

PANDEMIC PLANNING

GET INFORMED BE PREPARED



HHS Pandemic Influenza Preparedness Planning

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The Burden of Influenza

- **250,000 to 500,000 deaths globally/yr**
- **36,000 deaths and > 200,000 hospitalizations/yr in U.S.**
- **\$37.5 billion in economic costs/yr in U.S. related to influenza and pneumonia**
- **Ever-present threat of pandemic influenza**

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Seasonal Influenza Preparedness



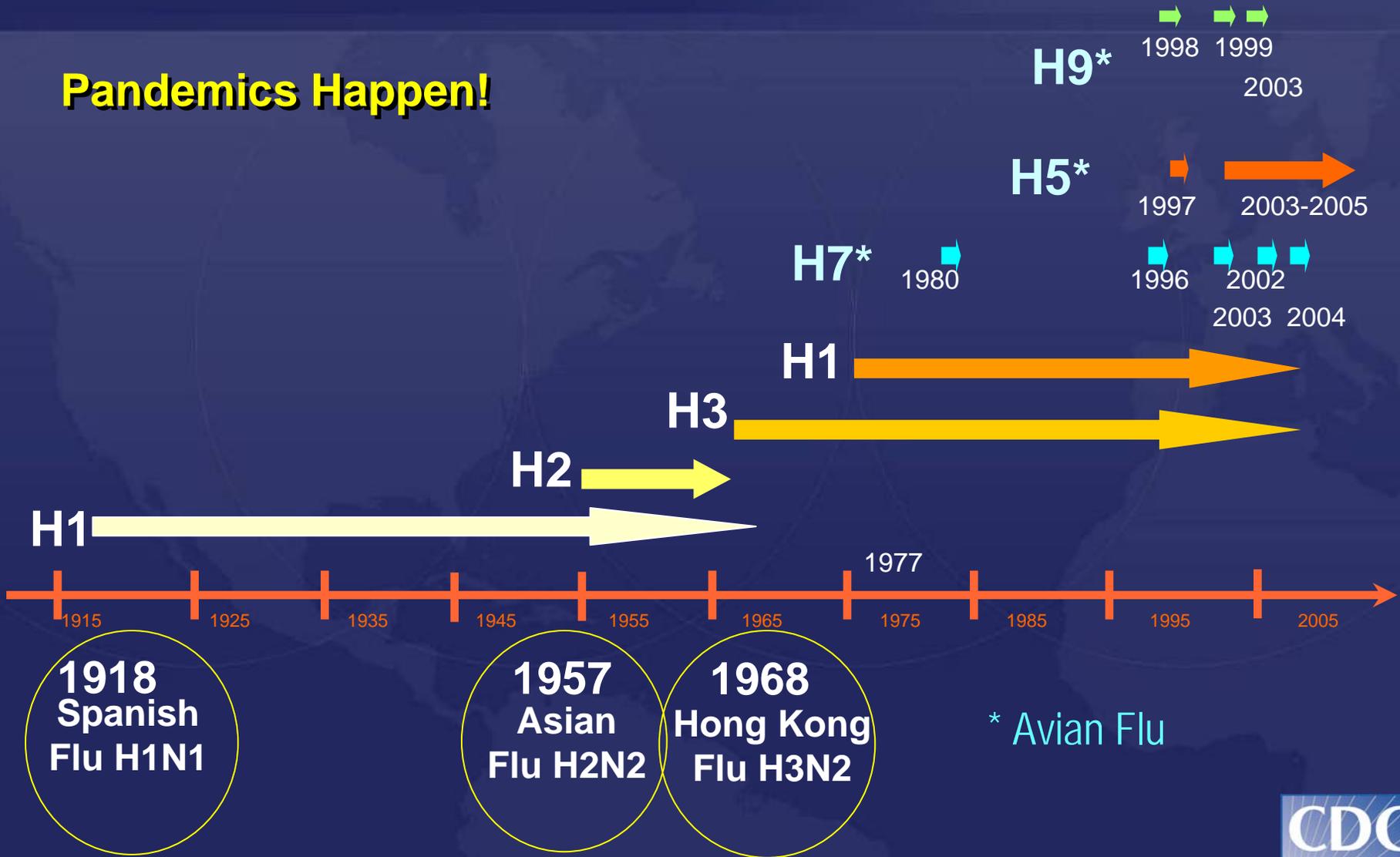
Pandemic Influenza Preparedness

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Pandemics Happen!



