

YOLO COUNTY HEALTH DEPARTMENT EMERGENCY PREPAREDNESS & RESPONSE

Lessons Learned from the Avian Flu Outbreak and Vaccination DRILL, June 10, 2004



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Photos by Yolo and Sonoma County Health Departments

BACKGROUND

In response to the heightened threat of bioterrorism and new emerging infections such as SARS, local health departments have been tasked with the responsibility to provide training to public health and other emergency medical providers to be able to rapidly identify, respond, treat and contain the spread of disease.

On June 10, 2004, the Yolo County Health Department conducted a two-hour long mass vaccination and disease investigation Avian Flu Drill on the University of California campus in Davis (UC Davis). The four objectives of the Drill were to:

- Identify, investigate, and isolate “patients ill or exposed” to disease
- Provide MOCK vaccinations to 200-300 volunteers in a short period of time
- Transport “ill patients” to local hospitals and clinics for treatment
- Test UC Davis Emergency Operations and Communications

The Drill was a collaborative effort among the following partners and agencies:

- Yolo County Departments of Health, Mental Health and Emergency Services
- UC Davis Emergency Preparedness Unit, School of Medicine & Telemedicine
- California Department of Health Services
- Sacramento & Contra Costa Health Department Epidemiologist Programs
- Woodland Memorial and Sutter Davis Hospitals & CommuniCare Clinics
- American Medical Response ambulance
- Red Cross of Yolo County

Why Avian Flu for the Drill?

Communicable disease practitioners and researchers expect that the most likely disease outbreak scenario to occur is a widespread influenza pandemic. The World Health Organization is closely monitoring emerging infections such as Avian Flu, which can cause rapid, life-threatening disease. Although it is presently only transmitted from infected poultry to humans through direct contact, it has the very real risk of mutating into an influenza strain that can be more easily transmitted from person-to-person across the globe. Currently, there is no effective treatment or vaccine for Avian Flu, although experimental drugs are being tested in poultry.

For purposes of the Avian Flu Drill, we assumed that the MOCK Avian Flu had mutated into a respiratory disease transmitted person-to-person. A MOCK experimental Avian Flu vaccine was modeled on existing live virus vaccines. Thus, we were able to exercise our ability to offer mass vaccinations, identify persons who were exposed or ill with a life-threatening disease that could be transmitted person-to-person, and implement isolation and quarantine procedures to contain the spread of disease.

This was the first large-scale test of a community’s ability to respond to a respiratory, communicable disease based on a new emerging infection such as Avian Flu in the United States.

PREPARING FOR THE DRILL

The Yolo County Health Department developed and coordinated the mass vaccination and disease investigation. UC Davis conducted a tabletop exercise at their emergency operation center. Local ambulance service, hospitals and community clinic planned for the transport and treatment of “ill patients”.



Planning: Planning started the beginning of March 2004 (not soon enough!). Staff had attended vaccination exercises at other counties and we were graciously provided with materials and useful words of advice and warning. All forms used in the exercise were developed in Spanish and English.

Facility & Materials: UC Davis thankfully provided the facility, setup and equipment. Office supplies, gloves, surgical masks and safety vests had been previously stockpiled. At the 11th hour, our neighboring sheriff’s media department helped us finalize spiffy videos about Avian Flu, vaccines and how to prevent spread of disease. Additional supplies, incentives and signage were hurriedly ordered as reality set in.

Staff recruitment and training: In addition to Health Department emergency preparedness staff, unsuspecting college interns were recruited to help. Health Department supervisors were given a half-day of training two weeks preceding the Drill. Other staff and volunteers were given on-the-spot training the morning of the Drill.

Volunteer recruitment: Volunteer “vaccinees” were recruited from the UC Davis campus through flyers distributed through department e-mail lists, on-line registration on our web site and announcements in pre-med and bio-psychology classes. We provided a fully functional First Aid Kit as a thank you for all who participated in the Drill.

Investigation of new disease: We were idealistically enthusiastic about learning about a new emerging disease and developing new forms. Fortunately, we enticed a few dedicated medical students and similarly enthused county epidemiologists, state and UC Davis infectious disease physicians to join in the fun, meeting weekly for 8 weeks.

Media & Security: Newspaper, television, radio and bilingual media were invited to the event, creating a real test of our public information planning. The UC Davis police department provided security and directed parking outside the facility. Health department and agency partner volunteers were crowd controllers inside.

Evaluation: Debriefing was held on-site immediately after the Drill; staff and patient volunteers submitted evaluations and meetings were later held with health department and neighboring county staff who helped with the planning. Colleagues with previous experience with these exercises volunteered to help evaluate the Avian Flu Drill.

Funding: Federal funds from the Centers for Disease Control and Prevention (CDC) bioterrorism and health preparedness grant were used for the Drill (total cost=\$30,000).

AVIAN FLU DRILL SCENARIO

To set the stage for the Drill, we prepared the following scenario:

“500 cases of a deadly strain of Avian Flu had been reported around the world. No cases were reported in the United States.

On June 4-6, 2004, participants from all over the world came to attend an International Agricultural Conference held in Chickenville, California. Some presenters ill with MOCK Avian Flu attended the conference and infected others. Symptoms developed in 2 to 4 days after close contact with an infected person. Symptoms included fever over 100.4 F, cough, shortness of breath, wheezing, sweating, chills and diarrhea.

