

Future public health strategies for influenza

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National Influenza Vaccine Summit
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Outline

- Lessons learned from H1N1 programs
- Improved flu surveillance
- Old and new partners
- Approaches to special populations
- Coverage assessment
- Vaccine safety monitoring
- Vaccine effectiveness
- Implications of a universal recommendation



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Virologic Surveillance

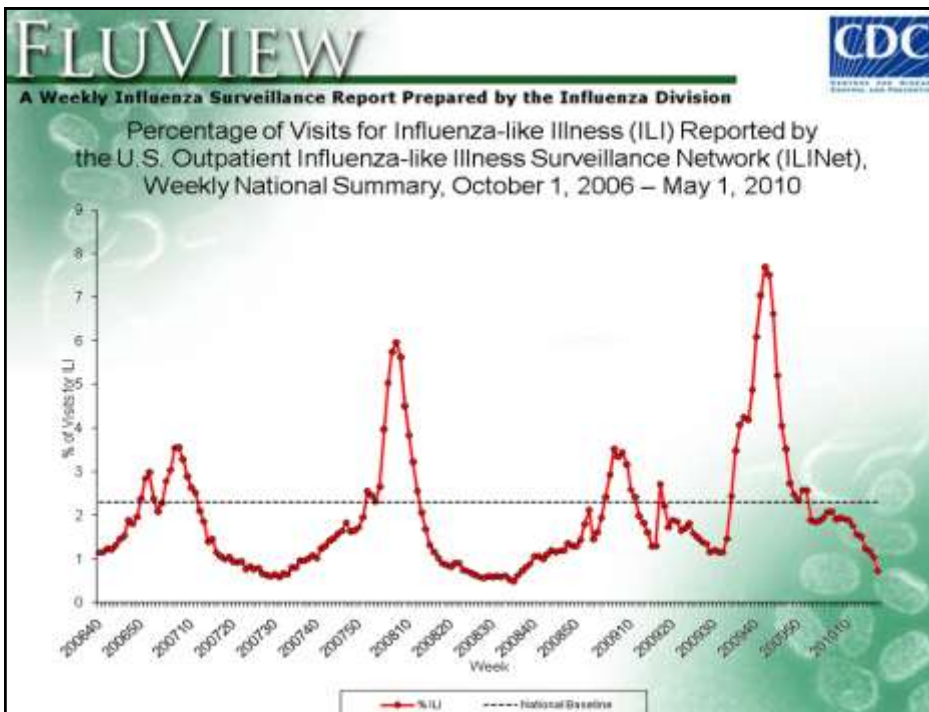
- Virologic surveillance is critical for directing vaccine strain selection and monitoring for viruses with pandemic potential
 - Increased support with reagents and TA to domestic and international labs
 - Increased antiviral resistance monitoring
 - Surveillance for reassortant viruses having genes from animal-origin viruses



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Communication about Surveillance

CDC Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

Flu Activity & Surveillance

Reports & Surveillance Methods in the United States

- Current United States Flu Activity Map
- Weekly U.S. Influenza Surveillance Report
- International Influenza Surveillance

Past Weekly Surveillance Reports

The most current information on 2009 H1N1 flu is available at <http://www.cdc.gov/h1n1flu/>.

Years	Report for the week ending
2009 - 2010	Current Weekly Influenza Report <input type="button" value="Go!"/>
2008 - 2009	Oct 3, 2009—Week 39 <input type="button" value="Go!"/>

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Surveillance plans

- Surveillance will need to be resourced at a level that is greater than pre-pandemic but less than pandemic level
 - Flexible capacity for vigilance and follow-up in place
 - Need to be prepared for early influenza season in 2010-11
 - Increased need for urgent contemporaneous analyses and visualization
 - Planning for fall internally and with partners



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Partners

- State and Local epi/surveillance, immunization, emergency preparedness, schools
- Medical specialists
 - Ob/gyn
 - Neurology
 - Others
- Retailers



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Special Populations

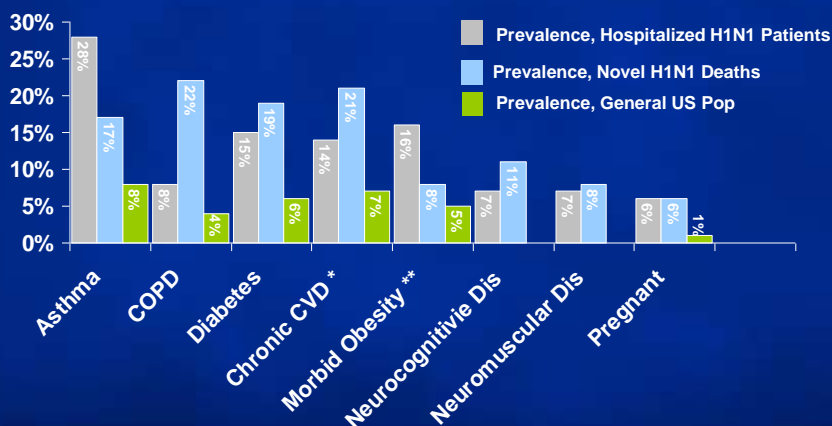
- Persons with medical indications
- School-aged children
- Pregnant women
- Health care workers
- Underserved populations



