

The presentation will begin shortly.
There will be no audio until then.



Influenza Update
2014-2015 Season



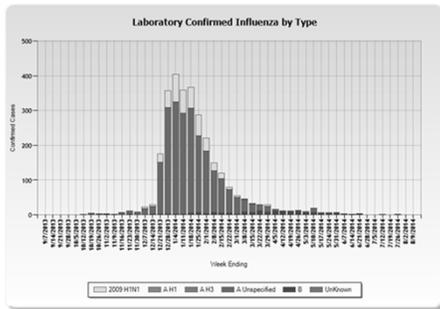
Influenza

- A respiratory disease; common symptoms include:
 - Fever $\geq 100^{\circ}$ F
 - Cough
 - Sore throat
 - Also body aches, chills, headache, fatigue
- NOT a gastrointestinal disease
 - GI symptoms (vomiting, diarrhea) *possible*, seen generally in children, but should be accompanied by other symptoms
 - Fever w/ nausea and vomiting is very likely NOT influenza

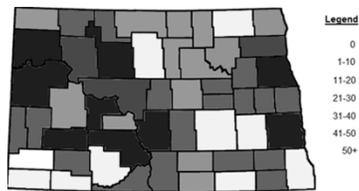
2013-2014 Seasonal Recap

- 2,922 cases since September 1, 2013
 - 452 2009 A H1N1
 - 4 A H3N2
 - 2,310 unsubtyped A
 - 156 B
- 149 hospitalizations, 8 deaths (3 < 60 years old)
- First 2009 A H1N1 year since the pandemic

2013-14 Seasonal Recap



2013-14 Seasonal Recap





H3N2 at the State Fair

- 3 pigs were noted to be sick at the North Dakota State Fair.
 - Sick pigs removed by owners
 - USDA lab confirmed influenza A H3N2
 - First confirmed H3N2 in pigs this summer
- No human cases have been confirmed.
- Flu happens in the summer, too—send specimens!



Surveillance

- Case reports: Lab-identified influenza A and B are reportable in North Dakota
- Sentinel sites:
 - Sentinel outpatient ILI reports
 - Lab reports
 - School Absenteeism reports
- Death data (Vital Records)
- Syndromic surveillance

Surveillance information is updated weekly on ndflu.com, and distributed in an email report.



Antiviral Recommendations

Used for treatment or prevention.

- Treatment: shorten duration of symptoms, possibly reduce risk of developing complications.
 - Recommended for patients who are hospitalized, have severe and/or progressive illness or who are at risk for influenza complications
 - Should be given as soon as possible after symptom onset, ideally within 48 hours
 - Should not wait for lab confirmation
- Prevention: prevent illness or severe illness in at-risk individuals
 - Should be given within 2 days of exposure
 - Routine use in general public not recommended—trying to avoid antiviral resistance.



Antiviral Recommendations

- Two antiviral medications are currently recommended for use in the United States:
 - Oseltamivir (Tamiflu) – oral medication
 - Treatment: any age*
 - Chemoprophylaxis: 3 months and older*
 - Zanamivir (Relenza) – inhaled medication
 - Treatment: 7 years and older
 - Chemoprophylaxis: 5 years and older
 - Contraindicated in patients with milk allergy
 - Not recommended in patients with underlying respiratory disease (asthma, COPD, etc.)

*Off-label recommendation supported by the CDC and the American Academy of Pediatrics



Antiviral Resistance 2013-14

- One ND case (10/2013) tested positive for a genetic mutation that could lead to antiviral resistance.
 - Resistance possible, not definite
 - Out-of-state travel
- Nationally, 1.2% of the 2009 A H1N1 specimens tested by the CDC were resistant to oseltamivir.
 - No oseltamivir resistance in A H3N2 or B strains
 - No zanamivir resistance in any samples tested



Available vaccines

- Injectable- IIV
 - Trivalent (IIV3)
 - Quadrivalent (IIV4)
- FluMist (LAIV4)
 - Only available in quadrivalent
- Recombinant (RIV3)
 - Only available in trivalent
 - Egg free
- Flucelvax (CCIIV3)
 - Only available in trivalent
 - Lower egg content

Vaccines Recommended For...