On June 8, 2004, the news media announced that there was an outbreak of MOCK Avian Flu in Chickenville resulting in serious illness and death. Health Departments in California were directed to open mass vaccination clinics to provide a newly developed MOCK Avian Flu vaccine to all residents. The Yolo County Health Department planned to open their first vaccination clinic on June 10, 2004 at the UC Davis campus.

The Health Department was informed that a UC Davis student who attended the conference in Chickenville was hospitalized with Avian Flu. Persons who had traveled to Chickenville or had direct contact with this case were referred to Health Department disease investigators. Ill persons who arrived at the vaccination site with suspected Avian Flu were transported by ambulance or private vehicle to local hospitals or clinics. UC Davis set up a telemedicine unit at one hospital for consultation with infectious disease experts.”



LESSONS LEARNED

Overall, our drill was deemed to be a huge success. We kept our objectives doable - train our staff and partner agencies in running an abbreviated mass vaccination clinic, conduct disease investigation and quarantine for several “exposed or infected” patients, transport, treat and isolate a small number of “infected” patients at local hospitals and clinics and role-play campus communications. We assumed that we would learn much about the gaps and challenges we needed to address – and we were right about that!

WHAT WENT WELL?

Participants reported that they now had a much better understanding about how a mass vaccination clinic operates. Staff felt more confident about their roles in a disease outbreak. Partnerships and professional relationships with other agencies were greatly enhanced. Based on evaluations submitted by participants

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from the health department, partner agencies and volunteers, our emergency preparedness staff has specific ideas about where to focus our efforts.

- *Organization:* Volunteers reported that the clinic was well organized and staff seemed “confident and knowledgeable”
- *Flow:* It took on average 40 minutes for patients to get through the clinic. It was clearly marked how to move through the clinic.
- *Support services:* the mental health team was excellent and much needed.
- *Medical information:* The Avian Flu fact sheet and video were helpful and easy to understand
- *Clarity of forms:* Medical history forms were simplified and easy to read
- *Medical guidance:* Clear guidelines were provided for medical screeners regarding vaccine contraindications
- *Operations:* The Logistics, Operations and Clinic Chiefs, having little advance training, did a great job checking in regularly with their staff and trouble-shooting problems
- *Collaboration:* Disease investigators, epidemiologists and emergency planners from various counties worked extremely well together. Our colleagues’ assistance, advice and suggestions were invaluable.



CHALLENGES TO BE ADDRESSED:

Communications, training and infection control measures were the key challenges. The Incident Command System was not well implemented and is a must for emergency operations. Supervisors and public information staff needed more training before the clinic ever opened. Infection disease control measures were inadequate for containing the spread of disease in crowded gatherings.

- *Incident Command (IC):* IC station needs to be clearly located and staffed. Updates need to be communicated on a regular basis. Clinic managers at each vaccination site need to have important contact information with them and need to share their phone and radio numbers with partner agencies.
- *Infection Control:* Better separation of infected and non-infected persons, consistent adherence with infection control measures and use of gloves and anti-microbial hand wash to prevent disease transmission
- *Training:* More training for Station Leads on clinic procedures, disease background, emergency information, exits & site maps. First Aid was not well utilized.
- *Radios:* Walkie-talkies for all Station Leads & VHF 2-way radios for clinic chiefs.
- *Informed consent:* Clarification that vaccinations or medications are recommended to prevent illness but can be declined. Literacy levels need to be checked on all patient materials.

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- *Forms*: Simplification of patient consent and medical screening approval forms.
- *Cross training*: Cross train staff to be able to aid other congested stations
- *Signage*: More signs placed high enough to see above crowds.
- *Bilingual*: Need vests, badges or signs to identify bilingual or special needs staff
- *Traffic control*: Police tape to direct waiting crowds at each station; address security measures in more depth to handle crisis situations
- *Staffing*: More staff to aid special needs clients, relieve staff and crowd control



- *Loud speaker*: Microphone is a necessity for group orientation or announcements
- *Computer*: Use computers to track vaccinees, case contacts during disease investigation and for clinic communications.
- *Staff sign-in*: Assign more staff to help direct workers who arrive in-mass at the beginning of each shift
- *Patient comfort*: Prepare for bad weather and outside crowds with portable shelters and toilets

WHAT NEXT?

The Yolo County Health Department needs to develop an action plan and assign staff to respond to each of the key issues identified in our debriefings, including:

- Scheduling annual training to practice ICS and clinic procedures
- Procuring additional radios, supplies and equipment identified in the drill
- Developing a plan to recruit licensed providers and volunteers in emergencies
- Providing training on infection control and quarantine measures
- Modifying existing plans and forms to address gaps identified in the drill

Many thanks to all who helped with the planning and operations:

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Other participants: Yolo County Health and Mental Health, California State University Sacramento nursing students, DMAT CA-11, Emergency Medical Service Agencies, California Department of Health, Placer, Sonoma, El Dorado, Monterey, San Joaquin, Sutter, Sacramento, Alameda, Solano and Contra Costa County Health Departments, UC Davis Student & Occupational Health, UC Berkeley, UC Davis students and other community volunteers.

Donations: Food for Less, Grocery Outlet, Longs Drugstore, Nugget Market THANK YOU!