* Avian Flu





Planning Assumptions: Health Care

- **50% or more of those who become ill will seek medical care**
- **Number of hospitalizations and deaths will depend on the virulence of the pandemic virus**

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

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H5N1 Influenza Severe Pneumonia - Vietnam 2004

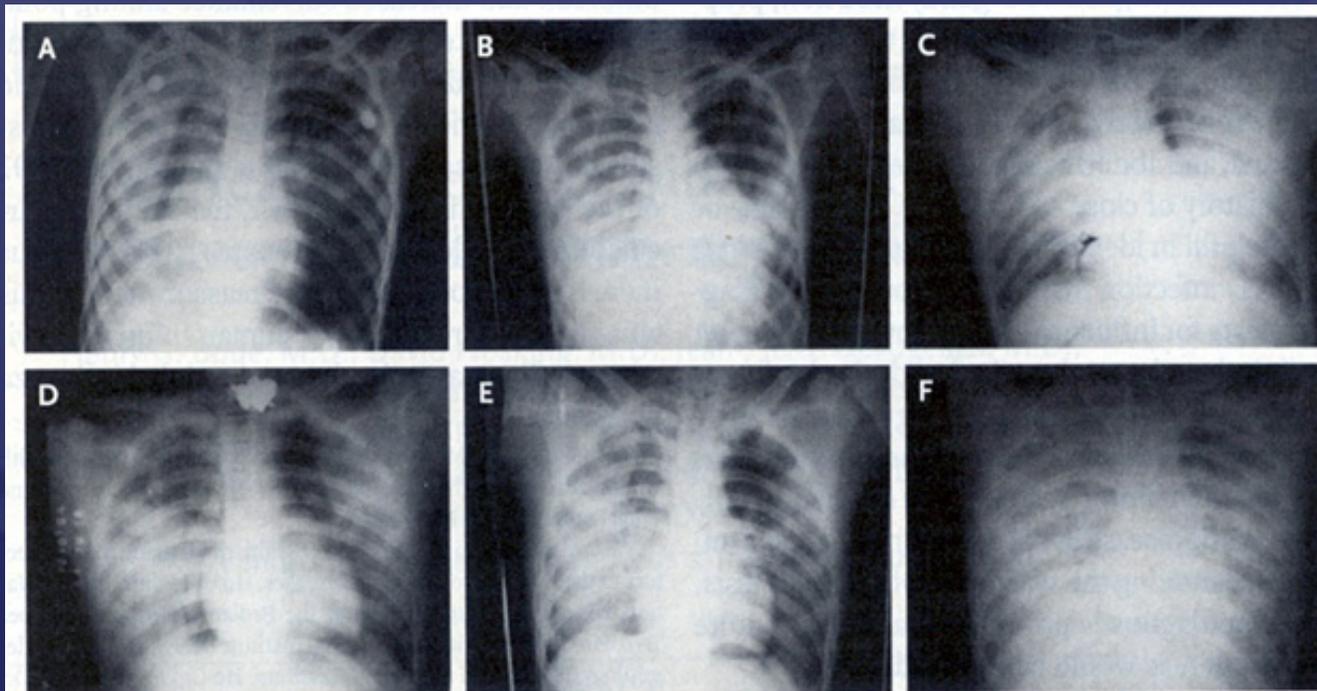
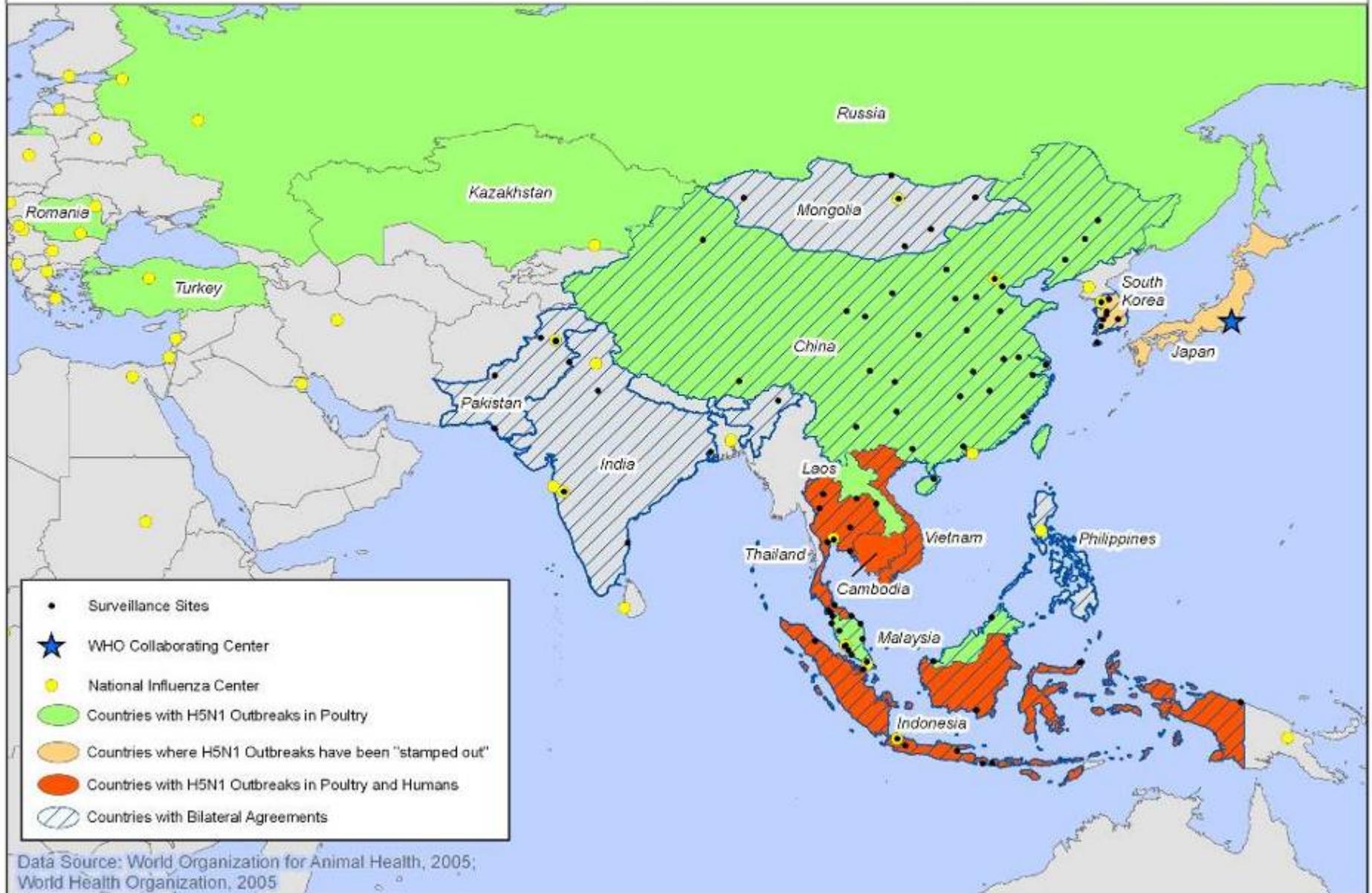


