

Pandemic Influenza: An Introduction

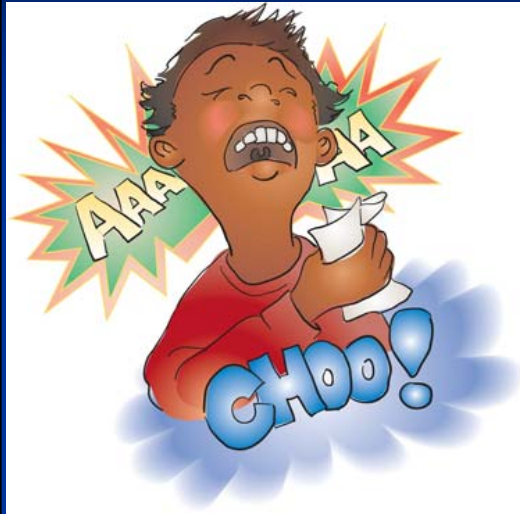


Dallas County Health and Human Services



Seasonal Influenza

Lifecycle of Influenza



Illness spread person-to-person either by:

- 1) Droplet
- 2) Contact
- 3) Airborne

Exposure occurs when virus is:

- 1) Inhaled into the respiratory system
- 2) Directly introduced into the mouth or nose

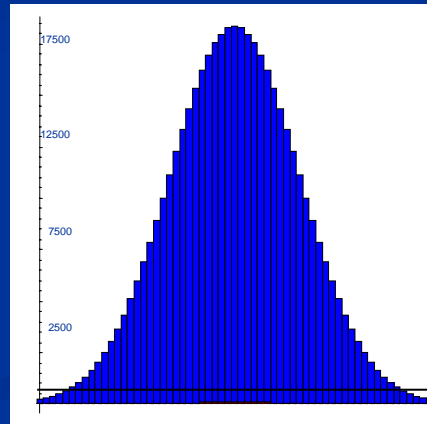
Influenza

- Lives for 48 hours on hard surfaces
- Average person touches their face 400 times / day
- Sneezes and coughs travel at a rate of 120 mph



Impact of an Outbreak of Seasonal Influenza on Dallas County

- ✓ One wave, ~2 months
- ✓ Attack rate ~20%
>400,000 infected individuals total
- ✓ Hospitalization rate ~0.4%
~1600 individuals per season in Dallas County
- ✓ Mortality rate ~0.05%
~ 200 individuals per season in Dallas County
- ✓ Healthcare system manages this every year



What is a Pandemic?

Pandemic Influenza

According to the Centers for Disease Control and Prevention, a pandemic is a **global disease outbreak**. A flu pandemic occurs when **a new influenza virus emerges for which people have little or no immunity** and for which there is no vaccine. The disease spreads easily person-to-person, causes serious illness, and can sweep across the country and around the world in very short time.

How Do Influenza Pandemics Arise?

- Wild birds are natural reservoirs of flu viruses, including those that infect people
- Flu viruses undergo slight changes each year, requiring us to update our vaccines
- Periodically, avian flu viruses will undergo major genetic changes (“shift”)

How Do Influenza Pandemics Arise?

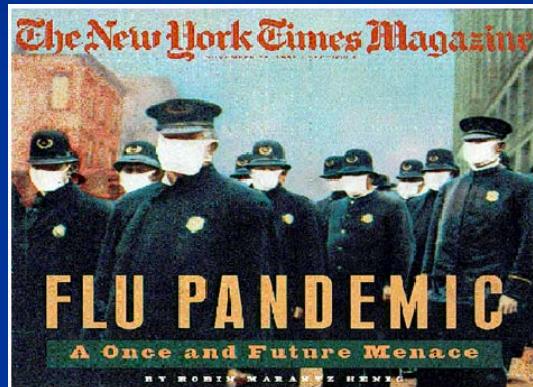
- When avian influenza viruses experience sudden changes in genetic structure
- And**
- Are capable of infecting humans
- And**
- Can reproduce and spread from person to person....**a pandemic occurs**

