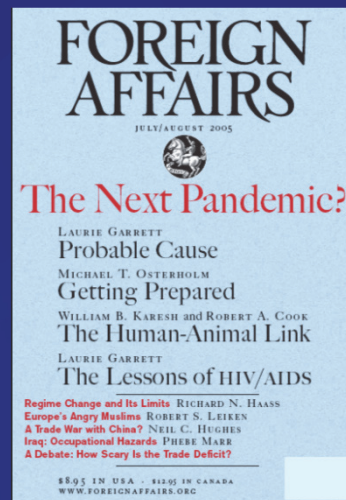


# PREPARING FOR A PANDEMIC

## *Lessons from the Past Plans for the Present and Future*



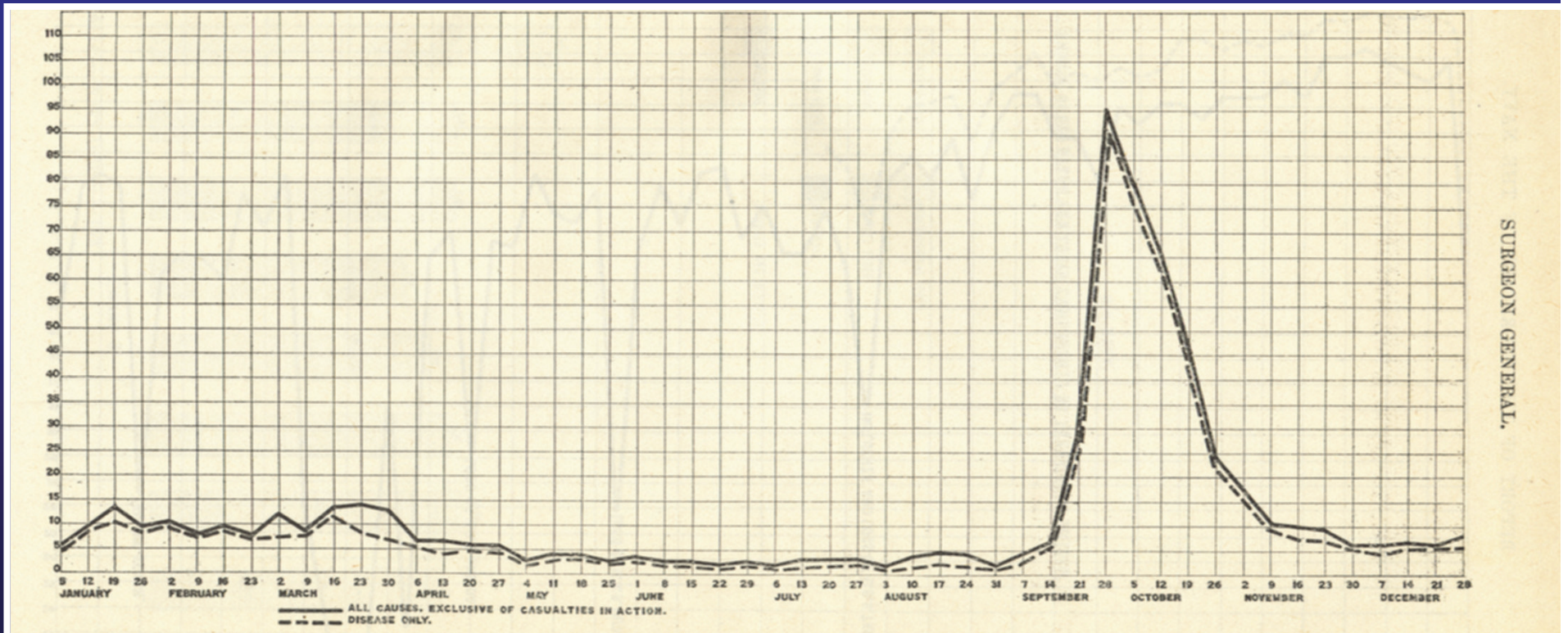
# Pandemics Are Inevitable

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

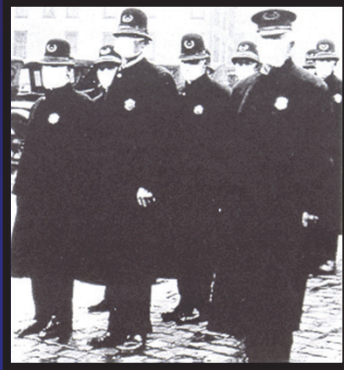


# And their impact can be devastating

1918 Spanish Flu  
20-100 million deaths worldwide  
600,000 US deaths



# Pandemic influenza in the 20<sup>th</sup> Century



1918 “Spanish Flu”

