



PUBLIC HEALTH

**ALWAYS WORKING FOR A SAFER AND
HEALTHIER WASHINGTON**

**2009 H1N1 (Pandemic) virus
IPMA
September 30, 2009
Anthony A Marfin**



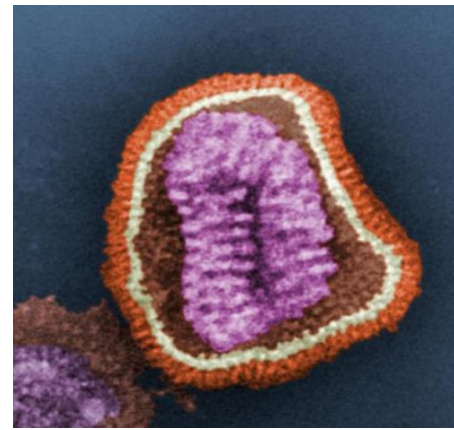
PUBLIC HEALTH
ALWAYS WORKING FOR A SAFER AND
HEALTHIER WASHINGTON

Introduction to Influenza

- What is influenza?
- What is pandemic influenza?
- What is 2009 H1N1 influenza?
- Current situation & “predictions”
- What can we do about 2009 H1N1 influenza?



What Is Influenza?



- Respiratory illness due to influenza viruses
 - Flu can infect different species (humans, poultry, pigs)
 - Influenza-like illness (ILI) - Fever plus cough or sore throat
 - Sometimes more severe → pneumonia or lung damage
 - Result in hospitalization & death
 - At-risk: Very young, elderly, persons with certain chronic medical problems

Virus Transmission

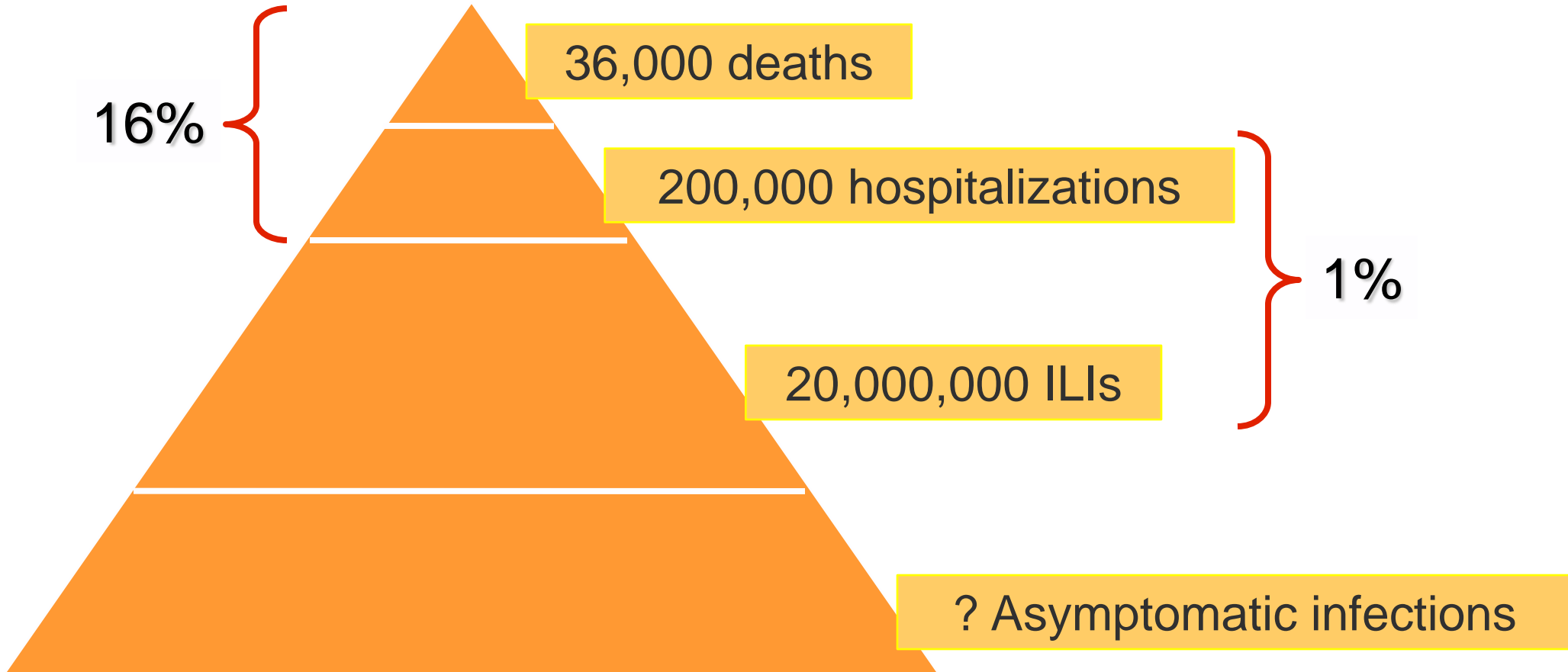


- Mainly spread by toddlers, children, & adolescents
- Spread by fluids from lungs & upper respiratory tract:
 - Big droplets from cough or sneeze
 - Contaminating hands during cough or sneeze
 - Touching surfaces contaminated with droplets
 - Very small (aerosol) particles may play small part

Seasonal vs. Pandemic

- Influenza viruses have frequent small changes
 - “Seasonal” flu epidemics each winter
 - Affect up to 20% of population
 - Disease control: Small changes in seasonal vaccine each year
- Rarely, influenza virus with big change
 - Gene swapping between viruses
 - Worldwide epidemic transmission (“pandemic”)
 - Disease control: Develop new vaccine from recently emerged isolate

On average, each year, seasonal flu accounts for:



2009 H1N1 Influenza

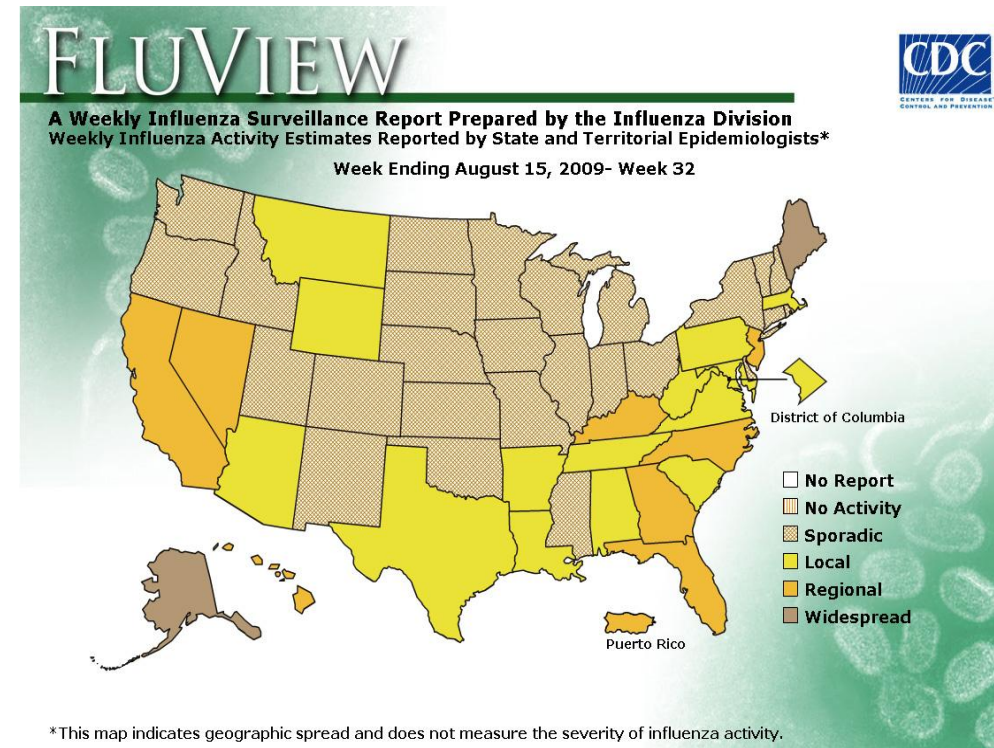
- Entirely new virus
 - Recombined avian, swine & human flu viruses
- 1st identified in California & Mexico, April 2009
- Initial investigations, virus found across many states
- Summer 2009, global epidemic spread
 - Globally, most flu cases due to 2009 H1N1 virus
 - Flu pandemic declared by WHO June 2009
- Flu cases in U.S. & Washington continue through summer (unusual)



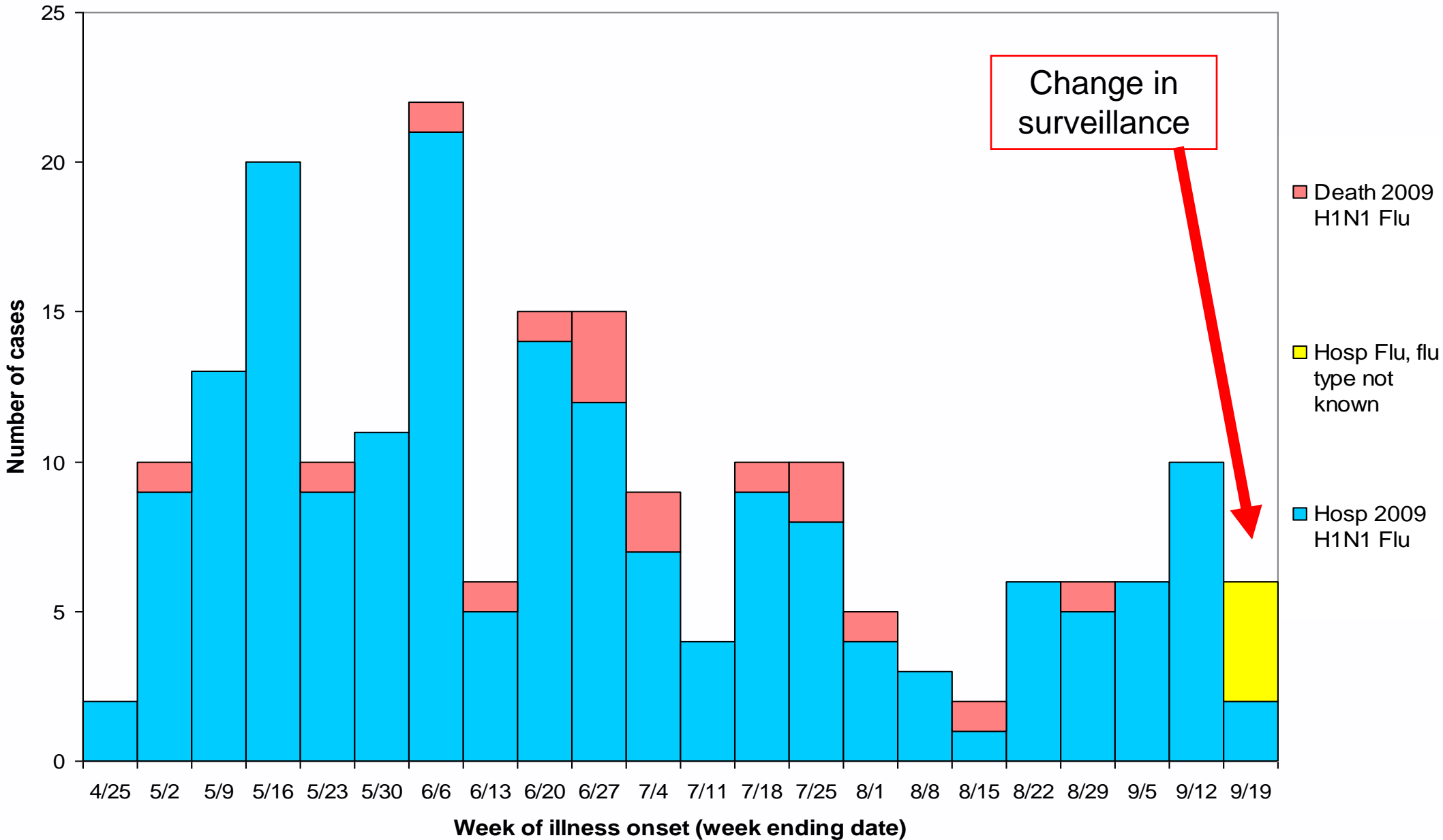
What happened in Washington and the United States?