Pandemic Influenza

- ❖ Pandemics are low probability, “high impact” events
- ❖ Random events, but always a few each century
- ❖ Current epidemic of Influenza A (H5N1) in birds (“avian influenza”) may place us at immediate risk of a pandemic



History of Pandemic Influenza



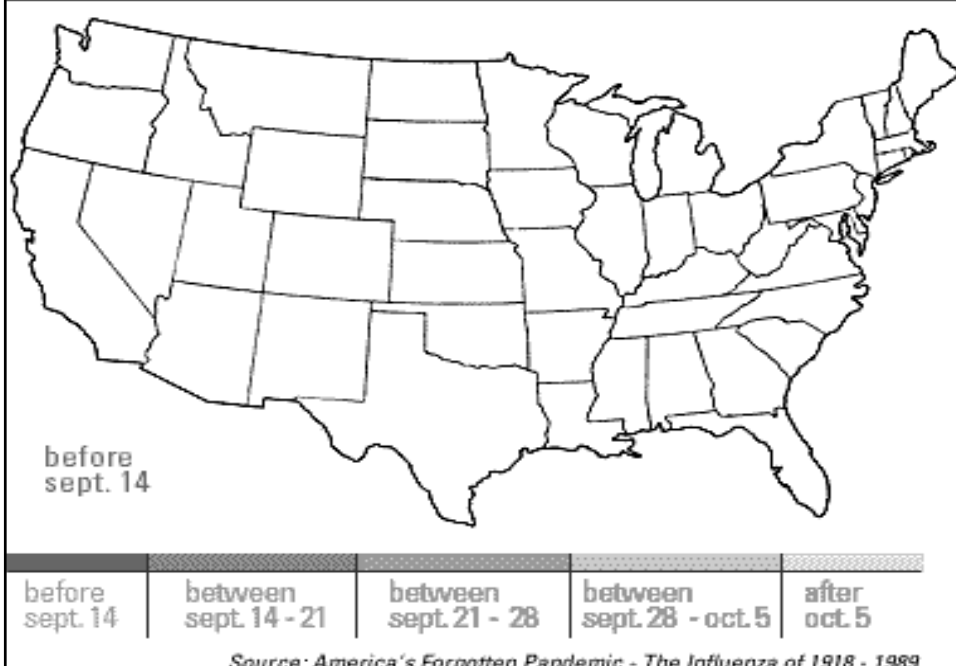
1918 Spanish Flu

- Spread around the globe in 4 - 6 months
- At least 50-100 million people died worldwide
- Death rate 25 times higher than previous epidemics
- Pandemic affected and killed younger, healthy people

