department of Health Services (CDHS) has indicated that the State lab has tested approximately 12 specimens to rule out avian influenza. CDHS is convening a conference call with local health departments in October to discuss involving local public health laboratories in testing for avian influenza.

### **Transmission of Avian Flu (Bird Flu)**

Birds infected with avian influenza shed the virus in their saliva, nasal secretions, and feces. The risk of humans becoming infected from bird flu is felt to be low. It appears that most cases of avian influenza infection in humans have been the result of contact with infected poultry or contaminated surfaces. However, there is a concern that changes in the virus may result in ongoing human to human transmission.

### **Precautions to protect the public and health care workers**

Basic infection control principles apply for avian influenza. It is important for the public to cover their mouth & nose with tissue when coughing or sneezing, and to frequently wash their hands. Individuals who feel ill with high fever, headache and severe muscle aches should contact their health care provider. It may be difficult to distinguish regular flu from avian flu without appropriate testing.

It is important to take appropriate infection control measures in health care facilities to avoid potential exposure of staff and other patients. This involves frequent hand washing, use of personal protective equipment and appropriate isolation of patients. This is especially important for patients with severe respiratory illness with fever who have traveled to countries with avian influenza activity within 10 days of hospitalization. Individuals traveling to Asia are asked to consult the CDC Travel Website for travel advisories for the Public.

### **Planning for Activities for Pandemic Influenza**

Planning activities are taking place at the National, State and local levels. The Department of Public Health prepared a draft Pandemic Influenza Response Plan based on guidance from CDHS and CDC. The plan delineates specific actions related to the various phases of a pandemic and outlines the roles and responsibilities of Public Health, State and Federal health officials. The plan will be shared with key stake holders once it is reviewed by CDHS.

### **Surveillance Activities**

#### **Human Cases**

The Department of Public Health routinely conducts surveillance activities for influenza. This involves using Reddinet to collect data on visits to emergency departments for influenza-like illness, and conducting active surveillance with hospitals, physician offices and clinics. In

addition, health care providers are required to report outbreaks of influenza. Hospitals have been asked to report any suspect avian influenza cases to Disease Control.

### **Poultry Related Cases**

The Department of Public Health has initiated communication with the Agricultural Commission to identify protocols for surveillance and reporting of avian influenza in poultry. Many of the procedures which were established in 2002 to address the Newcastle disease outbreak in poultry will be applicable to avian influenza.

### **Education of the Medical Community**

Information is being distributed to the medical community through Public Health Advisories and the Public Health Dispatch, which is a quarterly publication.

Disease Control is hosting a satellite conference in October, 2005 on Public Health Preparedness for pandemic influenza which is presented by the California Department of Health Services.

Information on avian influenza and appropriate precautions is included in the Department of Public Health new employee orientation and is part of the annual airborne pathogen update. An article is being prepared for an upcoming issue of the County Safety Newsletter.

### **Education for the Public**

Information on pandemic influenza has been posted on the Disease Control Website. In addition, educational materials are being developed for distribution to the Public (i.e., schools).

## **PRE-EVENT PLANNING**

Pre-event planning will assist Riverside County in preparing for responding to an influenza pandemic. It will also increase awareness among the public health, medical, and emergency response communities about a potential pandemic and will foster greater awareness about "routine" annual influenza epidemics, which kill an average of 36,000 Americans every winter.

Prompt improvements in infrastructure to address the major elements of pandemic preparedness can have immediate and lasting benefits and can also mitigate the effect of the next pandemic. For example, increasing routine annual influenza vaccination coverage levels in high-risk patients will not only reduce their risk of dying or being hospitalized during the pre-pandemic period, but will also facilitate access to such patients through greater confidence in the benefits of influenza vaccination and expanded programs to assess those patients when the next pandemic occurs. Influenza vaccination of children is advocated by some experts as a strategy to reduce transmission of disease to adults. Similarly, increasing the coverage of pneumococcal vaccine in such patients could have a significant impact on the incidence and severity of secondary bacterial pneumonia.

The Department of Public health will begin its annual influenza campaign targeting senior and other high risk individuals in October.

