Pandemic Influenza Planning for the Workplace

Georgia Tech OSHA Consultation Program
Georgia Tech Research Institute
Information Provided under OSHA Susan Harwood Grant
#SH-16620-07-60-F-13

This course does not necessarily reflect the views or policies of the U.S. Department of Labor, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.
Overview

• Definitions (Seasonal/Avian/Pandemic Flu)
• Transmission
• Historical Perspective
• Projections for Future Pandemic
• Current Status
• How to Prepare
• Development/Implementation
<table>
<thead>
<tr>
<th></th>
<th>Seasonal Flu</th>
<th>Avian Flu</th>
<th>Pandemic Flu</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cause</strong></td>
<td>Virus – strain changes every year.</td>
<td>H5N1 is current virus strain</td>
<td>Unknown, highly pathogenic virus</td>
</tr>
<tr>
<td><strong>Transmission</strong></td>
<td>Sneezing and coughing (droplets); surface contact</td>
<td>Bird to bird; some bird to human (rare); secretions</td>
<td>Unknown – probably droplet, contact, possibly aerosol</td>
</tr>
<tr>
<td><strong>Severity</strong></td>
<td>5-20% US population infected. &gt;200,000 hospitalized 36,000 die</td>
<td>348 human cases, 216 deaths (Jan. 2008)</td>
<td>(Past Pandemics) 30% US population infected 8,300 to 500,000 deaths in US; 700K to 40 million worldwide</td>
</tr>
<tr>
<td><strong>Target Population</strong></td>
<td>≤ 5 years old and ≥ 65 years old</td>
<td>Working population</td>
<td>All; primarily 18-35 years old</td>
</tr>
<tr>
<td><strong>Immunity</strong></td>
<td>Some immunity</td>
<td>Limited immunity</td>
<td>No immunity</td>
</tr>
<tr>
<td><strong>Current Status</strong></td>
<td>Flu “season” is usually December – March</td>
<td>Limited human cases in 14 countries (as of 1/2008)</td>
<td>No Pandemic</td>
</tr>
</tbody>
</table>
Pandemic Influenza

- A disease outbreak that spreads rapidly and affects many people worldwide.

- Characteristics
  - New virus that spreads easily as most people are susceptible (no natural resistance or immunity)
  - Effective human to human transmission is necessary
  - Measured by how fast the virus spreads
  - Wide geographic spread

- Not predictable

- Outbreaks lasting 8-12 weeks with 1-3 week wave cycles
Historical Perspective
## Past influenza pandemics

<table>
<thead>
<tr>
<th>Pandemic</th>
<th>Deaths in the US</th>
<th>Deaths Worldwide</th>
<th>Population Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish Flu (H1N1) 1918-1919</td>
<td>500,000</td>
<td>40 million</td>
<td>Persons 20-40 years old</td>
</tr>
<tr>
<td>Asian Flu (H2N2) 1957-58</td>
<td>70,000</td>
<td>1-2 million</td>
<td>Infants, elderly</td>
</tr>
<tr>
<td>Hong Kong Flu (H3N2) 1968-69</td>
<td>36,000</td>
<td>700,000</td>
<td>Infants, elderly</td>
</tr>
<tr>
<td>Russian Flu (H1N1) 1977-78</td>
<td>8,300</td>
<td></td>
<td>Persons under 20 years old</td>
</tr>
</tbody>
</table>
St. Louis

Death Rate / 100,000 Population (Annual Basis)

Mayor closes “theaters, moving picture shows, schools, pool and billiard halls, Sunday schools, cabarets, lodges, societies, public funerals, open air meetings, dance halls and conventions until further notice”

Closing order withdrawn

Projections: What Lies Ahead

• What are the projected numbers?
• What is the projected magnitude of impact?
• What to expect?
# Impact of Pandemic Flu

**United States**

(ESTIMATES for TODAY’S WORLD)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Moderate (1958/68-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 (11%)</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 Waves

- Pandemics occur in multiple waves of disease outbreaks
- The first wave in a local area is likely to last six to eight weeks
- The time between pandemic waves varies and cannot be easily predicted.
- Anticipate 1-3 waves
What to Expect

- Crisis for extended period of time in multiple locations
- Daily routines will be affected from personal, community, and professional changes
  - Isolation/quarantine guidelines or requirements?
  - Cancellation of public events and schools?
  - Non-essential work activities limited?
  - Commerce Patterns changed?
- Elements of personal action will be required
- Absenteeism from pandemic flu expected to be 40-60%
- Lost availability for those who are ill (or caring for ill family) is projected at 2-4 weeks
Is a Vaccine Available?