- Flu vaccine is recommended for all persons aged 6 months and older
- If flu supply is limited, efforts should be focused on people who:
 - Are ages 6 months-4 years
 - Are age 50 years and older
 - Have chronic pulmonary(including asthma), cardiovascular, renal, hepatic, neurologic, hematologic, or metabolic disorders(including diabetes)
 - Are immunosuppressed(including immunosuppression caused by medication or HIV)
 - Are or will be pregnant during the influenza season

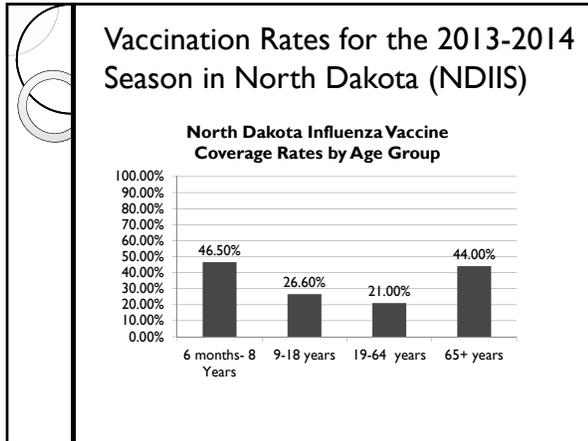
Vaccines Recommended For...(continued)

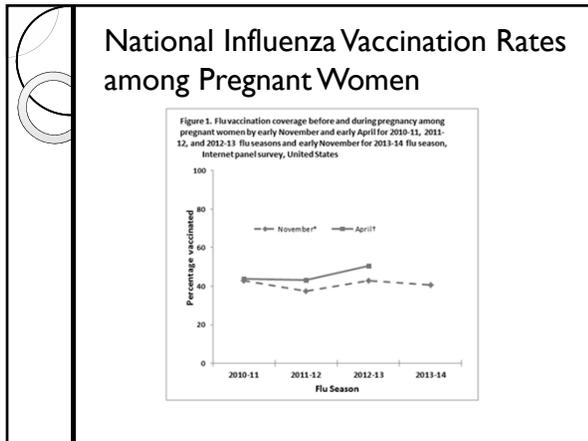
- Are ages 6 months through 18 years and receiving long-term aspirin therapy and who therefore might be at a risk for experiencing Reye syndrome after influenza virus infection
- Are residents of nursing homes and other chronic-care facilities
- Are American Indian or Alaska Natives
- Are morbidly obese (BMI is 40 or greater)
- Are healthcare personnel
- Are household contacts and caregivers of children ages younger than 5 years and adults ages 50 years and older with particular emphasis on vaccinating contacts of children aged younger than 6 months
- Are household contacts and caregivers of persons with medical conditions that put them at a higher risk for severe complications from influenza

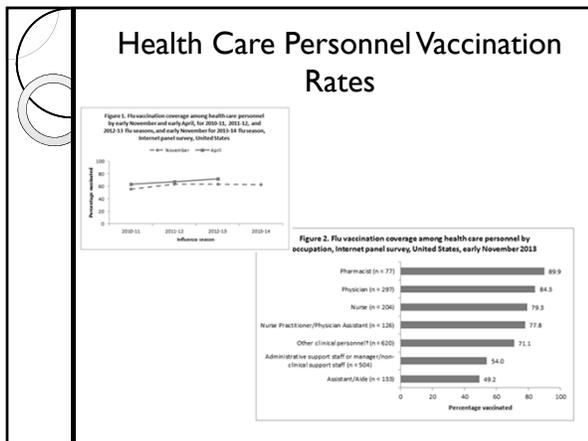
National Influenza Vaccination Rates

Figure 1. Early season and end of season flu vaccination coverage estimates, National Immunization Survey and National Internet Flu Survey, United States, 2012-13 and 2013-14 flu seasons

