

# H1N1 Novel Influenza

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# Seasonal Influenza

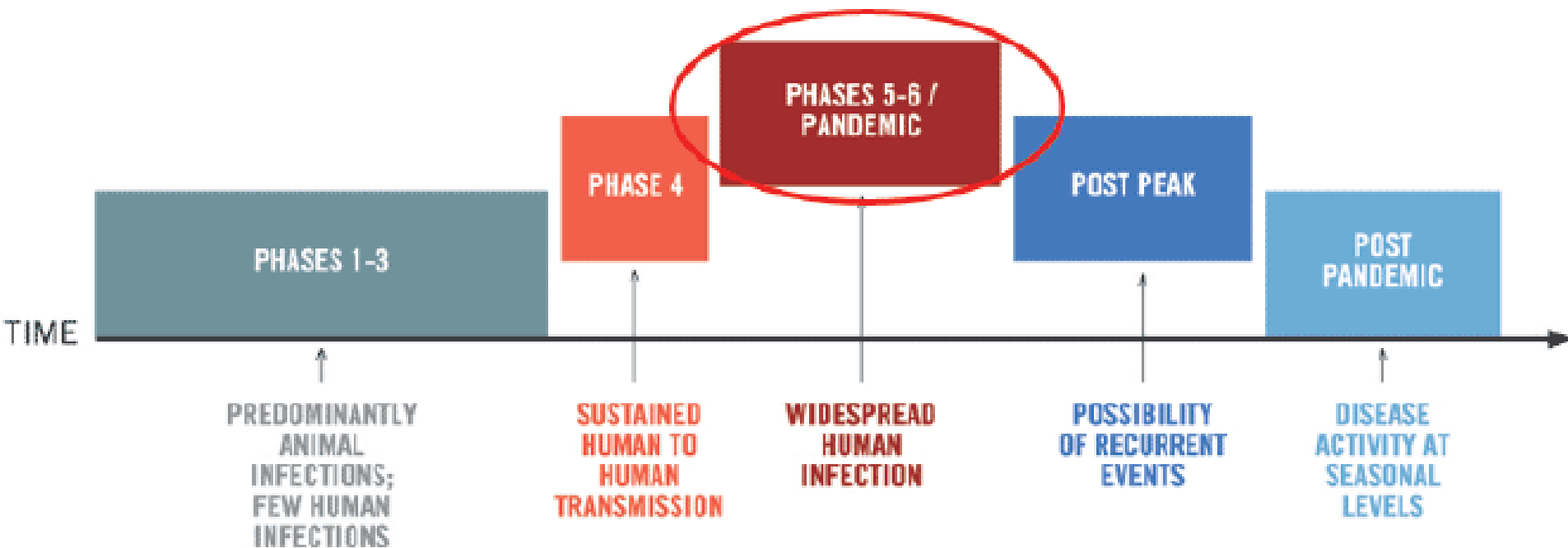
- **Outbreak every year between November and April in Northern Hemisphere, generally due to circulating H1, H3 and B influenza viruses**
- **Vaccine available each year based on circulating strains**
- **Associated with about 36,000 deaths per year in US**
  - **Most deaths (90%) in persons 65 years old and older**
- **More than 225,000 hospitalizations per year in US**
  - **Half of hospitalizations in persons 65 and older**