1957 “Asian Flu”

1968 “Hong Kong Flu”

20-40 million deaths

1 million deaths

1 million deaths

H1N1

H2N2

H3N2



1920

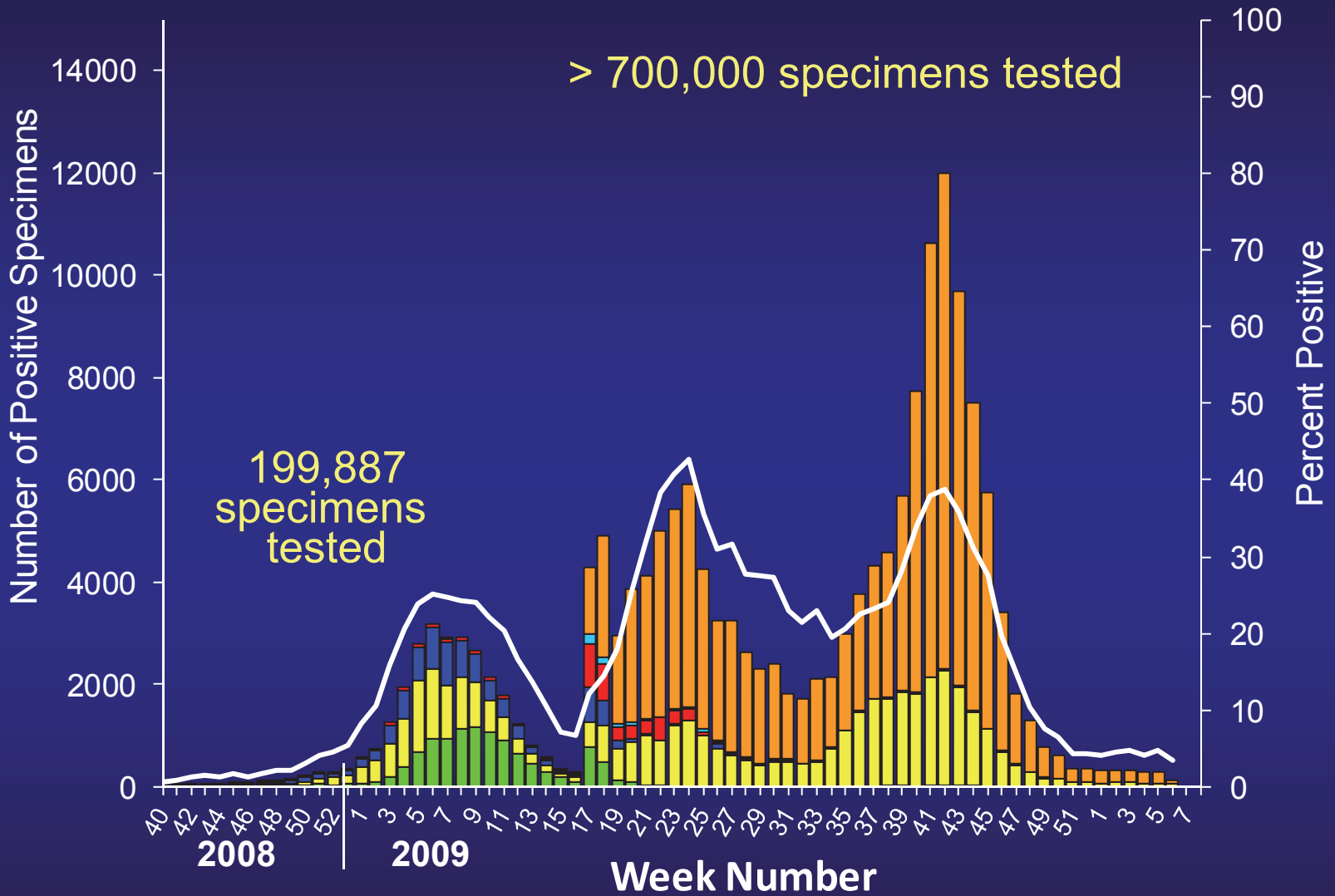
1940

1960

1980



# H1N1 - 2008-10 Influenza Seasons

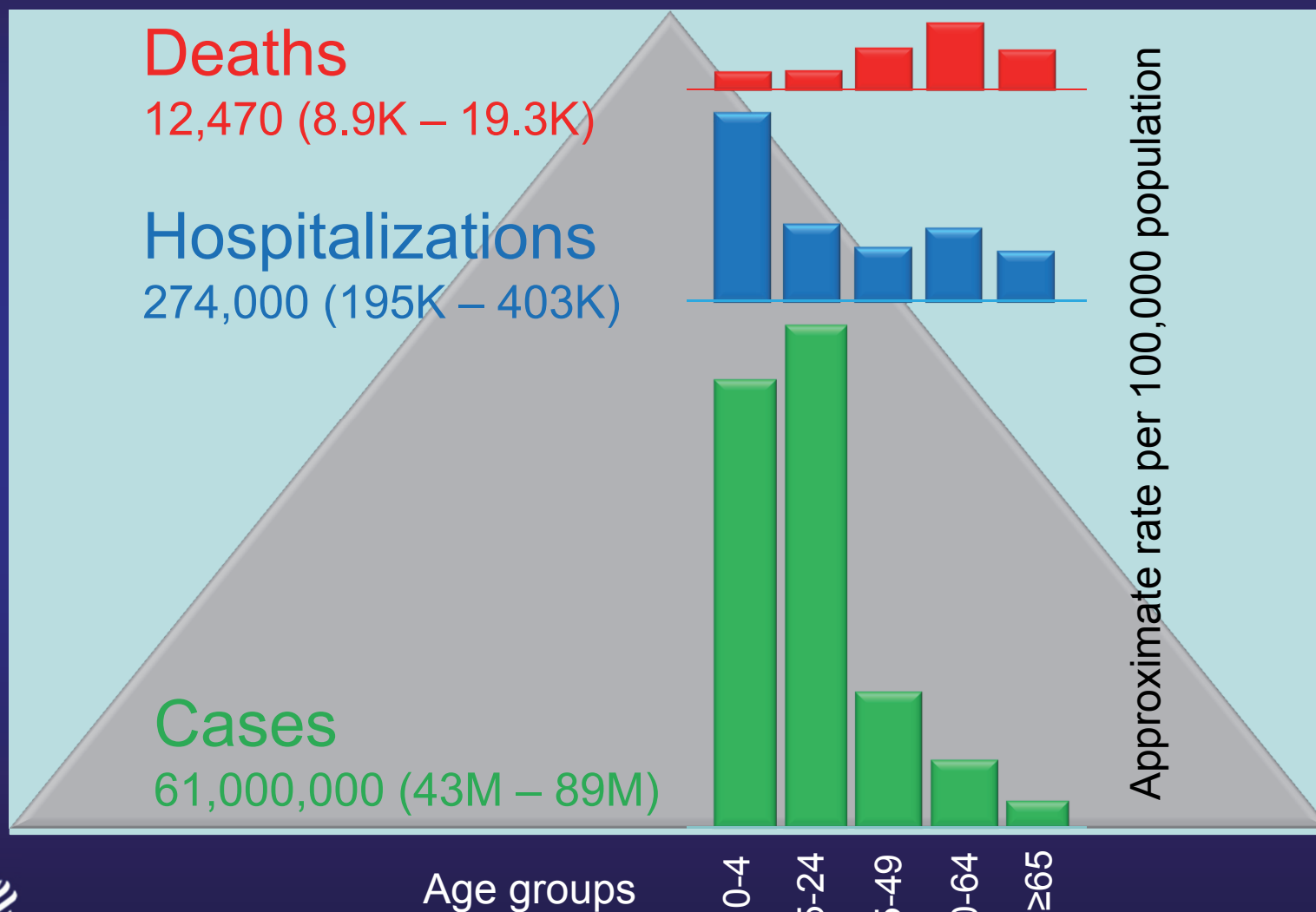


- B
- A(H3)
- A(Untype)
- A(H1)
- A(2009 H1N1)
- Percent Positive



# Characteristics of 2009 H1N1 Influenza Pandemic in the US

April 15, 2009–April 10, 2010



# Pandemic Planning Assumptions

	Moderate (1957-like)	Severe (1918-like)
<b>Illness</b>	90 million (30%)	90 million (30%)
<b>Outpatient medical care</b>	45 million (50%)	45 million (50%)
<b>Hospitalization</b>	865,000	9,900,000
<b>ICU care</b>	128,750	1,485,000
<b>Mechanical ventilation</b>	64,875	745,500
<b>Deaths</b>	209,000	1,903,000



