Avian Flu and the Workplace
Are you Ready?

October 18, 2006
Agenda

8:00- 8:30 a.m.  Registration
8:30- 8:40 a.m.  Welcome/Introductions – Bob Klonk
8:40- 9:00 a.m.  Overview of Pandemic Flu – Bob Salata, M.D.
9:00- 9:15 a.m.  Risk Managers Prospective – Eric Smolenski / Dr. Bill Gegas, M.D.
9:15- 9:30 a.m.  Legal Perspective – Chris Johnson
9:30- 9:45 a.m.  Community Preparedness – Terry Allan
9:45-10:00 a.m.  Carrier Perspective – Richard Thomas
10:00-10:30 a.m.  Q&A
Worldwide Occurrences of Bird Flu

Recent Studies show the following countries’ human populations have been infected with the H5N1 virus:

- Baku
- Borneo
- China
- Egypt
- Ethiopia
- Iran
- Myanmar
- Thailand
- Turkey
- Vietnam

Source: www.bserv.com/users/lesliq.htm
Pandemic Influenza: Global Epidemiology, Clinical Manifestations and Management

Robert A. Salata, M.D.
Professor and Vice-Chair
Department of Medicine
Chief, Division of Infectious Diseases
Case Western Reserve University
University Hospitals Case Medical Center
Robert Salata is Professor of Medicine, International Health, Biostatistics & Epidemiology at the Case Western Reserve University School of Medicine. He is Chief of the Division of Infectious Diseases and serves as Medical Director for Infection Control & Prevention at University Hospitals of Cleveland where he also serves as Medical Director of the Travelers’ Health Care Center.

Dr. Salata received his M.D. degree from Case Western Reserve University and served his residency in Internal Medicine at University Hospitals of Cleveland. He was a fellow in Infectious Diseases and Geographic Medicine at the University of Virginia School of Medicine.

Dr. Salata is a recognized clinical and research expert in the epidemiology, diagnosis and treatment of infections in immunocompromised hosts (especially HIV-infected), sexually transmitted diseases, nosocomial pneumonia and infections, and transplant-associated infections.
Objectives

- To review the global epidemiology of avian influenza
- To discuss the past pandemics and the implications for pandemic avian influenza
- To detail the common clinical features of avian influenza
- To discuss strategies to management of avian influenza
Complacency is the Enemy of Health Protection!
The Burden of Influenza

Seasonal Influenza
- Globally: 250,000 to 500,000 deaths each year
- In the United States each year:
  - 36,000 deaths
  - >200,000 hospitalizations
  - $37.5 billion in economic costs from influenza and pneumonia

Pandemic Influenza
- An ever-present threat
Excess P&I Hospitalization Rates by Risk Status
Barker & Mullooly (1980, 1982)

Age (Years)

Excess P&I Hospitalizations Per 100,000 Persons

Low Risk
High Risk

0 - 4
5-14
15-44
45-64
65+

0 100 200 300 400 500 600 700 800
Concerns about Pandemic Influenza

- Rapid global spread (morbidity and mortality)
- Shortages and delays – vaccines and antiviral medications
- Increases burden on hospitals and outpatient care systems
- Disrupts national and community infrastructures
Cumulative Number of Confirmed Human Cases of Avian Influenza A/(H5N1) Reported to WHO, September 27, 2006

251 total cases, 147 deaths (59%)
1918 “Flu hospital” in US

Spanish flu was a bird flu –  http://www.hhs.gov/nvpo/pandemics/annotatedSlide.ppt
### Effects of Past Pandemics on the US

<table>
<thead>
<tr>
<th>Pandemic Years</th>
<th>Estimated US Deaths</th>
<th>Influenza A Subtype</th>
<th>Populations at Greatest Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1918-1919</td>
<td>500,000</td>
<td>H1N1</td>
<td>Young; healthy adults</td>
</tr>
<tr>
<td>1957-1958</td>
<td>70,000</td>
<td>H2N2</td>
<td>Infants; elderly</td>
</tr>
<tr>
<td>1968-1969</td>
<td>34,000</td>
<td>H3N2</td>
<td>Infants; elderly</td>
</tr>
</tbody>
</table>

Source: NVPO.
Planning Assumptions: Health Care

- 50% or more of those who become ill will seek medical care
- Number of hospitalizations and deaths will depend on the virulence of the pandemic virus