Many of the Disease Control principles used for controlling disease outbreaks will be applicable for addressing pandemic influenza. However, it is important to recognize that a pandemic will require more intensive and sustained intervention, including widespread mass vaccination, stringent infection control measures and surveillance to detect a second wave of disease. Ongoing response planning for infectious disease outbreaks, other public health emergencies and potential BT events will assist in the ability of Riverside County to respond to pandemic influenza.

## Pandemic Influenza Fact Sheet

### What is pandemic influenza?

Influenza viruses cause infections of the respiratory tract (breathing tubes and lungs). In some persons, complications of influenza can be severe, including pneumonia.

Pandemic influenza is a global outbreak of disease from a new influenza A virus that is unlike past influenza viruses. Because people have not been infected with a similar virus in the past, most or all people will not have any natural immunity (protection) to a new pandemic virus.

### How is a pandemic different from regular flu season?

A pandemic flu is a new influenza virus that could be a much more serious and contagious flu virus than seen in a typical flu season. Different from the typical strains of flu, humans would have no or little natural resistance to a new strain of influenza. Also, there is a vaccine for seasonal flu, which is prepared each season against new variations of the seasonal influenza. There is no vaccine available at this time for a pandemic flu, and it is expected to take at least six months after a pandemic flu appears to develop a vaccine.

### Why is pandemic influenza so serious?

Because most or all people would not have immunity to a new pandemic virus, large numbers of persons around the world can be infected. If the pandemic virus causes severe disease, many people may develop serious illnesses.

Once a pandemic virus develops, it can spread rapidly causing outbreaks around the world. The U.S. Centers for Disease Control and Prevention (CDC) predicts that as much as 25% to 30% of the US population could be affected.

### Can pandemic flu be prevented?

Riverside County Department of Public Health is working with state and other local government agencies to respond to pandemic influenza and to maintain essential health care and community services if an outbreak should occur. In fact, governments all around the world are preparing for the possibility of a pandemic outbreak under the leadership of the World Health Organization.

It is not possible to prevent or stop a pandemic once it begins. A person infected with influenza virus can be contagious for 24 hours before the onset of symptoms, and for seven days thereafter, making it extremely easy for the virus to spread rapidly to large numbers of people.

Although the federal government is stockpiling medical supplies and antiviral drugs, no country in the world has enough antiviral drugs to protect all their citizens. Anti-viral drugs can be used to treat severe cases as long as there was a reasonable chance that the drugs might help save lives. Antiviral drugs might also be prioritized for people who work in essential occupations, such as health care workers.

Riverside County  
Disease Control  
4065 County  
Circle Drive  
Riverside, CA  
92503

Phone:  
(951) 358-5107

TTD:  
(951) 358-5124

Other strategies for slowing the spread of a severe influenza outbreak could include temporarily closing schools, sports arenas, theaters, restaurants, taverns, and other public gathering places and facilities.

There currently is no vaccine to protect humans against a pandemic influenza virus because the pandemic virus has not yet fully developed. However, vaccine development efforts are under way to protect humans against a pandemic influenza virus that might develop from the current bird flu virus in Asia. (See information on bird flu below).

### **When is pandemic influenza A expected?**

Influenza pandemics occur naturally. There were 3 pandemics in the 20th century. The pandemic of 1918-19 was the most severe pandemic on record, in which 50 million or more persons around the world died, including approximately 650,000 Americans.

It is not possible to predict accurately when influenza pandemics will occur or how severe they will be. However, the current outbreak of avian influenza in Asia has influenza experts concerned that a pandemic is developing that may be severe.

### **Why does the current bird flu outbreak in Southeast Asia pose a risk of causing a pandemic influenza A outbreak in humans?**

New human influenza viruses arise from bird influenza viruses that then change to a form that can infect humans and spread readily from person to person. The current bird flu outbreak in Asia is caused by a type of influenza A virus called "H5N1." The H5N1 outbreak among domestic chickens and ducks in Asia is widespread and uncontrolled. Human infections and deaths due to the avian H5N1 virus have occurred. However, at this time the virus has not developed the ability to pass easily from person to person and cause outbreaks in humans.

### **What are the symptoms of bird flu in humans?**

The reported symptoms of bird flu in humans have ranged from typical influenza-like symptoms (e.g., fever, cough, sore throat, and muscle aches) to eye infections (conjunctivitis), pneumonia, acute respiratory distress, viral pneumonia, and other severe and life-threatening complications.

