

# Pandemic Influenza

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June 11, 2009



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## Agenda

- Timeline
- Current Situation
  - US
  - Other Nations
  - Actions to Date
- Anticipated Actions
- Questions



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## US Timeline

- Novel virus first detected in Mexico and the United States in March and April
- First patient confirmed by CDC April 15th
- 2<sup>nd</sup> patient April 17th
- Quickly determined the virus was spreading from person-to-person
- CDC EOC operational April 22<sup>nd</sup>
- HHS declares a Public Health Emergency April 26<sup>th</sup>



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## Current Situation--US

- “I’ve been doing this for 20 years, and I can’t ever remember seeing **widespread** flu in the middle of June...It’s not just in a little pocket here and there, its’ across the whole state”

Wil Himble

Interim Director, Arizona Department of Health Services

*June 9, Arizona Republic*

Arizona      4,877 flu cases  
580 lab-confirmed cases H1N1  
6 deaths



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## Current Situation--US

- 13,217 confirmed cases of 2009-H1N1 flu
- 27 fatalities (+10)
  - 50 States
  - District of Columbia
  - Puerto Rico
- 82% of all influenza reporting is H1N1
- Reporting now weekly (Fridays)

## Current Situation--US

- Incubation period “unknown”
  - Could range from 1-7 days
  - 1-4 days more likely
- Common findings (30 Hospitalized vs. **Outpatients**)
  - Median Age 27.5 (16 / 81% <18yo; only 2% ≥60)
  - More female—70% (Pregnancy is an increased risk factor) (51% male)
  - 55.7% deaths 30-59 yo
  - 13% travel to Mexico, 0% exposure to another case
  - Pneumonia (60%)/ dehydration lead to admission
  - 64% underlying conditions (chronic lung, cardiac, immunosuppressed, obese,
  - Fever, cough and vomiting
  - Rapid test was unreliable
- Sensitive—Neuraminidase inhibitors
  - Resistant--Adamantanes



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## Current Situation--US

- CDC recommends that testing be prioritized for those with severe respiratory illness and those at highest risk of complications from influenza



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# Confused???

- Influenza-like-illness → 100<sup>0</sup>, cough and/or sore throat in the absence of a known cause
- “Confirmed” case
  - Real time RT-PCR
  - Viral culture
- Probable
  - ILI, + influenza A, but negative for human H1 and H3
- Suspected
  - Does not meet confirmed or probable definition
  - Not H1N1 test negative
  - And previously healthy <65 hospitalized for ILI
- Severity **likely to increase**—early in disease curve



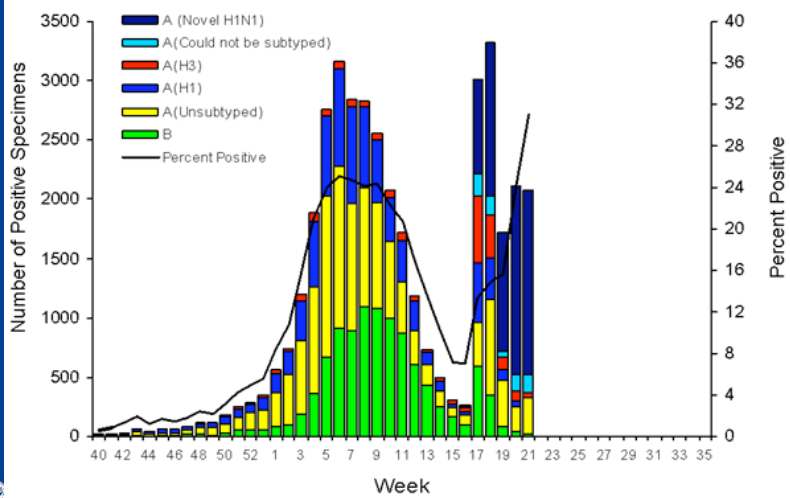
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# Current Situation--US