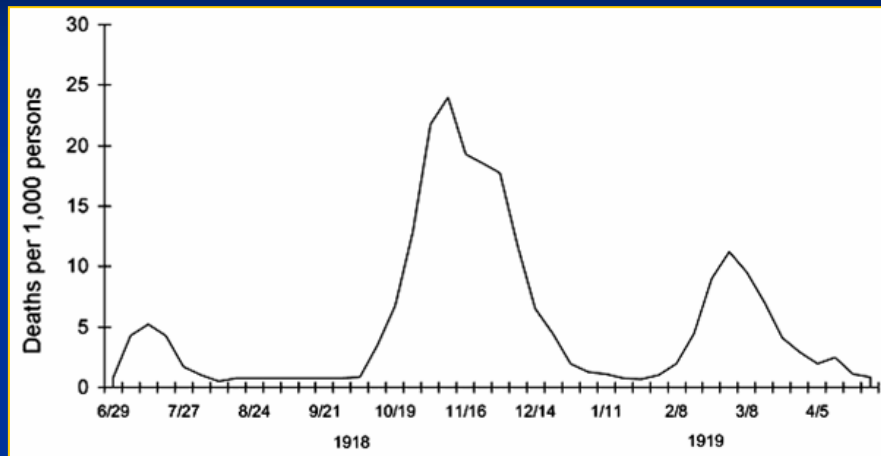
1918 Spanish Flu



Approximate beginning of the epidemic, 1918



1918 Spanish Flu



The 1957 Asian flu



**Resulted in over 70,000 deaths
across the United States**

1968 Hong Kong Flu



Resulted in over 40,000 deaths
across the United States

Current Avian Influenza Outbreak



Avian Influenza Virus

- Avian Influenza or Bird Flu effects birds.
- The H5N1 Virus is highly lethal to all birds.
- To date, over 150 million birds have died or been killed.
- It is the largest epidemic ever reported in history.



Avian Influenza

- No sustained person-to-person transmission
- Avian outbreak is not controlled
- No pre-existing immunity in humans

Cases & Fatalities

- As of January 30, 2008 there have been 357 confirmed human cases and 224 deaths



Source: <http://www.nationalgeographic.com>



How likely am I to get it?

- Most cases continue to be in individuals around sick or dying birds



Source: <http://www.nationalgeographic.com>



Culture



In Egypt women feed their birds by chewing corn and blowing it into their mouths, a tradition that dates back to the days of the Pharaohs.

Source: www.pandemicflu.gov

Culture

In Thailand people create shrines and pray for the rooster. The rooster represents good luck.



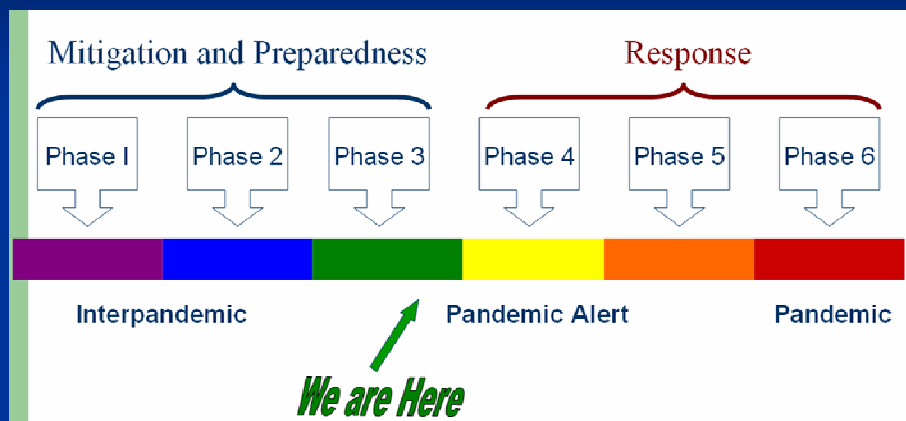
Source: <http://www.nationalgeographic.com/ngm/0510/feature1/>

Why Are We Talking About Pandemic Flu?

Experts agree that the current epidemic of Influenza A (H5N1) in birds (“avian influenza”) may place us at immediate risk of a pandemic



WHO Pandemic Phases



Source: <http://www.metrokc.gov/health/>

WHO Phases		Federal Government Response Stages	
INTER-PANDEMIC PERIOD			
1	No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human disease is considered to be low.	0	New domestic animal outbreak in at-risk country
2	No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.		
PANDEMIC ALERT PERIOD			
3	Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.	0	New domestic animal outbreak in at-risk country
		1	Suspected human outbreak overseas
4	Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.	2	Confirmed human outbreak overseas
5	Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).		
PANDEMIC PERIOD			
6	Pandemic phase: increased and sustained transmission in general population.	3	Widespread human outbreaks in multiple locations overseas
		4	First human case in North America
		5	Spread throughout United States
		6	Recovery and preparation for subsequent waves

