



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

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19GET277 / Biology For Engineers IV YEAR / VII SEMESTER UNIT-IV: HUMAN DISEASES

INFLUENZA

INFLUENZA- FLU

Topics of Discussion

- Seasonal Influenza (Flu)
- Avian Flu
- Pandemic Flu
- Your Role
- Resources

What is Seasonal influenza (flu)?

- Illness caused by the influenza virus
- Extremely contagious and spreads quickly to others.
- Symptoms vary from person to person
- Occurs every year, usually in the fall and winter killing 36,000 people in U.S.



Symptoms of Seasonal Flu


Sudden onset of:

- Respiratory symptoms = cough, sore throat, difficulty breathing
- Fever, headache, aching muscles, weakness

IS IT A COLD OR THE FLU

Possible complications
Cold: Sinus congestion, earache
Flu: Bronchitis, pneumonia

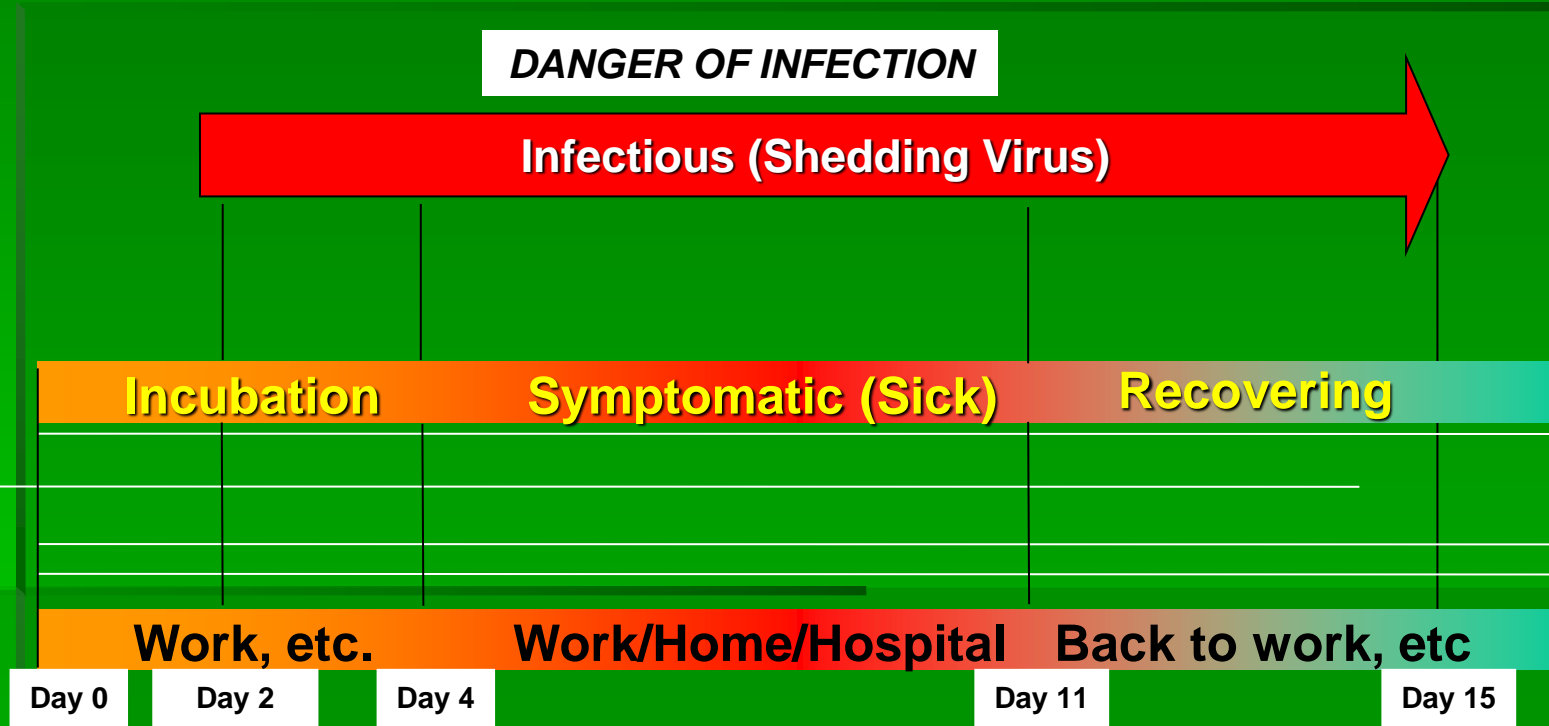
Prevention
Cold: None
Flu: Annual vaccination