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Underlying conditions among hospitalized patients and those who died from H1N1 compared to the general population



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Special Populations and Venues for Vaccination

- **Persons with medical indications**
 - Retail establishments
 - Medical specialists
- **School-aged children**
 - School-located vaccination
- **Pregnant women**
 - Prenatal programs
- **Health care workers**
 - Workplace vaccination
- **Underserved populations**
 - Multiple venues



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School-aged children

- Some school-located vaccination occurred in most states during the H1N1 campaign
 - During school
 - Afternoon, evening, weekend clinics at school
 - Students transported to central sites

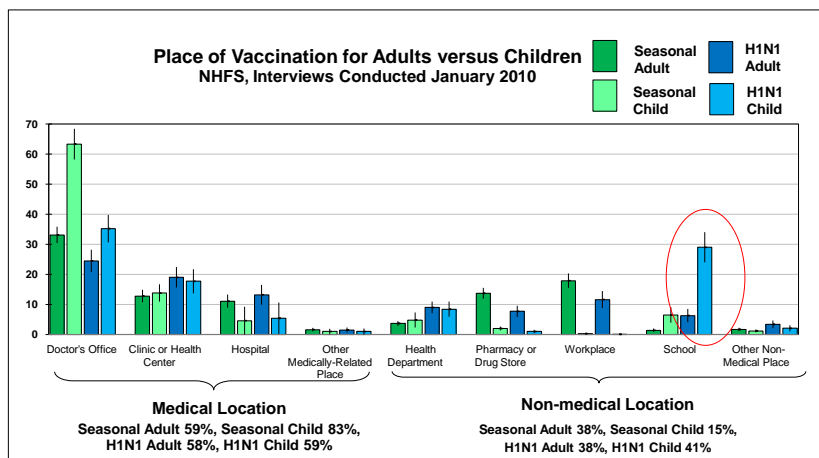


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NHFS – Place of Vaccination



School-aged children

- Some school-located vaccination occurred in most states during the H1N1 campaign
 - During school
 - Afternoon, evening, weekend clinics at school
 - Students transported to central sites
- Many immunization programs planning school-located vaccination for fall



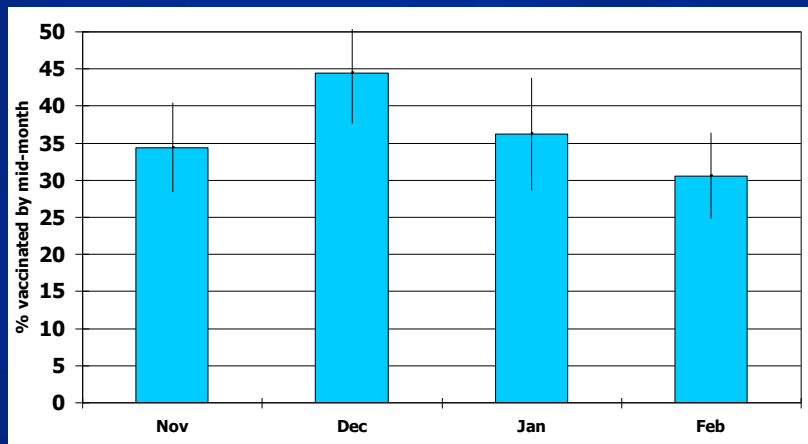
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Pregnant Women H1N1 Vaccination Coverage, BRFSS



Sample sizes were 218, 161, 136, and 185 currently pregnant women in Nov, Dec, Jan and Feb, respectively.
States not included: VT in Nov and Dec; AZ, CT, DC, RI, UT, VT in Jan; DC, VT in Feb.



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Pregnant Women

- Will continue to be a focus for communications efforts
 - Vaccine safety
 - Importance of early ILI treatment, low threshold for intervention
- New CDC working group
- Increasing OB and prenatal clinic vaccinators

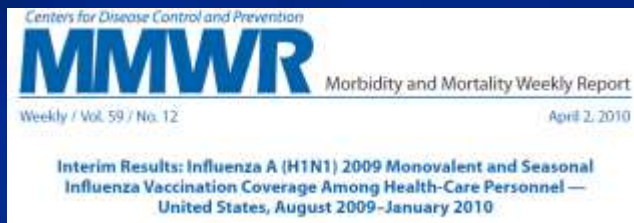


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- Estimated vaccine coverage among healthcare personnel:
 - Seasonal influenza: 62%
 - pH1N1: 37% (31% - 39%)
 - Either vaccine: 64%
 - Both vaccines: 35%