# Pandemic Influenza

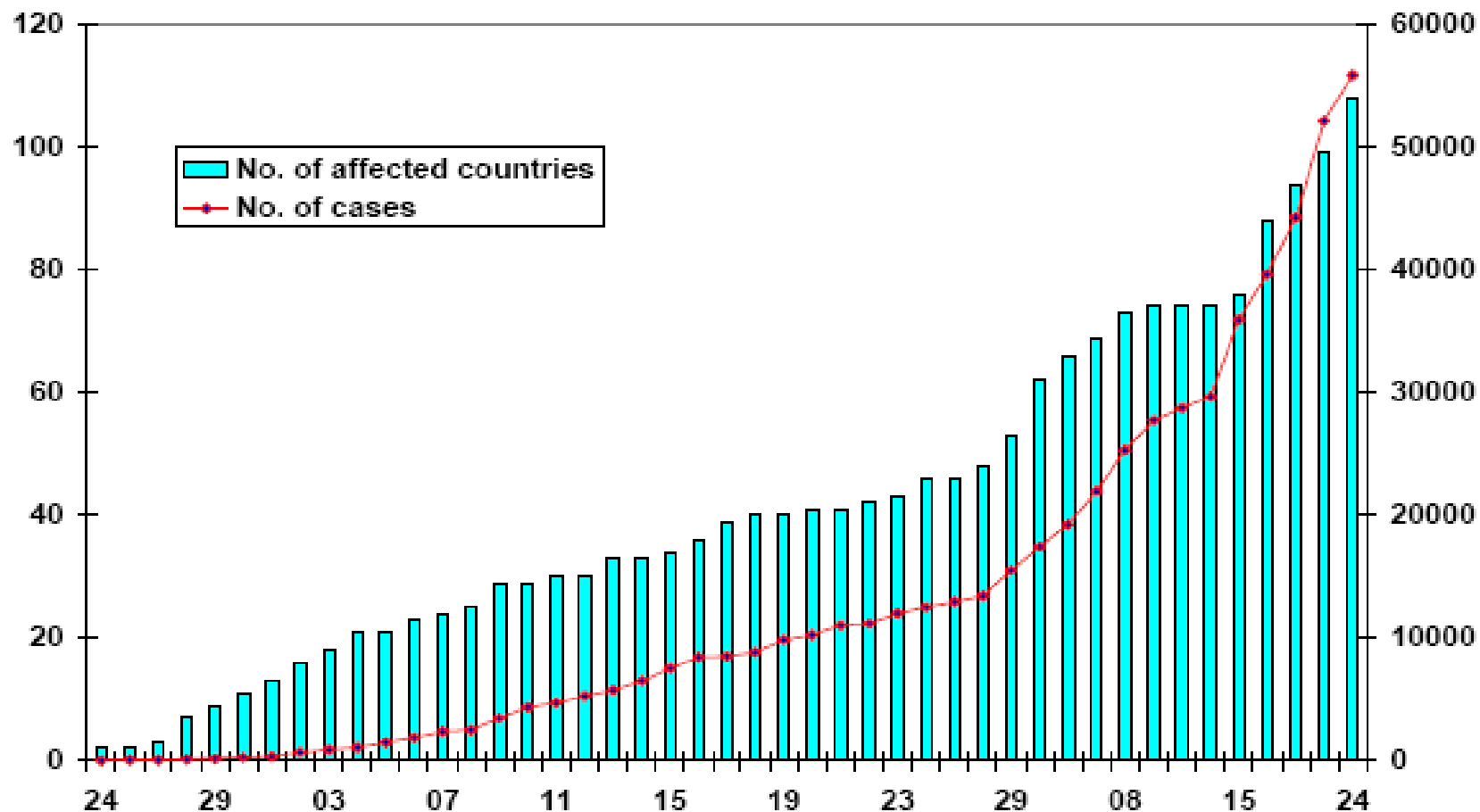
- **Novel strain of virus**
- **Little to no immunity in the general public**
- **Virus infects all age groups**
- **The “novel” virus can spread easily person-person**
- **Spreads throughout multiple countries and continents**
- **More than one wave of influenza is likely**