<table>
<thead>
<tr>
<th></th>
<th>Moderate (1957-like)</th>
<th>Severe (1918-like)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illness</td>
<td>90 million (30%)</td>
<td>90 million (30%)</td>
</tr>
<tr>
<td>Outpatient medical care</td>
<td>45 million (50%)</td>
<td>45 million (50%)</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>865,000</td>
<td>9,900,000</td>
</tr>
<tr>
<td>ICU care</td>
<td>128,750</td>
<td>1,485,000</td>
</tr>
<tr>
<td>Mechanical ventilation</td>
<td>64,875</td>
<td>745,500</td>
</tr>
<tr>
<td>Deaths</td>
<td>209,000</td>
<td>1,903,000</td>
</tr>
</tbody>
</table>
Pandemic Strain Emergence: Direct Infection

Avian virus

Avian Reservoir

Direct Avian – Human Infection

Human virus
Pandemic Strain Emergence: Reassortment of Influenza A Viruses

Avian Reservoir

Avian virus

other mammals?

New reassorted virus

Human virus

New reassorted virus
Clinical Manifestations of Avian Influenza

- The reported symptoms of avian influenza in humans have ranged from typical influenza-like symptoms (e.g., fever, cough, sore throat, and muscle aches).
- Other features of avian influenza can include eye infections (conjunctivitis) and diarrhea not commonly encountered with seasonal flu.
- There is frequently the rapid development of pneumonia, acute respiratory distress, viral pneumonia, and other severe and life-threatening complications.
H5N1 Influenza Severe Pneumonia – Vietnam 2004

DAY 5                             DAY 7                         DAY 10

Diagnosis of Human Avian Influenza

- Recognition of the global epidemiology
- High level of clinical suspicion (but symptoms are not specific)
- Respiratory secretions need to be collected carefully
- Culture or PCR (genetic) methods to confirm the virus
"I'll have the chicken Tamiflu."
# Antiviral Agents For Influenza

<table>
<thead>
<tr>
<th>Class/agent</th>
<th>Brand name</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M2 inhibitors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amantadine</td>
<td>Symmetrel</td>
<td>PO</td>
</tr>
<tr>
<td>Rimantadine</td>
<td>Flumadine</td>
<td>PO</td>
</tr>
<tr>
<td><strong>NA inhibitors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zanamivir (GG167)</td>
<td>Relenza</td>
<td>Inhaled</td>
</tr>
<tr>
<td>Oseltamivir (GS4104)</td>
<td>Tamiflu</td>
<td>PO</td>
</tr>
<tr>
<td>Peramivir (BCX-1812)*</td>
<td></td>
<td>PO/IV/IM</td>
</tr>
</tbody>
</table>

*Investigational at present in USA.
### Oseltamivir Therapy in H5N1: Thailand and Vietnam, 2004-5

<table>
<thead>
<tr>
<th>Oseltamivir Treatment</th>
<th>No. Patients</th>
<th>No. (%) Survivors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>25</td>
<td>6 (24%)</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>3 (25%)</td>
</tr>
</tbody>
</table>

*NEJM.* 2005;353:1374.
Options for Pandemic Vaccines

- Inactivated vaccine resembling currently licensed inactivated vaccine
- Live vaccine resembling currently licensed live vaccine
- Inactivated vaccines with experimental adjuvants/route of administration
- Experimental approaches
Response Rates Following One or Two Doses of rHA H5 Vaccine

*4-fold or greater increase to a titer of 1:80 with positive WB. Treanor. Vaccine. 2001;19:1732.
Situation Report: Avian Influenza

- Widespread and spreading prevalence in migratory birds; broad host range
- Continued outbreaks among domestic poultry
- Mammalian infection (cats, pigs, etc.) lethal
- Virus is evolving
- Sporadic human cases (>140 reports to date)
  - Most in young and healthy
  - Case-fatality 50%
  - Rare person-to-person transmission
- Sustained and rapid person-to-person transmission
## WHO Phases and US Stages of a Pandemic

<table>
<thead>
<tr>
<th>WHO Phases</th>
<th>US Stages</th>
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<tbody>
<tr>
<td>Inter-Pandemic Period</td>
<td></td>
</tr>
<tr>
<td>(New virus in animals, no human cases)</td>
<td>1: Low risk of human cases</td>
</tr>
<tr>
<td></td>
<td>2: Higher risk of human cases</td>
</tr>
<tr>
<td>Pandemic Alert</td>
<td></td>
</tr>
<tr>
<td>(New virus causes human cases)</td>
<td>3: No or very limited human-human transmission</td>
</tr>
<tr>
<td></td>
<td>4: Evidence of increased human-human transmission</td>
</tr>
<tr>
<td></td>
<td>5: Evidence of significant human-human transmission</td>
</tr>
<tr>
<td>Pandemic Period</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6: Efficient and sustained human-human transmission</td>
</tr>
</tbody>
</table>