Group	Season	2012-13 (%)	2013-14 (%)
All persons	Early Season	36.5	39.5
	End of Season*	45.0	41.1
Children	Early Season	39.9	41.1
	End of Season*	56.6	41.5
Adults	Early Season	35.2	39.0
	End of Season*	41.5	41.5









Flu Vaccine and Healthcare Workers

- Influenza vaccination is recommended for all health care workers by the CDC (Centers for Disease Control), ACIP (Advisory Committee on Immunization Practices), and NFID (National Foundation for Infectious Diseases).
 - Many health care workers begin to spread influenza before they even realize they are sick or continue to work despite illness
 - Up to 50% of health care workers, infected with influenza, are either asymptomatic or only experience mild symptoms



Mandatory Flu Vaccination Policies

- CDC found that the national coverage rate of health care personnel was approximately 72% for the 2012-2013 influenza season.
 - For facilities requiring vaccination, the coverage rate was 96.5%
- Some facilities require flu vaccination as a condition of employment.
 - According to a survey done last year, flu vaccination is a requirement of employment at about 16% of North Dakota facilities.
 - These facilities have noticeably higher vaccination rates among staff.



Timing of Vaccination

- CDC recommends that flu vaccine should be administered as soon as it is available
 - Studies have shown declining antibodies after vaccination over a few months
 - However, declining antibodies have not been correlated with less protection
- If possible, flu vaccine should be offered by October



Flu Vaccine Storage and Handling

- IIV should be stored at 35°F-46°F (2°C-8°C) and should not be frozen. IIV that has been frozen should be discarded.
- LAIV is shipped at 35°F-46°F (2°C-8°C). LAIV should be stored at 35°F-46°F (2°C-8°C) on receipt and can remain at that temperature until the expiration date is reached.



This Season's Vaccine

- All of the 2014-2015 influenza vaccine is made to protect against the following three viruses:
 - an A/California/7/2009 (H1N1)pdm09-like virus
 - an A/Texas/50/2012 (H3N2)-like virus
 - a B/Massachusetts/2/2012-like virus
 - Quadrivalent vaccine protects against an additional B virus (B/Brisbane/60/2008-like virus).



What's New

- In June of 2014, the Advisory Committee on Immunization Practices (ACIP) voted to recommend preference for using LAIV instead of the flu shot for healthy children 2-8 years of age if it is immediately available.
 - Based on evidence that the nasal spray can provide better protection in this age group.
- If LAIV is not available, IIV should be given in order to avoid missed opportunities.



High Dose Influenza Vaccine

- A high dose influenza vaccine is available for individuals 65 and older.
- Contains a higher dose of antigen in order to give older adults a better immune response.
 - Data from clinical trials indicate higher antibody levels after receiving the high dose vaccine.
 - An ongoing study is examining if higher antibody levels result in a higher immune response.



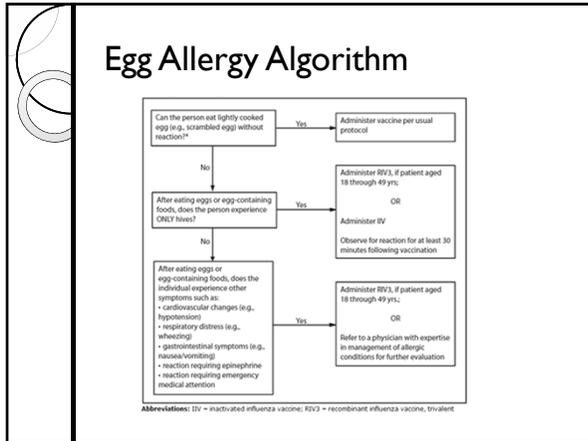
Live Vaccines and LAIV

- LAIV should not be given less than 28 days before or after another live vaccine.
 - Children entering or about to enter kindergarten maybe coming in at this time for kindergarten shots.
 - MMR
 - Varicella
- Patients should be asked if they have received any vaccines recently.
- Additionally, clinicians should take special care to check if a patient has received live flu vaccine before administering any live vaccines.
 - Use forecaster in NDIIS



