

EPI Update

A BULLETIN ON EPIDEMIOLOGY AND PUBLIC HEALTH IN KNOXVILLE AND EASTERN TENNESSEE



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PADEMIC INFLUENZA PLANNING

H5N1 Influenza, also known as “Avian Flu” or “Bird Flu,” has been reported in birds and humans in several countries throughout Asia. While Avian Flu is not pandemic flu, its potential for creating a pandemic cannot be ignored. Recent outbreaks of H5N1 Avian Flu in poultry and birds are the largest outbreaks that have ever been documented; over 25 million birds have been killed in an attempt to stop the spread of the virus. Currently the world is at a Pandemic Alert level, in which human infection with this novel strain of influenza virus is limited, but nevertheless on the increase.

In November of 2005 the Department of Health and Human Services released its national Pandemic Influenza Plan. While no one can guarantee the future occurrence of an influenza pandemic, it is a distinct possibility that mandates some degree of preparation at all levels. This issue of EpiUpdate addresses some of the national planning issues, and tries to convey what useful things can be done at the local level to assure readiness if we do in fact face another pandemic in the near future.

Planning at the National and State Level

HHS has developed several planning objectives in creating their planning strategy. Currently, their *primary objective* in response is to minimize sickness and death. *Secondary objectives* are to preserve functional society and minimize economic disruption. *Planning assumptions about disease transmission have also been made:*

1. No one will be immune to the virus, so 30% of the population will become ill.
2. On average, each ill person will be able to infect 2 or 3 others if no precautions are taken.
3. There will probably be two waves of illness over a 2-year period, moving through our community each time over 6 to 8 weeks.

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1. Hospitals will see > 25% more patients than normal needing hospitalization during those 6 to weeks of a local pandemic wave (hospitalization numbers for Tennessee range from 17,300 to 198,000).
2. During the local pandemic wave about 40% of employees may be absent from work at any one time.
3. Overall mortality rate estimates range from 0.2% to 2%, based on worst and best case scenarios.

In the face of these types of assumptions, HHS also recognizes that there will be shortages of resources, including personal protective equipment, antiviral medications, and influenza vaccine. HHS commits to working to enhance those resources; additionally it has developed priority guidelines for use of resources. *HHS priority groups for vaccine begin with the military and vaccine manufacturers as top priority*, followed by healthcare workers with direct patient care and persons at highest risk for complications of influenza. *Tamiflu's main use is seen as treatment rather than prevention*; the military is also the top priority group for Tamiflu, followed by patients admitted to the hospital.

Centers for Disease Control is working with states to enhance laboratory diagnostic capability for rapid, safe testing for pandemic viruses. They are also working with states to develop plans for surveillance of worldwide travelers, as well as improved general surveillance and control measures for any potential outbreak within United States.

The Tennessee Department of Health is in the process of updating its pandemic influenza plan; state public health officials will then work with local health departments to translate this plan into local preparedness planning. For those of us at the local public health level, there are three main areas of preparedness to address even now: surveillance, isolation and quarantine, and public education.

Local Surveillance

Dr. Marion Kainer, Epidemiologist for Tennessee Department of Health, has already provided guidance for local avian influenza surveillance, which has been distributed to hospital infection control nurses and hospital emergency departments. *Current surveillance criteria for suspected avian influenza include:*

1. A hospitalized patient with CXR-confirmed pneumonia or ARDS, who has traveled to an affected country in Asia in the 10 days prior to illness.
2. A patient with fever (> 100.4 degrees F., 38 degrees C.) with a cough or sore throat, or shortness of breath, and contact with poultry or a suspected human case of avian influenza in an affected country in Asia in the 10 days prior to onset of symptoms.
3. A patient with fever (>100.4 degrees F.; 38 degrees C.), with a cough or sore throat, or shortness of breath, who works in a laboratory with H5N1 influenza virus.

Any patient meeting one the three above categories should be reported to the local health department immediately, and infection control measures should immediately be put in place (standard and droplet precautions). A NEGATIVE RAPID FLU TEST DOES NOT RULE OUT H5N1! Viral cultures are needed, but should not be done in the hospital lab because of safety concerns. Instead, cultures should be submitted to the State Health Department's lab, through local public health contacts.