# WHO Pandemic Preparedness Phases

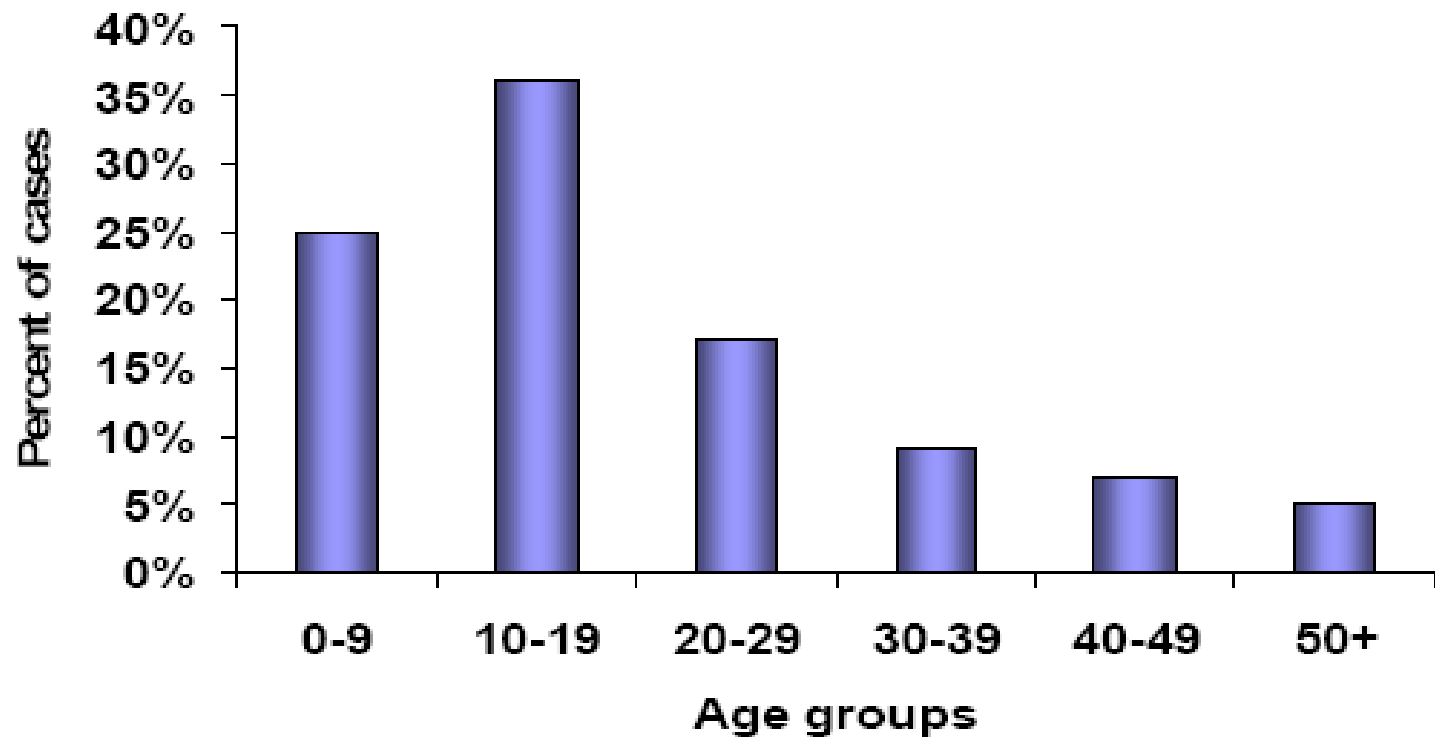
## PANDEMIC INFLUENZA PHASES



# Affected Countries and Lab-confirmed Cases (24 April - 24 June 2009)



# Pandemic H1N1 Cases by Age Group



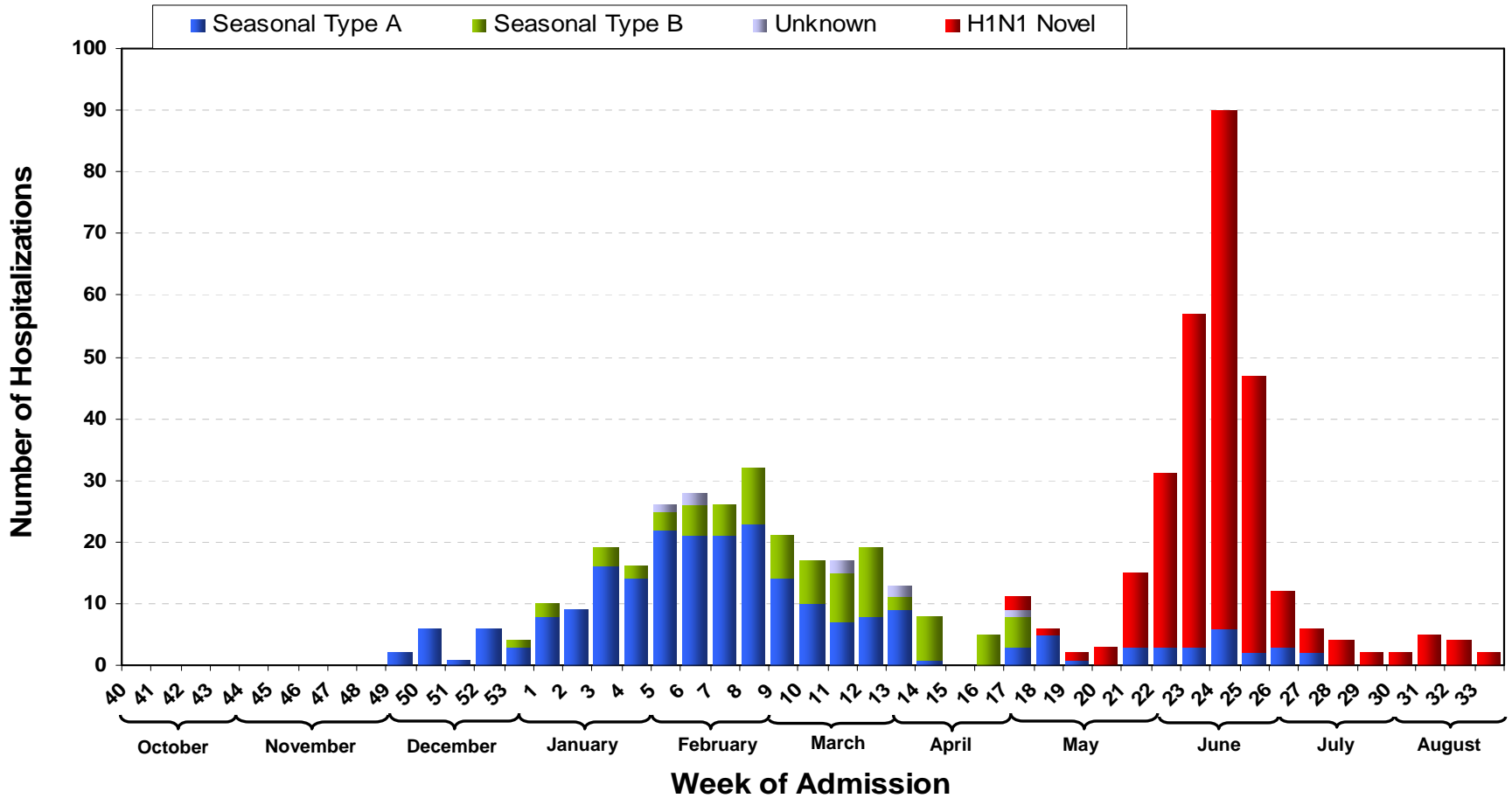
# Novel H1N1

- **Transmissibility similar or greater than seasonal influenza**
- **Severity currently similar to seasonal influenza although cases generally younger**
- **Underlying conditions: asthma, other respiratory conditions, obesity, pregnancy, diabetes, cardiovascular, neurological, and others**
- **Attack rates about 20% in US households**
- **Per CDC in US (preliminary data): median age cases-12 years, hospitalized-20 years, death- 37 years**

# **H1N1 Cases in Minnesota: Preliminary Data**

- **As of August 25: 263 hospitalized cases (18 pregnant)**
- **Median age 11 years (range 0-91 years)**
  - **70% of hospitalizations <25 years**
- **Median length of stay: 3 days**
- **15% in ICU**
- **35% of hospitalized cases had asthma; 64% of hospitalized had an underlying condition**
- **> 80% hospitalized cases in 7 county metropolitan Minneapolis-St. Paul area residents**
- **3 deaths: 2 children (one no underlying conditions), 1 elderly**

