



Emergency and Pandemic Preparedness – Are You Ready?

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Connecting Great Ideas and Great People

Overview

- The Context: Can history help us see the future?
- Preparedness challenges: Why a pandemic is different
- Where do we go from here?
 - Business continuity planning
 - Roles & Responsibilities of associations



Perceptions about a pandemic: Where we are now

- It's those fearmongers who were wrong before....Swine Flu, Ebola, SARS, etc.
- It will never happen here
- We can't prevent it
- The public can't handle it



Polling question

On a scale of low to medium to high probability, how convinced are you that we will experience another pandemic?



The New York Times

Avian Flu Wanes in Asian Nations It First Hit Hard

By DONALD G. McNEIL Jr.
Published: May 14, 2006

Bird Flu Deaths in Indonesia Raise Concerns

By DONALD G. McNEIL Jr.
Published: May 18, 2006



But what if...

- The 1918 human strain of influenza evolved directly from an avian strain through gradual adaptation to the human host.
- 1918 influenza pandemic infected 500 million (one third of the world's population). 50 to 100 million died.



- "The American Society of Microbiology concurs with the Department of Health and Human Services that the threat of an impending influenza pandemic is real and that there is an immediate need to prepare for that threat."

ASM Public and Scientific Affairs Board letter to HHS Secretary Michael Leavitt, November 22, 2005

- "Like our colleagues in the federal government, we believe that the next influenza pandemic is imminent."

Testimony by Andrew Pavia MD on behalf of the Infectious Diseases Society of America; US House Committee on Energy and Commerce Subcommittee on Health. May 26, 2005



About pandemics

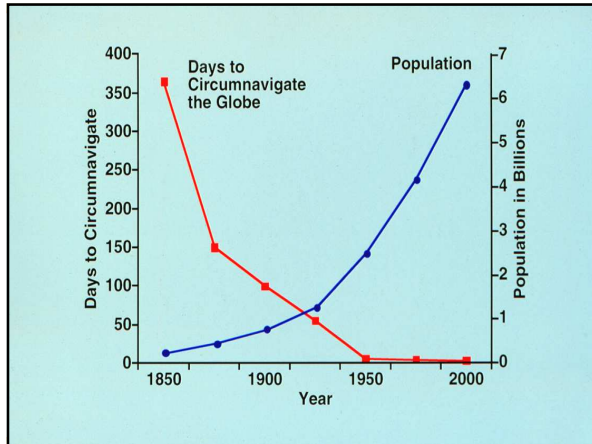
- Pandemic
 - An epidemic that becomes very widespread and affects an entire region, continent, or the world
- Ten pandemics in the past 300 years
- Pandemics occur when a novel influenza strain emerges with following features:
 - Readily transmitted between humans
 - Genetically unique (i.e., lack of pre-existing immunity in the human population)
 - Increased virulence



Related Facts


- 2003 SARS outbreak:
 - 8,078 cases and 775 deaths worldwide
 - Did more damage to the global economy than 9-11
 - In Toronto, hospitals and schools closed
 - Tourism and hospitality industries were devastated






Understanding Pandemic Influenza

- Pandemic – An epidemic that becomes very widespread and affects an entire region, a continent or the world.
- Pandemics recorded since Hippocrates
 - At least 10 pandemics recorded in last 300 years
 - 1918-1920 – 50 million to 100 million deaths worldwide
 - 1830-1832 was also “very severe”



Influenza Virus Change and Pandemic Potential

- Reassortment
- Key cumulative mutations



Pandemic influenza 1957-1958

Asian flu

- H2N2 strain
- Pandemic strain acquired three genes from the avian influenza gene pool in wild ducks by genetic reassortment and obtained five other genes from then-circulating human strain
- 60,000 to 70,000 people in U.S. died



Pandemic Influenza

- 1968-69 (Hong Kong flu)
 - H3N2 strain
 - two genes from ducks and six genes from human virus
 - approximately 40,000 people died in the U.S.



People, Pigs and Poultry in China

	1968	2004
People	790 million	1.3 billion
Pigs	5 million	508 million
Poultry	12 million	15 billion



Pandemics in the Past 300 Years

- 10 to 49 years between pandemics.
- 24 years is average
- 1732-33
- 1781-82
- 1800-02
- 1830-33
- 1847-48
- 1857-58
- 1889-90
- 1918-19
- 1957-58
- 1968-69



Why study the 1918 Pandemic?