Figure 3. Chest Radiographs.

Radiographs from Patient 5 (Panel A), Patient 7 (Panel B), and Patient 9 (Panel C) show widespread consolidation, collapse, and interstitial shadowing. In Panels D, E, and F, three chest radiographs show the progression in Patient 8 on days 5, 7, and 10 of illness, respectively.

Hien TT et al., *New England J Med* 2004;350:1179-1188

National Influenza Centers, WHO Collaborating Centers, Surveillance Sites, Nations with Bilateral Agreements, Avian Outbreaks, and Human Cases

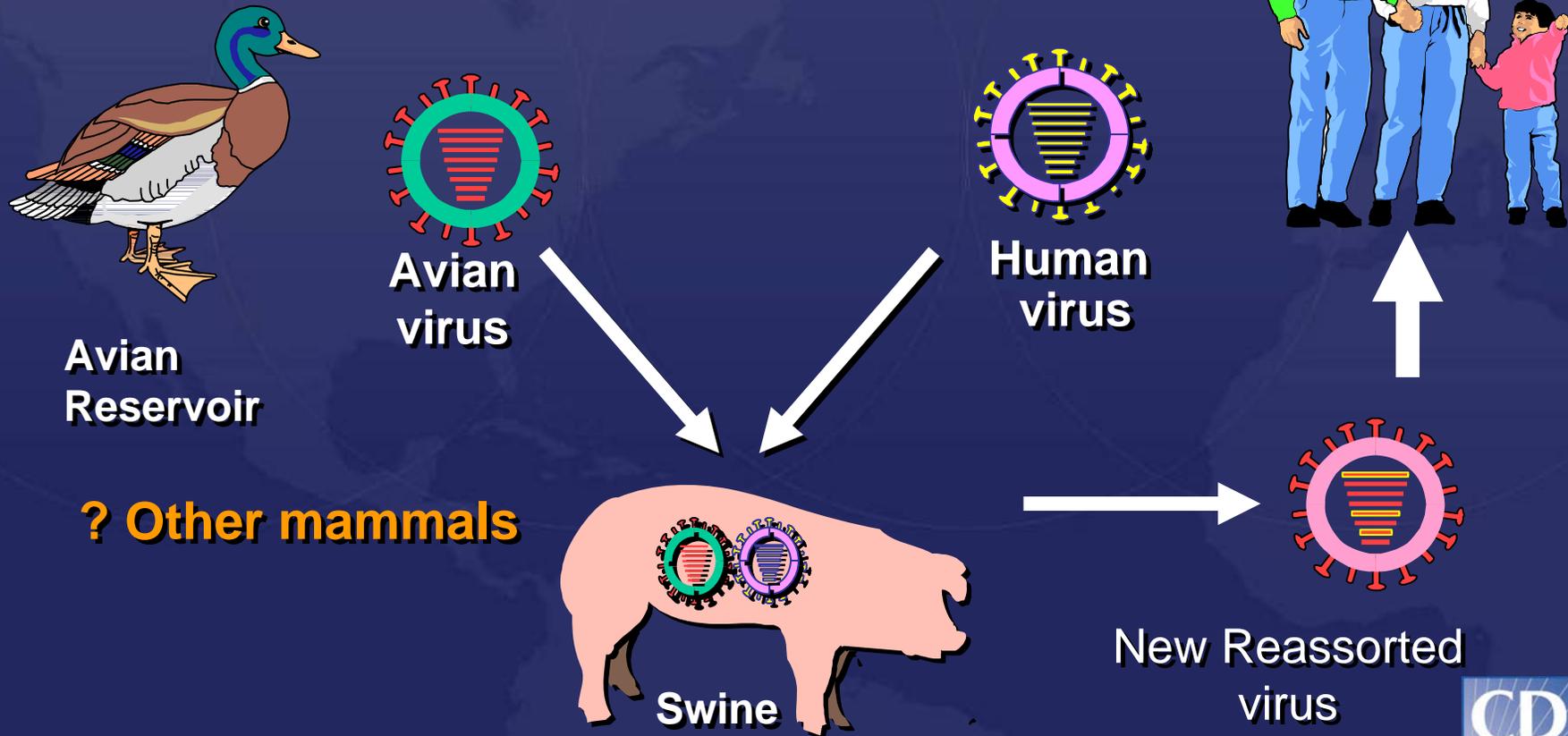


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Pandemic Strain Emergence: Reassortment of Influenza A Viruses



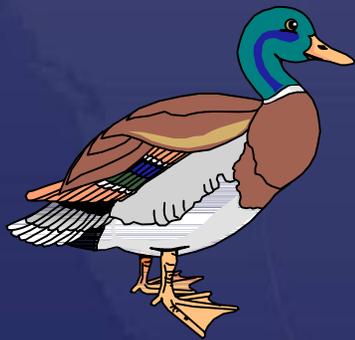
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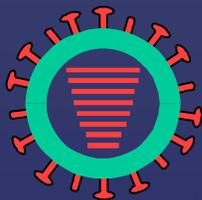