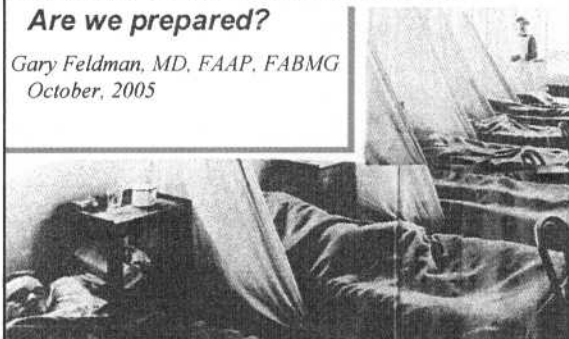
### **What can the public do to reduce their risk of pandemic influenza?**

- **Stay informed.** These web sites provide regularly updated information about bird flu and pandemic flu:
  - Centers for Disease Control and Prevention (CDC)
  - For information on the vaccine development process, visit the National Institutes of Health at [www.niaid.nih.gov](http://www.niaid.nih.gov)
  
- **Stop germs from spreading.**
  - Cover your mouth and nose with tissue when coughing and sneezing
  - Wash your hands often
  - Stay home when you are sick
  
- **If you plan to travel to Southeast Asia, check the [CDC web site for travel advisories](#)**

## ***Avian Flu Pandemic***

***Are we prepared?***

*Gary Feldman, MD, FAAP, FABMG  
October, 2005*



---

---

---

---

---

---

---

---

*New York Times, October 5, 2005  
Fear of Flu Outbreak Rattles Washington  
By GARDINER HARRIS*

- *The Senate adds \$3.9 billion for flu preparations to a Pentagon appropriations bill.*
  
- *Meanwhile, Bush speculates on a role for the military to enforce quarantines.*

---

---

---

---

---

---

---

---

### ***Avian flu infects humans.***

- *Avian flu (H5N1) infects 18, kills 6 in Hong Kong in 1997.*
- *Related pathogenic avian H5N1 strains sweep across Asia, since 2003 over 116 cases. Millions of fowl sacrificed.*
- *At least 60 dead in Thailand and Vietnam, 50% mortality rate.*
- *Direct human to human transmission not confirmed - YET.*

---

---

---

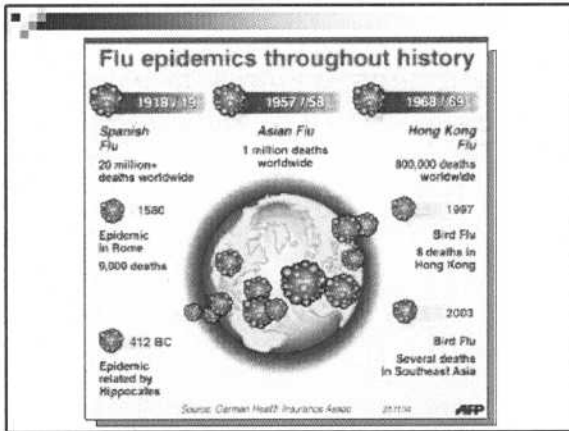
---

---

---

---

---




---

---

---

---

---

---

---

---

- *The Flu Pandemic of 1918-1919 killed from 20 to 80 million worldwide – 20 million is more than all the combat deaths in WWII.*
- *Smaller pandemics in 1957 and 1968.*
- *All these were mutated versions of animal influenzas.*

---

---

---

---

---

---

---

---

*RNA from the 1918 flu has recently been sequenced from pathology specimens.*

*And now the 1918 virus has been recreated in the lab and is alive.*

*The work shows that the 1918 virus was an avian flu. This is why we are so concerned.*

---

---

---

---

---

---

---

---

***What does the RNA sequence tell us about virulence?***

- *Aquatic birds, like ducks, are natural reservoir, since they carry the avian flu viruses without becoming ill.*
- *The 1918 virus was so virulent because it caused intense inflammation deep in the lungs.*