# How might societal functioning be affected by a severe pandemic?

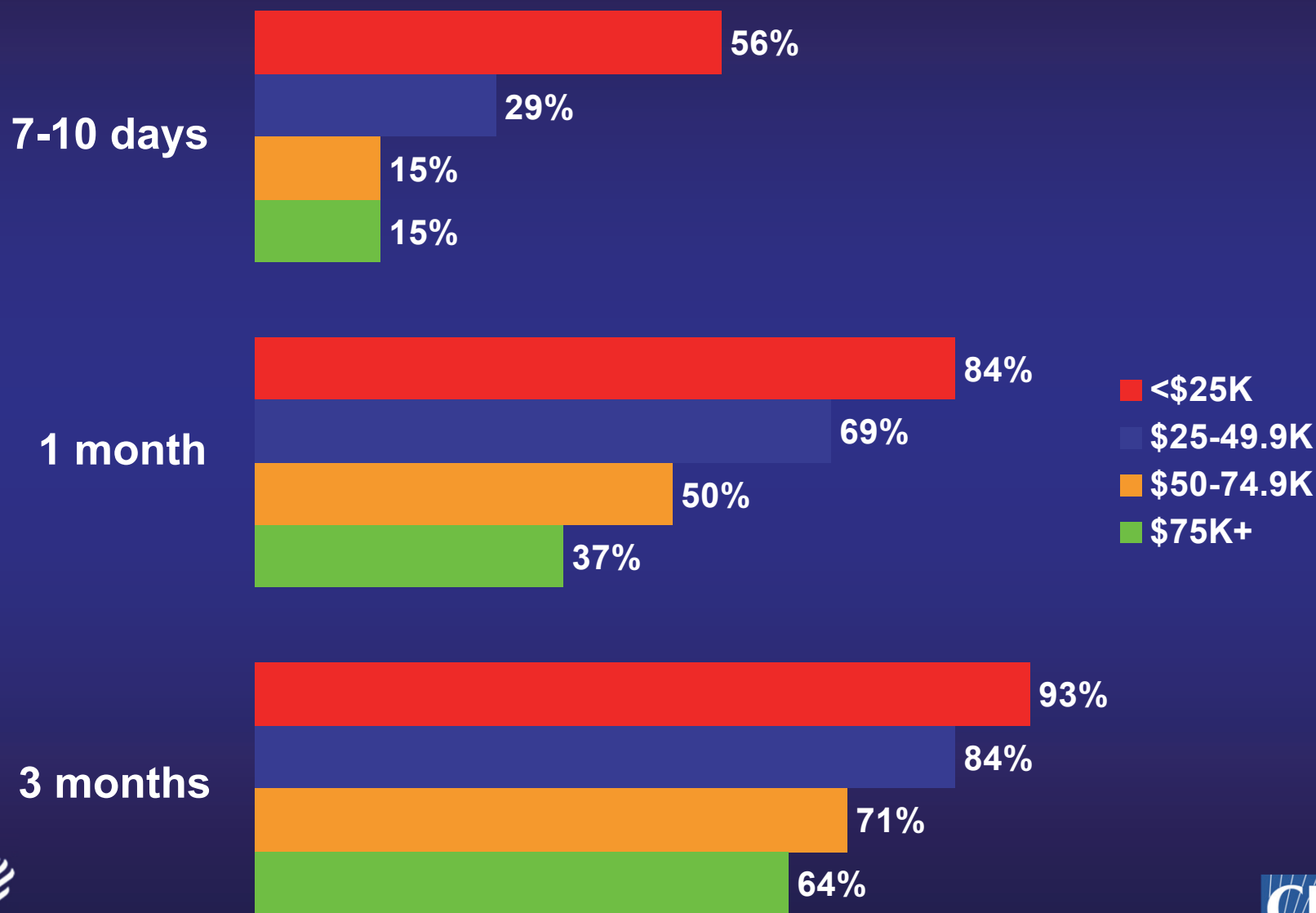
- Social distancing measures could be required (closing work and schools)
- Worker absenteeism could be high
- “Just-in-time” supply chains could be interrupted & lead to disruption in community functioning
  - Shortages of food, water, fuel, medicine