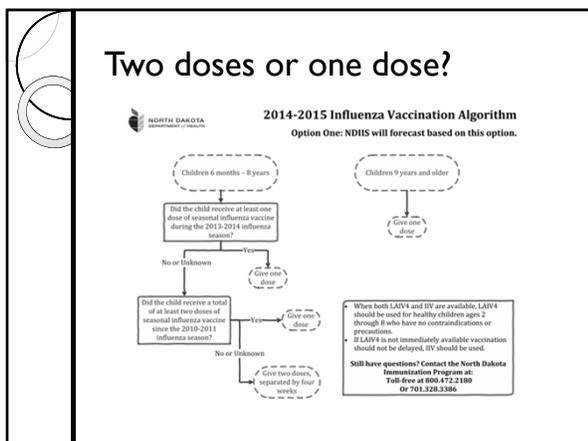
Intervals with Antivirals

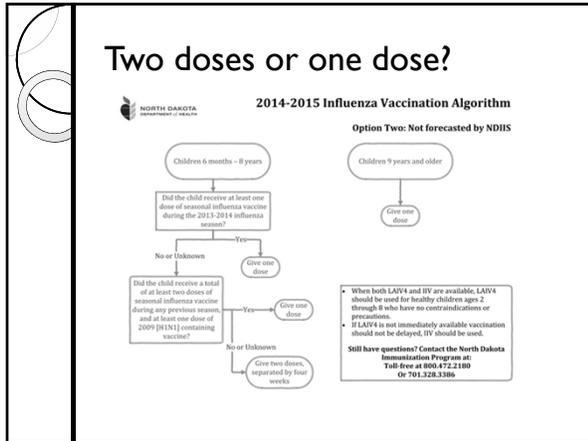
- LAIV should not be given to a person on antivirals until 48 hours after the last dose of their medication
- If antivirals are started within 2 weeks of receiving LAIV, the person should be revaccinated
- Inactivated vaccine (IIV) may be administered to a person on antivirals or anytime before or after antiviral treatment has been started



Two Dose Recommendation

- Some children between 6 months through 8 years are recommended to receive two doses of vaccine.
- Algorithm to determine how many doses are needed.
 - Two different methods
- Children who received a dose last year will only need one dose this year.





- ## Influenza Vaccine VIS
- Required to be given to patient before administering vaccine
 - 2 Influenza Vaccine VISs available
 - Live Flu VIS
 - Inactivated Flu VIS
 - Will be available on CDC website.

- ## Abbreviations
- IIV3: Trivalent Inactivated Injectable
 - IIV4: Quadrivalent Inactivated Injectable
 - LAIV4: Live Attenuated Nasal Spray
 - Available only in quadrivalent
 - RIV3: Recombinant Injectable
 - 100% egg free
 - CCIIV3: Cell Culture Inactivated Injectable
 - Low egg content



Vaccines Offered by the VFC program

- Fluzone (Sanofi Pasteur)
 - Available for several different age groups.
 - 6-35 months (quadrivalent only)
 - 6 months-18 years
 - 3-18 years
 - Available in both trivalent and quadrivalent.
- Fluarix (GSK); available for ages 36 months to 18 years.
 - Available only in quadrivalent.
- FluLaval (GSK); available for ages 36 months to 18 years.
 - Available in quadrivalent and trivalent.
- Fluvirin (Novartis); available for ages 4 to 18 years.
 - Available in trivalent only.
- Afluria (CSL); available for ages 9-18 years.
 - Available in trivalent only.
- FluMist (Medimmune); available for ages 2-18 years.
 - Available in quadrivalent only.