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2008-09



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# The World



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## Current Situation—World

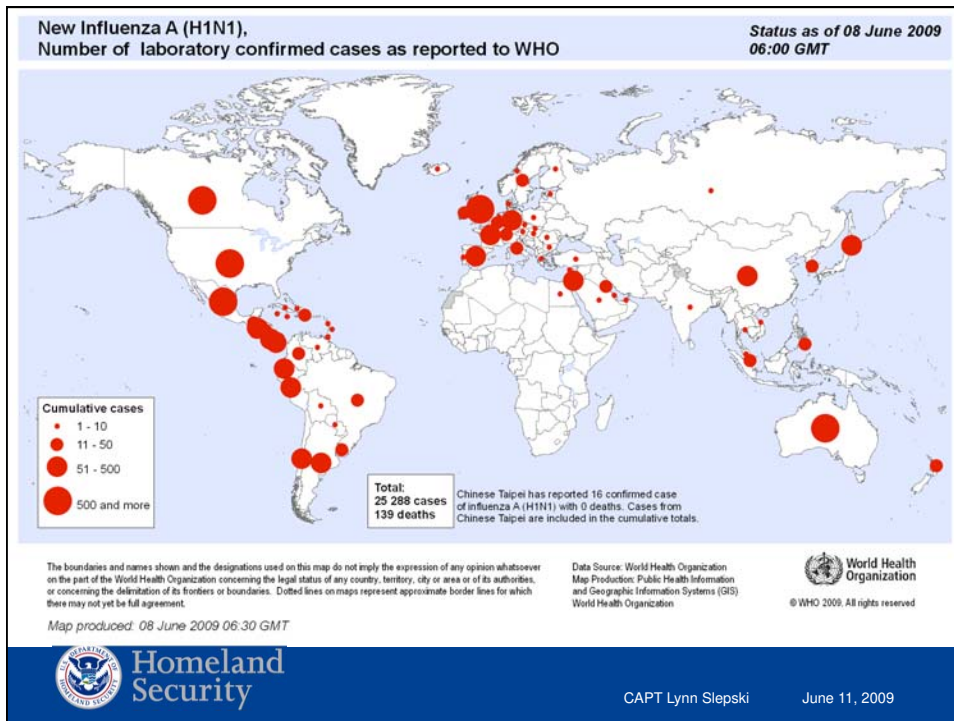
- WHO reports 25,288 confirmed cases in 73 countries with 139 deaths (June 8) (+ 3348/ 4/ 14)
- Highest weekly confirmed case increases:  
US (+4242), Canada (+779), Australia (+754), Mexico (+688), UK (+328)
- New Orleans Mayor Ray Nagin quarantined in China on June 7<sup>th</sup>
- Open source reports
  - death in the Dominican Republic (first in the Caribbean—pending WHO confirmation)
  - Cases in Australia have quadrupled in the past week



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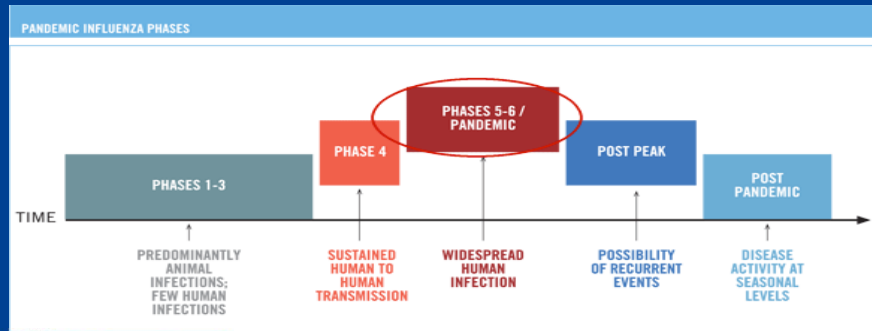
## Current Situation—World

- H1N1 showing signs of becoming the dominant strain in the southern hemisphere
  - Chile—360
  - Australia—870 (Victoria had 231 overnight)
- **Similar to the experience in 1918**
  - 1<sup>st</sup> wave—mild disease
  - Follow-ons—increased transmissibility/ severity

## Current Situation—World

“Globally we believe that we are in Phase 5 but we are getting close to Phase 6”

Keiji Fekuda  
WHO Acting Ass't Director-General, June 2



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## Current Situation—World

- “It’s probably fair to call the situation something like moderate now. We do have some hesitation to call the situation mild”.
- “There are a number of countries that appear to be in transition, moving from travel-related cases to more established community types of spread...“We are still waiting for evidence of really widespread community activities in these countries”
  - (Australia, Britain, Chile, Japan and Spain)