# Financial Problems in a Severe Pandemic, by Income

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



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

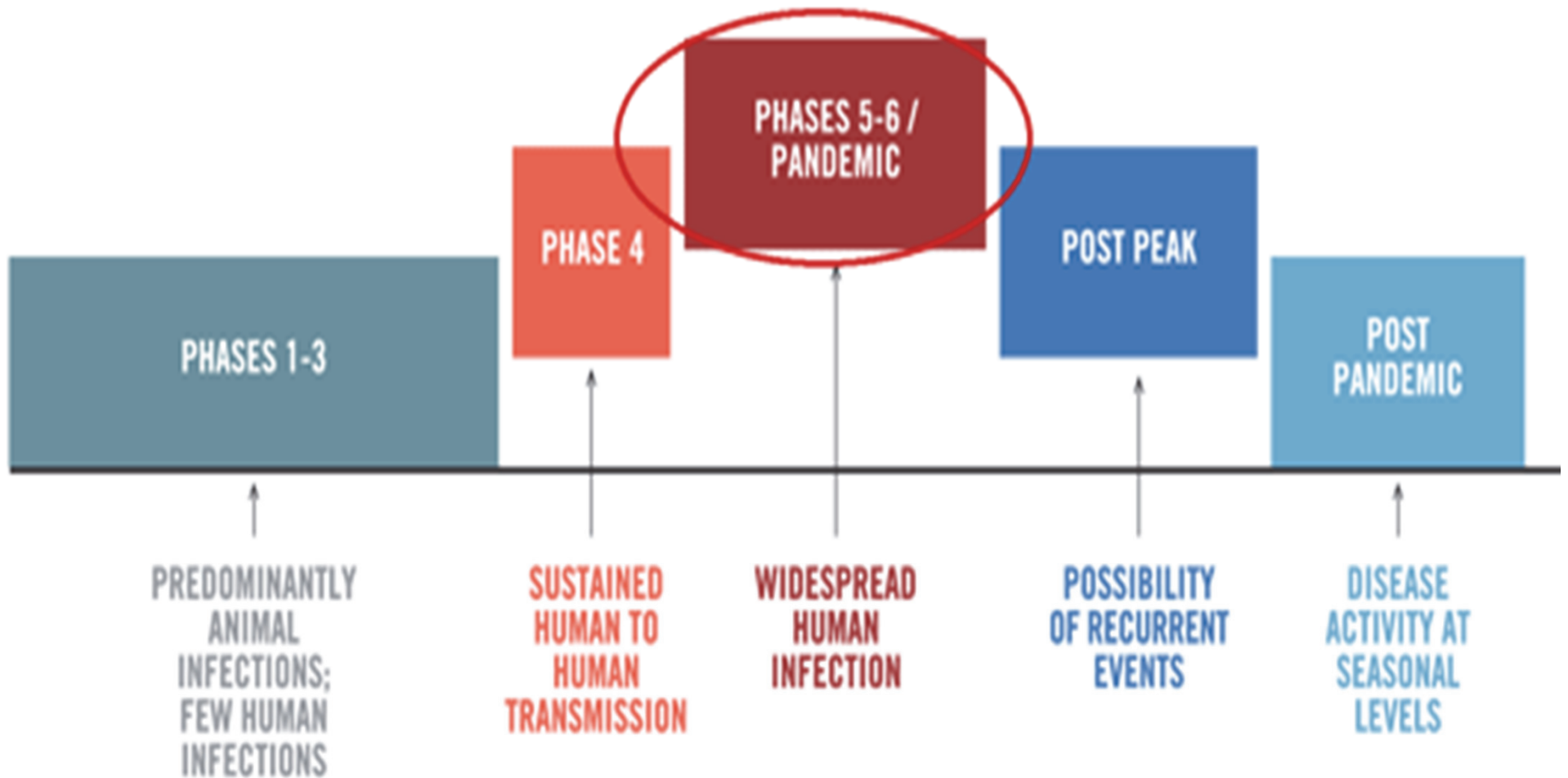


# Influenza Terms Defined

- ***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



# What Can Be Done to Minimize the Risk of a Pandemic

Focus on Prevention