VFC Flu Vaccine Allocations

- Providers pre-book in the spring.
- North Dakota VFC program receives Flu vaccine in multiple shipments
- Flu vaccine is allocated by the VFC program to providers
- Amount providers receive in fall based on two things:
 - How much vaccine is given to the VFC program by CDC
 - How much vaccine was pre-booked by providers in February



High Risk People and LAIV

- Who should not receive flu mist?
 - Pregnant Women
 - People younger than 2 and older than 49
 - Immunosuppressed persons
 - Those in close contact with severely immunosuppressed persons (require a protective environment)
 - Persons with asthma and other chronic respiratory conditions
 - Anyone with an egg allergy



People Who Can Receive LAIV

- Breast feeding women
- Contacts of people who are immunocompromised but do not need to live in a protective environment.
- People with mild acute illness who do not have significant nasal congestion.



Administration Errors

- Giving FluMist® less than 28 days (not on the same day) before or after a live vaccine
 - The vaccine given second should be re-administered
- Administering the intradermal vaccine intramuscularly
 - This would be considered a valid dose but it is a serious administration error
- Administering FluMist® within less than 2 weeks of antivirals
 - If the person is vaccinated less than 2 weeks before or after starting antivirals, he/she must be revaccinated
- Vaccine leaks out while being injected
 - It is difficult to determine how much vaccine the person received so they must be revaccinated



Frequently Asked Influenza Questions

- When a child younger than 9, needs 2 doses of flu vaccine, can a dose of quadrivalent and a dose of trivalent be given?
 - Yes, as long as they are appropriately spaced.
- When a child younger than 9, needs 2 doses of flu vaccine, can a dose of live vaccine and a dose of inactivated vaccine be given?
 - Yes, as long as the child is eligible to receive LAIV and the doses are spaced appropriately.



Frequently Asked Influenza Questions

- **Why is high dose flu vaccine not recommended over regular injectable vaccine for individuals 65 and older?**
 - Data from clinical trials shows that antibody levels are higher for individuals 65 and older who received high dose over regular flu vaccine. However, whether the improved immune response leads to greater protection is not yet known. So, at this time one vaccine is not recommended over the other.



Frequently Asked Influenza Questions

- **Is it ok to administer two doses of standard dose flu vaccine if high dose is not available?**
 - No, this is not recommended.
- **Can a patient who is receiving treatment for cancer receive influenza vaccine?**
 - Yes, individuals with cancer can and should receive influenza vaccine. However, they should receive inactivated vaccine; live vaccine is not recommended for immunocompromised individuals.



Frequently Asked Influenza Questions

- **Can a woman who is breastfeeding receive LAIV?**
 - Yes, breastfeeding is not a contraindication.
- **If a child younger than 3 is inadvertently given adult influenza vaccine, can the dose be counted as valid?**
 - Yes, but it is important to realize that two errors occurred here. The child was given the wrong dosage as well as the wrong vaccine. It is important to select a vaccine that is licensed for the age of the child.

Entering Influenza Vaccine in NDIIS

- Flu vaccine must be entered into the registry within 4 weeks after administration.



Flu Kickoff and Media Campaign

- NDDoH flu kickoff will occur on September 22, 2014
 - Individuals will be vaccinated on television
 - Adolescent, parent and grandparent will receive vaccine.
 - Will take place at Custer Health(Mandan)
- Public Service announcements targeting pregnant mothers and children will also air during the months of October, November, December.
 - GoodHealth TV
 - Internet music streaming service

Other resources available

- NDDoH will provide resources to encourage flu vaccination
 - Brochures
 - Posters
 - Ndflu.com
- Several healthcare providers throughout the state will be providing school vaccination clinics.
 - Will vaccinate children in schools.



School Located Clinic Coalition

- Monthly calls before and during influenza season
- Discuss school influenza vaccination clinics
- Share ideas and strategies
- Gather data
- Interest in Participating?



Type your question in the chat window to the right

After the presentation, questions may be sent to:

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Immunization Program :
701.328.3386 or toll-free 800.472.2180



Post-test

- Post-test
 - Nurses interested in continuing education credit, visit www.ndhealth.gov/immunize/posttest/
 - Successfully complete the five-question post-test to receive your certificate
- Credit for this session available until Wednesday, August 27, 2014
- This presentation will be posted to our website: www.ndhealth.gov/immunize