Pandemic Strain Emergence: Avian Influenza A Virus Evolution and Adaptation

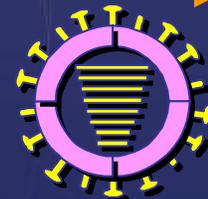
Direct Avian – Human Infection



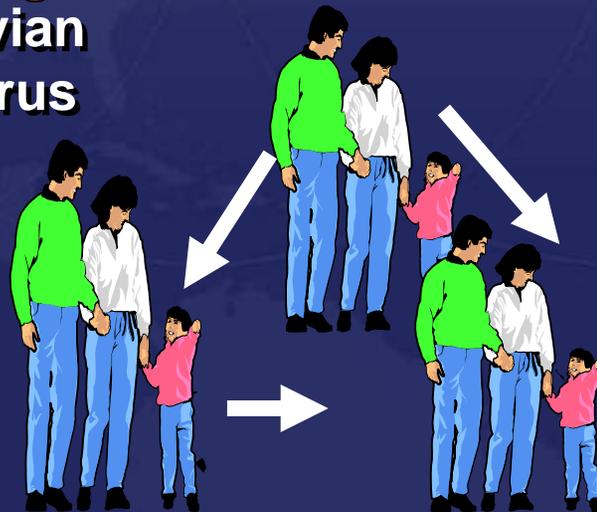
Avian Reservoir



Avian virus



Human virus



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Addressing Local Practices



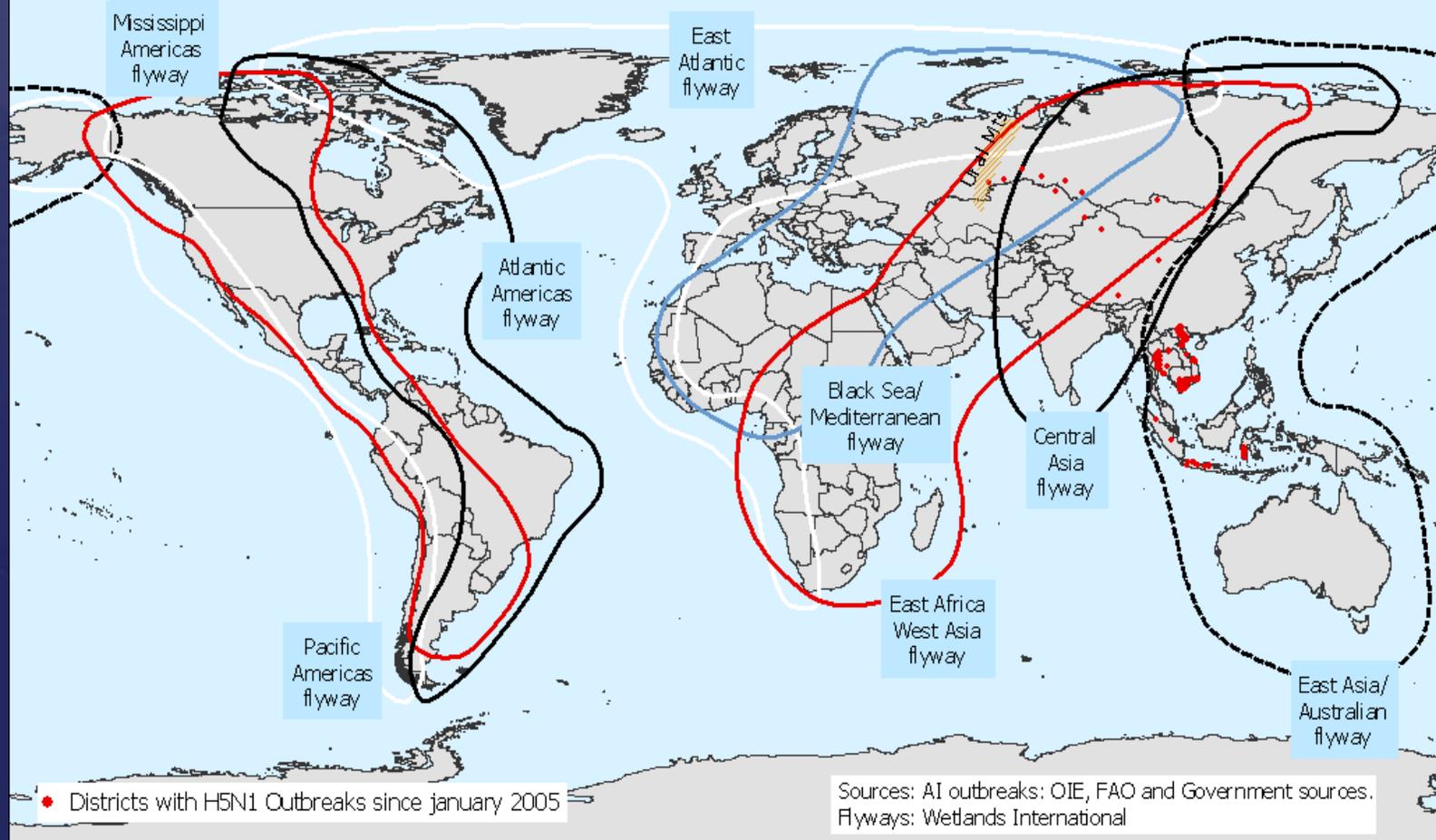
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H5N1 outbreaks in 2005 and major flyways of migratory birds