SYMPTOMS	COLD	FLU
Fever	Rare	Characteristic, high (102-104° F); lasts three to four days
Headache	Rare	Prominent
General aches and pains	Slight	Usual, often severe
Fatigue, weakness	Quite mild	Can last two to three weeks
Prostration (extreme exhaustion)	Never	Early and prominent
Stuffy nose	Common	Sometimes
Sneezing	Usual	Sometimes
Sore throat	Common	Sometimes
Chest discomfort, cough	Mild to moderate, hacking cough	Common, can become severe

Source: National Institutes of Health, Grand Forks (N.D.) Herald KNIGHT-RIDDER

The Flu Virus as a Contagion



Home Treatment of the Flu

- Bed rest
- Hydration-with eight ounces of fluid every hour
- Acetaminophen, ibuprofen, naproxen
- Avoid aspirin when dealing with children



Seeking Medical Treatment for the Flu

- Persistent fever
- Productive cough
- Increasing difficulty breathing
- Improvement, followed by relapse



Prevention

Here are Some Things You can Do

- **Yearly vaccinations**
- **Wash your hands regularly**
- **Avoid touching eyes, nose and mouth**
- **Avoid close contact with sick people**
- **Stay at home when sick**
- **Cover your cough**

Protects Yourself

Protects Others

Avian (Bird) Flu

■ What is it?

- An infection occurring naturally among birds (example: H5N1)
- Wild birds are natural carriers- Sometimes without illness
 - Can infect domesticated birds- often resulting in illness, culling, and death.
- Humans can become infected. Most cases due to close contact.



Will H5N1 become the next pandemic?

- Avian Flu not yet Pandemic Flu
 - current outbreaks of H5N1 Avian Flu in poultry and birds are the largest ever documented
 - Issue of concern- some cases of H5N1 virus in other kinds of animals, such as pigs and tigers
 - Some human cases of contraction
- Impossible to predict next pandemic flu event

If not H5N1, then another

Plan now!

Practice Prevention NOW!



What is a Pandemic Flu?