Keiji Fekuda  
WHO Acting Ass't Director-General, June 2

- Chile— more from H1N1 than seasonal flu



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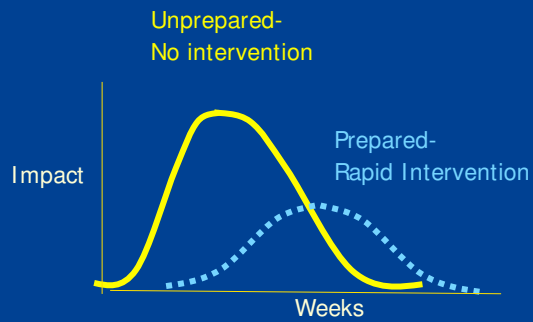
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## US Government Strategy: Focus is on Saving Lives

- Slow spread, decrease illness and death, buy time
  - Antiviral treatment and isolation for people with illness
  - Quarantine for those exposed
  - Community Containment
  - Social distancing
  - Vaccine when available
  - Local decisions

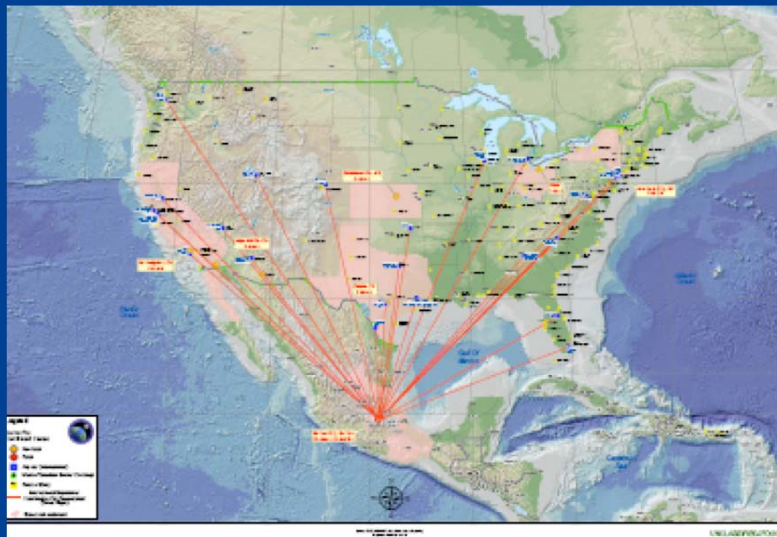


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## US Direct Flights from Mexico City



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## US Actions to Date

- HHS has declared a Public Health Emergency on April 26
  - Allows HHS to prepare for and respond to an emergency (gain access to federal assets)
  - Allows implementation of liability or regulatory protections (waivers)
- CDC has released
  - Health Advisory
  - New guidance for AV treatment and prophylaxis; infection control; flight crews returning from Mexico
  - Moved 25% of Tamiflu within the Strategic National Stockpile (12,500 courses) PPE/ Resp Protection per DHS
- Department of State—warden message to US Citizens in Mexico
  - Expects requests from Mexican Government (AV, PPE, logistics and mobilization support, communications)
- DoD has prepositioned 7 million courses of Tamiflu
- OPM has issued worker guidance
- ALL borders remain open—using passive surveillance (questions)
- Federal Response Stages—dropped ~ May 4<sup>th</sup>
- HHS developed a “seed” for pandemic vaccine



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## Trust for America

- Investments in pandemic planning and stockpiling antiviral medications paid off.
- Public health departments did not have enough resources to carry out plans.
- Response plans must be adaptable and science-driven.
- Providing clear, straightforward information to the public was essential for allaying fears and building trust.
- School closings have major ramifications for students, parents and employers.



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## Trust for America

- Sick leave and policies for limiting mass gatherings were also problematic (48% have no paid sick days)
- Even with a mild outbreak, the health care delivery system was overwhelmed (especially ERs); concerns re healthcare workers
- Communication between the public health system and health providers was not well coordinated
- WHO pandemic alert phases caused confusion.
- International coordination was more complicated than expected.



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## What's NEXT??????



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## What Makes an Influenza Pandemic?

- More cases than expected—widespread
- Sudden shift in strain
  - Not expected (more pathogenic)
  - **No pre-existing immunity**
- Duration
  - Longer (up to 18 months)
  - Multiple waves, each different
- May be some advance notice (not a lot)
- Medical infrastructure capacity compromised



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## Effects of Past Pandemics on the U.S.

