A. Influenza Background

Dr. Valerie A. Boaz, Health Officer
Chattanooga-Hamilton County Health Department

Influenza
1. Seasonal influenza
2. Pandemic influenza
3. Avian influenza
1. Seasonal Influenza

Every year in the United States:

- 5% to 20% of the population gets the flu;

- more than 200,000 people are hospitalized from flu complications, and;

- about 36,000 people die from flu.

* Value Missing: Christmas Holidays

* Data for missing value is included in the following week count.
2. Pandemic Influenza

- A new flu strain emerges; no one has immunity
- It is transmitted easily among people
- Many people can get sick at once; severe illness and many deaths
- Probably no vaccine at the onset of a pandemic

Pandemics occur along a spectrum of severity

- Pandemic severity is determined by the death rate
- A Category 1 pandemic would be a severe seasonal influenza event;
- A Category 5 pandemic would be like the 1918 flu
Pandemics reoccur

Number of U.S. deaths in previous pandemics:

- 1918 - 19: 500,000 - 650,000 (Spanish Flu)
- 1957 - 58: 70,000 (Asian Flu)
- 1968 - 69: 34,000 (Hong Kong Flu)
3. Avian Influenza

- Viral disease of poultry and some wild birds
- H5N1 is a severe strain of flu (highly pathogenic)
- H5N1 has been found in birds in parts of Asia, Europe and Africa
Avian Influenza H5N1

-Humans can be infected by H5N1
-Direct and prolonged contact with infected domesticated poultry or poultry droppings
Current Human Outbreak of H5N1

- 291 confirmed human cases
- 172 deaths in Asia, Europe, and Africa
- 59% mortality rate

http://www.who.int/csr/disease/avian_influenza/en/

The concern is that H5N1 will mutate to become a form easily transmitted among humans, causing a pandemic.
Phases of a Pandemic
World Health Organization

<table>
<thead>
<tr>
<th>Inter-pandemic phase</th>
<th>Low risk of human cases</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>New virus in animals, no human cases</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Pandemic alert | No or very limited human-to-human transmission | 3 |
| New virus causes human cases |

| Pandemic | Efficient and sustained human-to-human transmission | 6 |

Situation Report

- Widespread and spreading prevalence in migratory birds
- Continued outbreaks among domestic poultry
- Mammalian infection (cats, pigs, etc.) lethal
- Sporadic human cases
  - Most in young and healthy
  - Case-fatality >50%
  - Rare person-to-person transmission
- Sustained and rapid person-to-person transmission
B. Response Plan for Avian Influenza in Domestic and Wild Birds

Bonnie Deakins, Director of Environmental Health
Chattanooga-Hamilton County Health Department

Dr. Ray Burden, Director
UT Extension-Hamilton County
Animal Disease Surveillance

- Surveillance is the tracking of disease.

- The CHCHD does not conduct animal disease surveillance for avian influenza.

- Surveillance in Commercial poultry is done through the National Poultry Improvement Plan (NPIP).

- NPIP is a cooperative Federal-State-Industry program developed for controlling certain poultry diseases.

Animal Disease Surveillance

- Surveillance in Privately-Owned Poultry
  UT-Extension provides education to owners of backyard flocks. If birds die unexpectedly, owners should make a report to the Tennessee Department of Agriculture.

- Surveillance of Poultry Meat and Poultry Products
  Fresh, frozen, or chilled poultry meat and poultry meat products are prohibited from entry into the United States from countries affected by H5N1.
Animal Disease Testing and Notification

- CHCHD does not conduct Avian Influenza testing of domestic and wild birds.

- Testing is done by the Tennessee Department of Agriculture and the USDA, respectively.

- CHCHD refers public reports of dead birds to appropriate agencies.

Figure: Call tree for reporting of dead birds:
- Poultry (e.g., chickens, turkeys), confined penned, dollars and quarters, or per birds:
  - Public reports DEAD bird(s) to any agency
  - Wild birds
    - Does the bird(s) appear to be a duck, goose, or shorebird (e.g., have long legs, webbed feet, or long slender bill)?
      - YES
        - NO2, June 1 – April 30
        - NO2, June 1 – Oct 31
      - NO
        - Possible shorebird or waterfowl
          - Is the bird(s) a Crow or Blue Jay?
            - YES
              - Crow and Blue Jays
            - NO
              - Are there 5 or more birds?
                - YES
                  - Refer to USDA-WS 1-866-4USDAWS For Possible Avian Influenza Testing
                - NO
                  - Refer to USDA-WS 1-866-4USDAWS For Reporting Only
          - Is there an obvious cause of death? (e.g., fell into window, killed by animal, trauma, hit by car)
            - YES
              - Report to County HD for possible WNV testing, see list of County HD phone numbers
            - NO
Animal Disease Response

Hamilton County Disaster Animal Response Team (HC-DART)

- HC-DART is one of only two teams in East Tennessee with Green Status (team completed with call-down list).
- HC-DART membership consists of Health Department staff, Ag Extension staff, veterinarians, veterinarian technicians, farmers, animal control officers, and other community volunteers.
HC-DART Structure