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Health Care Personnel

- Coverage varies greatly by job type among health care personnel
 - Targeting different professions
 - Employer recommendation/requirement
- Using/developing new methods to assess vaccination coverage



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Racial/Ethnic Disparities in H1N1 and Seasonal Vaccination Coverage by mid-March, NHFS, February 28 – March 27, 2010

	Difference in coverage rate, Black – White		Difference in coverage rate, Hispanic – White	
	H1N1	Seasonal	H1N1	Seasonal
Children	-4.2	-5.6	5.5	-2.6
Adults	-9.8*	-16.5*	-11.5*	-21.7*
All	-7.6*	-13.7*	-6.3*	-16.5*

* Coverage rate difference statistically significant, $p < 0.05$



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Underserved Populations

- Existing new and CDC partnerships with minority organizations
- Communications campaigns
- Universal vaccination recommendation



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New Analytic Approaches Improving Precision

Kaplan-Meier survival estimates –
Improving the “enhanced” approach



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Plans for 2010-2011 Season Influenza Vaccination Surveillance

- Adult coverage surveys: data monthly by state (BRFSS)
- Children:
 - National weekly estimates
 - State-level estimates in November-December
- “Snapshot” surveys in selected metro areas
 - Mid-season and March snapshots
 - Vaccination, opinions, behaviors
- Special population surveys, mid-season & March
 - Health care personnel
 - Pregnant women
- PRAMS, SDI, College Health Database



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Within-Season Uses of Influenza Vaccination Data

- At state level
 - Target communications for National Influenza Vaccination Week
 - Brief state government officials
 - Evaluate progress of state vaccination campaign
- At federal level
 - Brief CDC leadership and HHS on progress
 - Identify states doing well or lagging
 - Identify target populations for heightened communications
 - Provide a denominator for vaccine safety surveillance



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Vaccine Safety Monitoring

- Daily review of VAERS reports
 - Follow-up (obtain medical records) for:
 - All serious reports
 - All GBS
 - Generate weekly automated tables
- Collaborate with FDA
 - Signal detection and verification of signal
 - Datamining
 - Vaccine Safety Datalink
 - Share reports received by CDC



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Vaccine Safety Monitoring

- Real-time monitoring of specified health events in managed care
 - GBS
 - Demyelinating disease
 - Disorders of the peripheral nervous system, neuropathies
 - Seizures
 - Encephalitis, myelitis, encephalomyelitis
 - Bell's Palsy, Other cranial nerve disorders
 - Ataxia (other cerebellar ataxia, ataxia)
 - Anaphylaxis, allergic reaction
 - Myocarditis, pericarditis
 - Hemorrhagic and ischemic stroke
 - Wheezing, asthma, other diseases of trachea/bronchi, bronchiolitis
- New DoD-DMSS and VA electronic medical record monitoring, developed during pH1N1



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Vaccine Effectiveness (VE) Monitoring

- VE for prevention of RT-PCR confirmed medically attended influenza
 - Assessment conducted in 4 communities
 - Case-control: among persons seeking ARI care
 - Offers earliest estimate of VE
- VE for prevention of influenza hospitalizations
 - Diagnosed by provider-ordered clinically available tests in 10 Emerging Infections Program sites
 - Case-control evaluations



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Vaccine Effectiveness (VE) Monitoring

- VE among pregnant women
 - Few data in this high-risk population
 - Will begin in Sept 2010, managed care organizations
 - Will enroll 1 000 women with influenza; 2 control groups
 - Also to evaluate effects of maternal immunization on risk for influenza among infants during first 6 months of life
- VE in other populations of particular interest
 - Health care personnel
 - VE for prevention of life-threatening influenza (ICU admission) among children and young adults
- Overall goal: monitor VE annually for a common influenza outcome (i.e., health care visit) and periodic assessments of VE for severe outcomes



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Implementing a Universal Vaccination Recommendation

- Simple messaging
- Use surveillance and epidemiology to target programmatic efforts
- Monitor vaccine coverage
- Continue to target communications to highest risk populations
- Improving venue based vaccination
- Increasing child vaccination
- Measuring the impact



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Potential Legacies of Pandemic in United States

- Better diagnosis, increased levels of antiviral treatment and surveillance
- More community level vaccination including schools and retail establishments
- More obstetricians vaccinating
- Better links: health care, public health and local, state and federal partnerships



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Summary

- Lessons have been learned from H1N1 programs
- Improved flu surveillance
- Work with old and new partners
- Use new approaches to special populations
- Improved coverage assessment
- Enhanced vaccine safety monitoring
- Enhanced vaccine effectiveness monitoring
- Universal vaccination recommendation



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Thank you

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