---

---

---

---

---

---

---

---

***Life cycle of Influenza A.***

- *Unlike DNA virus, no proofreading – hence rapid mutation.*
- *More than one different virus strain can be reproducing in the same cells.*
- *RNA segments mix freely and can reassemble and "reassort." The avian virus could instantly acquire the trick of human transmission if it co-infects a host along with a human strain of flu.*

---

---

---

---

---

---

---

---

***How prepared are we?***

*If avian flu acquires the ability to transmit from human to human, it will be everywhere in the world in a matter of days or weeks.*

*Unlike SARS, isolation and quarantine are not very effective public health measures, because flu is communicable before symptoms develop.*

---

---

---

---

---

---

---

---

Current vaccine technology is too slow to protect the world from an avian flu pandemic. We only have 2 million doses and they are as yet untested and unlicensed.)

However, sequencing the 1918 viral RNA may provide information which could lead to the development of new vaccines, such as an anti-RNA vaccine or to new antiviral drugs.

---

---

---

---

---

---

---

---

**Riverside County**

- We do not have enough surge capacity to deal with a fairly bad "normal" flu season, let alone a pandemic. Capacity issues are primarily staff - include ambulance, emergency rooms, hospital and ICU beds, nursing care, resp. tx., etc.
- Health care workers will be disproportionately affected.
- Everyone will be in the same boat, so that we cannot expect a lot of mutual aid in a pandemic.

---

---

---

---

---

---

---

---

- There will likely be long waits, triage and rationing of care.
- There is a risk of civil disorder, especially if supplies of vaccine or antiviral medication must be rationed.
- We must be able to communicate clearly and demonstrate fairness.
- It is possible that the SNS may help if there are national stockpiles of useful vaccine or drugs.
- We do have a pandemic flu plan (in draft,) but it is more about how to cope and recover, than a way to dodge the bullet.

---

---

---

---

---

---

---

---

*Elements  
Riverside Pandemic Flu Plan*

- *Surveillance and lab detection for quick ID and tracking.*
- *Mass vaccination (assuming vaccine is available).*
- *Suspension of licensing rules to increase capacity in ERs and hospitals.*
- *Use of volunteer medical and nursing staff.*

---

---

---

---

---

---

---

---

*Plan, continued*

- *Public information and infection control via personal hygiene.*
- *Isolation to minimize spread– suspend school, etc.*
- *Deployment of cache of ventilators and other supplies and pharmaceuticals, including antiviral medications.*
- *Seek mutual assistance and other resources – SNS, etc.*

---

---

---

---

---

---

---

---

*Stockpiles?*

- *Bush considers stockpiling Tamiflu, the only antiviral medication that is effective against the current avian flu.*
- *But Tamiflu has a short shelf life and is very expensive. And, it may not be effective against a mutated strain.*
- *At this time, I recommend against purchasing a local stockpile of Tamiflu.*

---

---

---

---

---

---

---

---

### *Riverside Poultry*

- *Can we prevent avian flu from spreading to Western flocks? Probably not. (Official jurisdiction is with Ag. Commissioner and CDFA, but we work with them for surveillance, etc.)*
- *Even if we could prevent it, it would have little effect on our risk from an avian flu-derived pandemic, which can be caused by a genetic reassortment anywhere in the world.*

---

---

---

---

---

---

---

---

- *By the way, the reason that avian flu is now resistant to Amantadine and related antiviral medications is that the Chinese Agriculture Department ordered it added to the water given to poultry.*

- *Don't try this at home.*

---

---

---

---

---

---

---

---

### *In Conclusion*

- *The next flu pandemic is only a matter of time. H5N1 is a likely candidate.*
- *Unless we work on developing the capacity to create and deliver vaccine rapidly on worldwide basis, a new pandemic could kill far more people than the 1918 pandemic.*
- *Knowledge of the RNA sequence of the 1918 virus may help in that effort.*
- *There is no time to be lost to plan and prepare.*
- *BOS action – liability/credentialing*

---

---

---

---

---

---

---

---

*Food for thought*

- *Will the re-animated 1918 virus escape from the lab and cause a pandemic? (BL-3 containment.)*
- *Will the technology of creating live viruses from genetically engineered RNA sequences be useful to create bioterrorism weapons?*

---

---

---

---

---

---

---

---