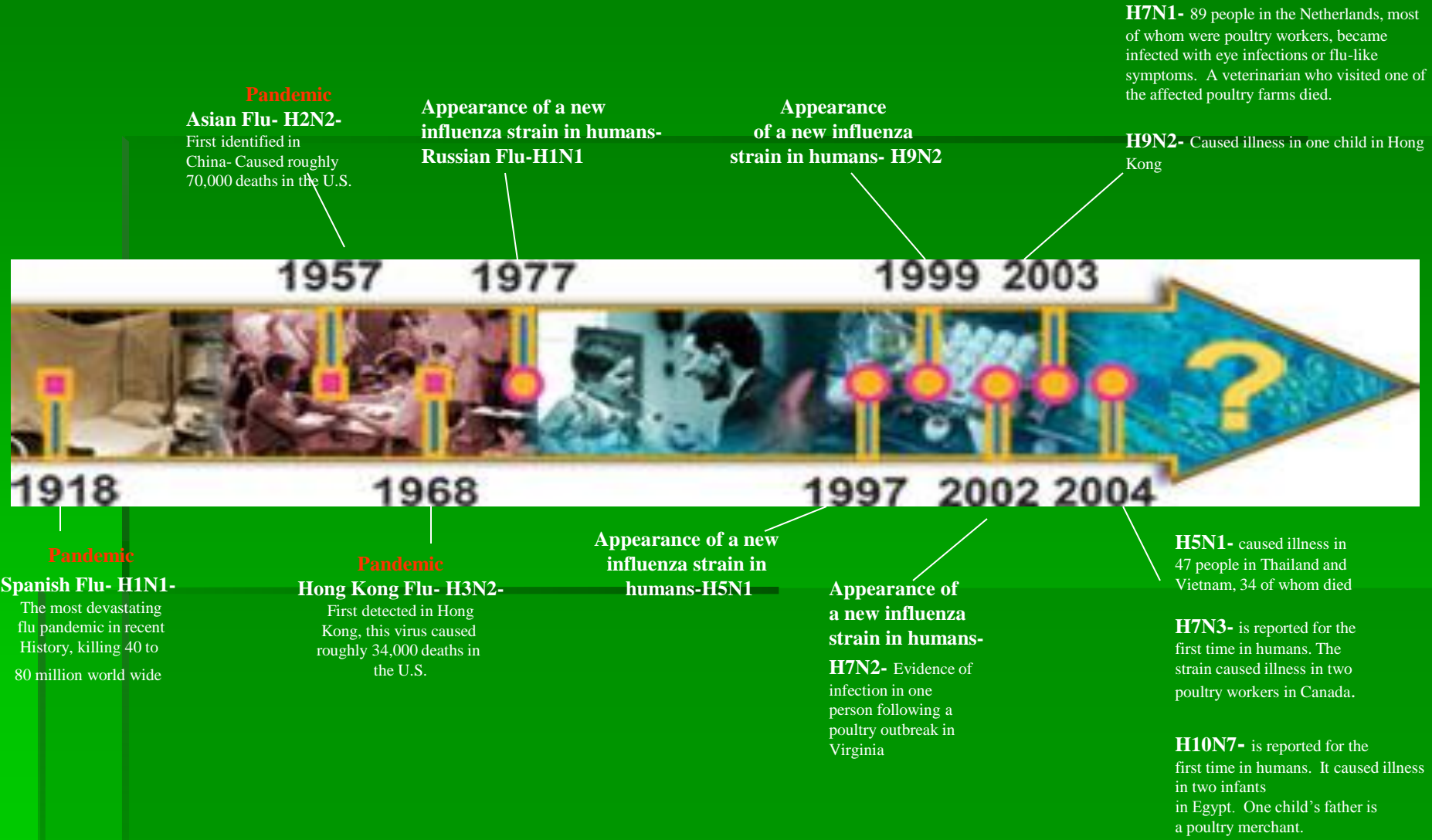
- **Pandemic:** an epidemic spreading around the world affecting hundreds of thousands of people, across many countries
- **Pandemic flu:** a pandemic that results from an influenza virus strain that humans have not been previously exposed to



Putting Pandemic Flu into Perspective

- 2001 terrorist attack with anthrax
 - killed **five** people
- 2002 outbreak of West Nile Virus
 - killed **284** people nationally in six months
- 2003 SARS outbreak
 - killed over **800** people world wide
 - froze Asian economies
 - frightened millions of people into wearing masks on the streets

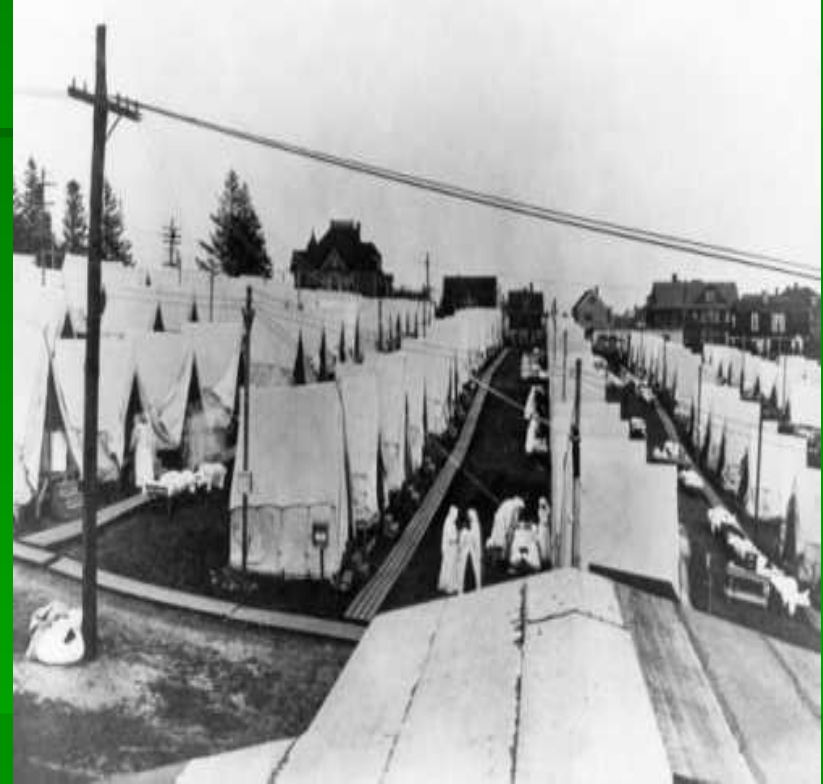




****Seasonal Influenza results in 36,000 deaths in the U.S. every year**

Three Pandemics

- 1968-Hong Kong Flu
 - Caused 34,000 deaths in the United States
- 1957-Asian Flu
 - 70,000 deaths in the United States
- 1918-Spanish Flu
 - Over 600,000 deaths in the United States. Up to 100 million world wide