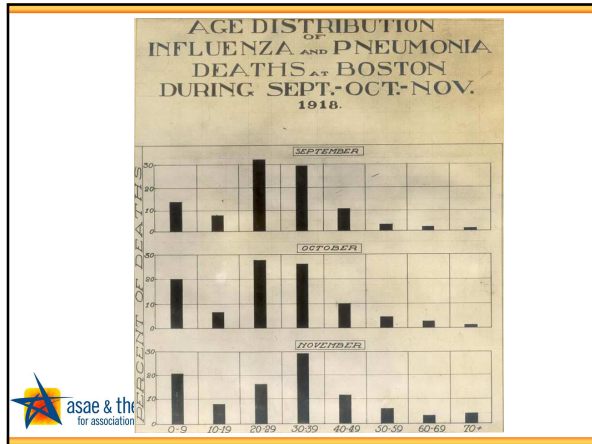
- Taubenberger et al. **Nature 2005: 437;889**
 - Results support that the 1918 pandemic H1N1 “jumped” directly from an avian species to humans
 - “Notably, a number of the same changes have been found in recently circulating highly pathogenic H5N1 viruses that have caused illness and death in humans and are feared to be precursors of a new influenza pandemic.”
 - Virus samples from a Turkish child who died (winter of 2005-06 showed 3 notable mutations

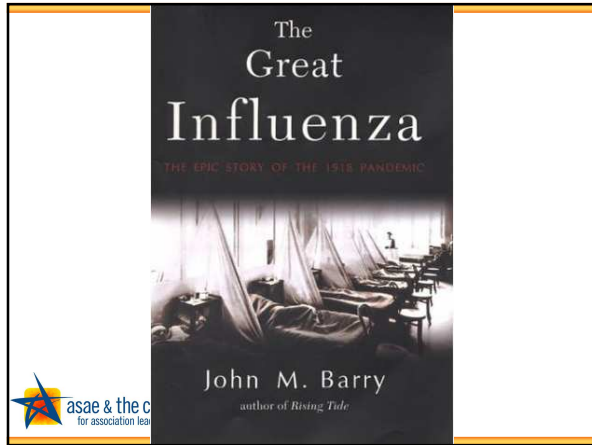


Pandemic influenza – 1918-1919

- H1N1 strain
- 200 million to 1 billion people were infected
- More than 50 to 100 million died
- Killed a disproportionate number of healthy, young adults (W curve)
- Summary of 13 studies in 1918-19 involving pregnant women demonstrated that the case-fatality rate ranged from 23% to 71%

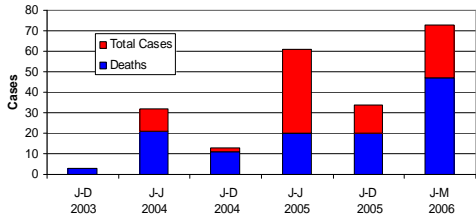




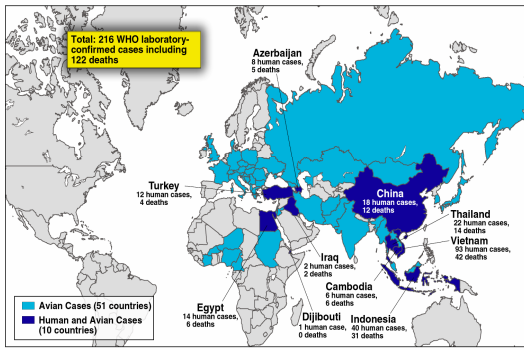




Human Cases of H5N1 Influenza



H5N1 Influenza Cases, 2003-2006



Responding to an influenza pandemic

- Prevention/patient treatment
 - Vaccine and antivirals
- Populations and medical system response



Vaccination

- Current influenza vaccine reflects 1950s technology
- Requires pandemic strain for optimal protection
- World manufacturing capacity is extremely limited
 - 300 million doses annually
- H5N1 vaccine research results – disappointing
 - requires 6 to 12 times as much antigen as seasonal flu vaccine
- Assume no vaccine for first 6 months, then extremely limited supply, rationing
- At most 20 to 30 million people vaccinated worldwide in first year of a pandemic



Use of Oseltamivir Treatment for H5N1 Infection

- H5N1 and 1918 H1N1 cause a very different disease than seasonal flu
- If antiviral therapy works, it will likely be needed very early, at higher doses, and for a prolonged period
- WHO is considering a recommendation change: to increase treatment dosage (4X)
 - implications for stockpile size is obvious



Case and death estimates for next pandemic

- Assuming the next pandemic will be caused by H5N1
- Most estimate that 30% to 60% of the world's population will become infected
- 1968-like pandemic: 2 to 7.5 million deaths
- 1918-like pandemic: 180 to 360 million deaths
 - CDC predicts 16 million in US alone
- Current H5N1 case fatality rate: 1.6 billion deaths



Economic Impact of Pandemic

- Annual loss of real GDP growth with pandemic of 3-month duration: \$1.1 to 3.2 trillion
 - » BMO Nesbitt Burns



When will it happen?

