

Influenza Update 2003
Satellite Broadcast
December 19, 2003



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Topics

- **Status of influenza activity in the U.S.**
- **Update of vaccine supply**
- **Current vaccination recommendations**



Topics

- **Influenza laboratory and diagnostics**
- **Antiviral drugs**
- **Infection control**



Influenza Surveillance
Week ending December 13, 2003
Keiji Fukuda, MD



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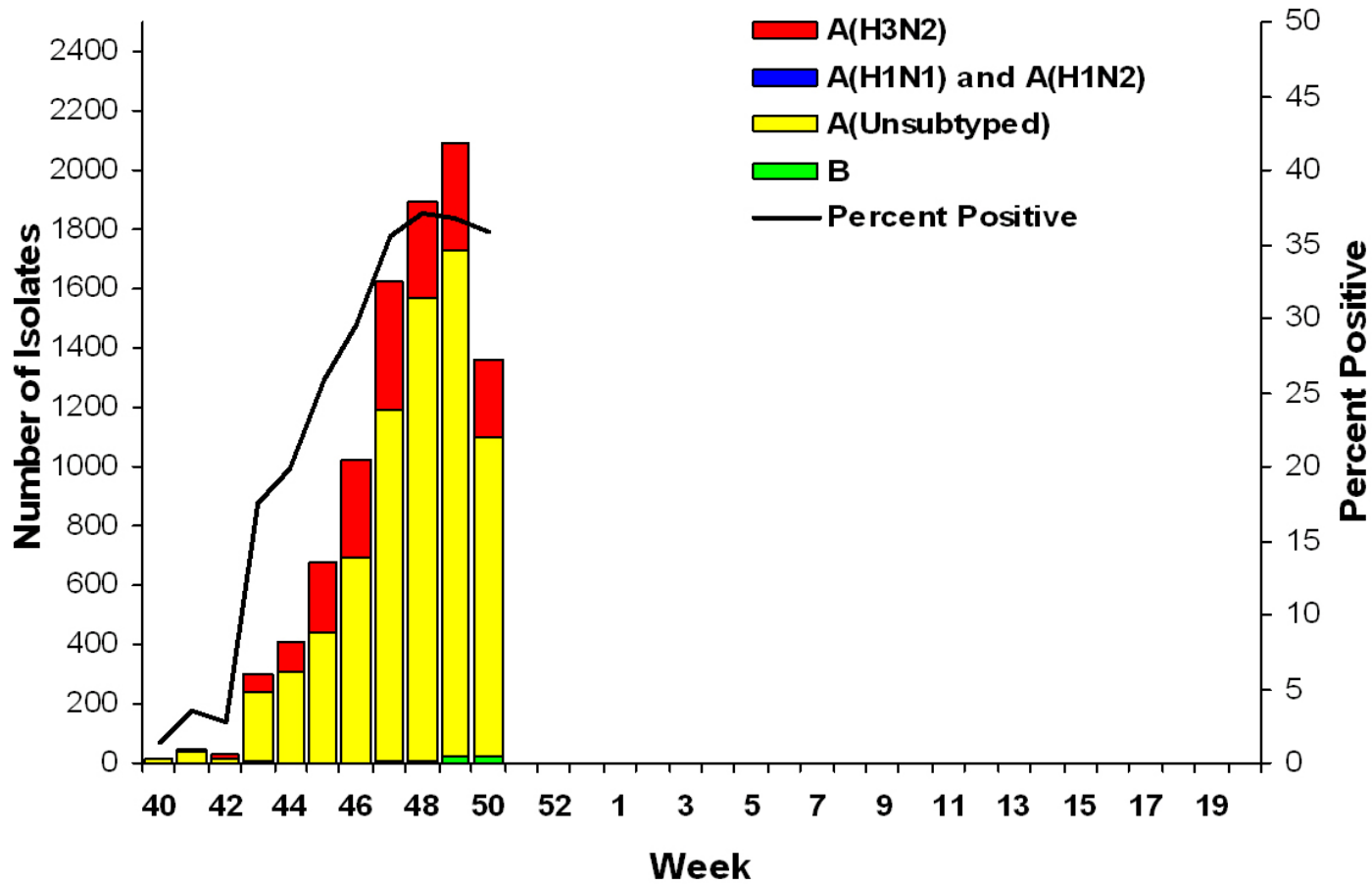


Influenza Surveillance in the United States

- **Laboratory characterization of viruses**
- **Influenza activity as assessed by State and Territorial Epidemiologists**
- **Influenza-like illness surveillance by sentinel providers**
- **Pneumonia and influenza mortality in 122 U.S. cities**



