Influenza Vaccine
What’s New and What’s Not So New?

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Vaccination is the top Public Health achievement of the 20th Century

MMWR 1999; 48:241
What’s new with Influenza vaccine this year?
Everybody Every Year Needs a Flu Shot!
Special Emphasis for:

- Pregnant women
- Household contacts of young infants
- Traditional high-risk populations
- Healthcare workers
Influenza
Control and Prevention

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2008-09
Percentage of respiratory specimens that tested positive for influenza

Status as of week 31
01–08 August 2010

Note: The available country data were joined in larger geographical areas with similar influenza transmission patterns to be able to give an overview (www.who.int/csr/disease/swineflu/transmission_zones/en/). The displayed data reflect reports of the stated week, or up to two weeks before if no data were available for the current week of that area.

Data used are from FluNet (www.who.int/influenza) regional WHO offices or ministry of health websites.

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.
This year’s influenza vaccine

- A/California/7/2009 (H1N1)-like virus
- A/Perth/16/2009 (H3N2)-like virus
- B/Brisbane/60/2008-like virus
What will happen with Influenza in 2010-2011?

- H1N1 influenza will be back
- Children and young adults are going to get sick with H1N1 influenza
- Pregnant women are going to get sick with H1N1 influenza
- Seniors will get sick with Influenza A (H3N2) and Influenza B
- Not enough people will get immunized to protect themselves from influenza

I Guarantee It!!
Epidemiology/Surveillance

Pandemic H1N1 Cases Rate per 100,000 Population by Age Group

As of 09 JULY 2009 (n=35,860*)

*Excludes 1,386 cases with missing ages.

Rate / 100,000 by Single Year Age Groups: Denominator source: 2008 Census Estimates, U.S. Census Bureau at:
How did we do with influenza vaccine last year?

- Over 100 million doses distributed (similar to usual seasonal vaccine distribution)
- Coverage rate for first priority group 27.9% (January 2010)
- Coverage rate for children
  - 1 dose 29.4% (33% for 6mo-4yrs of age)
  - 2 doses 17.8%
- Coverage rate for pregnant women 38%
- About half the population is still susceptible

MMWR 2010: 59 (early release), January 15, 2010
Does H1N1 Influenza Vaccine Cause Guillain-Barre Syndrome?
H1N1 Influenza Vaccine Safety

- Closely monitored by CDC and National Vaccine Program Office
- Multiple large population databases scoured for adverse events related to H1N1 vaccine
  - Vaccine Safety Datalink
  - VA Health System and Dept. of Defense
  - PRISM Health Plan/Immunization Registry link
  - HIS
  - Emerging Infections Program
- More than 10 million post-H1N1 vaccination lives under observation
H1N1 Influenza Vaccine Safety (May 2010)

- More than 100 million doses distributed
- No clear signal of any unexpected adverse events
- Possible signals for:
  - Guillain-Barre syndrome in 1 system (maximum risk 1 in a million recipients)
  - Bell’s palsy in 2 systems
  - Thrombocytopenia in 3 systems
- Occasional reports of allergic reactions, including anaphylaxis
Influenza Vaccine
How many doses do I give??

Kids under 10 years of age…whoops, under 9 years of age…. need one dose of influenza vaccine this year unless they only got one dose last year in which case they need two doses this year but not if they got one dose the year before that or the year before or the year before that…. 
2010 Influenza Vaccine Recommendations for Children <9 years

- Children under 9 years of age
- Start with seasonal history
- Then, review H1N1 history for 2009-2010
- Children ≥ 9 years of age only need one dose

<table>
<thead>
<tr>
<th>Previous seasonal doses</th>
<th>2009-10 H1N1 doses</th>
<th>Doses of 2010-2011 Vaccine</th>
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<tbody>
<tr>
<td>0</td>
<td>N/A</td>
<td>2</td>
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<tr>
<td>1 last year as first dose ever</td>
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<td>All other scenarios</td>
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<td>All other scenarios</td>
<td>1</td>
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Important Influenza Vaccine Products for 2010

- Afluria/CSL withdrawn from the market for infant dose because of febrile seizures
- Fluarix/GSK now licensed down to 3 years of age
- New adult flu vaccine (Agriflu/Novartis) available this fall
- New high-dose (60 mcg) senior vaccine available (Fluzone-High Dose/Sanofi)
New High-Dose Influenza vaccine

- Manufactured by sanofi pasteur (Fluzone High-Dose)
- Contains 60 mcg (4x as much) hemagglutinin antigen from each strain
- Licensed for adults ≥65 years of age
- Induces higher influenza antibody levels in seniors
- Increased local side effects compared to standard vaccine
- No preference for this product stated by CDC/ACIP
When should I start immunizing with flu vaccine?

- NOW
- NOW
- NOW
- NOW!
What’s not so new?
Do you and those who work with you get an influenza vaccine every year?
National HCW flu coverage rates

MMWR 2010;59(12):357-62
Rationale for Mandatory Influenza Immunization for Healthcare Workers

- There is precedent for requiring immunizations for employment in healthcare settings (measles, varicella, hepatitis B)
- Multiple studies implicate healthcare workers in the transmission of influenza to patients
- Maximum efforts over many years to reach the goal that >90% of HCW be immunized for influenza have failed
- People are infectious before they have symptoms so steps to avoid transmission come too late
BJC Healthcare/Washington University experience

- Large system with 11 acute care hospitals
- Mandated influenza vaccination and made it a condition of employment in 2008
- Medical and religious exemptions allowed
- In 2009 25,561/25,980 (98.4%) employees vaccinated
- 321 medical exemptions
- 90 religious exemptions

Babcock et al, Clin Infect Dis 2010; 50:459-64
Hospitals with Mandatory Influenza Policies

- Rady Children’s Hospital San Diego 2009
- Naval Medical Center San Diego (Civilians) 2009
- Virginia Mason Health System, 2004
- UC Davis Medical Center, 2009
- University of Iowa Medical Center, 2009
- BJC Healthcare/Washington University, St. Louis 2008
- U Penn/CHOP 2009
- All New York State Hospitals and long-term care facilities, 2009
Summary

- Influenza marches on-expect multiple strains of influenza virus to circulate in 2010-2011
- H1N1 influenza will be back
- Everyone needs a flu shot!
- New vaccine products available this year
- Start immunizing now!