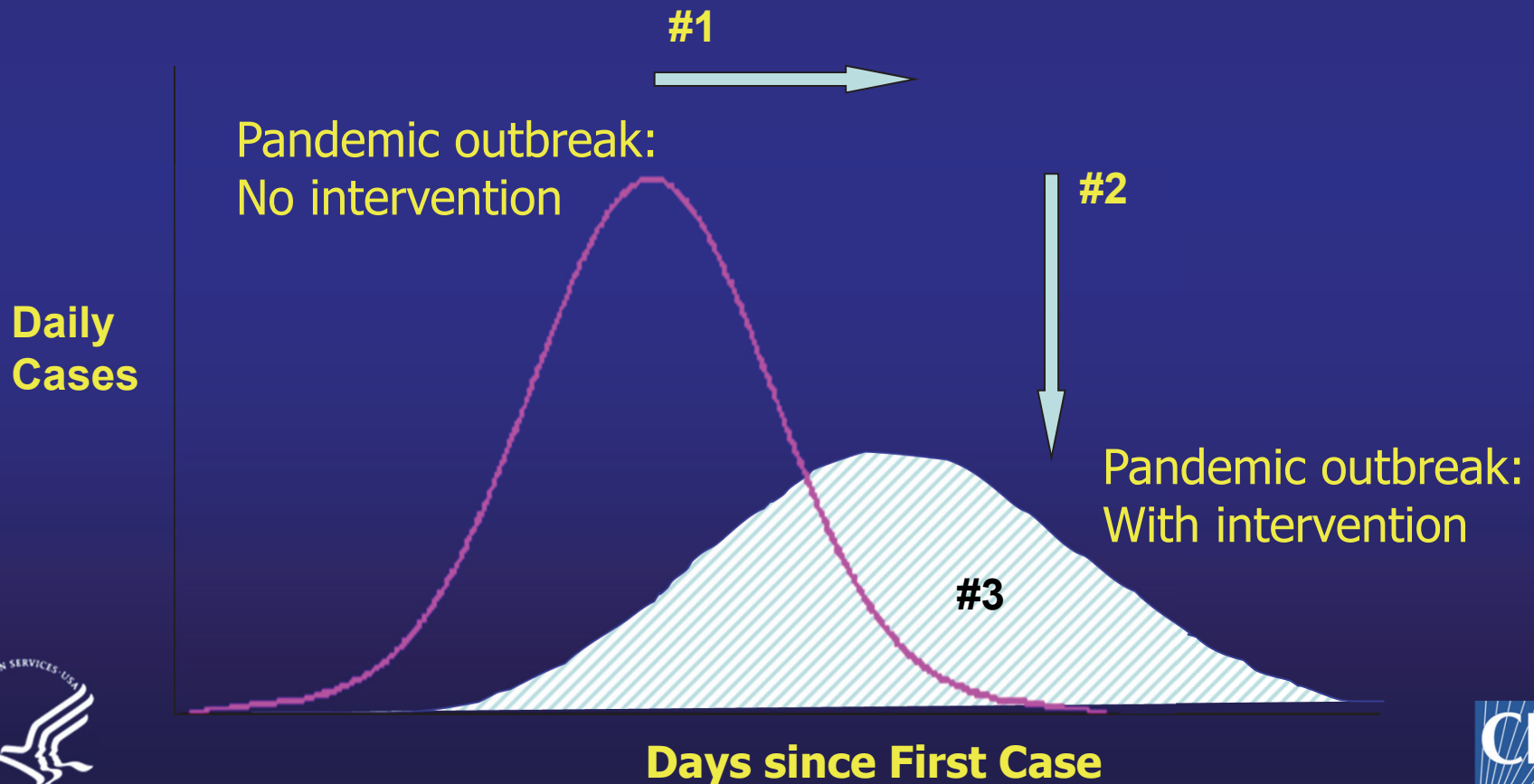
Monitor Cases

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



# Ebola Response Priority Objectives

## *Not a Pandemic*

- ❑ **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**





# 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



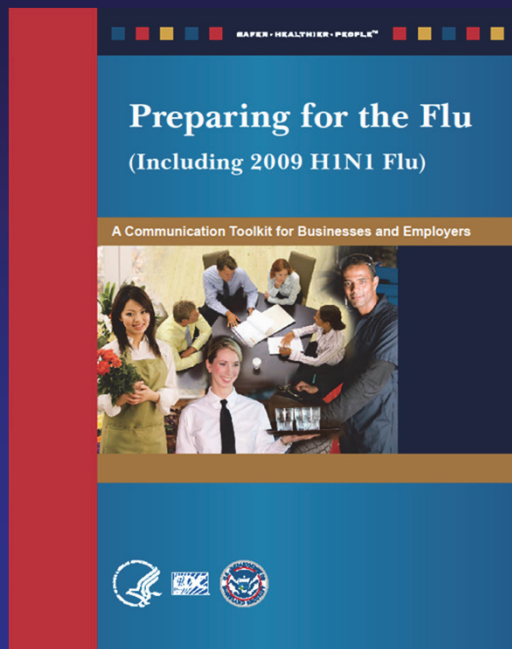
# Insurers: Reimbursement/Budgeting/Planning

