Management of Pandemic Influenza Outbreaks

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Management of Pandemic Disease Outbreaks

- PANDEMIC DEFINED
- HISTORY OF PANDEMIC DISEASE
- LIFECYCLE AND CAUSATION OF PANDEMIC
- CONSEQUENCES OF ILLNESS ON BUSINESS OPERATIONS
- INSTITUTIONAL AND COMMUNITY MANAGEMENT OF OUTBREAKS
PANDEMIC

ENDEMIC
The level at which disease is maintained in the population without the need for external inputs

EPIDEMIC
When new cases of a certain disease, in a given human population, and during a given period, substantially exceed what is expected based on recent experience
PANDEMIC

from Greek πᾶν (pan) "all" + δῆμος (demos) "people"

The level at which disease is spreading through human populations across many large regions or continents, so that it is considered to be, or have the potential of becoming, worldwide

Characteristics

• New virus that spreads easily as most people are susceptible
• Effective human to human transmission is necessary
• Measured by how fast the virus spreads
• Wide geographic spread
INFLUENZA

The flu is a contagious respiratory illness caused by a virus.

It can cause mild to severe illness, and at times can lead to death.

A person infected with the flu virus can transmit it two days before they have symptoms.

A person infected with the flu virus can transmit it up to five days after symptoms start.
INFLUENZA

Spread by contact with an infected person through:

• Sneezing
• Coughing
• Touching items recently contaminated by a person with the flu virus

Every year in the US on average:

• >200,000 people are hospitalized
• 36,000 people die
• Most people who get the flu recover within 1-2 weeks and do not require medical treatment
## HISTORY OF PANDEMIC DISEASE

<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)</td>
<td>500,000</td>
<td>40 million</td>
<td>Persons 20-40 years old</td>
</tr>
<tr>
<td>1918-1919</td>
<td></td>
<td></td>
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<tr>
<td>Asian Flu (H2N2)</td>
<td>70,000</td>
<td>1-2 million</td>
<td>Infants, elderly</td>
</tr>
<tr>
<td>1957-58</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hong Kong Flu (H3N2)</td>
<td>36,000</td>
<td>700,000</td>
<td>Infants, elderly</td>
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<tr>
<td>1968-69</td>
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</tr>
<tr>
<td>Russian Flu (H1N1)</td>
<td>8,300</td>
<td></td>
<td>Persons under 20 years old</td>
</tr>
<tr>
<td>1977-78</td>
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</tbody>
</table>
LIFECYCLE OF PANDEMIC

• 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.
LIFECYCLE OF INFLUENZA

**DANGER OF INFECTION**

- **Infectious (Shedding Virus)**

**Phases**

- **Incubation**
  - Day 0
- **Symptomatic (Sick)**
  - Day 2
- **Recovering**
  - Day 4
- **Work, etc.**
  - Day 11
- **Work/Home/Hospital**
  - Day 15
- **Back to work, etc.**
  - Day 15
CONSEQUENCES

• Pain, Discomfort, Risk of Death

• Loss of productivity, fatigue-related mistakes and injury

• Absenteeism, overwhelming of available resources

• Fear, Morale, Suspension of bedside manner and protocol
CONSEQUENCES

• Reputation

• Financial Loss to employees

• Financial Loss to organization

• Human Resource grievances, litigation
MANAGEMENT

• Continuity of Operations Planning

• Resource Management
  Including human resource management

• Monitoring and Communications

• Prevention, Prevention, Prevention
MANAGEMENT

Continuity of Operations Planning

Identification of Essential Functions

Delegation and Succession of Authority

Data and systems redundancy

Cross-training and assistance agreements
MANAGEMENT

Resource Management

Realistic resource ordering and inventory loading
   Just in time vs. stockpiling

Response phase resource management
   Systems and policies

Rationing and assistive agreements
MANAGEMENT

Monitoring and Communications

Disease Phase definitions and triggers

Standardized information sources and authorities

Resource and status situation reporting

Interagency task forces and collaboration
MANAGEMENT

Prevention, Prevention, Prevention

   Early disease phase education for patient contact staff

   Consider and reconsider absenteeism policies

   Availability of PPE and strict enforcement of hygiene practices