- A vaccine to protect people from pandemic flu is not available now.
- A vaccine may not be available at the start of a flu pandemic (~ 6-8 months after start)
- The best protection is to practice healthy hygiene to stay well now and during a flu pandemic.
Current Status

• Where are we now?

• What preparation has been done so far?
  • Federal level
  • State level

• What available tools do we need to understand to prepare better at the local level?
Is there a Pandemic now?

- As of 3 January 2008:
  - Reported to World Health Organization (WHO); cumulative total confirmed human cases of Avian Influenza A H5N1 virus:
    - 348 cases
    - 216 deaths
  - No sustained human to human transmission identified

= currently NO pandemic
Risk Classification Structure

• Who’s Who:
  • World Health Organization (Phases 1-6)
  • US Government (Stages 1-5)
  • Centers for Disease Control and Prevention —
    CDC (Categories)
  • OSHA Risk Pyramid
<table>
<thead>
<tr>
<th>U.S. Government Stages</th>
<th>WHO Phases</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>0</strong> New domestic animal outbreak in at-risk count...</td>
<td>Inter-pandemic phase</td>
</tr>
<tr>
<td></td>
<td>Low risk of human cases</td>
</tr>
<tr>
<td></td>
<td>Higher risk of human cases</td>
</tr>
<tr>
<td><strong>1</strong> Suspected human outbreak overseas</td>
<td>Pandemic alert</td>
</tr>
<tr>
<td></td>
<td>No or very limited human-to-human transmission</td>
</tr>
<tr>
<td><strong>2</strong> Confirmed human outbreak overseas</td>
<td>New virus causes human cases</td>
</tr>
<tr>
<td></td>
<td>Evidence of increased human-to-human transmission</td>
</tr>
<tr>
<td></td>
<td>Evidence of significant human-to-human transmission</td>
</tr>
<tr>
<td><strong>3</strong> Widespread outbreaks overseas</td>
<td>Pandemic</td>
</tr>
<tr>
<td></td>
<td>Efficient and sustained human-to-human transmission</td>
</tr>
<tr>
<td><strong>4</strong> First human case in North America</td>
<td></td>
</tr>
<tr>
<td><strong>5</strong> Spread throughout U.S.</td>
<td></td>
</tr>
</tbody>
</table>
CDC Severity Index

<table>
<thead>
<tr>
<th>Interventions by setting</th>
<th>1</th>
<th>2 &amp; 3</th>
<th>4 &amp; 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Home: Voluntary isolation of ill</strong></td>
<td>Recommend</td>
<td>Recommend</td>
<td>Recommend</td>
</tr>
<tr>
<td>Voluntary quarantine of household members in homes with ill</td>
<td>Generally not recommend</td>
<td>Consider</td>
<td>Recommend</td>
</tr>
<tr>
<td><strong>School: Child social distancing (dismiss schools, close childcare)</strong></td>
<td>Generally not recommend</td>
<td>Consider</td>
<td>Recommend</td>
</tr>
<tr>
<td><strong>Workplace/Community: Adult social distancing</strong></td>
<td>Generally not recommend</td>
<td>Consider</td>
<td>Recommend</td>
</tr>
</tbody>
</table>

*Assumes 30% illness rate and Unmitigated Pandemic Without Interventions
National Incident Management System (NIMS) and Incident Command System (ICS)

- **Incident Command System (ICS)**
  - Public safety, especially fire & EMT services
  - utilizes standardized terminology & concepts in order to efficiently & safely address emergencies and other kinds of incidents

- **National Incident Management System (NIMS)**
  - Private entities have compliance responsibilities under
  - NIMS is mandated for adoption across all spectra of response organizations
    - public & private;
    - government;
    - non-governmental organizations;
    - and private businesses

- [http://training.fema.gov/IS/NIMS.asp](http://training.fema.gov/IS/NIMS.asp)
Exposure Reduction
and
General Infection Control Practices
HHS & CDC Plan

- **GOAL:** Slow the spread to reduce incidence of illness and death
- **Hospitals/Healthcare System Overloaded**
- **Use social distancing, targeted antiviral treatment, isolation and quarantine to buy time to increase:**
  - Antiviral supply
  - Vaccine availability

![Graph showing impact over weeks, comparing prepared vs unprepared scenarios]
Tiered Readiness Approach