Tracking Influenza

- Too many influenza infections to count each case
- Track by counting:
 - Hospitalizations
 - Deaths
 - Sentinel physician visits
 - Lab tests
 - School absenteeism



Number of lab-confirmed SARI cases (hospitalized & deceased) among Washington residents by age group, April 19 - September 19, 2009



*Data downloaded September 23, 2009

Age of 2009 H1N1 SARI Cases Onset of Illness 4/19/09–9/12/09

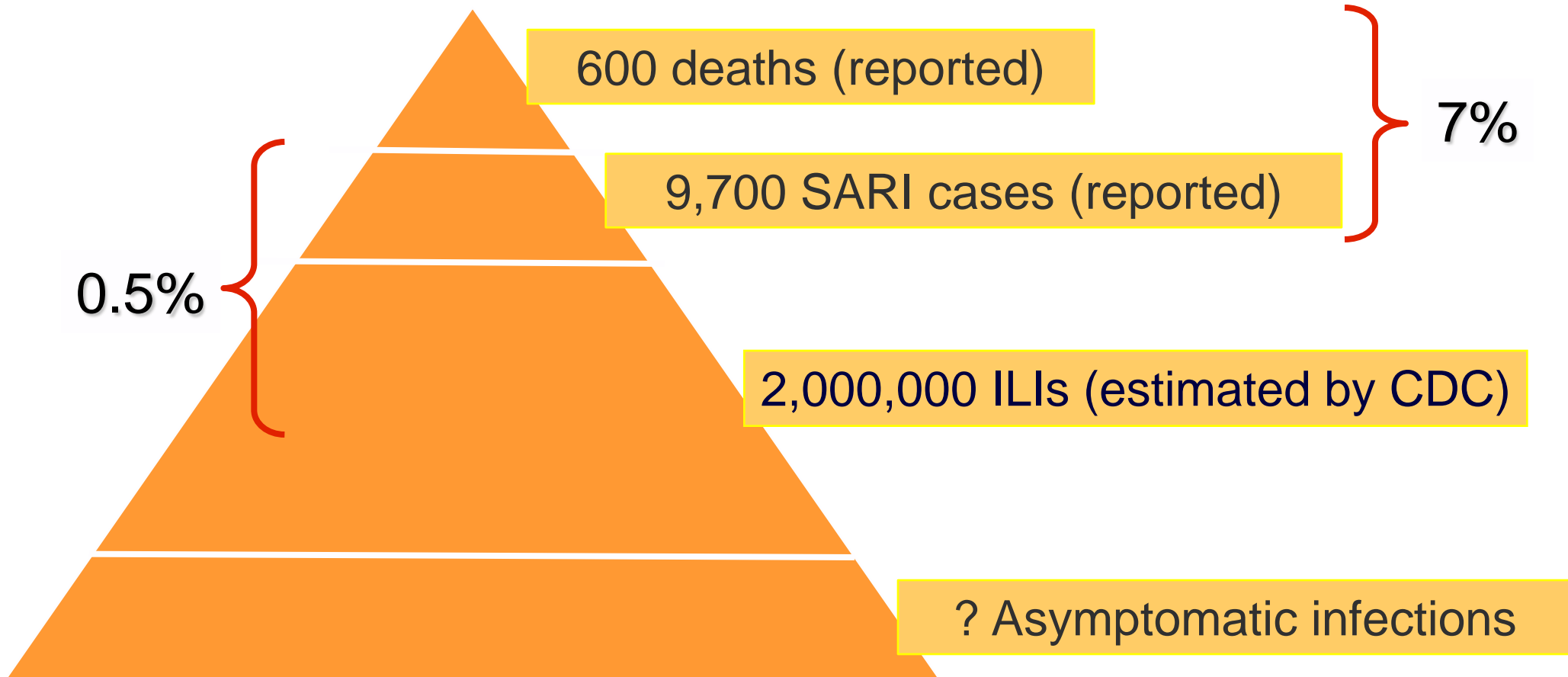
Age (years)	Hospitalized	Deceased
0-4	39	0
5-24	58	3
25-49	37	7
50-64	25	4
65+	9	2
Age unknown	3	0
Total	171	16

93%
88%

2009 H1N1 SARI cases WA, 4/19-9/9/09

Age (years)	Critical Care/Fatal?	
	<i>Neither</i>	<i>Yes (%)</i>
0-4	30	4 (12%)
5-17	29	8 (22%)
18-49	31	29 (48%)
50-64	13	16 (55%)
65+	6	2 (25%)

By August, 2009 H1N1 virus accounts for:



At risk groups?

- In U.S.
 - 75% of hospitalizations under 50 years
 - 60% of deaths under 50 years
- In Washington
 - 171 hospitalized & 16 fatal cases*
 - 93% of hospitalizations under 65 years
 - 88% of deaths age under 65 years

* As of 9/12/09



What can expect over the next 3-6 months?

PUBLIC HEALTH
ALWAYS WORKING FOR A SAFER AND
HEALTHIER WASHINGTON

National Estimates (PCAST)

Factor	Seasonal Flu Averages	2009 H1N1 virus
Attack rate (ILIs)	5-20%	30-50%
Hospitalizations/100 ILIs*	1	1
Deaths/100 ILIs*	0.1-0.2	0.1
Deaths/year	~36,000	30,000-90,000 (For WA, ~1,800)
Age distribution of deaths	90+% deaths \geq 65 yrs	90+% deaths <65 yrs



Are those estimates realistic for Washington?

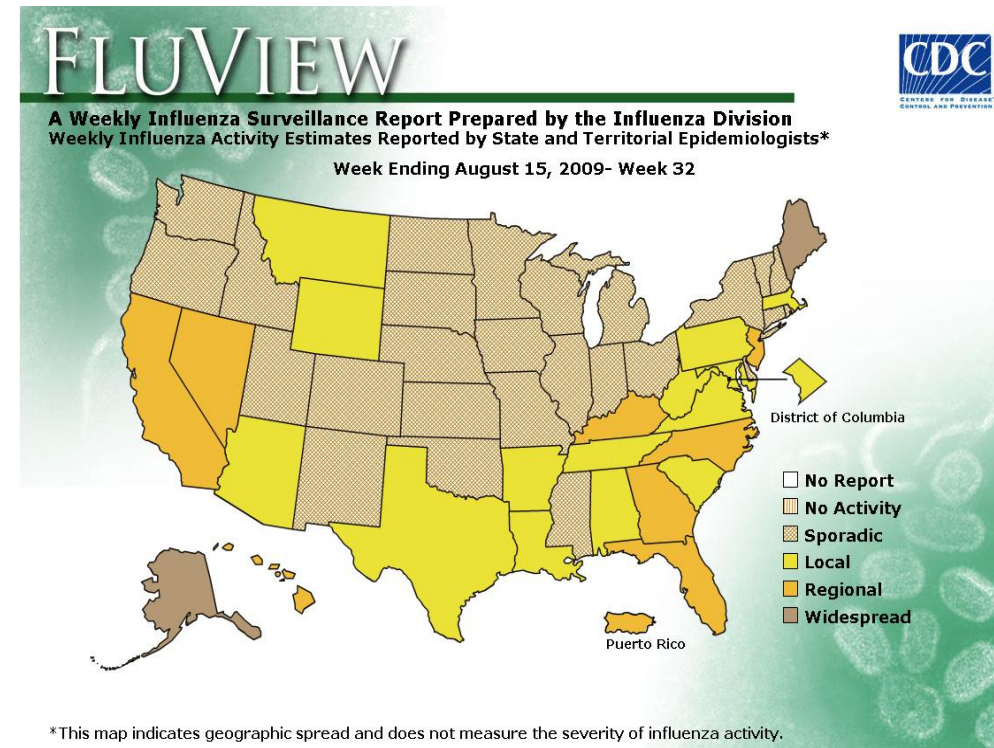
Age group	1957 pandemic model*			1968 pandemic model*		
	ILI	Hosp	Deaths	ILI	Hosp	Deaths
0-19	729K	7.3K	650	700K	7K	630
20-39	520K	5.2K	520	610K	6.1K	610
40-59	423K	4.2K	440	749K	7.5K	780
60-79	168K	1.7K	180	306K	3.1K	340
80+	45K	0.5K	50	67K	0.6K	70
Total	1.9M	18.9K	~1800	2.4M	24.3K	~2400