## Hospitalized Cases of Influenza by Week of Admission Minnesota, October 1, 2008 through August 22, 2009



# Surveillance Systems in Minnesota

- Hospitalizations for influenza
  - MDH will conduct laboratory testing for type of influenza
- Outpatient sentinel site surveillance for influenza-like illness
- Surveillance for outbreaks in schools, nursing homes
- Mortality due to influenza

# What to Expect in the Fall

- **Potential scenarios:**
  - **General increased burden of illness due to high level of influenza (seasonal plus novel)**
    - **Impact in younger age groups (novel H1N1) and in elderly (seasonal and potential mismatch with H3N2)**
    - **Big burden on healthcare**
  - **Increased severity with novel H1N1**
    - **Increased hospitalizations (overwhelm system)**
    - **Increased deaths**

# Possible Impact of Pandemic Influenza in Minnesota

- **Number infected will depend on:**
  - **The transmissibility of the strain**
  - **The uptake and effectiveness of vaccine**
  - **The effectiveness of other prevention and control measures**
    - **people staying home when sick**
    - **respiratory and hand hygiene**
    - **social distancing**

# Possible Impact of Pandemic Influenza in Minnesota (cont.)\*

- If as many as 30% of population infected this would be 1,544,000 people
- If 50% of those infected sought outpatient care this would be 772,000 people
- Depending on severity there may be between 2% (15,000) and 22% of those that seek outpatient care, that are hospitalized (currently the strain is not very severe, a more severe strain would result in increased hospitalizations
  - 15% (2,250) of those hospitalized may require ICU care
- If the case fatality rate is 0.2% (what is expected with current severity) this would be 3,100 deaths

**\*Note these are not predictions- but models**

# **Possible Impact of Pandemic Influenza in Minnesota (cont.)**

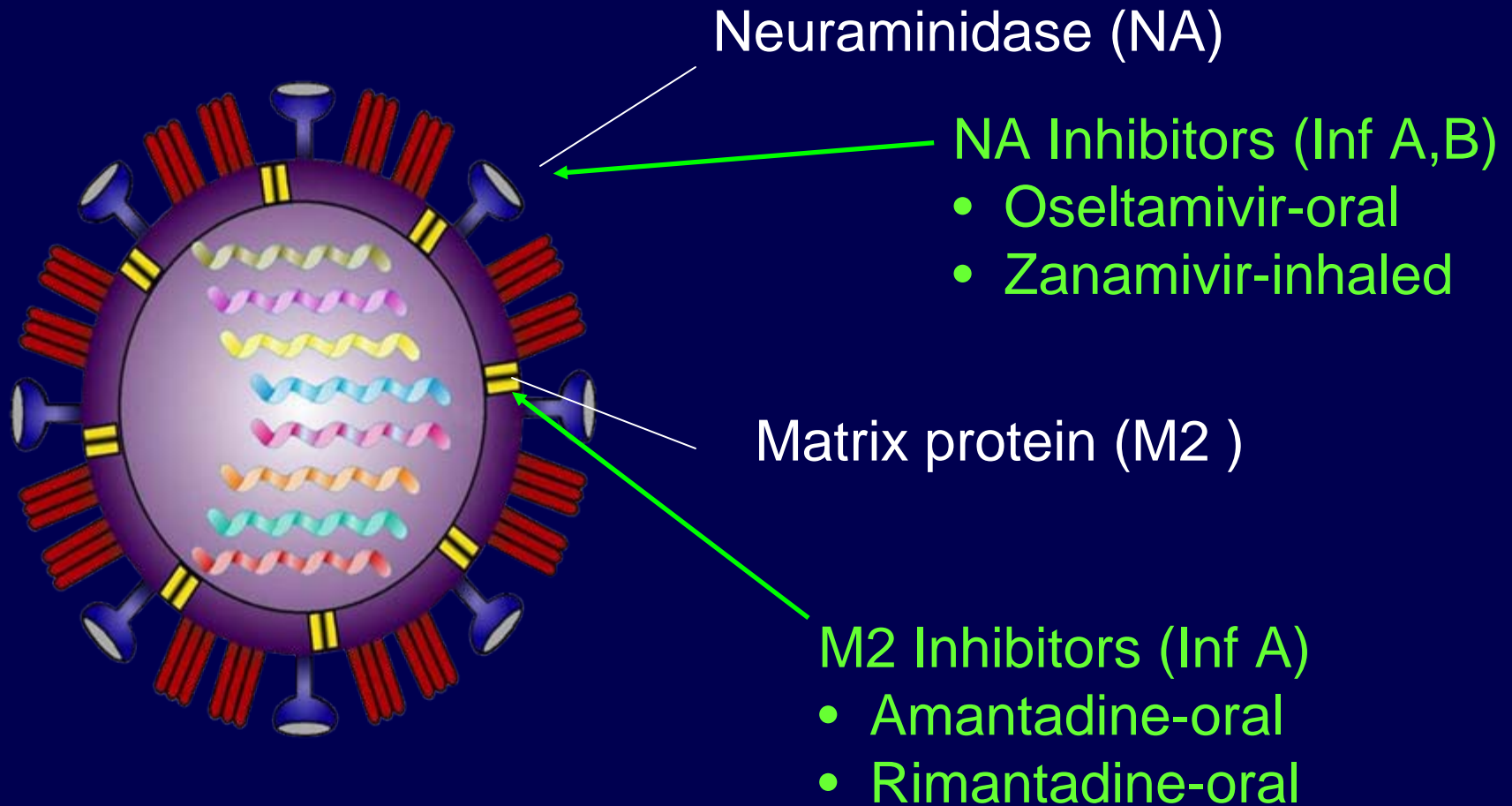
**Therefore it is important to limit the number of people infected-**