- 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

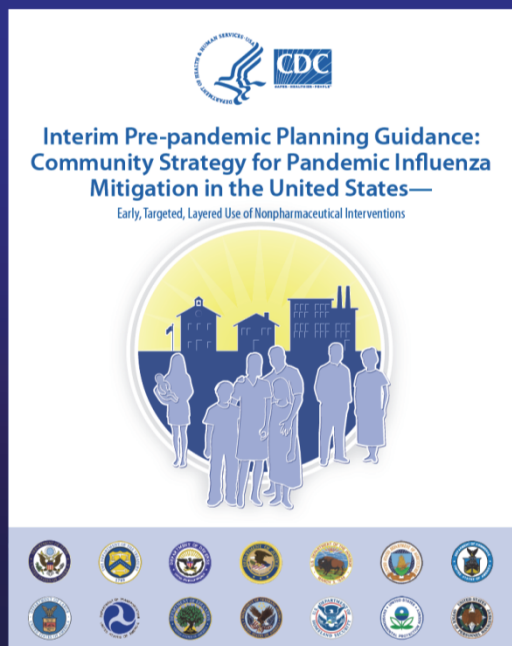




# Use Tools to Help Prepare and Respond

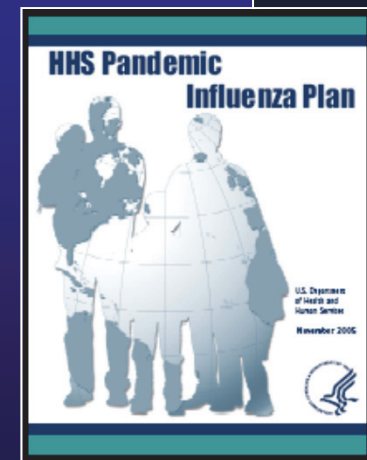
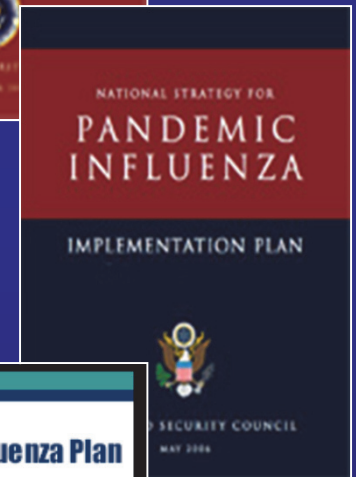
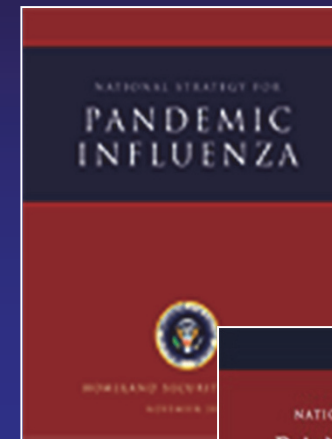


- Communication Toolkit for Businesses and Employers
- Information and resources to help implement CDC's Guidance for Businesses and Employers
- Includes Q&A, fact sheets, posters, template emails/letters, resources