US Stages

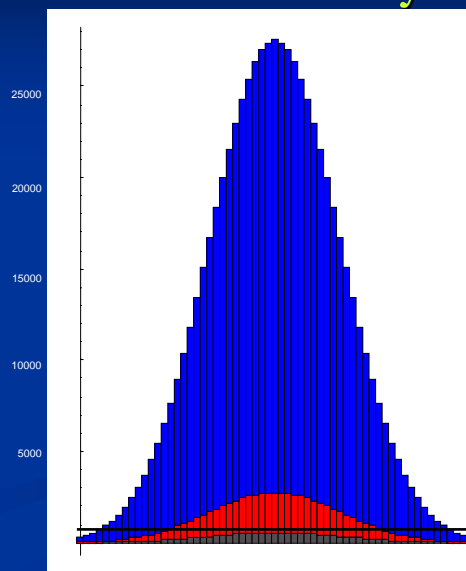
Consequences will effect all individuals and organizations:

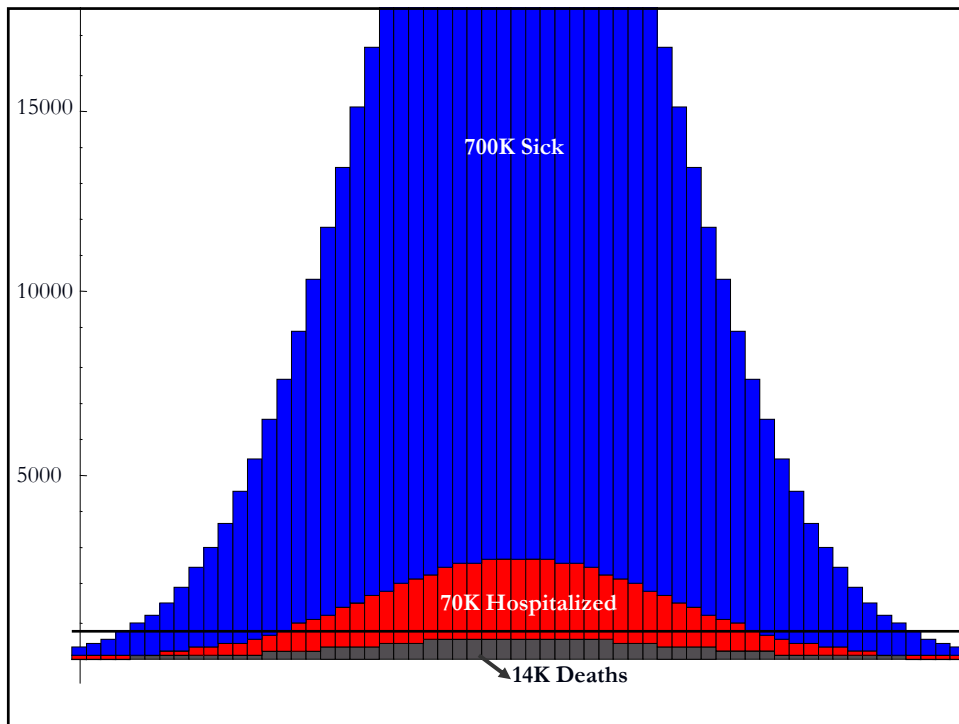
- Extreme staffing shortages (30%)
- Overwhelming demand for services
 - (health care, first responders)
- Limited supplies (transportation disrupted)
- Reduced reliability in communications, power, water, fuel availability, transportation service
- Reduced reliability on contractor services
 - (maintenance and repair)

How does this affect me?

Impact of a 1918-like Outbreak of Pandemic Influenza on Dallas County

- ❖ 2 month duration per wave
- ❖ Attack rate 30%
- ❖ Hospitalization rate 10%
- ❖ Mortality rate 2%
- ❖ An unmanageable strain on the healthcare system





1918-like Influenza and You

- ❖ 30% to 50% chance you will get sick
- ❖ Symptoms may be no worse than a fever, sore throat, body aches, a cough, and/or a terrible pain in your chest
- ❖ There's ~10% chance you will need to be admitted to the hospital

1918-like Influenza and You

- ❖ Once infected, you're contagious to others for up to 24 hours *before you become ill* and for about 5 days after