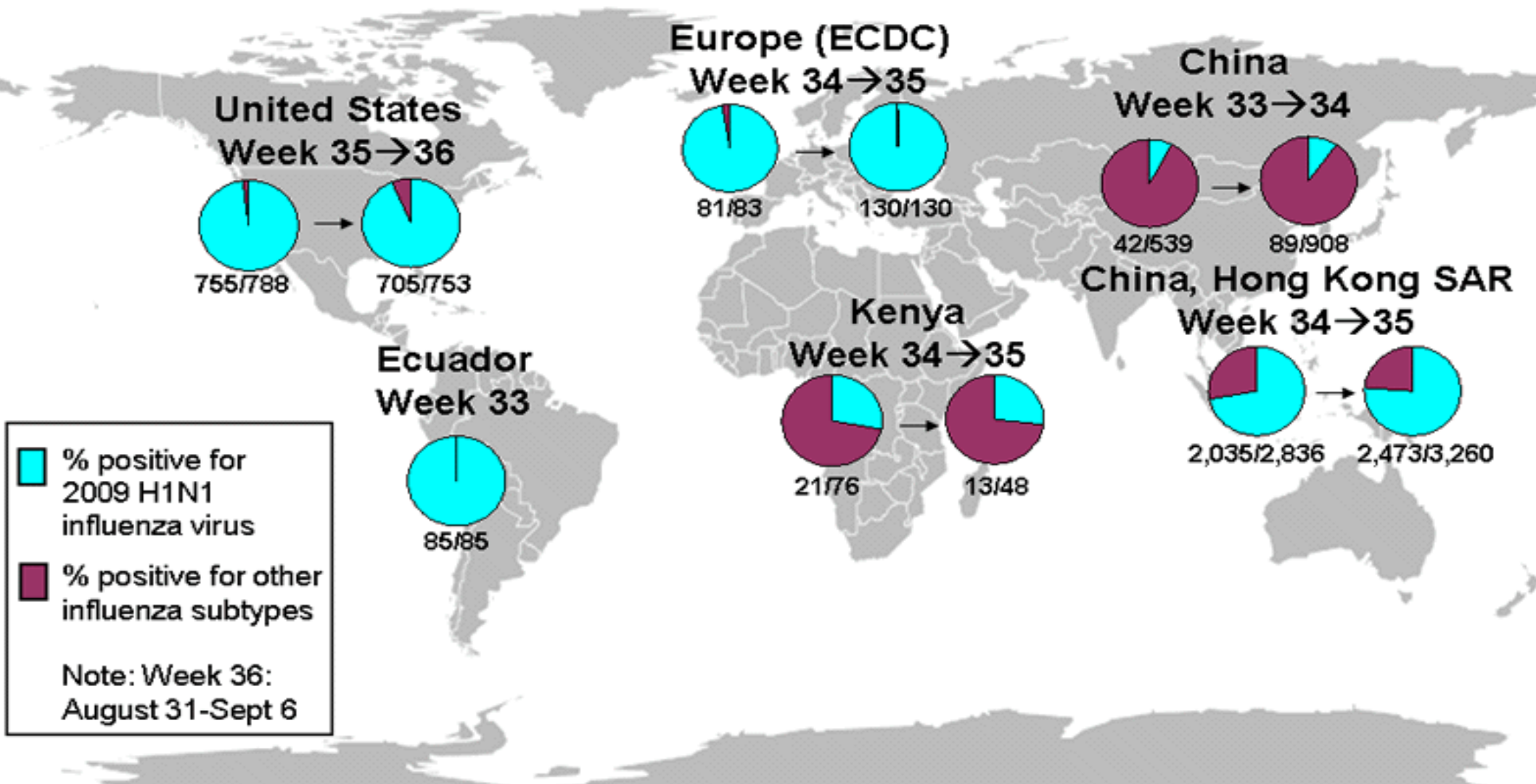
Current Situation in US & Washington

Tracking Influenza

- Too many influenza infections to count each case
- Worldwide, track flu by counting:
 - Hospitalizations
 - Deaths
 - Sentinel physician ILI visits
 - Lab tests
 - School absenteeism