# 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

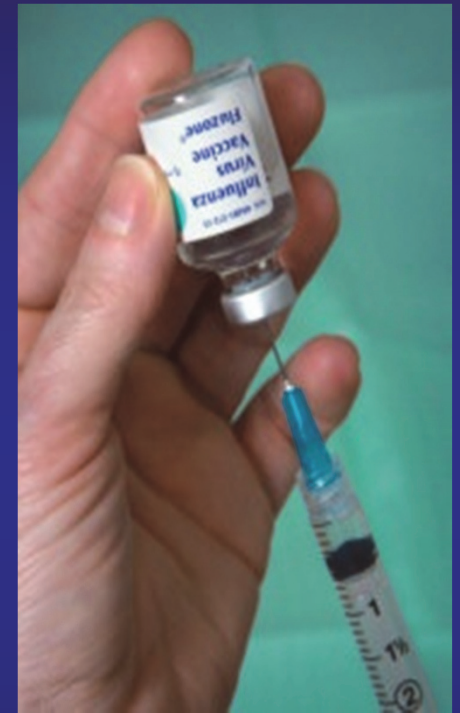


# Examples of Federal Efforts



# 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

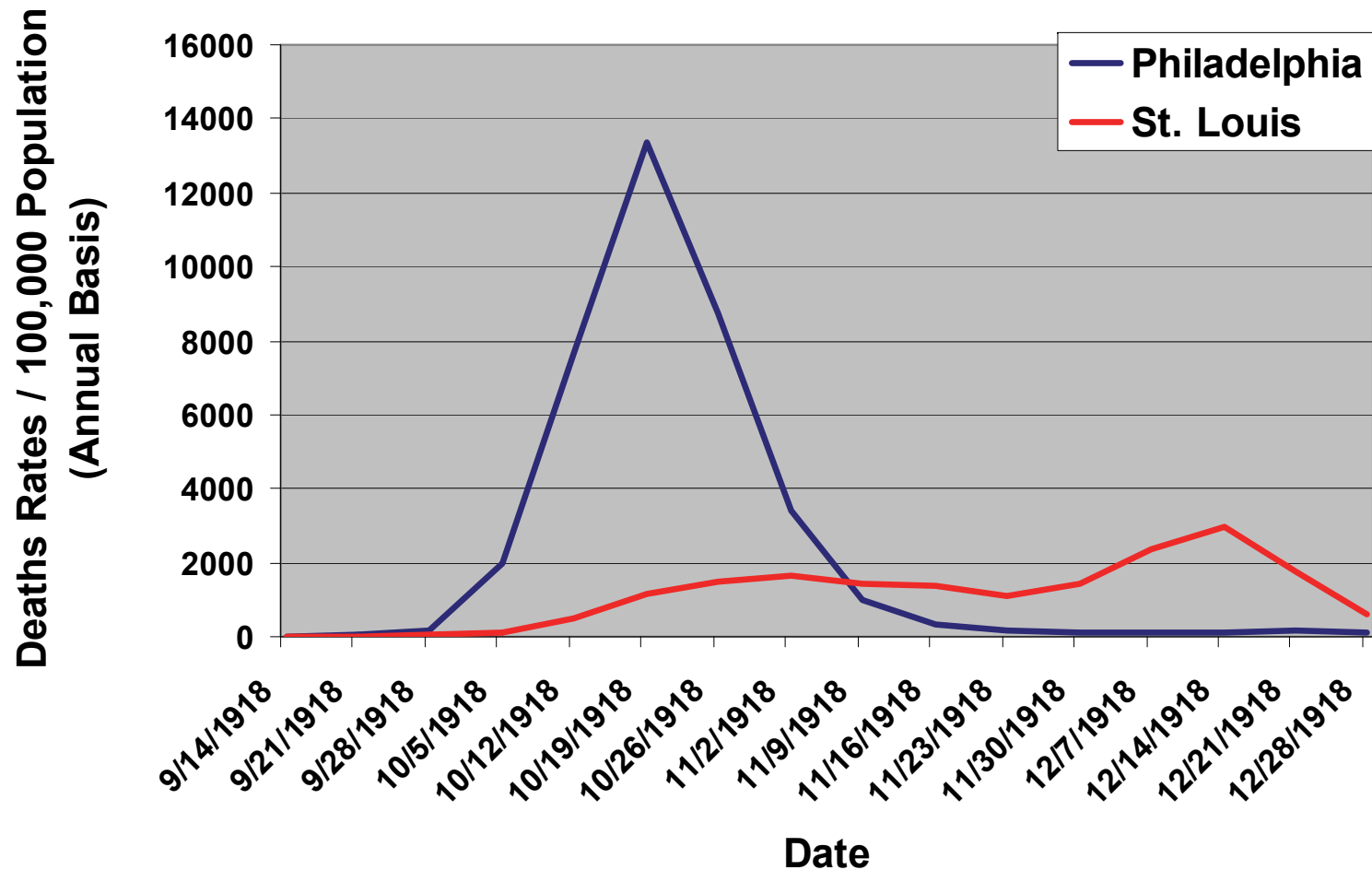
- **Ebola**

- Dramatically reduced new cases
    - Adapted infection control and treatment measures
    - Contained cases to few countries



# The Right Approach Saves Lives

## 1918 Death Rates: Philadelphia v St. Louis





# Summary

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- 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