**Everyone has a role in this!**

## **Novel H1N1 Vaccine**

- **Anticipate that will come in batches beginning in late October 2009**
  - **2 doses for protection**
- **Prioritize healthcare workers and high risk groups for H1N1 [pregnancy, young children (6 months-4 years), caring for children < 6 months of age, high risk children]**
- **People up to age 24 years and those 25-64 years with high risk conditions**
- **Rest of population**
- **Surveillance for adverse effects- Guillain Barre Syndrome**

# Antiviral Therapies for Influenza



# Antiviral Drugs for the Treatment and Prevention of Influenza

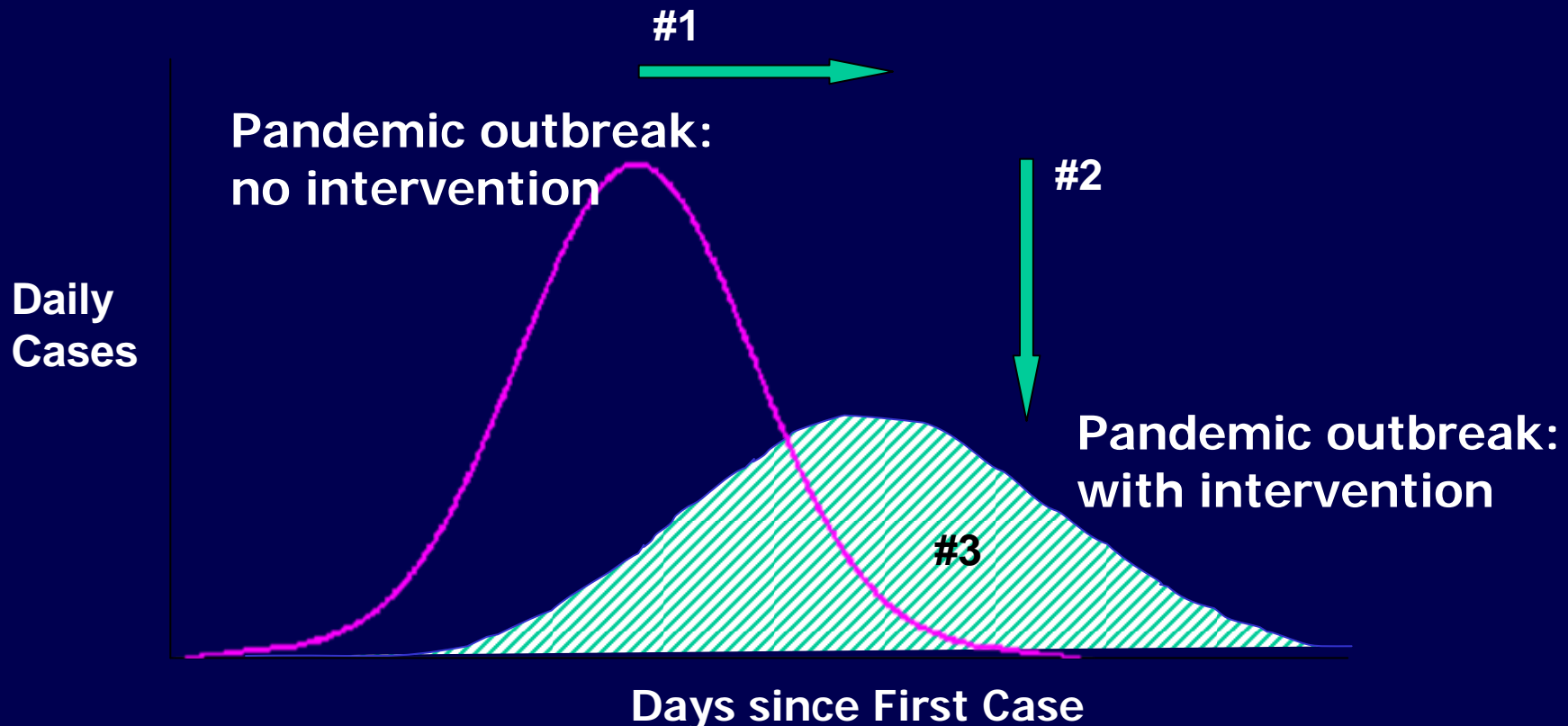
- Decreases rate of severe illness
- Can be used to prevent disease in exposed
- Have the greatest efficacy when started when started within 48 hours
- Resistance issues:
  - Novel H1N1 resistant to M2, rare cases resistant to oseltamivir
  - Seasonal H1 resistant to oseltamivir
  - Seasonal H3 resistant to M2

# Community Prevention Measures

- Sick people stay home
- If increased severity:
  - Household members of an ill person stay home
  - “Social distancing” at work and in the community (reducing interactions between people to reduce the risk of disease transmission )