Pandemic	Estimated U.S. Deaths	Influenza A Strain	Populations at greatest risk
1918 – 1919	500,000	H1N1	Young, healthy adults
1957 – 1958	70,000	H2N2	Infants, elderly
1968 – 1969	34,000	H3N2	Infants, elderly

All three spread around the world in **less than a year** after efficient sustained human-to-human transmission.



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## Number of Episodes of Illness, Healthcare Utilization, and Death (HHS Plan, 2005)

Characteristic	Moderate (1958/68 - 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	742,500
<b>Deaths</b>	<b>209,000</b>	<b>1,903,000</b>



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## Criterion Required for a Pandemic

- A new Influenza A virus appears or “emerges” virus emerges in the human population
- It spreads easily from person-to-person
- It causes serious illness in humans

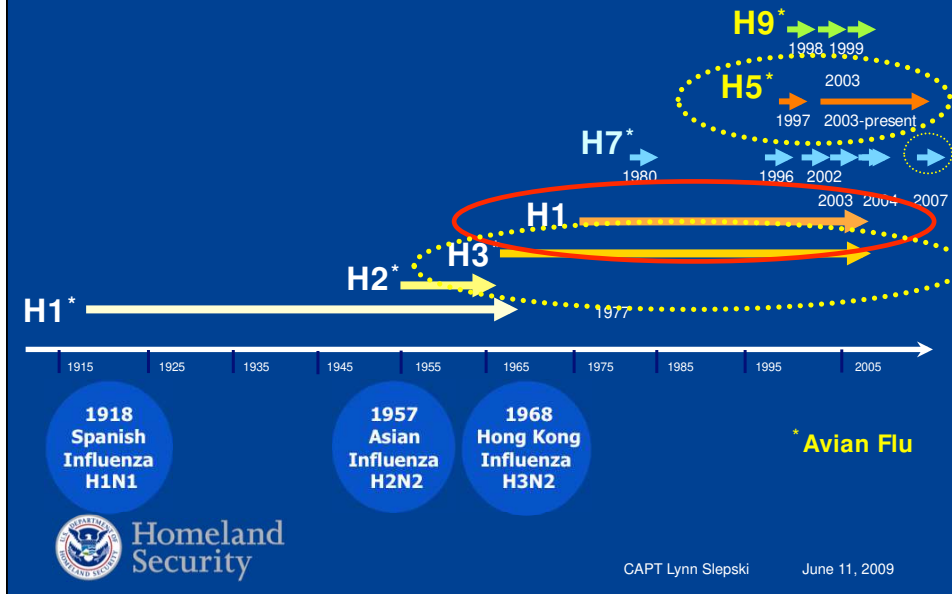


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## Emergence of Pandemics



## Pandemic Challenges

- Pandemics are different from other emergencies because it's likely that almost all locations will be affected simultaneously
- Resources cannot be shifted geographically as in other emergencies
- Every country will be affected, but countries with better plans will be less vulnerable to terrorism and other threats during a pandemic

## Challenges to Consider

- Dismissal of schools and daycares/ closure of public places
- Transit shutdowns (air, rail, bus)
- Closure of stores/ businesses (grocery, drug, etc.)
- Supply chain and fuel disruptions
- Drinking and wastewater treatment system disruptions
- Power outages
- Healthcare surge capacity
- Public Safety
- Quarantines or restrictions of movement
- Communication with stakeholders.



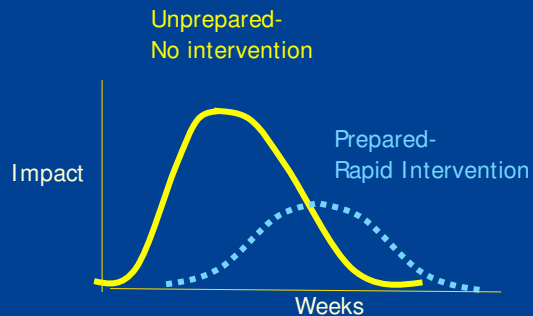
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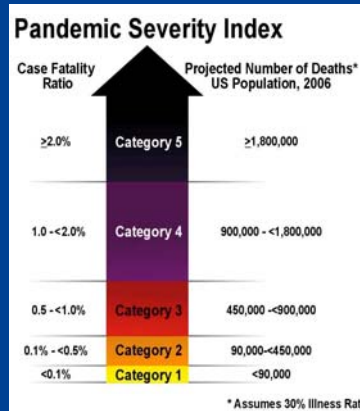
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# Triggers—Pandemic Severity Index



- Similar to the system for categorizing the strength of hurricanes, the CDC interim guidance introduces a **Pandemic Severity Index**.
  - Uses fatality ratio as the critical driver for forecasting a pandemic's severity.
  - Allows for better forecasting the impact of a pandemic
  - Enables recommendations to be made regarding mitigation strategies and interventions.