County DART Leader
↓
DART Field Ops

Livestock Leader
Companion Animal Leader
Equine Leader
Zoo & non-domestic Leader

Evacuation
Transportation
Host Sites
Routing
Assistance
Special Equip.
Veterinarians

DART Leader

- Appointed by County EMA Director
- Chair of DART; Calls meetings
- Gives overall direction
- Available to give advice to Incident Commander regarding animal issues
DART Field Leader

- Contact between DART and IC
- Responsible to ICO and DART Team Leader in the EOC
- Collects field information and relates to EOC
- Directs Animal Response teams in the field

Species Leaders: Companion, Livestock, Equine, Exotic

- On-site with DART Field Leader
- Resource Requirements
- Evacuation – call down list
- Assess for injuries/sickness
Current Status of HC-DART

- Over 40 Individuals fully Credentialed
- Additional 20-30 individuals in process
- Begin “hands-on” training in early June

BREAK
C. Hamilton County Pandemic Influenza Response Plan

Dawn M. Ford, Emergency Response Coordinator
Chattanooga-Hamilton County Health Department

Plan is available on our website:
http://health.hamiltontn.org/

1. Based on Federal and State Guidance

The National Strategy for Pandemic Influenza, issued by President Bush November 1, 2005
Tennessee Pandemic Influenza Response Plan

- Tennessee’s plan first published in 1999
- Revised in May 2006 to reflect new federal guidelines
- Plan provides standard pandemic response policies

2. Planning Assumptions

- No one is immune.
- The pandemic will move through the community in waves.
- The entire pandemic period will last between 18 months and 2 years.
Planning Assumptions

- 30% of the population will become ill.
- On average, each ill person can infect 2 or 3 others – if no precautions are taken.
- Hospital Demands: 
  ~25% more patients than normal
- Absenteeism: 
  ~40% of employees may be absent

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**Estimate of Burden in Hamilton County**

<table>
<thead>
<tr>
<th>Moderate Scenario</th>
<th>Severe Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>313,194</strong></td>
<td><strong>10,335</strong></td>
</tr>
<tr>
<td>Hamilton County Population</td>
<td>Hospitalized (11% of ill)</td>
</tr>
<tr>
<td><strong>93,958</strong></td>
<td><strong>1,550</strong></td>
</tr>
<tr>
<td>Ill (30% of population)</td>
<td>ICU Care (15% of hospitalized)</td>
</tr>
<tr>
<td><strong>46,979</strong></td>
<td><strong>775</strong></td>
</tr>
<tr>
<td>Outpatient Care (50% of ill)</td>
<td>Mechanical Ventilation (50% of ICU patients)</td>
</tr>
<tr>
<td><strong>940</strong></td>
<td><strong>187</strong></td>
</tr>
<tr>
<td>Hospitalized (1% of ill)</td>
<td>Deaths (0.2% of ill)</td>
</tr>
<tr>
<td><strong>141</strong></td>
<td><strong>1,550</strong></td>
</tr>
<tr>
<td>ICU Care (15% of hospitalized)</td>
<td>ICU Care (15% of hospitalized)</td>
</tr>
<tr>
<td><strong>70</strong></td>
<td><strong>775</strong></td>
</tr>
<tr>
<td>Mechanical Ventilation (50% of ICU patients)</td>
<td>Mechanical Ventilation (50% of ICU patients)</td>
</tr>
<tr>
<td><strong>187</strong></td>
<td><strong>1866</strong></td>
</tr>
<tr>
<td>Deaths (0.2% of ill)</td>
<td>Deaths (2% of ill)</td>
</tr>
</tbody>
</table>
3. Basis of the Plan

- The plan is based upon the severity of the 1918-19 influenza pandemic.

- The lead agency for response to a human pandemic in Hamilton County is the Chattanooga-Hamilton County Health Department (CHCHD).

- The objectives of the plan are to:
  - Minimize sickness and death
  - Preserve social function
  - Minimize economic disruption

4. Sections of the Plan

- **Health Department Continuity of Operations Plan**
  Outlines services and functions to be retained during an emergency.

- **Disease Surveillance**
  Detection and tracking of illness
Surveillance Systems

- **Emergency Departments**
  CHCHD receives data daily from all county hospital emergency departments and from two emergency departments outside the county.

- **Sentinel Provider Network**
  Local health care providers report cases of ILI (influenza-like illness) weekly to the state.

- **School Absenteeism**
  CHCHD receives daily teacher and student absentee counts.

Laboratory Policy and Procedure

- The CDC and the Tennessee Department of Health will determine who will be tested for pandemic influenza.

- The Tennessee Department of Health is responsible for conducting laboratory testing for pandemic influenza in Tennessee.

- The CHCHD will be responsible for coordinating sample collection at the local level.

- Once the disease is widespread, testing will not be necessary.
Hospital Planning

- This section provides guidance to hospitals for pandemic influenza planning.

- Hospitals each have a pandemic flu coordinator who is currently leading planning efforts for their hospital.

- This section also explains the role of CHCHD’s Regional Hospital Coordinator during an event.

Vaccine Distribution and Use

- At this time, it is thought that vaccine will not be available at the onset of a pandemic event; it will arrive 4-6 months later.