• Personal Readiness
• Family and Community Readiness
• Workplace Readiness

Multiple Level Impact requires Multiple Level Planning

INFORMATION = POWER

• Example: Personal Readiness – planning now to care for yourself or loved ones who get the flu = better equipped to respond in Workplace Readiness

• Example: encourage employees to obtain a seasonal flu vaccine (as normal flu will probably continue to circulate).
Workplace Readiness

- Surface Cleaning and other Environmental Measures
- Cough Etiquette
- Hand Hygiene
- Social Distancing
  - Limiting Face-to-Face Meetings
  - Tele-commuting and Tele-conferencing
  - Lunch “To Go”
- Contingency Planning/Business Continuity
Potential for Contact Transmission and Surface Cleaning

- Influenza virus can survive on surfaces at room temperature and moderate humidity:
  - Steel and plastic: 24-48 hours
  - Cloth and tissues: 8-12 hours

- Surfaces can include items such as:
  - Tabletops
  - Doorknobs
  - Tools
  - Computer keyboards and Telephone handsets
  - Cloth, tissues, paper or currency infected with the virus
  - Faucets, toilet flushers
Potential for Contact Transmission

Effectively inactivated by:

• Detergents
• Alcohol-based products (hand gels)
• Bleach solutions
• Household disinfectants (virucides)
Stop the spread of germs that make you and others sick!

Cover your Cough

Cover your mouth and nose with a tissue when you cough or sneeze or cough or sneeze into your upper sleeve, not your hands.

Clean your Hands after coughing or sneezing.

Wash hands with soap and warm water or clean with alcohol-based hand cleaner.

Put your used tissue in the waste basket.
Hand Hygiene

• Provide resources and work environment that promote personal hygiene.
  • Tissues; no-touch trashcans, sinks, towel dispensers; hand soap; hand sanitizer; disinfectants for work surfaces
• Train on the expectation that employees will follow these guidelines
• Make it a habit NOW
Social Distancing

- Encourage sick employees to stay home
- Avoid close contact with coworkers and customers (>6 ft apart)
- Avoid shaking hands (and wash after)
- Discourage sharing of phones, desks, offices, work tools and equipment
- Minimize face-to-face meetings. Utilize email, telephone, texting capabilities
- Reduce or eliminate unnecessary social interactions (including others coming onsite)
Respiratory Protection

• Is it needed?
• What kind?
• Stockpiling?
• Additional requirements?
1910.134(c)(1) Respiratory Protection Program

• Where respirators are required you need:
  • Written program
  • Worksite-specific procedures

• Required elements:
  • Training
  • Fit testing
  • Medical evaluations
  • Care and maintenance
  • Procedures for respirator selection
  • Procedures for routine & emergency use
Variable Guidance Depending on Risk Classification Level

• Lower Exposure Risk
• Medium Exposure Risk
• High Exposure Risk
  • OSHA Guidance on Preparing Workplaces for an Influenza Pandemic (OSHA 3327-02N 2007)

Expect majority of American workforce will be in these 2 categories
Expect to be Asked:

“Does MY employer have a plan”:

• for employees who get sick during a pandemic and need to stay home?

• to keep the business functioning if key staff can’t come to work?

• for sick leave, benefits and wages when employees are asked to remain at home?
Workplace Questions

As an overall matter, employers should be guided in their relationship with their employees not only by federal employment law, but by their own employee handbooks, manuals, and contracts (including bargaining agreements), and by any applicable state or local laws.

Not all of the employment laws referenced apply to all employers or all employees, particularly state and local government agencies. For information on whether a particular employer or employee is covered by a law, please use the links provided for more detailed information. This information is not intended for federal agencies or federal employees -- they should contact the U.S. Office of Personnel Management (OPM) for guidance.

Categories of Workplace Frequent Questions:

**Human Resource Policies and Pandemic Planning**
- Leave/Leave Policies (including Family and Medical Leave)
- Return To Work
- Layoff/Termination/Firing
- Sending Workers Home
- Refusal To Work
- Pay Policies
- Work Restrictions
- Working At Home And Social Distancing
- Re-Employment Rights
- Child Care At The Workplace
- Liability Issues
- Pre-Pandemic Workplace Planning

**Equal Employment Opportunity (EEO) and Privacy Issues**
- Privacy Issues
- Accommodation
- Essential Workers

**Workplace Benefits**
- Workers' Compensation
- Health Benefits/Health Plans/Health Insurance
- Pension Plans/Retirement
Example Plan Overview

- Organizational Structure
- Assumptions
- Business Continuity
- Employee Health
- Management of Ill Staff
- Attendance and Leave policies