  - Schools and child care programs close
  - Public gatherings cancelled

# Community-Based Interventions

1. Delay disease transmission and outbreak peak
2. Decompress peak burden on healthcare infrastructure
3. Diminish overall cases and health impacts



# Respiratory Etiquette

## Coughs and Sneezes Spread Diseases

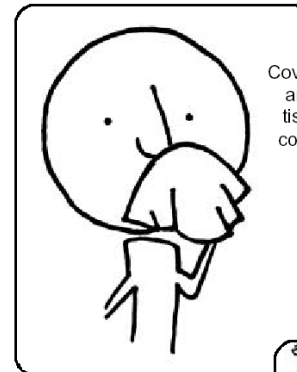


As Dangerous as Poison Gas Shells  
SPREAD OF SPANISH INFLUENZA  
MENACES OUR WAR PRODUCTION

U. S. Public Health Service Begins Na-  
tion-wide Health Campaign.

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.

Put your used tissue in the waste basket.



You may be asked to put on a surgical mask to protect others.

# Clean your Hands

after coughing or sneezing.



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



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Minnesota  
American  
Public Health  
Association



# Stay Informed

- [www.who.int/en/](http://www.who.int/en/)
- [www.flu.gov](http://www.flu.gov)
- [www.cdc.gov](http://www.cdc.gov)
- [www.health.state.mn.us](http://www.health.state.mn.us)