Co-circulation of 2009 H1N1 & Seasonal Influenza A Viruses



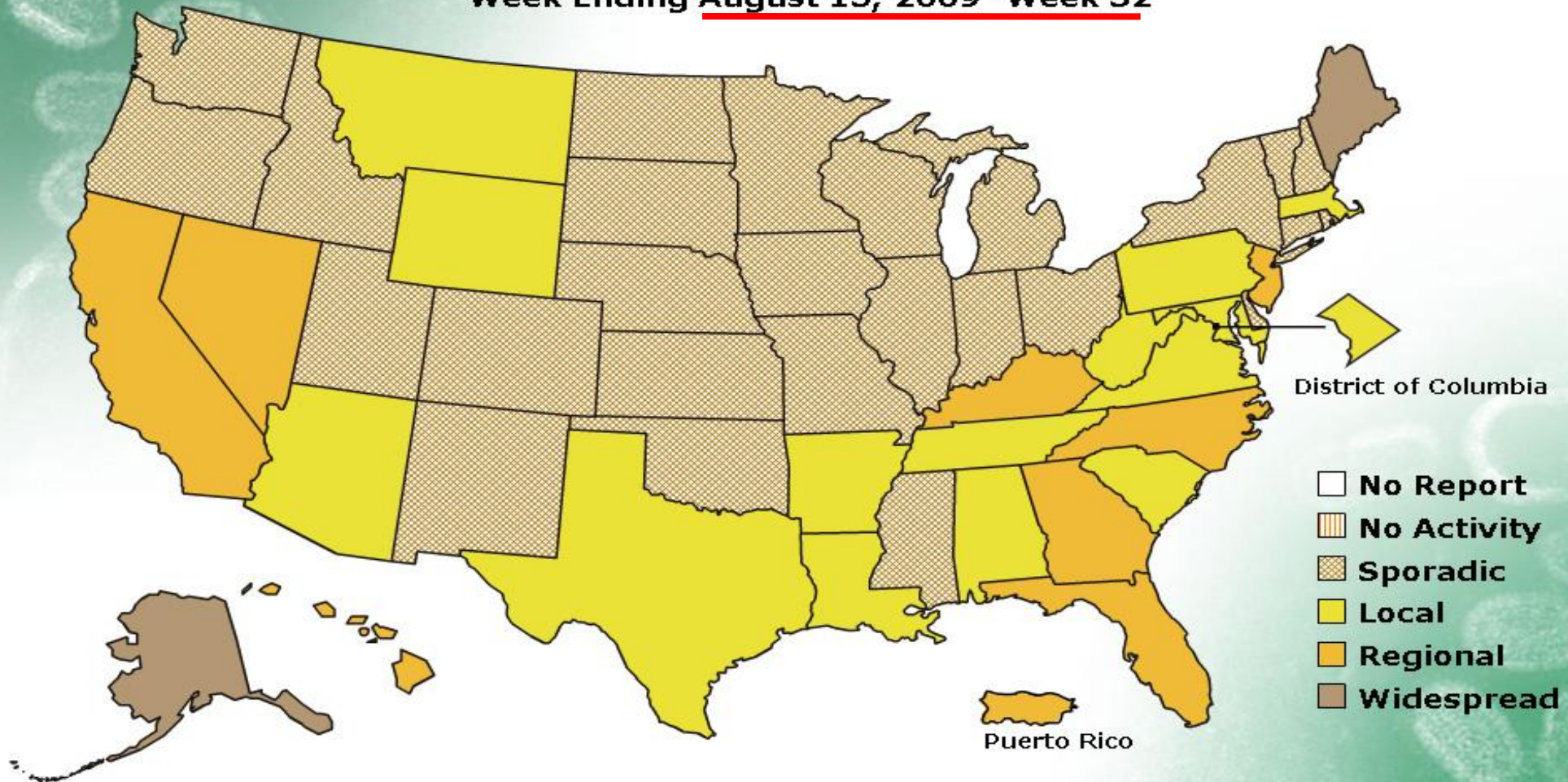
■ % positive for 2009 H1N1 influenza virus
■ % positive for other influenza subtypes

Note: Week 36:
August 31-Sept 6

FLUVIEW

A Weekly Influenza Surveillance Report Prepared by the Influenza Division
Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*

Week Ending August 15, 2009 - Week 32

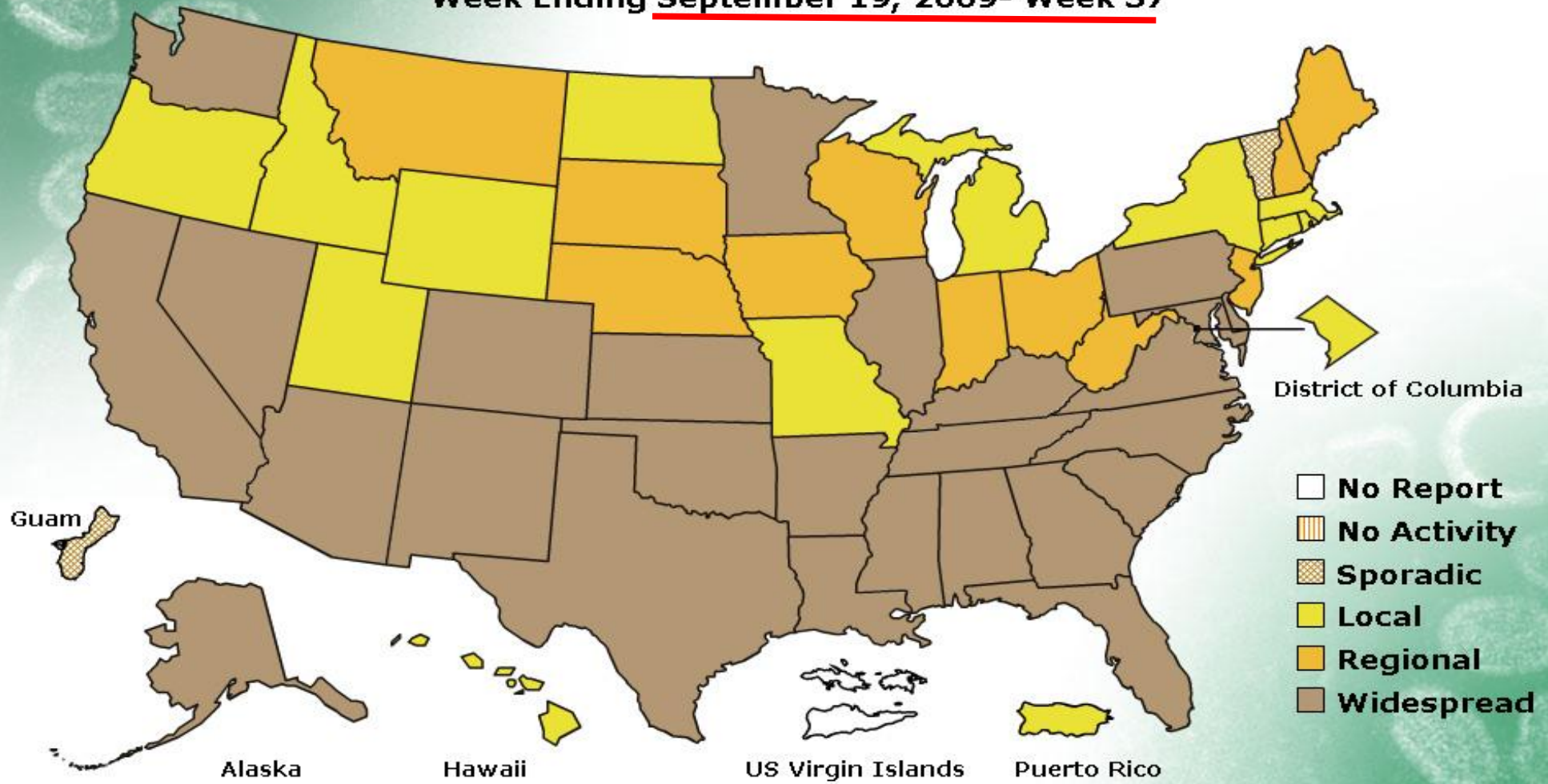


*This map indicates geographic spread and does not measure the severity of influenza activity.