- Vaccine supplies will be received in small, frequent shipments over many months.

- Vaccine will be administered by the health department to persons according to priority categories as established by federal and state agencies.
Antiviral Drug Distribution and Use

- The state of Tennessee will have access to stockpiles of antivirals.

- Antivirals will be used in accordance with federal guidance which currently states they be used to treat hospitalized patients.

- Based on this, antivirals will be distributed to acute care hospitals. Antivirals will not be used to prevent illness, only to treat illness.
Community Interventions

a. **Pre-pandemic**
Before a pandemic is widespread in the community, suspected cases of infection will be managed with isolation and quarantine measures.

- **Isolation**
  Sick persons will be asked to stay at home or in an alternative facility until they are fully recovered.

<table>
<thead>
<tr>
<th>Isolation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sick persons will be provided with the following by the health department:</td>
</tr>
<tr>
<td>- A contact number for the Health Department;</td>
</tr>
<tr>
<td>- Information about infection control and symptoms;</td>
</tr>
<tr>
<td>- Surgical masks should be worn. If a patient is unable to purchase a surgical mask, the Health Department will provide one.</td>
</tr>
<tr>
<td>- Instructions on what to do in a medical emergency;</td>
</tr>
<tr>
<td>- Information about social support resources</td>
</tr>
</tbody>
</table>
Quarantine

- Household members of a sick person (contacts) will be asked to stay at home for at least 7 days.
  - Contacts will be assessed daily by the Health Department in person or by phone.
  - If assessed by phone, contacts will take their temperature to report to the Health Department. Contacts will also report any early signs of illness.
  - At the first sign of illness, contacts will isolate themselves from other people, put on a surgical mask, and call the Health Department.

CDC Guidance

<table>
<thead>
<tr>
<th>Interventions by Setting</th>
<th>Pandemic Severity Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Home</strong></td>
<td></td>
</tr>
<tr>
<td>Voluntary isolation of ill at home</td>
<td>Recommend</td>
</tr>
<tr>
<td><strong>Voluntary quarantine</strong> of household members in homes with ill persons</td>
<td>Generally not recommended</td>
</tr>
</tbody>
</table>
b. Pandemic Response

After community transmission begins, the emphasis will shift to social distancing strategies.

Social distancing involves using measures that slow the spread of disease through the suspension/cancellation of crowded group settings.

Child Social Distancing

<table>
<thead>
<tr>
<th>Interventions by Setting</th>
<th>Pandemic Severity Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>School</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Child social distancing</strong></td>
<td></td>
</tr>
<tr>
<td>- Dismissal of students from schools and school-based activities, and closure of child care programs</td>
<td>Generally not recommend</td>
</tr>
<tr>
<td>- Reduce out-of-school social contacts and community mixing</td>
<td>Generally not recommended</td>
</tr>
</tbody>
</table>
Adult Social Distancing

<table>
<thead>
<tr>
<th>Interventions by Setting</th>
<th>1</th>
<th>2 and 3</th>
<th>4 and 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace/Community</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult social distancing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Decrease number of social contacts (e.g., encourage teleconferences, alternatives to face-to-face meetings)</td>
<td>Generally not recommended</td>
<td>Consider</td>
<td>Recommend</td>
</tr>
<tr>
<td>- Increase distance between persons (e.g., reduce density in public transit)</td>
<td>Generally not recommended</td>
<td>Consider</td>
<td>Recommend</td>
</tr>
<tr>
<td>- Modify, postpone, or cancel selected public gatherings to promote social distancing (e.g., postpone indoor stadium events, theatre performances)</td>
<td>Generally not recommended</td>
<td>Consider</td>
<td>Recommend</td>
</tr>
<tr>
<td>- Modify work place schedules and practices (e.g., telecommuting, staggered shifts)</td>
<td>Generally not recommended</td>
<td>Consider</td>
<td>Recommend</td>
</tr>
</tbody>
</table>

Social distancing is effective

1918 Death Rates: Philadelphia v St. Louis

- Delay outbreak peak
- Decompress peak burden on hospitals / infrastructure
- Diminish overall cases and health impacts
Public Health Communications

Our plan for communicating pre-event, event, and post-event information.

- Health Department employees
- Healthcare providers and emergency responders
- Involved government agencies
- Media
- Community leaders
- Volunteers
- The Public

Channels of Communication

- Press releases/news conferences
- Website
- Public hotline
- Radio announcements/PSAs
- Facts sheets/Brochures
- Rapid Public Notification System
- Direct public outreach
Workforce and Social Support

- Our plan to facilitate access to community resources.

- Addressing workforce and community needs will help the public and CHCHD’s workforce cope in a pandemic.

- Resource list will be made available to the public; CHCHD staff will refer patients to these resources.
D. Community Preparedness

All employers should have a continuity of operations plan.

- Identify key functions
- Cross train staff
- Identify telecommuting opportunities
- Review human resources policies (sick leave, flex shifts)

Preparing at Home

- Be Informed
- Make a Plan
- Get an Emergency Kit
- Stay Healthy
Pandemic Flu Public Service Announcement