Situation on 30 August 2005





Situation Report: Avian Influenza

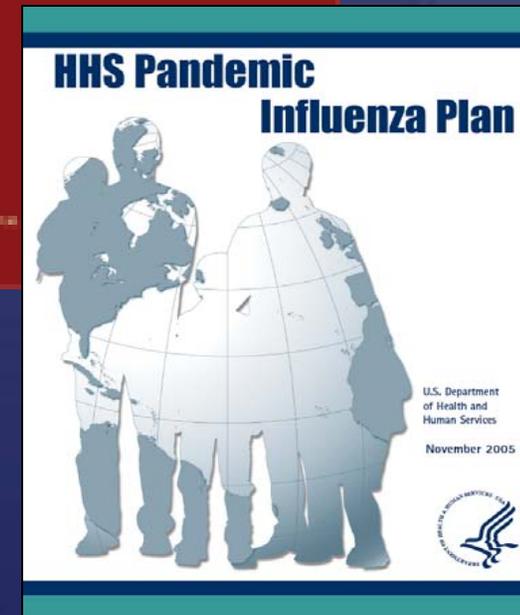
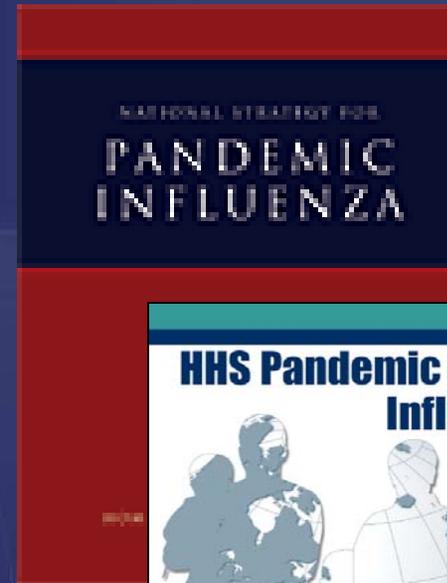
- Widespread and spreading prevalence in migratory birds; broad host range**
- Continued outbreaks among domestic poultry**
- Mammalian infection (cats, pigs, etc.) lethal**
- Virus is evolving**
- Sporadic human cases (>120 reports to date)**
 - **Most in young and healthy**
 - **Case-fatality 50%**
- Sustained and rapid person-to-person transmission**

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- **HHS Pandemic Influenza Plan**
- **Support the National Strategy for Pandemic Influenza**
- **Outlines planning assumptions and doctrine for health sector pandemic preparedness and response**
- **Public Health Guidance for State and Local Partners**
- **11 Supplements provide detailed guidance**



www.pandemicflu.gov



Planning Assumptions for United States

- **Incubation period:**
 - 1-4 days (average 2 days); (Note: current incubation period for H5N1 may be closer to 10 days)
- **Viral Shedding and Transmission:**
 - Greatest during the first 2 days of illness
 - May be infectious 1-2 days BEFORE symptoms
 - Infectious for about 10 days; children may shed virus longer
 - On average, each persons will transmit influenza to two others
- **Course of the Pandemic:**
 - In an affected community, a pandemic outbreak will last about 6 to 8 weeks
 - Multiple waves (periods during which community outbreaks occur across the country) of illness could occur with each wave lasting 2-3 months
 - Absenteeism may approach 40% in a severe pandemic

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HHS Pandemic Influenza Doctrine: Saving Lives

- **A threat anywhere is a threat everywhere!**
- **Quench first outbreaks: detect and contain where it emerges, if feasible**
 - **International collaborations**
 - **Frontline detection and response; rapid laboratory diagnosis**
 - **Isolation / quarantine / antiviral prophylaxis / social distancing / animal culling**