- No one can predict if, when, or where H5N1 virus will shift from an avian strain with incidental human infections to a genetically competent human-to-human transmitted agent
- Asia remains the genetic roulette table for H5N1 mutations
- First evidence of a pandemic will be third-generation cases



Eleven things you must know about pandemic influenza

1. Pandemics are recurring events, the world may be on the brink of another pandemic
2. All countries will be affected
3. Duration of 18 months to 2 years, waves of 6-8 weeks
4. Medical supplies will be inadequate



Eleven things you must know about pandemic influenza (continued)

- 5. Vaccine and antiviral drugs will have minimal impact if pandemic occurs in the next several years
- 6. Nonpharmaceutical interventions (NPI) such as quarantine, infection control, social distancing, etc. will likely have limited impact on the number of cases
- 7. International governments will have limited resources to respond "everywhere and to everything" for 12 to 18 months



Eleven things you must know about pandemic influenza (continued)

- 8. 30% absentee rate
- 9. Economic and social disruption will be great
- 10. Every country must be prepared
- 11. World Health Organization (WHO) will alert the world when the pandemic threat increases



Preparing For the Next Pandemic


"A number of recent events and factors have significantly heightened concern that a specific near-term pandemic may be imminent...At this juncture scientists cannot be certain...nor can they know exactly when a pandemic will hit...the reality of a coming pandemic, however cannot be avoided. Only its impact lessened. Some important preparatory efforts are under way, but much more needs to be done by institutions at many levels of society."

Michael T. Osterholm, MPH
Director, Center for Infectious
Disease Research and Policy
Foreign Affairs 2005:84(4)24-37




**Emergency and
Pandemic Planning**

Bob Mellinger
President
Attainium Corporation




Polling question

Considering what you have just heard,
on a scale low to medium to high probability,
how convinced are you now that we will
experience another pandemic?




“I am prepared for the worst
but hope for the best.”

Benjamin Disraeli




Emergency Management

- Awareness
- Preparation
- Mitigation
- Response
- Recovery



Emergency Management


- **Awareness**
 - Activities to identifying what COULD happen...
 - Threats, hazards, vulnerabilities
- **Preparation**
 - Activities performed to "GET READY"
- **Mitigation**
 - Activities to reduce or eliminate the disruption
- **Response**
 - Activities to occur during or just after the disruption
- **Recovery**
 - Activities to return the organization to "normal"



Risk = Probability x Impact

What is the likelihood of a pandemic occurring?

What are the consequences if a pandemic does occur?




Preparation
Develop a readiness capability

Mitigation
Reduce vulnerability

Response
Minimize the impact

Recovery
Return to normal



Business Sector Experience

- Many have weathered other crises – 9-11, Hurricane Katrina, etc.
- The pandemic difference
 - Global
 - Sustained
 - Recovery will be delayed, requiring weeks, months or years



The Dilemma

- As the economy slows down, can your organization function without:
 - 1/3 of your staff?
 - 1/3 of your customers?
 - 1/3 of your suppliers?
 - 1/3 of your board members?



Where will the 1/3 be?

- Sick
- Taking care of someone that is sick
- Afraid of getting sick



Business Sector Impact

Information Technology

Surge in use as companies move workers to home or remote locations could overwhelm capacity.



Courtesy of Center for Infectious Disease Research and Policy (CIDRAP), University of Minnesota

Business Sector Impact

Food and Agriculture

Animal protection; dramatic changes in consumer purchasing; shortages due to transportation and energy problems; security.



Courtesy of Center for Infectious Disease Research and Policy (CIDRAP), University of Minnesota

Business Sector Impact

Transportation

Just-in-time inventory practices will lead to rapid shortages; bottlenecking of cargo due to employee shortages; incorrect fears re transmission from cargo.



Courtesy of Center for Infectious Disease Research and Policy (CIDRAP), University of Minnesota

Business Sector Impact

■ Energy

Tight coordination between utilities will be disrupted; lack of skilled labor could shut down operations; transportation and labor issues will lead to shortages of fuel, gas, electricity; recovery could take months.



Courtesy of Center for Infectious Disease Research and Policy (CIDRAP), University of Minnesota

Business Sector Impact

■ Hospitality

Travel curtailed and events cancelled; impact on guest numbers and length of stay; government use of hotels; unique liability for health-related events.



Courtesy of Center for Infectious Disease Research and Policy (CIDRAP), University of Minnesota

Policy Considerations

- What responsibility will you undertake to ensure staff safety?
- Will you pay your staff if they cannot work?
 - And if so, for how long?
- Can you operate without key staff?
 - And if so, for how long?



Policy Considerations

- How will you handle customers affected by the pandemic?
- Will you discontinue meetings, events, and other revenue-producing opportunities?
- Will your governance allow you to operate without face-to-face contact?