Isolation and Quarantine

Isolation and quarantine have been used for centuries, but in recent times these methods of disease control have become controversial as they come into conflict with modern concepts of civil liberties and due process. *Tennessee currently has effective isolation and quarantine laws in place*, typically used in East Tennessee for noncompliant cases of Tuberculosis or other communicable disease. In the case of avian flu, only the initial cases would undergo strict isolation procedure, with contacts being quarantined, in order to stop the spread of disease. In the case of widespread disease, e.g. in a pandemic, disease control will shift to community wide disease control measures, such as school closures, cancellation of large public gatherings, limitation of public business hours and public transport, etc. Implementing these types of measures will require significant education of and cooperation from the public.

Public Education

This may be the most important aspect of planning for a possible pandemic of influenza. It includes education for medical personnel, businesses, and the general public.

“Most patients with pandemic influenza will be able to remain at home during the course of their illness and can be cared for by family members or others who live in the household.

Anyone who has been in the household with an influenza patient during the incubation period is at risk for developing influenza. A key objective in this setting is to limit transmission of pandemic influenza within and outside the home.” (HHS Pandemic Influenza Plan, page S5-15)
Planning for care in outpatient setting thus becomes essential.

Physicians should consider the following:

1. Developing policies and procedures for managing pandemic influenza in patients and in staff.
 - a. Establishing telephone communication protocols to provide advice on whether a patient should seek care or remain home.
 - i. Discourage unnecessary visits to medical facilities.
 - ii. Instruct patients on infection control measures to limit transmission in the home and when traveling to necessary medical appointments.

- a. Posting **visual alerts** at the entrance to outpatient offices instructing persons with respiratory symptoms to:
 - i. Inform reception and healthcare personnel when they first register for care
 - ii. Practice **respiratory hygiene/cough etiquette** (see www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm)
 - iii. Sample visual alerts are available at <http://www.cdc.gov/ncidod/hip/INFECT/RespiratoryPoster.pdf>
 - b. Posting signs that promote cough etiquette in common areas, and encouraging patients with a cough to sit at least 3 feet away from other persons in common waiting areas. If possible, designate separate waiting areas for patients with influenza symptoms.
 - c. As always, encouraging and facilitating hand washing to prevent spread by droplet contamination of hands.
 - d. Establishing a sick leave policy for staff who may become ill, or need to care for a sick family member.
2. Developing a plan and procedure for procuring the personal protective equipment and other supplies needed to manage influenza patients. If there are no aerosol-generating procedures involved, **surgical masks** should be sufficient for protection of staff from droplet spread, and for symptomatic patients. (Surgical masks have a long shelf life and are less expensive than N95 respirators). Staff should follow other standard and droplet precautions. Cleaning of frequently touched surfaces with an EPA registered disinfectant is important, since influenza virus can survive of extended periods of time (>24 hours) on environmental surfaces such as stainless steel and plastics.

Businesses and schools should develop policies that encourage sick employees/students to stay home. They will also need to anticipate how to function with a significant portion of the workforce/school population absent due to illness or caring for ill family members. The same messages for respiratory hygiene/etiquette utilized in physician offices will need to be posted in the work and school setting. Businesses may want to develop contingency plans that allow employees to work out of their home, using telephone and Internet connection to remain in contact with the workplace.

General public education will need to include many of the same messages outlined above; getting these messages out to persons through a variety of media sources will be the responsibility of local, state, and federal public health officials. Additionally, public health will need to educate the public, before a pandemic occurs, regarding possible community measures to “increase social distance” as a method for limiting the spread of pandemic influenza. School closures, cancellation of large public gatherings, limitation of public business hours and public transport, etc. may be utilized to achieve infection control in broader community settings.

When the updated Tennessee Pandemic Influenza Plan is completed, Tennessee Department of Health will send out further information to health care providers and health-care facilities, and will coordinate local public health departments throughout the state in preparing for pandemic influenza.

HEMOCARE INFECTIONS CONTROL GUIDANCE FOR PANDEMIC INFLUENZA PATIENTS AND HOUSEHOLD MEMBERS

Most patients with pandemic influenza will be able to remain at home during the course of their illness and can be cared for by family members or others who live in the household. Anyone who has been in the household with an influenza patients is also at risk for developing influenza in the following several days. Limiting spread of influenza within and outside the home becomes very important.

MANAGEMENT OF INFLUENZA PATIENTS IN THE HOME

- Physically separate the patient with influenza from non-ill persons living in the home as much as possible.
- Patients should not leave the home during the period when they are most likely to be infectious to others (i.e. 5 days after onset of symptoms). When movement outside the home is necessary (e.g. for medical care), the patient should cover the mouth and the nose when coughing/sneezing, and should wear a mask.