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HHS Pandemic Influenza Doctrine: Saving Lives

- **Prevent/slow introduction into the United States**
 - May involve travel advisories, exit or entry screening
 - For first cases, may involve isolation / short-term quarantine of arriving passengers
- **Slow spread, decrease illness and death, buy time**
 - Antiviral treatment for people with illness
 - Isolation / social distancing / voluntary quarantine
 - Vaccine when available
 - Local decisions

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Countermeasures: Vaccines, Antivirals, and Medical Supplies



Strategic National Stockpile



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U.S Seasonal Influenza Vaccines Production and Use

	Doses Produced (millions)	Doses Distributed (millions)
1980	15.7	12.4
1985	23.1	20.1
1990	32.3	28.3
1995	71.5	54.9
1999	77.2	76.8
2000	77.9	70.4
2001	87.7	77.7
2002	95.0	83.0
2003	86.9	83.1
2004	61.0	56.5



Major Challenges to Pandemic Vaccine Development and Availability are Production and Surge Capacity

- **Accelerate development of cell culture based vaccine technology**
- **Develop novel vaccine approaches**
- **Evaluate dose-sparing technology (adjuvants, intramuscular vs. intradermal)**



Influenza Treatments: Stockpile and Strategy

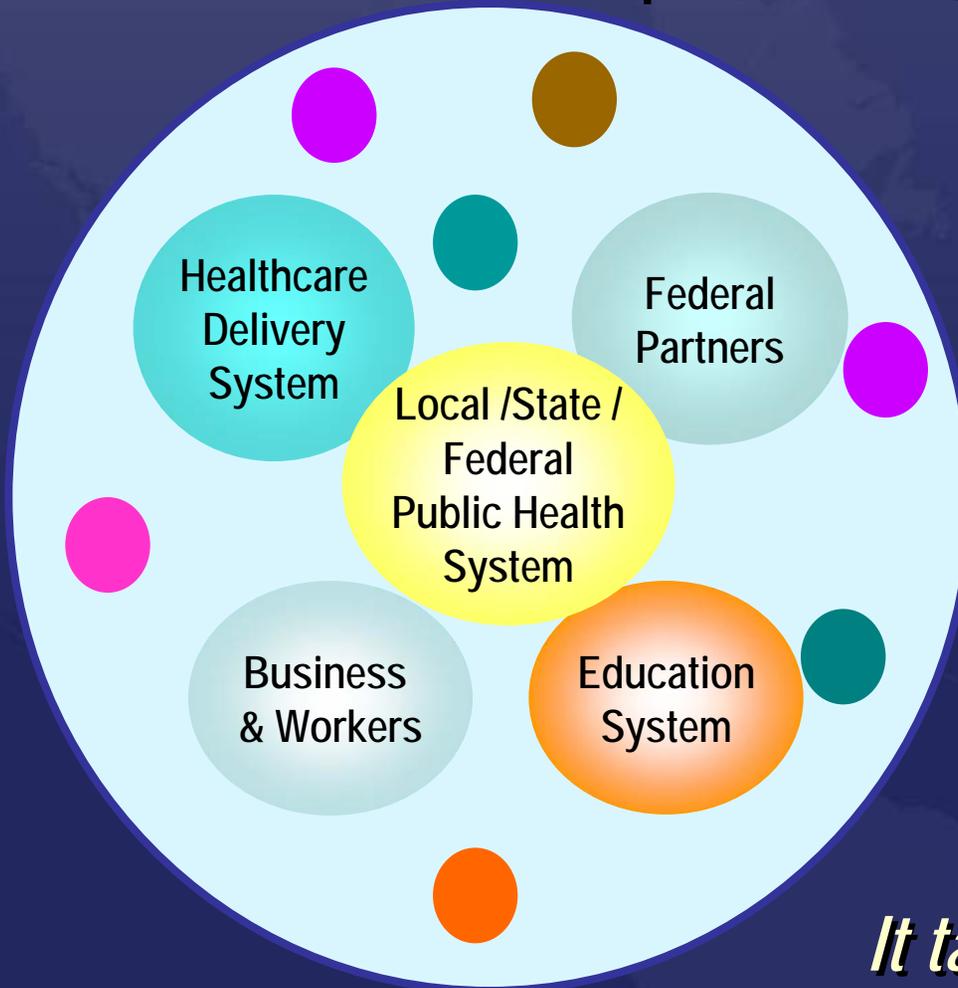
- **Stockpile**
 - **Tamiflu: 4.3 million courses in Strategic National Stockpile with an additional 1 million courses by end of January 2006**
- **Strategy**
 - **Procure 81 million courses of antivirals**
 - **6 million courses to be used to contain an initial U.S outbreak**
 - **75 million courses to treat 25 percent of U.S. population**
- **Accelerate development of promising new antiviral candidates**