Policy Considerations

- Are you willing to completely shut down your organization to preserve capital?
 - And if so, under what circumstances?




“There are risks and costs to a program of action, but they are far less than the long-range risks and costs of comfortable inaction.”

John F. Kennedy




**Pandemic Preparedness
for Associations**

Kathy Warye
Chief Executive Officer
Association for Professionals in Infection Control & Epidemiology



What we'll cover next


- What associations need to consider in planning for a pandemic
- The association executive's dual responsibilities
- What you can do now to mitigate the impact of a pandemic



Basic assumptions

What to expect:

- Duration of severe pandemic: 18 months to 2 years
- Waves of influenza – 6-8 weeks each
- 30% absentee rate for employees
- *30% fewer customers, purchasers, members utilizing services*



The association executive's dual responsibilities

- Alerting, informing and preparing the industry or profession you serve
 - What is your industry or profession's role in global business continuity? In provision of essential services?
- Protecting your organization and employees



Preparing your members

- What is your role in alerting, preparing and supporting your industry or profession?
- What shifts will occur in your members' businesses or practices?
- What expectations will your members and customers have of the association?
- What can you do to deliver, realistically?




Preserving and protecting your employees & the association entity

- How will you protect your employees?
- How will you preserve the association as a viable entity?




**11 Steps
Your Association Can Take
to Prepare**




1. Revise existing contingency plans for pandemic

- Identify core business activities
- Identify outside services critical to maintaining operations and safety
- Identify employees who perform essential functions
- Establish an emergency communications plan specific to pandemic



2. Communicate, communicate, communicate

- Maintain clear, simple, frequent communications
 - Threat of pandemic flu and the steps you are taking to prepare
 - Modes of transmission and symptoms
 - Importance of staying away from the workplace when ill
- Direct staff to credible external resources



3. Education on basic precautions

- Promote hand and respiratory hygiene to stop spread of germs in workplace
 - Ensure widespread availability of alcohol-based hand sanitizers (min. 60% alcohol)
 - Cover nose & mouth when coughing or sneezing
 - Avoid touching eyes, nose or mouth



3. Education on basic precautions (cont'd)

- Avoid close contact with people who are sick
- Discourage “presenteeism”



4. Provide psychological support services

- Employee Assistance Programs (EAPs)
- Counseling



5. Establish and/or expand telecommuting options

- What do employees need to conduct business remotely?
 - Full, secure access to desktops and applications from home, office or another remote location



6. Identify essential staff and functions

- Identify and prioritize essential functions
- Create redundancy in essential functions
- Prepare for disruptions in leadership continuity



7. Update sick leave, family and medical leave policies

- Healthy work environment
- Mandatory absence of the sick
- Non-punitive sick leave and family leave policies



8. Expand online and self-service options for members

- Implement remote access options for essential services; revenue streams
- Streamline customer interface processes



9. Limit legal exposure

- Businesses without adequate infectious disease policies could face HR-related legal challenges
 - Health, communication, hygiene, and leave policies related to infectious diseases
- Be prepared to rapidly comply with new local, state, federal and international mandates, laws or regulations



10. Conduct a cash reserves assessment

- What is your monthly burn rate?
- Can you afford to sustain a severe, prolonged drop in income? or will shut-down be required?
- What cash and other resources will be required to “restart” the organization?



11. Know where to turn



World Health Organization Pandemic Alert

Inter-pandemic phase	Low risk of human cases	1
New virus in animals, no human cases	Higher risk of human cases	2
Pandemic alert	No or very limited human-to-human transmission	3
New virus causes human cases	Evidence of increased human-to-human transmission	4
	Evidence of significant human-to-human transmission	5
Pandemic	Efficient and sustained human-to-human transmission	6

www.who.int



Centers for Disease Control & Prevention (CDC)

- Pandemic Q&A
- Business planning for pandemic (checklists by business sector), etc.
- Resources for individuals and families

www.pandemicflu.gov



Center for Infectious Disease Research & Policy (CIDRAP)

- Pandemic Influenza Fact Sheet
- Key Assumptions for Pandemic Influenza Business Contingency
- 10-Point Framework for Pandemic Influenza Business Contingency Planning
- Planning Issues by Business Sector

www.cidrap.umn.edu



Association for Professionals in Infection Control & Epidemiology (APIC)

APIC ID Center

- Late-breaking information on infectious disease outbreaks, avian influenza, SARs, etc.
- ID Center email alert service
- Downloadable brochure: *It's Not Flu as Usual*

www.apic.org



Thank you for your participation!

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Thank you!

*We look forward to your participation
in future programs.*

For upcoming programs,
please visit our Web site:
www.asaecenter.org

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