MANAGEMENT OF OTHER PERSONS IN THE HOME

- Persons who have not been exposed to pandemic influenza, and who are not essential for taking care of the patient or others in the home, should not enter the home while persons are still having a fever due to pandemic influenza.
- If unexposed persons must enter the home, they should avoid close contact with the patient.
- Persons living in the home with the patient with pandemic influenza should limit contact with the patients to the extent possible; consider choosing one person to be the primary person caring for the influenza patient.
- Household members should be extremely aware of the development of any symptoms of influenza in themselves.

INFECTION CONTROL MEASURES IN THE HOME

- All persons in the household should carefully follow recommendations for hand washing, or use of an alcohol-based hand rub, after contact with an influenza patient or with the environment in which the patient is receiving care (e.g. their bedroom).
- Although no studies have assessed the use of masks at home to decrease the spread of infection, using a surgical mask by the patient or the caregiver during their interactions may be beneficial.
- Dirty dishes and eating utensils should be washed either in a dishwasher or by hand with warm water and soap. Separation of eating utensils for use by a patient with influenza is not necessary.
- Laundry may be washed in a standard washing machine with warm/cold water and detergent. It is not necessary to separate dirty laundry used by a patient with influenza from other laundry. Care should be used when handling dirty laundry, though, to avoid self-contamination. Wash hands after handling dirty laundry.
- Tissue used by the ill patient should be placed in a bag and disposed of with other household waste. Consider placing a bag at the bedside for this purpose.

SELECTED DISEASES REPORTED by COUNTY, EAST TN JANUARY - DECEMBER 2005 YEAR-TO-DATE

Disease	Campylobacter	Salmonella	Shigella	Hep A	Hep B	DRSP	Pen Sen	Strep VRE	Chlamydia	Syphilis	Gonorrhea	AIDS/HIV	TB
Knox County													
YTD '05	35	73	10	8	4	15	69	12	1410	72	840	40/56	10
YTD '04	42	66	14	6	14	14	50	30	1485	38	693	26/56	6
East Tennessee Region													
Anderson	6	6	0	1	7	8	15	0	-	-	-	1/2	1
Blount	13	11	1	0	0	4	13	2	-	-	-	6/5	2
Campbell	2	1	0	55	2	2	4	1	-	-	-	1/0	2
Claiborne	2	3	1	0	0	1	5	5	-	-	-	1/1	1
Cocke	2	7	0	1	0	4	4	2	-	-	-	2/2	0
Grainger	5	6	3	0	0	0	1	0	-	-	-	0/0	1
Hamblen	5	7	1	0	2	1	3	1	-	-	-	3/6	1
Jefferson	7	7	1	0	2	0	6	2	-	-	-	2/2	0
Loudon	6	10	1	2	0	2	9	0	-	-	-	0/0	1
Monroe	5	0	0	0	1	2	3	0	-	-	-	2/3	2
Morgan	1	2	0	0	2	0	2	2	-	-	-	3/2	0
Roane	1	4	0	0	1	3	9	1	-	-	-	5/1	1
Scott	1	1	0	6	1	1	0	0	-	-	-	0/0	0
Sevier	2	5	0	0	0	0	6	2	-	-	-	9/12	1
Union	2	1	0	1	0	2	3	0	-	-	-	0/1	0
YTD '05	60	71	8	66	18	30	83	18	1129	37	311	1129	13
YTD '04	67	90	17	7	61	26	73	9	1178	16	351	48/93	20

-- = Unavailable

EPI Update

Epi Update
 A Epidemiology NEWSLETTER
 FROM THE
 KNOX COUNTY HEALTH DEPARTMENT
 AND THE
 EAST TENNESSEE REGIONAL OFFICE

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ANIMALS TESTED FOR RABIES IN EAST TN JANUARY - DECEMBER 2005



County	Bats	Skunks	Dogs	Cats	Raccoons	Foxes
Anderson	4	0	10	3	3	0
Blount	6	0	9	14	7	4
Campbell	3	0	2	2	0	0
Claiborne	2	0	3	2	1	0
Cocke	1	3	3	4	1	1
Grainger	2	1	5	1	2	0
Hamblen	1	1	3	4	0	0
Jefferson	1	1	2	2	0	0
Knox	31	6	120	100	42	2
Loudon	1	0	9	16	1	0
Monroe	1	0	5	3	5	1
Morgan	0	0	1	0	0	0
Roane	4	0	14	11	5	1
Scott	1	0	2	0	0	0
Sevier	6	1	24	22	5	1
Union	0	0	2	0	0	0
Total	64	13	214	184	72	10