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Health Protection Preparedness System



- **Local - state - federal**
- **Domestic – international**
- **Multisector integration**
- **Public - private**
- **Non-partisan**
- **Animal – human**
- **Health protection – homeland security - economic protection**

It takes a NETWORK!

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Preparedness is Local



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State and Local Pandemic Influenza Planning Checklist

- ✓ **Community Leadership and Networking**
- ✓ **Surveillance**
- ✓ **Health System Partnerships**
- ✓ **Infection Control and Clinical Care**
- ✓ **Vaccine Distribution and Use**
- ✓ **Antiviral Drug Distribution and Use**
- ✓ **Community Disease Control and Prevention**
- ✓ **Communications**
- ✓ **Workforce Support**

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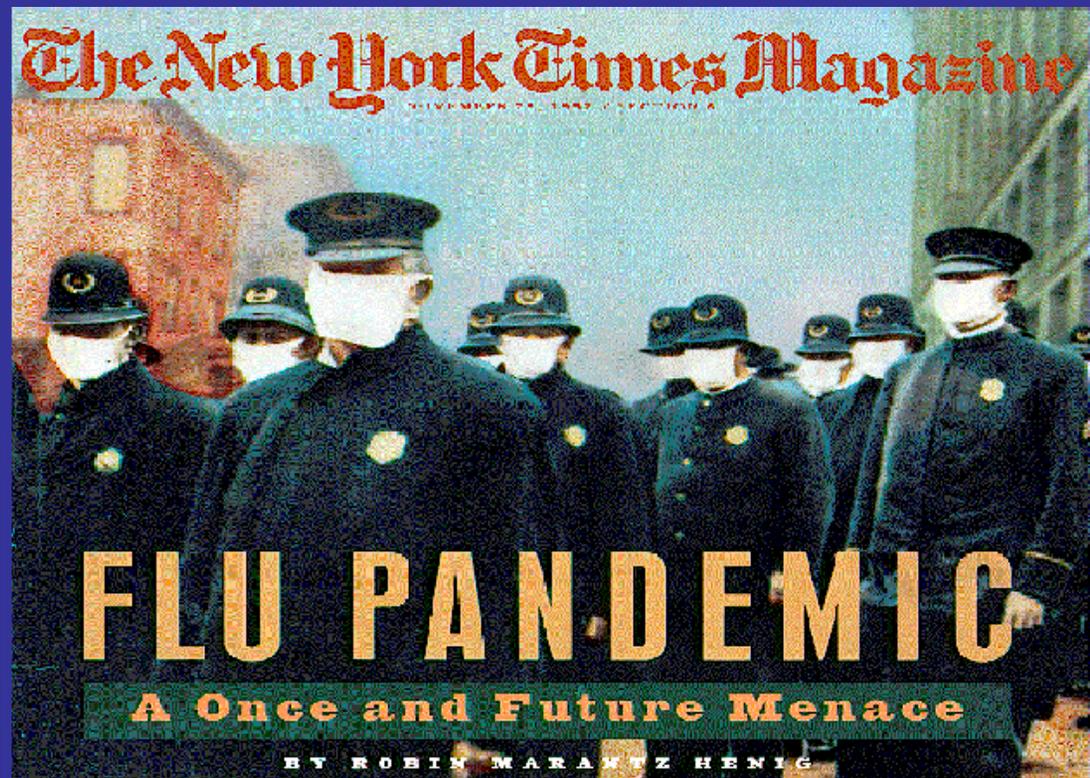
Seasonal Influenza Preparedness



Pandemic Influenza Preparedness

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Complacency
is the enemy of health protection!

www.cdc.gov www.pandemicflu.gov