FLUVIEW

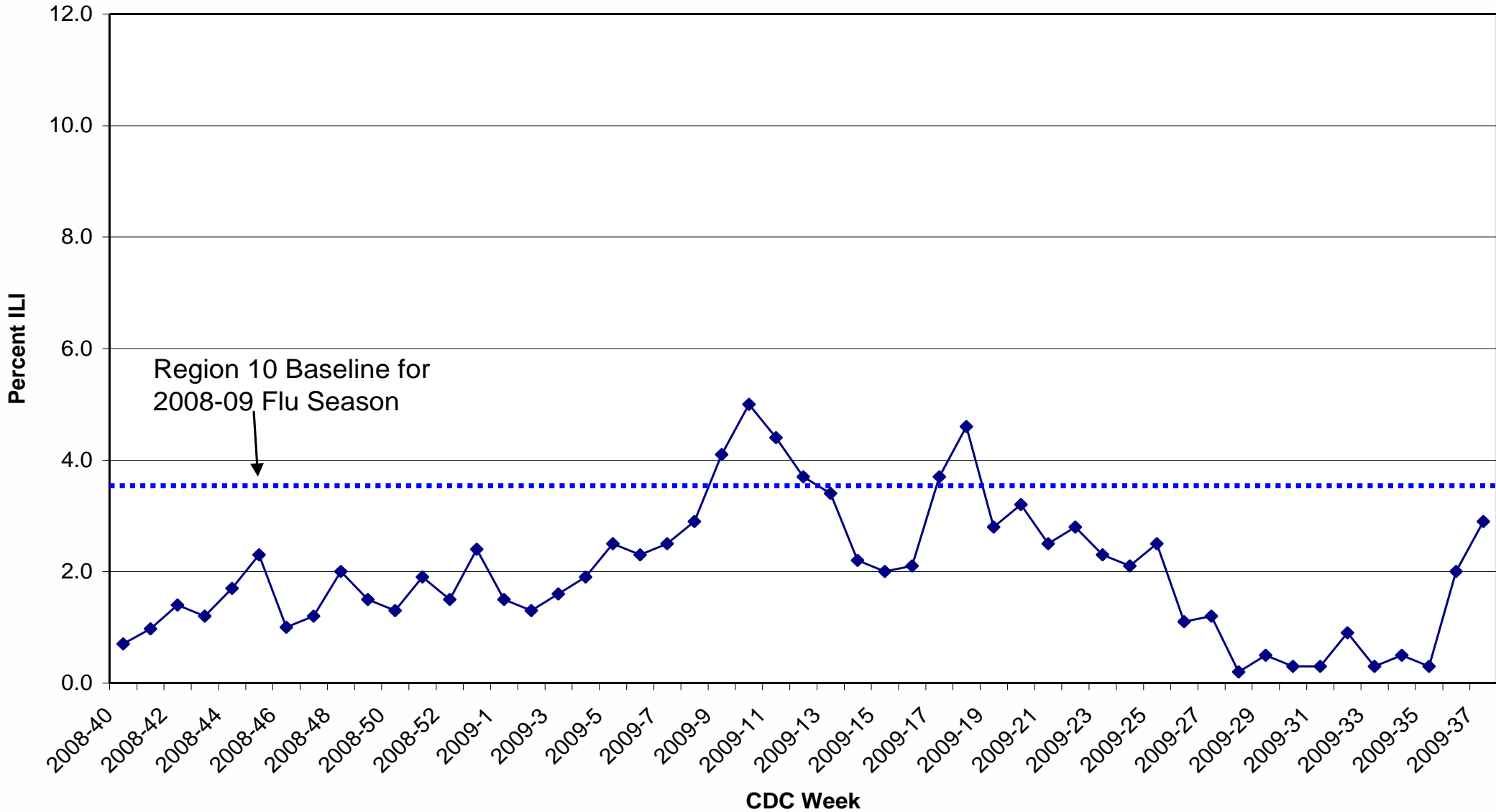
A Weekly Influenza Surveillance Report Prepared by the Influenza Division
Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*

Week Ending September 19, 2009 - Week 37

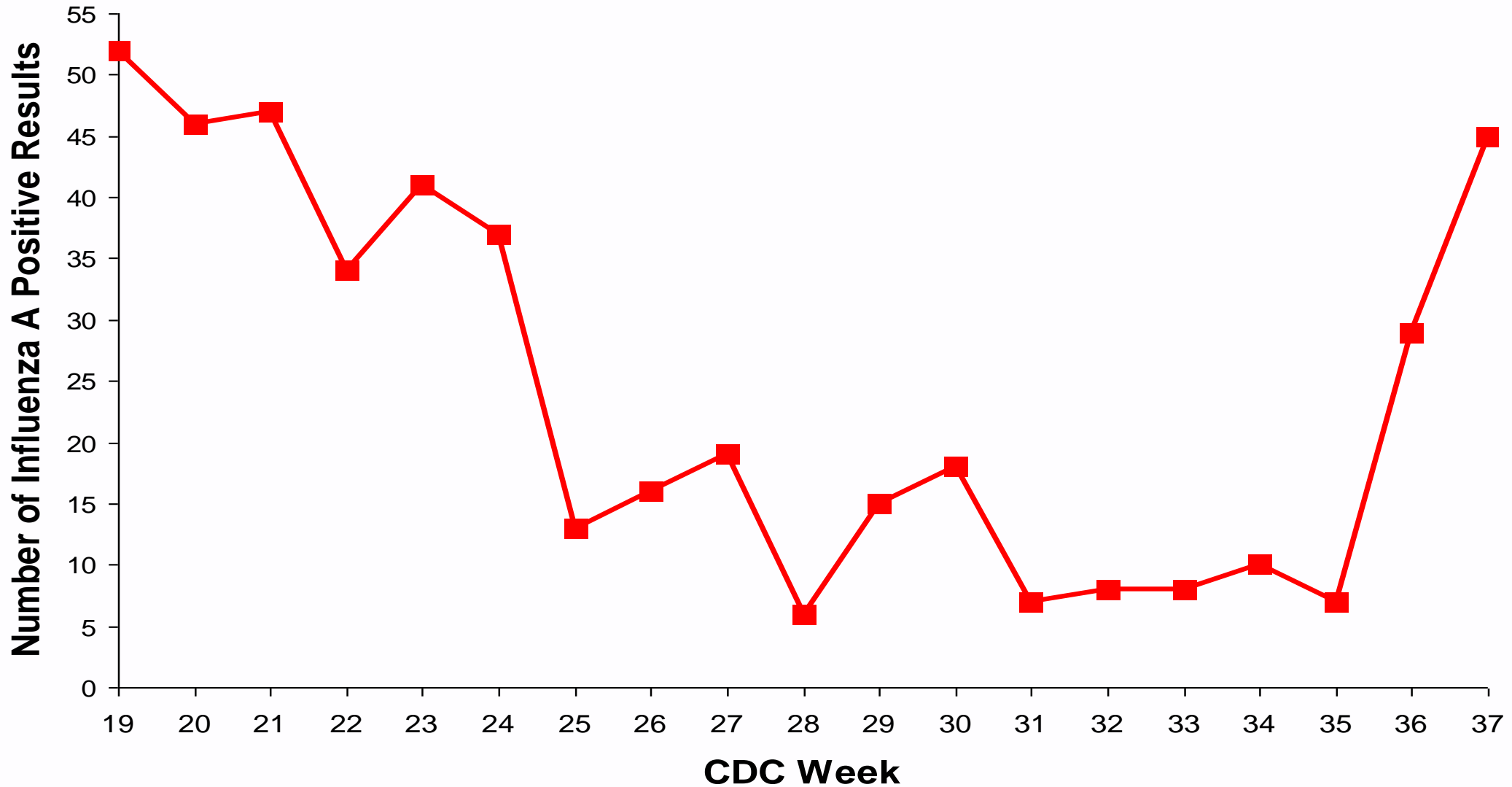


*This map indicates geographic spread and does not measure the severity of influenza activity.