- **0**: New domestic animal outbreak in at-risk country
- **1**: Suspected human outbreak overseas
- **2**: Confirmed human outbreak overseas
- **3**: Widespread human outbreaks in multiple locations overseas
- **4**: First human case in North America
- **5**: Spread throughout US
- **6**: Recovery and preparation for subsequent waves
Our Health Protection Preparedness System: A NETWORK of Shared Responsibility

- Local - State - Federal
- Domestic – international
- Public – private
- Multi-sector
- Non-partisan
- Animal – human
- Health protection – homeland security – economic protection
The typical incubation period for influenza averages 2 days.

Persons who become ill may transmit infection for one-half to one day before the onset of illness.

On average about 2 secondary infections will occur as a result of transmission from someone who is ill.

In an affected community, a pandemic outbreak will last about 6 to 8 weeks.

Work/school absenteeism may be as high as 40% at the peak.

At least two pandemic disease waves are likely.
Preparedness

Pandemic Influenza Preparedness

Preparing for a pandemic now will mean:

- Lives saved during seasonal influenza
  - Modern seasonal influenza vaccine for all who need it
  - New antiviral drugs for prevention and treatment
- Community health protection from other threats
- Peace of mind
Seasonal Influenza Preparedness

Pandemic Influenza Preparedness
A pandemic will place incredible demands on the healthcare system

Pandemic preparedness actions must begin now
  – Be familiar with national, state, and local plans

Early detection of initial cases/clusters is essential
  – Know reporting guidelines

Monitoring the impact of the pandemic will be critical
  – Assist federal, state, and local officials
I'm so glad we live far from all those disaster-prone areas of the country.

Monster hurricanes, batter Gulf Coast.

Ah, choo! Bird flu.

Life in Cleveland, OH
An Employer’s Perspective

Eric Smolenski
Vice President of Human Resources
Worthington Industries

Bill G. Gegas, M.D.
Medical Director
Worthington Industries
Eric Smolenski is a graduate of The Ohio State University, with a bachelor's degree in accounting. He received his MBA in 2004 from Otterbein College in Columbus, Ohio.

Mr. Smolenski has served in numerous capacities throughout his career at Worthington Industries including accounting, treasury, finance and human resources. Mr. Smolenski was named vice president of human resources of Worthington Industries in December of 2005.
Introduction

- Eric Smolenski – VP Human Resources
- Dr. Bill Gegas – Director, Medical Center

- 8,000 Employees Worldwide
- 10 Countries
- 62 Facilities—mostly production facilities
Utilizing CDC Business Planning Checklist

- Establishing Avian Flu Team
- Determining communications/education plan
- Review sick time, leave and travel policies and establish guidelines to be implemented during a pandemic
- Review existing business continuity plans
- Capitalizing on WII Medical Center Facility
Establishing Avian Flu Team

- **Purpose**
  - Raise awareness of potential pandemic and consequences
  - Coordinate resources to mitigate possible impact
    - Develop policies and internal procedures
    - Develop reporting and communication processes

- **Team Representation**
  - Human Resources / Benefits / Medical Center
  - Communications / IT
  - Risk Management
  - Business Units
Determining Communication and Education Plan

- Assess key communications personnel
- Initial delivery of information & education
  - Communication employee/family preparedness plan
    - Dept of Health and Human Services Guide (HHS)
  - Raise awareness of Company’s approach
- On-going communication
  - Monitoring of WHO / CDC releases
  - Adapt plan based upon updated information
  - Revision of policy will depend on geographic area and alert level
- Review distribution channels (electronic, intranet, phone calls, virtual meetings, bulletin boards, etc.)
Reviewing Current Business Continuity Programs

- Review redundant business capabilities
  - Steel Processing, Blanking, Roll-forming, Valves
- Update plans and communicate as necessary
- Identify critical employees and ensure remote access is established
  - Contact Information
Reviewing Sick, Leave and Travel Policies and Establishing Guidelines

- Currently have a liberal sick leave policy
- Assessing mandatory leave policy
  - Leave work / don’t come in if experiencing flu symptoms
- Restrict travel to affected geographic areas
- Guidelines for returning from an affected area
  - “Shelter in”
- Reduction in centralized meetings/training
- Assessing policy for mask usage and distribution