Positive Rabies Reported			
Date	County	Animal	Variant
February	Cocke	Skunk	NC Skunk
April	Knox	Bat	
May	Cocke	Skunk	NC Skunk
May	Knox	Bat	
July	Campbell	Bat	
August	Knox	2-Bats	
August	Monroe	Bat	

IMMUNIZATION INFORMATION FOR PROVIDERS

Results of the 2004 Immunization Status Survey of 24-Month Old Children

The survey of 24-month-old children is conducted annually to determine immunization status. The survey is composed of 13 separate, random, statistically valid samples, which are combined to give statewide statistics regarding immunization coverage levels in Tennessee. One sample is drawn for each health department region; all samples are aggregated to determine statewide coverage. The 2004 statewide sample consists of 1,740 children born in March, 2002. Samples are selected to yield survey results that are comparable across the 13 health department rural and metropolitan regions.

The Tennessee Immunization Program's goal is to achieve a 90% level of complete immunization against the following 10 vaccine preventable diseases: Diphtheria, Tetanus, Pertussis, Polio, Measles, Mumps, Rubella, Haemophilus influenza type B, Hepatitis B, and Varicella. Complete immunization for children aged 24 months is defined as having received four disease of DTaP vaccine, three doses of Polio vaccine, one dose of MMR vaccine, three doses of Haemophilus influenza type B vaccine, three doses of Hepatitis B vaccine, and one dose of Varicella vaccine **(4:3:1:3:3:1)**.

The statewide percentage of 24-month old children with on-time immunization (4:3:1:3:3:1) was 80.5%, which increased from the 2003 level of 75.1%. For the East Tennessee region, this percentage was 83.2%, and for Knox County it was 80.3%. Individually, all antigens are in excess of 90% on-time coverage, except DTaP 4. ***The DTaP 4 level is the barrier to achieving the statewide goal of 90% coverage for the "4:3:1:3:3:1" series.*** The Tennessee Immunization Program will continue to encourage both public and private providers to improve the low DTaP 4 level by ensuring that the DTaP 3 is administered by 6 months of age, so the DTaP 4 may be administered by 12 months of age.

Other key findings of the survey included:

- The number of survey participants served exclusively by public health continues to decline as the VFC program and TennCare make immunization services more available to those children cared for in the private sector.
- Immunization levels for the "4:3:1:3:3:1" series are higher for those in private practice as a group than for public health departments; one reason for this is that 58.3% of patients seen in health department clinics have at least one risk factor for delayed immunization, compared to 31.8% in private practices. Those risk factors include:
 - Starting immunizations at > 120 days of life,
 - Having two or more siblings,
 - Being enrolled in TennCare and receiving all immunizations in a private practice (as to non-TennCare enrollees immunized by private physicians).
- Series completion levels for TennCare enrollees have improved and are now only slightly less than those for non-TennCare enrollees.

- *There is a growing disparity in on-time immunization, now 9.6 percentage points between black and white children. The reason for this widening gap is not known.* The Tennessee Immunization Program will work to increase awareness of this disparity.

New Vaccines on the VFC Program!!

- Menactra is now available to children through the age of 18 years, with emphasis on vaccination of children at the 11 to 12 year old visit.
- Tdap, the new combined tetanus-diphtheria-pertussis booster, has been approved through the VFC program for routine use in children ages 11 – 18 years, and will be available at health departments soon. Brand names are Adacel and Boostrix.

FINALLY!! The American Committee on Immunization Practice has recommended universal vaccination of children with Hepatitis A vaccine, and the vaccine will become available through the VFC Program in Tennessee this year. YEA!!

Contacting Public Health Staff Personnel After Regular Business Hours:

Any healthcare provider/healthcare facility can dial the regularly listed health department number in any of our sixteen counties. The recorded message will direct you to an emergency beeper number; a staff member who is on-call should return your phone call immediately.

For Knox County Public Health emergencies: 215-5093

For Public Health emergencies in the fifteen counties surrounding Knox: 546-9221