Percent of Outpatient Visits for ILI by Week, Washington Sentinel Provider Network, 2008-2009

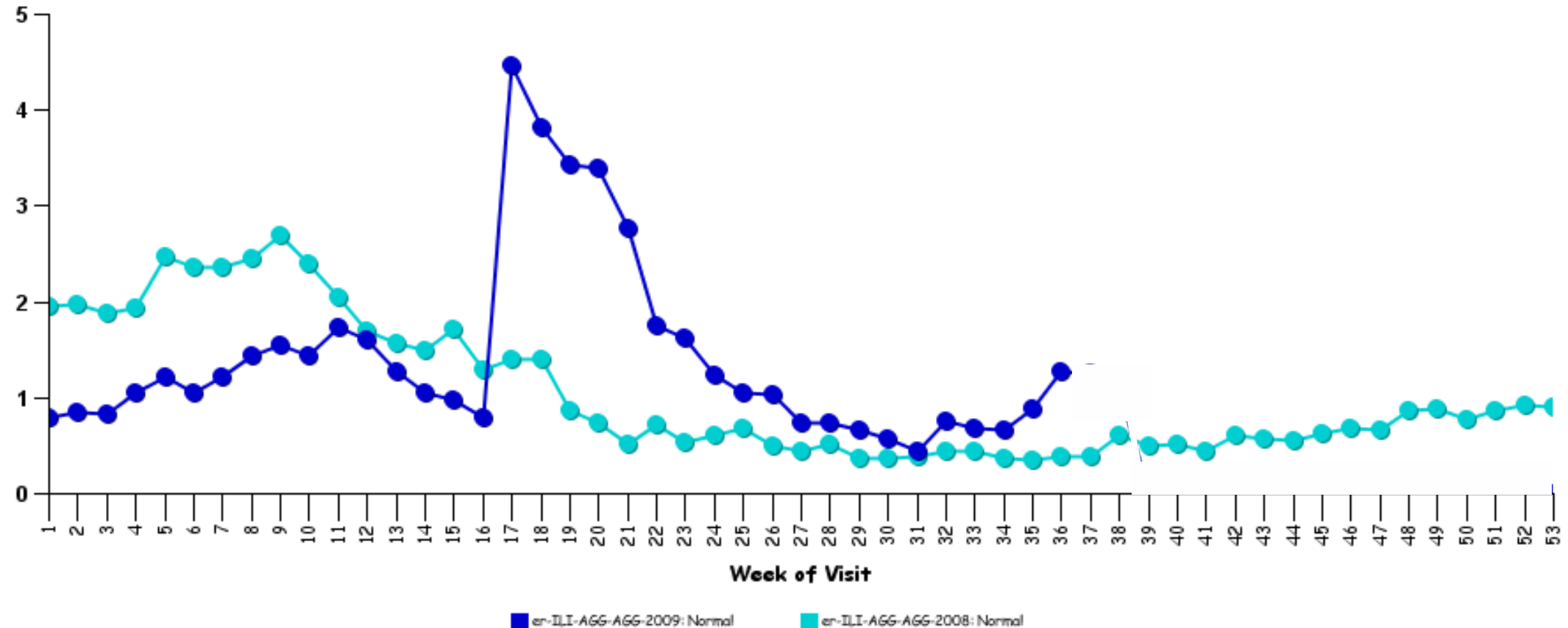


Number of Influenza A Positive Results by Week, Washington, 2009

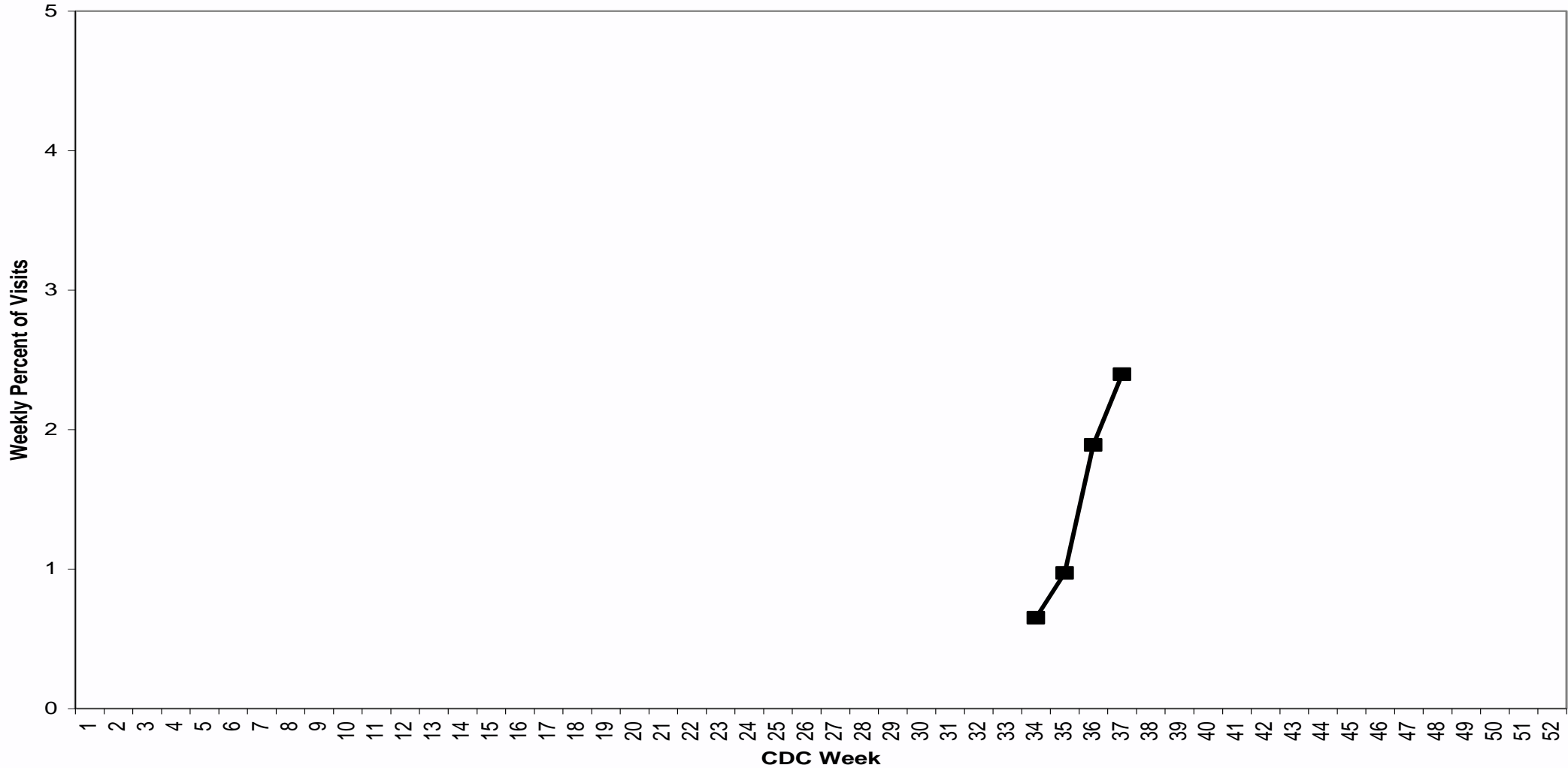


Percent ER Visits for ILI, Western Washington, 2009

Weekly Percentage of Visits



Proportion of ER Visits for ILI, Eastern Washington, 2009

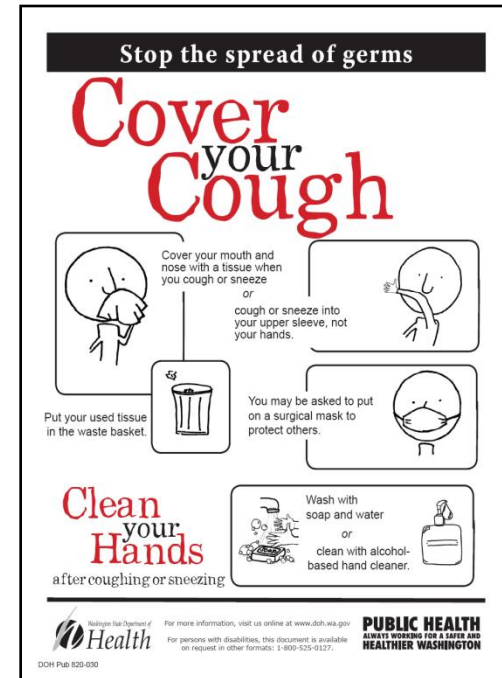


Predictions for Winter Flu Season 2009

- It started in September 2009
- Up to 50% of population may have 2009 H1N1
 - Younger age groups with higher rates of illness
 - Students, parents, workers will be affected
 - Potential impact on schools, businesses, hospitals, health care system
- Virus has not changed much
 - Vaccine will become available fall 2009
 - Antiviral medications will be effective

Controlling Influenza

- Goal: Save lives
 - Reduce cases
 - Reduce deaths
 - Sustain infrastructure
 - Minimize social disruption
 - Reduce economic impact
- Interventions: Individual behaviors, public health, social planning, medical treatment



Controlling Influenza: Individual Behaviors

- Stop spreading virus
 - Cover coughs & sneezes (“cough etiquette”)
 - Wash your hands
 - Don’t go to work or public events sick
 - Don’t send sick kids to school
- Get vaccine when available
- Plan for sick child care
- Plan for school/work closure



Controlling Influenza: Vaccine Distribution (Public Health)

- Seasonal vaccine - Anyone
- 2009 H1N1 influenza vaccine initially for:
 - Pregnant women
 - Care givers for infants aged <6 months
 - Health-care & emergency medical services
 - Ages 6 mos – 24 yrs (2.2 million in Washington)
 - Ages 25–64 yrs with underlying medical conditions



