PREPARING FOR A PANDEMIC

Lessons from the Past
Plans for the Present and Future
Pandemics Are Inevitable

Emergency hospital during 1918 influenza epidemic, Camp Funston, Kansas
Image courtesy of the National Museum of Health and Medicine, Armed Forces Institute of Pathology, Washington DC
And their impact can be devastating

1918 Spanish Flu
20-100 million deaths worldwide
600,000 US deaths
Pandemic influenza in the 20th Century

1918 “Spanish Flu”
20-40 million deaths
H1N1

1957 “Asian Flu”
1 million deaths
H2N2

1968 “Hong Kong Flu”
1 million deaths
H3N2
H1N1 - 2008-10 Influenza Seasons

> 700,000 specimens tested

199,887 specimens tested
Characteristics of 2009 H1N1 Influenza Pandemic in the US
April 15, 2009–April 10, 2010

Cases
61,000,000 (43M – 89M)

Hospitalizations
274,000 (195K – 403K)

Deaths
12,470 (8.9K – 19.3K)

Approximate rate per 100,000 population

Age groups
0-4
5-24
25-49
50-64
≥65

CDC
Centers for Disease Control and Prevention
## Pandemic Planning Assumptions

<table>
<thead>
<tr>
<th></th>
<th>Moderate (1957-like)</th>
<th>Severe (1918-like)</th>
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</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>
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<tr>
<td>ICU care</td>
<td>128,750</td>
<td>1,485,000</td>
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<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>
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How might societal functioning be affected by a severe pandemic?

- Social distancing measures could be required (closing work and schools)
- Worker absenteeism could be high
- “Just-in-time” supply chains could be interrupted & lead to disruption in community functioning
  - Shortages of food, water, fuel, medicine
Financial Problems in a Severe Pandemic, by Income

% of employed saying would have serious financial problem if had to miss work for...

<table>
<thead>
<tr>
<th>Time</th>
<th>&lt;$25K</th>
<th>$25-49.9K</th>
<th>$50-74.9K</th>
<th>$75K+</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-10 days</td>
<td>56%</td>
<td>29%</td>
<td>15%</td>
<td>15%</td>
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<tr>
<td>1 month</td>
<td>84%</td>
<td>69%</td>
<td>50%</td>
<td>37%</td>
</tr>
<tr>
<td>3 months</td>
<td>93%</td>
<td>84%</td>
<td>71%</td>
<td>64%</td>
</tr>
</tbody>
</table>

Source: Blendon et al EID, 2008
Pandemic

- **General**: An epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people.

- **Influenza Pandemic**: Emergence of virus significantly different from circulating human influenza A viruses that is:
  - Able to infect humans and cause disease in humans
  - Able to easily spread from human to human.
Influenza Terms Defined

- **Seasonal (or common) flu (Influenza A and B):**
  - Most have some immunity
  - Up to 500,000 deaths globally/year
  - More than 200,000 hospitalizations/year in US
  - Vaccine is available every flu season

- **Avian (or bird) flu (Novel Influenza A):**
  - Disease primarily of birds—not readily transmitted from birds to humans
  - No human immunity
  - Limited if any human vaccine available

- **Pandemic flu:**
  - Novel virus emerges without warning
  - Humans have limited or no natural immunity
  - Spread easily—causes illness and death
  - No/very limited vaccine available at start of pandemic
WHO Phases

- **PHASES 1-3**: Predominantly animal infections; few human infections
- **PHASE 4**: Sustained human to human transmission
- **PHASES 5-6 / PANDEMIC**: Widespread human infection
- **POST PEAK**: Possibility of recurrent events
- **POST PANDEMIC**: Disease activity at seasonal levels
What Can Be Done to Minimize the Risk of a Pandemic

Focus on Prevention
Monitor Cases
Respond to Outbreaks
Goals of a Pandemic Response

1. Delay outbreak peak
2. Decompress peak burden on hospitals / infrastructure
3. Diminish overall cases and health impacts
Disease containment measures

- **Isolation:** restriction of movement/separation of ill infected persons with a contagious disease
- **Quarantine:** restriction of movement/separation of well persons presumed exposed to a contagious disease
- **Self-shielding:** self-imposed exclusion from infected persons or those who may be infected
- **Social distancing:** reducing interactions between people to reduce the risk of disease transmission
- **Cancelled events:** days on which offices, schools, transportation systems are closed or cancelled to prevent potential exposure
Interrupt Ebola transmission in West Africa
- Case identification, isolation and care
- Contact identification and monitoring
- Transmission risk factor identification and mitigation
  - HCW protection and infection control
  - Funeral and burial safe practices

Prevent Ebola transmission to other countries
- Prevention of undiagnosed cases entering unaffected countries
- Prevention of transmission from diagnosed cases during and after repatriation

Ebola Response Priority Objectives
Not a Pandemic
Particular Role of Businesses and Employers
Businesses and employers play key roles in planning and response to flu pandemics

- Protect the health of the workforce
- Keep businesses operational (especially critical infrastructure)
- Assure functioning of communities
Why Plan Now?