- Payroll Administration
- Training
- Employee Services
- Workplace Practices
- Recovery
Planning Team (example)

- Human Resources
- Safety
- IT
- Security
- Sourcing/Purchasing
- Facilities
- Travel
- Legal
- Communications
- Operations
- 3rd Parties
Business/Infrastructure Continuity Planning

- Human Resource Issues:
  - Workplace open or closed? Why? How Long?
  - Risks to employees and others reasonable?
- Short and Long-Term Planning
- Influenza Management Team
  - Who?
  - Activation of plan?
- Communication
- Maintaining Essential Business Activities
  - Who are the core employees?
  - What are their skills?
  - Planning for absence
Business/Infrastructure Continuity Planning

- What affect of shortages of supplies/raw materials/personnel have on operations? Interrupted supply/delivery?

- How will staff and visitors be protected?
  - Restricted entry?
  - Personal hygiene (handwashing)?
  - Workplace cleaning?
  - Ventilation system (HVAC)?
  - Social distancing?

- Becoming ill at work?

- Travel?

- Personal Protective Equipment?
Risk Communication

- Develop FAQ list (example: Pre-Event Pandemic Message Maps)
- Communicate policies
- Technology capability
  - Email
  - Internet
- Test, Drill, Revise
It is important during an emergency event to convey complex information clearly and simply. The communication resources on this page provide information about crisis, pandemic flu risk communications.

### Resources

- **Crisis & Emergency Risk Communication (CERC) course** (U.S. Centers for Disease Control and Prevention)
  
  The online, instructor-led course has been designed to serve those who will perform crisis and risk communication and media relations in the event of a public health emergency. Target audiences include federal, state, and local public health professionals; healthcare professionals; emergency medical services professionals; preparedness planners; and community leaders.

- **Communications Planning Webcast** (U.S. Centers for Disease Control and Prevention, the World Bank and Partners)

This event on September 26, 2006, is a videoconference-based distance learning seminar on communications planning for avian and human influenza preparedness.

- **Crisis and Emergency Risk Communication: By Leaders For Leaders** (Centers for Disease Control and Prevention)
  
  - **Pandemic Influenza**
    
    The HHS/CDC Crisis & Emergency Risk Communication (CERC): Pandemic Influenza course is a 1½ day training that offers a combination of influenza communication tabletop reviews and informative group discussions.
    
    - **Course Book (PDF - 695 KB)** (Centers for Disease Control and Prevention)
    - **Participant’s Manual (includes slides) (PDF - 447 KB)**

- **Communicating in a Crisis: Risk Communication Guidelines for Public Officials** (Substance Abuse and Mental Health Services Administration)

- **Effective Media Communication during Public Health Emergencies** (World Health Organization)

- **Terrorism and Other Public Health Emergencies: A Reference Guide for the Media** (U.S. Department of Health & Human Services)

- **Pandemic Influenza Pre-Event Message Maps (PDF - 523.98 KB)**

"Message maps" are risk communication tools used to convey complex information, and to make it easier to understand. Each primary message has three supporting messages that can be used to provide context for the subject of the primary message. This file contains message maps for both avian flu and pandemic influenza.

- **USDA Key Messages for Avian Influenza** (US Department of Agriculture)

  Message maps for three scenarios in the event of a detection and/or outbreak of highly pathogenic avian influenza in the United States

- **Pandemic Influenza--Past, Present, Future: Communicating Today Based on the Lessons from the 1918-1919 Influenza Pandemic (PDF - 1.72 MB)**

  These workshop proceedings provide a historical retrospective review of the impact of the 1918–1919 influenza pandemic. A panel of experts discuss how the 1918-affected daily life in the United States, and what lessons can be learned and applied to planning today.

- **WHO Handbook for Journalists: Influenza Pandemic (PDF - 738 KB)** (World Health Organization)

- **WHO Outbreak Communications Guidelines (PDF - 452 KB)** (World Health Organization)
Key Resources

- www.pandemicflu.gov


- http://training.fema.gov/IS/NIMS.asp
Contact Information

Hilarie Schubert Warren, MPH
Industrial Hygienist
Health Sciences Branch
Georgia Tech Research Institute
430 10th St NW, North Building
Atlanta, GA 30332-0837
PHONE (404) 407-6255
FAX (404) 407-9256
email: hiliarie.schubert@gtri.gatech.edu
website: www.oshainfo.gatech.edu

Information Provided under OSHA Susan Harwood Grant
#SH-16620-07-60-F-13