Controlling Influenza: Antiviral Drugs (Medical)

- Antiviral drugs (e.g., Tamiflu[®], Relenza[®])
 - Treat sick persons with severe influenza
 - Treat sick persons at high risk for complications
 - Give antiviral drugs to prevent infection in exposed people at high risk for complications
- Increase capacity of hospitals to support & treat ill persons

Controlling Influenza: Social Planning

- Social distancing
 - Stop large assemblies
 - New policies for mass transit
 - Quarantine
 - Flexible work schedules
 - Working from home (telecommute)
- Prepare for large-scale vaccine campaigns
- Prepare alternative care sites
- Plan for work or school closures resulting from high absenteeism



Personal Planning

- Stock emergency health care supplies & food
- Teach the family to cover coughs and wash hands
- Plan to stay home if ill with flu
- Vaccinate against seasonal and 2009 H1N1 flu



Business Planning

- Cross-train for critical jobs
 - Continuity of operations plans: staffing, suppliers
- Reduce spread of influenza
 - Develop flexible work schedules
 - Encourage use of sick leave
 - Promote cough etiquette, hand cleaning, environmental cleaning, and vaccination



School Planning

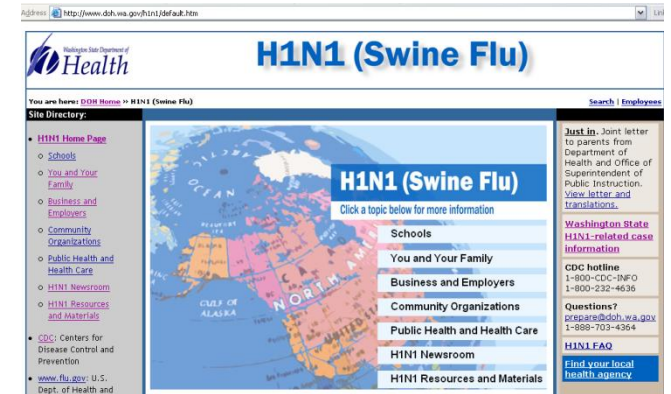
- Keep sick children home from school
- Provide time and supplies for hand cleaning
- Make sure high risk students who get sick know to contact their doctor ASAP
- DOH or LHJs may recommend more interventions if pandemic severity increases





Resources

<http://www.doh.wa.gov/h1n1/>



<http://www.cdc.gov/h1n1flu/>



PUBLIC HEALTH
ALWAYS WORKING FOR A SAFER AND
HEALTHIER WASHINGTON

PUBLIC HEALTH

**ALWAYS WORKING FOR A SAFER AND
HEALTHIER WASHINGTON**