Tent Hospitals-1918

More History about Spanish Flu of 1918

- 8-10% of all *young adults* may have been killed.
- From September 1918-December 1918-Killed more people than the Black Death in the Middle Ages killed in 100 years
- Killed more people in 24 weeks than AIDS has killed in 24 years



Compare 2008 to 1918

■ 2008

- Modern travel
- Many areas more densely populated
- Population exceeds 6 billion

■ 1918

- World War I (civilian and military overcrowding)
- Public information withheld
- Population approximately 1.8 billion



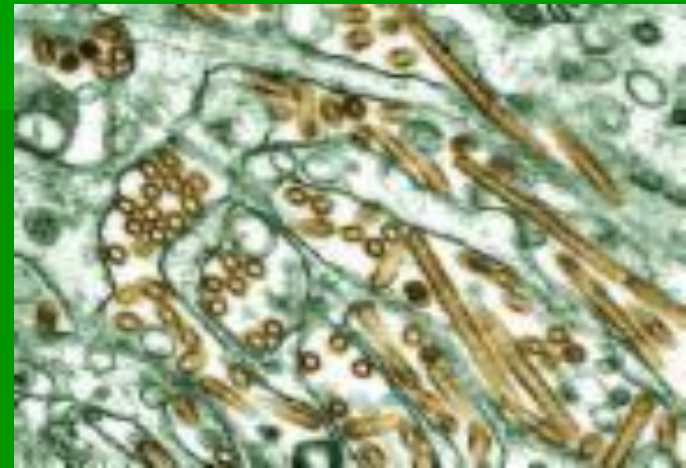
Lessons from Past Pandemics

- Occurs unpredictably, not always in winter
- Variations in:
 - Case fatality rates (number of people diagnosed with a disease that die from that disease)
 - Severity of illness
 - Pattern of illness (ages most severely affected)
- Rapid surge in number of cases over brief period of time
- Tend to occur in waves- May only be one wave



Becoming a Pandemic

- For pandemic influenza to occur, three conditions must be met:
 - ✓ A new virus which humans are not immune emerges
 - ✓ The virus causes severe human illness or death in humans
 - The virus spreads easily from person to person worldwide
- H5N1 has **two** of the three today.



H5N1 Virus

Possibility versus Probability

- World Health Organization assures us that there will be another influenza pandemic.
- Unknown when it will occur/how severe the next pandemic will be
- Unknown what the organism will be



World Health Organization

Current Status

Interpandemic		Pandemic alert			Pandemic
Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
No new virus in humans	No new virus in humans	New virus in humans	Small clusters, localized	Larger clusters, localized	Increased and sustained spread in general human population
Animal viruses low risk to humans	Animal viruses low risk to humans	Little/no spread among humans	Limited spread among humans	Limited spread among humans	