- ❖ You may pass the illness on to 2 to 4 other people

Impact of a 1918-like Pandemic on Businesses and Organizations

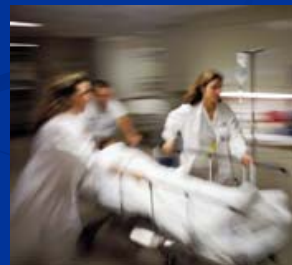
1918-like Pandemic and Business



- ❖ You will have to cope with the healthcare needs of yourself, your family, clients, and your co-workers
- ❖ You will be faced with substantial proportions of the workforce out due to personal illness or caring for ill family members, as well as the worried well.

1918-like Pandemic and Business

- ❖ You will have to cope with your own psychological responses, and your family's, clients, and co-workers'
- ❖ If your agency provides services that will be in demand in this kind of crisis, you will have to cope with the increased demand, despite a reduced workforce and, later, insufficient supplies



1918-like Pandemic



- ❖ Once the epidemic starts the public's needs will grow quickly
- ❖ There will be shortages of essential supplies & services
- ❖ There will be a shortage of hospital beds, medical supplies and over-the-counter meds

1918-like Pandemic



- ❖ There may be a surge of people from outside the county coming into Dallas County
- ❖ It is highly unlikely mass shelters will be used

Dallas County Health and Human Services Public Health Response

OUR ROLE

By Texas emergency management law:
**Dallas County HHS is the lead response agency
in Health Emergencies in Dallas County**

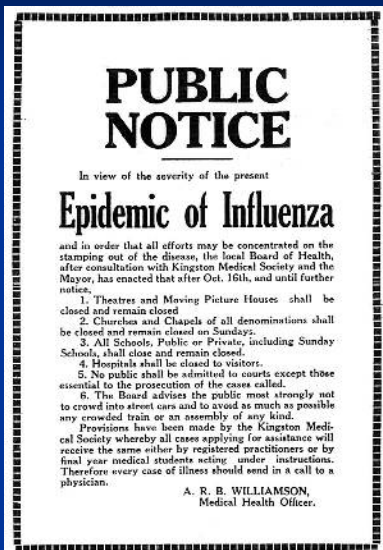




Our Function

- LABORATORY TESTING
- DETECTION
- SURVEILLANCE
- HEALTH CONTROL MEASURES
- PUBLIC INFORMATION
- VACCINATION/PROPHYLAXIS
(if available)

Strategies



- ❖ Reduce the frequency with which people come into contact with one another
- ❖ Avoid unnecessary interactions

Strategies



- ❖ When people do come into contact with one another, minimize the opportunity for exposure

Public Health Control Measures

- ❖ Employ social distancing techniques to limit person-to-person transmission by:



Isolating the ill,

- ❖ Canceling all business and work activities except for **critical infrastructure** staffed by minimum personnel



- ❖ Closing public transportation



- Canceling public gatherings such as theatres, sporting events, movies, concerts, church services, museums, and conventions,

- Issuing voluntary shelter-at-home orders for the entire population



Avoiding exposure when in public places:

- Limiting all close personal contact,
- Frequent hand washing,
- Regular use of a mask.



How Are We Preparing?



The DCHHS lab has received CDC approval and expanded its capabilities to conduct Influenza A/H5 virus testing.

Preparing Dallas County

- Dallas County has launched its “Be Ready, Be Prepared!” Campaign
 - Media
 - Outreach to vulnerable populations
 - Community Awareness
 - Guidance Documents
 - Exercises and Table-top events
 - Community Partner Collaboration
 - Increased Seasonal Influenza Surveillance

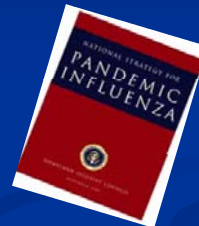
Preparing Dallas County

- Educate the community
 - Increase vaccination rates
 - Hand hygiene
 - Respiratory hygiene
- Increase the ability to detect cases early
- Business continuity planning
- Foster community healthcare response capability

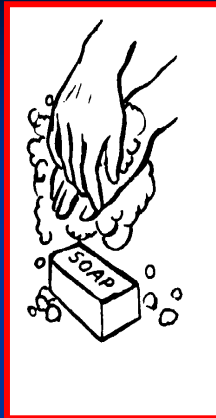


What YOU Can Do...