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# Interventions Are Tied to Index



- The **Pandemic Severity Index** provides businesses and communities a tool for scenario-based contingency planning to guide their pandemic preparedness efforts.
- The matrix summarizes the recommended strategies for families, schools, and workplaces, keyed to the severity index.

Interventions by Setting	Pandemic Severity Index		
	1	2 and 3	4 and 5
<b>Home</b> Voluntary isolation of ill at home (adults and children); combine with use of antiviral treatment as available and indicated	Recommend <sup>3,2</sup>	Recommend <sup>2,3</sup>	Recommend <sup>2,3</sup>
Voluntary quarantine of household members in homes with ill persons <sup>4</sup> (adults and children); consider combining with antiviral prophylaxis if effective, feasible, and quantities sufficient	Generally not recommended	Consider <sup>4</sup>	Recommend <sup>4</sup>
<b>School</b> Child social distancing			
-dismissal of students from schools and school-based activities, and closure of childcare programs	Generally not recommended	Consider: 54 weeks <sup>4</sup>	Recommend: 512 weeks <sup>4</sup>
-reduce out-of-school social contacts and community mixing	Generally not recommended	Consider: 54 weeks <sup>4</sup>	Recommend: 512 weeks <sup>4</sup>
<b>Workplace / Community</b> Adult social distancing			
-decrease number of social contacts (e.g., encourage teleconferences, alternatives to face-to-face meetings)	Generally not recommended	Consider	Recommend
-increase distance between persons (e.g., reduce density in public transit)	Generally not recommended	Consider	Recommend
-modify or cancel selected public gatherings to promote social distance (e.g., postpone indoor stadium events)	Generally not recommended	Consider	Recommend
-modify work place schedules and practices (e.g., telework, staggered shifts)	Generally not recommended	Consider	Recommend





## Triggers for Implementation of Mitigation Strategies by Pandemic Severity Index and WHO Phases/ USG Stages

Pandemic Severity Index	WHO Phase 6, U.S. Government Stage 3*	WHO Phase 6, U.S. Government Stage 4† And First human case in United States	WHO Phase 6, U.S. Government Stage 5§ and First laboratory-confirmed cluster in State or region¶
1	Alert	Standby	Activate
2 and 3	Alert	Standby	Activate
4 and 5	Standby**	Standby/Activate ††	Activate



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## What's Next?????

- H1N1 rates 2-5X higher than seasonal flu—50% if no countermeasure
  - ↑ Hospitalizations and deaths
- WHO Phase—Remains at 5. Likely to go up.
- WHO--Meeting this week to discuss revamping pandemic alert scale to address
  - Severity
  - Geographic spread

### United States

- Similar rework of the Pandemic Severity Scale
- Rethinking of actions with economic impacts—school closures
- Discussion of triggers, better ways to coordinate, "tailored" plans
- May see a shift from seasonal flu vaccine to a pandemic vaccine
- \$\$\$\$\$ issues



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## New Resources

- Antiviral Stockpiling by Businesses
- Respirator Stockpiling by Businesses
- Draft Guidance on Allocating and Targeting Pandemic Influenza Vaccine (“Guidance”)
- Sector Specific Guides
- Frequently Asked Questions (FAQs)



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*“We don’t know when a pandemic might strike. But we can be sure of two things:*

*Everything we do before a pandemic will seem alarmist.*

*Everything we do after a pandemic will seem inadequate.*

*This is the dilemma we face, but it should not stop us from doing what we can to prepare. We need to reach out to everyone with words that inform, but not inflame. We need to encourage everyone to prepare, but not panic.”*

*HHS Secretary Michael Leavitt  
Department of Health and Human Services  
Pandemic Influenza Leadership Forum  
[June 13, 2007]*



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# www.pandemicflu.gov



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## Questions?



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