↑
Current
H5N1 status

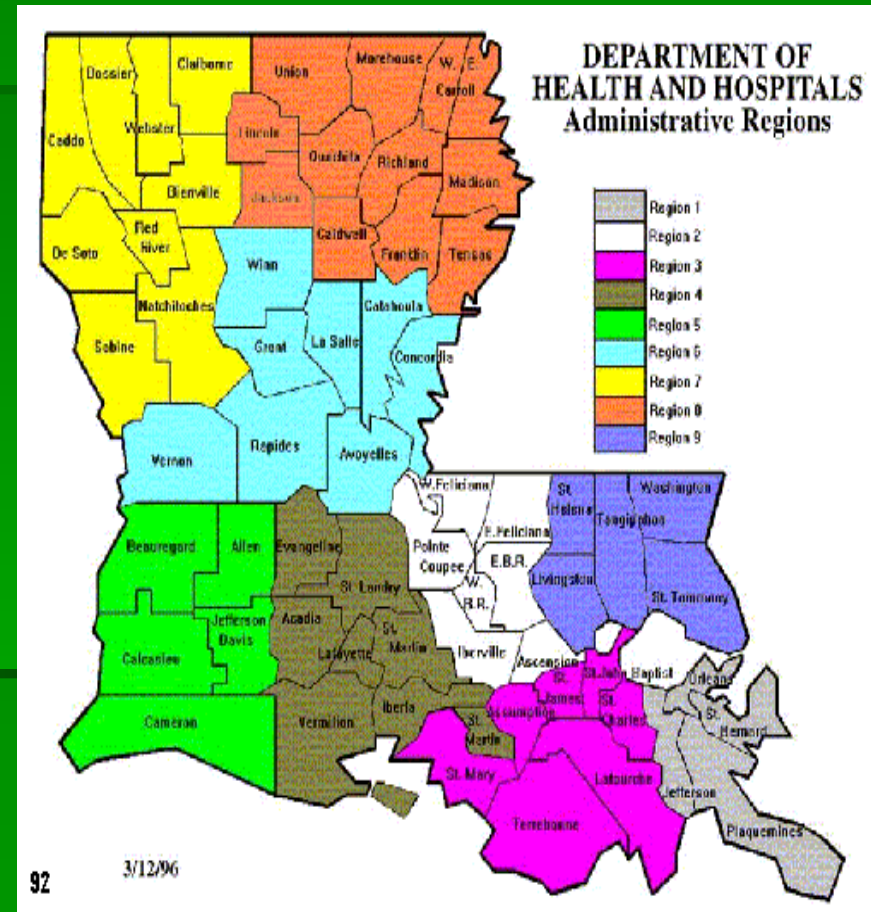
Would there be a vaccine?

- Because the virus will be new, there will be no vaccine ready to protect against pandemic flu
- A specific vaccine cannot be made until the virus has been identified
- Seasonal flu vaccine or past flu immunization will not provide protection



Pandemic Influenza Impacts

- Estimated Impact in Louisiana
 - 3 Million infected
 - Between 600,000-1.4 million clinically ill
 - Between 300K-700K requiring outpatient care
 - Between 10,000 – 22,500 hospitalized
 - Between 3,000 – 6,000 deaths



Health Care, Business, Communities, Government, Schools

- Significant disruption of infrastructure

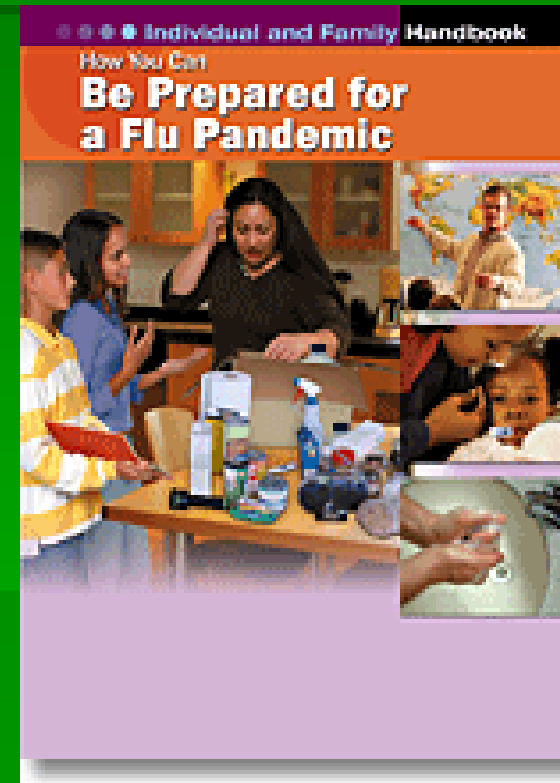
- Transportation
- Schools
- Businesses
- Medical care
- Utilities
- Police and fire protection
- Communications



- Limited to no assistance from State and Federal Governments due to nation-wide impact

Personal/Family Planning

- Stockpiling up to 30 days of water, food, supplies, medicines
- Social distancing
- Practice all the same behaviors to prevent seasonal flu
- Stay at Home Toolkits.



Public Health Role in Pandemic

- Facilitate planning
- Disease tracking & control
- Communication about public health issues
- Coordinate mass antiviral medication and vaccination clinics
- Issue isolation and quarantine orders