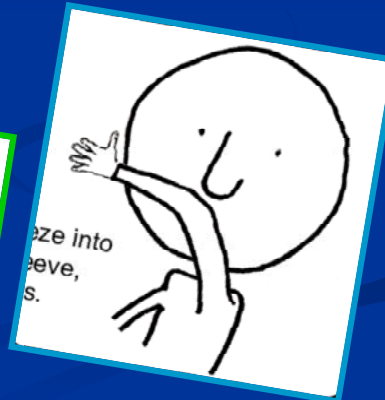
- Develop an Emergency Preparedness Plan
 - Home
 - Clients
 - Place of Business
- Identify Roles and Responsibilities of staff in transmission control



- Improve hygiene of clients, staff & practice social distancing



- Hand washing campaigns
- Use of hand sanitizer
- Cover mouth with arm when coughing
- Stay home if ill
- Clean hard surfaces



Communication

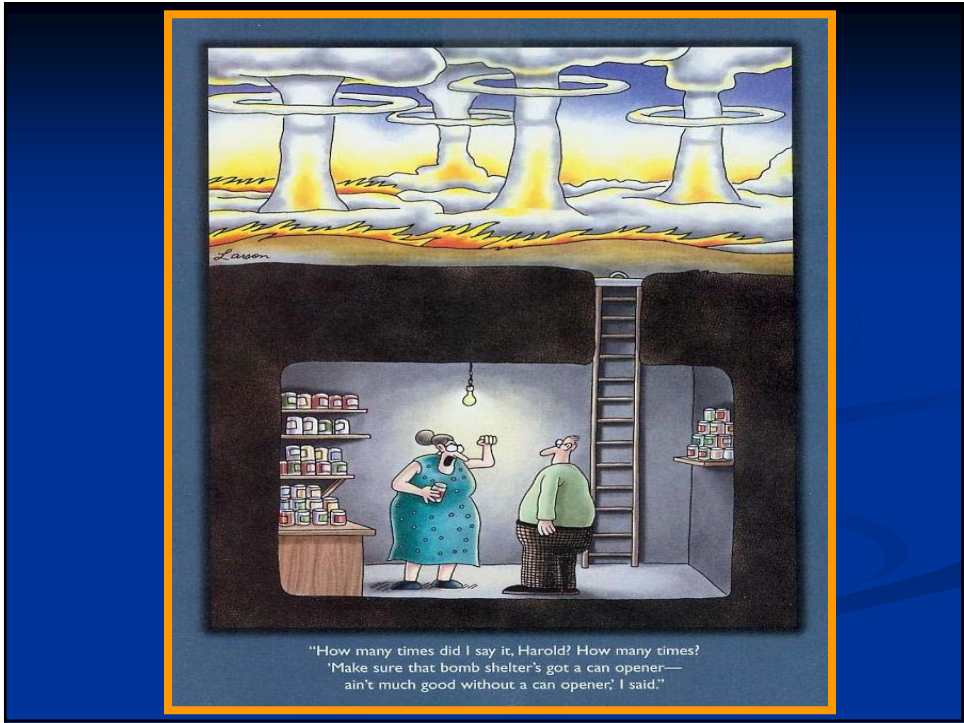
- Communication with the public and health care providers will be an essential component of emergency response.
 - Have an employee communication plan
 - Have a client communication plan
 - Have a family communication plan
 - Know where to get information-trusted source
 - Identify avenues to disperse information



So, what if a Pandemic
Doesn't Happen???

*" Prepared communities make
stronger communities"*

U.S. Surgeon General Richard Carmona



Be Ready, Be Prepared!
www.dallascounty.org