- Pandemic response is disruptive for prolonged period of time
- Advance planning is necessary as little or no notice will be given when a pandemic begins
- Planning takes time, partnerships and resources
- Pandemic planning can be built into workplace wellness efforts
CDC Guidance for Businesses and Employers

- Review and/or establish a flexible influenza pandemic plan
- Plan to protect worker health
  - Develop flexible leave policies
- Plan to maintain operations in light of absenteeism
- Engage state and local health departments for communications channels for outbreaks
  - Response will be based on local conditions
Components of a Plan

- Sick persons should stay home
- Sick employees at work should be asked to go home
- Don’t require a doctor’s note
- Cover coughs and sneezes
- Improve hand hygiene
- Clean surfaces and items likely to have frequent hand contact
- Encourage employees to get vaccinated
Action Steps Under Conditions with Increased Severity

- Consider active screening of employees who report to work
- Consider alternative work environments for employees at higher risk for complications of influenza during periods of increased influenza activity in the community
- Consider increasing social distancing in the workplace
Insurers: Planning May Include

- Incentivize immunizations and other preventive measures to minimize complications.
- Have well trained centralized emergency preparedness and satellite teams in key locations.
- Use incident command structures and information centers.
- Attend to need for teleworking plans in place and social distancing trainings.
- Emphasize value of exercises, debriefings and real world minor and major experiences.
Insurers: Reimbursement/Budgeting/Planning

• Consider reimbursement related flexibility for such things as:
  - information/hot lines
  - clinician telephone/computer counseling of patients advised not to come to the ED
  - care at unlicensed satellite sites
  - care by those outside of network
  - rationing of care
Use Tools to Help Prepare and Respond

- Communication Toolkit for Businesses and Employers
- Information and resources to help implement CDC’s Guidance for Businesses and Employers
- Includes Q&A, fact sheets, posters, template emails/letters, resources
Refer to National Strategy Pandemic Plans

- National Strategy for Pandemic Influenza
- National Strategy for Pandemic Influenza: Implementation Plan
- HHS Pandemic Influenza Plan
- HHS Implementation Plan
Examples of Federal Efforts
Capabilities Developed to Prepare for a Pandemic

- Surveillance plans
- Diagnostic test development & deployment
- Vaccine development & deployment
- Antiviral stockpiling & guidance
- Community mitigation measures
  - School closure guidance
  - Planning for airport screening
- Infection control guidance
- Communication planning & training
Lessons from H1N1
Key Items for Improvement

- **Vaccine Production**: Strengthen ability to rapidly produce vaccine
- **Laboratory Diagnostics**: Improve lab diagnostics, including next generation serologic testing & sensitive point-of-care testing
- **Communications**: Clearly define and express severity of seasonal and pandemic influenza
- **Anti-viral Distribution**: Leverage existing commercial drug distribution to efficiently distribute antivirals
- **Staffing**: Effectively manage the emergency response staffing
- **Infection Control**: Improve infection control, especially respiratory protection
- **Modeling**: Integrate statistical modeling into the response
Public Health System

- **States** – Track disease; find, isolate and/or treat cases; monitor utilization of services and assist as needed; *determine/implement policies of social isolation; distribute anti-viral supplies and vaccines*; provide education to key sectors.

- **Locals** – Track disease; find, isolate and/or treat cases; monitor utilization of services; deploy first responders (e.g. public safety); target education for public & advise local officials & businesses; *promote & enforce social isolation (e.g. school closure)*; assess need for key supplies; assist vaccine distribution and *vaccine administration*. 
Does This Work?

• Yes!
  - **H1N1**
    - Rapidly identified novel influenza virus
    - Developed vaccine and vaccinated 80 M US residents
    - Increased use of antiviral drugs for severely ill
  - **Ebola**
    - Dramatically reduced new cases
    - Adapted infection control and treatment measures
    - Contained cases to few countries
The Right Approach Saves Lives
Summary

- Pandemics occur without warning with illness, death & disruption to society
- Avian flu virus strains continue to evolve and pose risks; other risks exist as well
- Proven steps can be taken by insurers & employers to mitigate impact
- These steps require plans and action before outbreak
- Tools and guidance exist from CDC and others