WHO/NREVSS Collaborating Laboratories National Summary, 2003-04



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Influenza Virus Surveillance Through December 13, 2003

- **> 99% of influenza viruses are type A**
- **> 99% of A viruses are H3N2 subtype**
 - **~ 23% A/Panama/2007/99**
 - **~ 77% A/Fujian/411/2002**



Influenza Vaccine Virus Selection

- **3 viruses (H3N2, H1N1 and B)**
- **A/Fujian H3N2 strain not included**
 - **Strains chosen by FDA in February**
 - **A/Fujian detected late**
 - **A/Fujian virus suitable for vaccine manufacture not available in time**



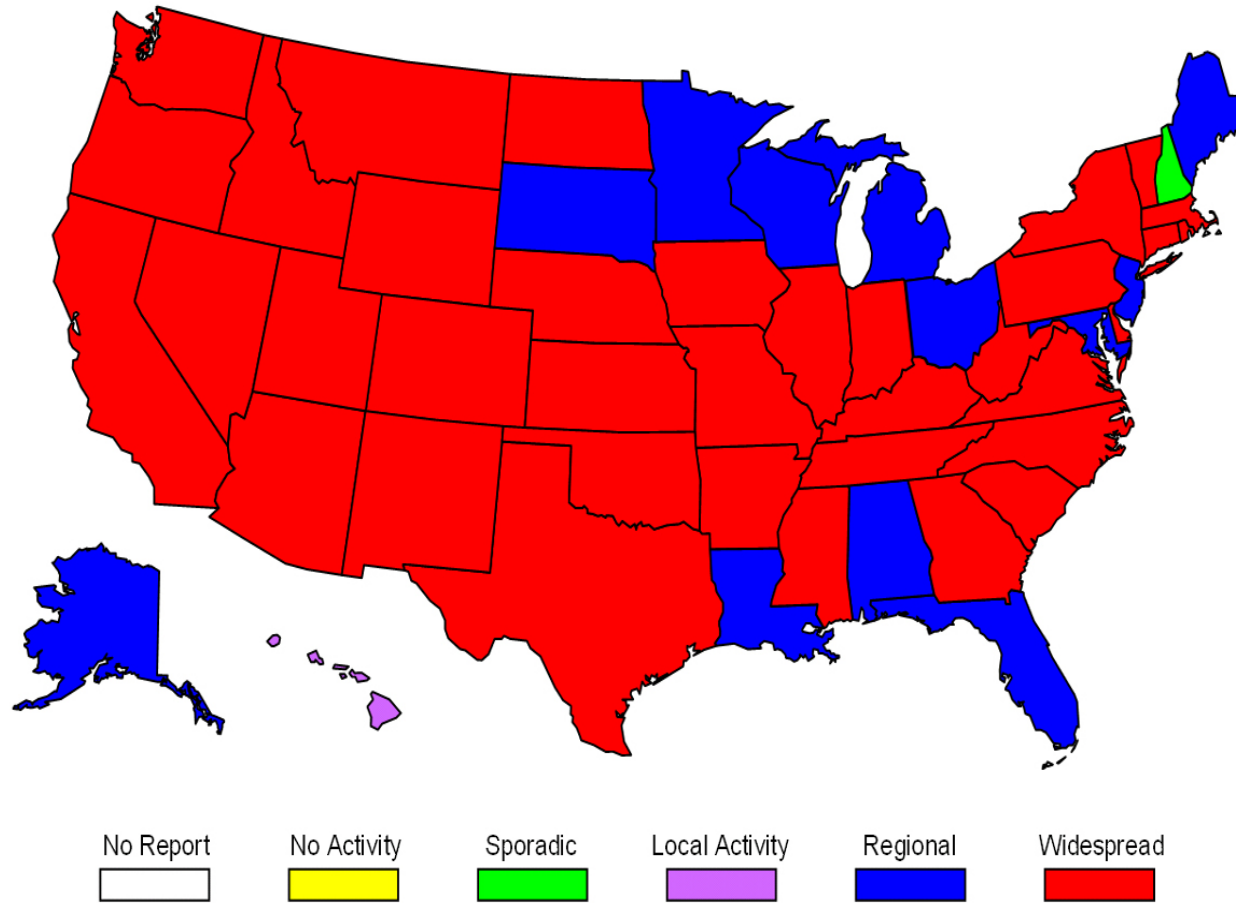
2003 Vaccine Effectiveness

- **A/Panama-like and A/Fujian-like viruses related but antigenically distinguishable**
- **Antibodies to Panama cross react with A/Fujian-like viruses**
 - **Some cross immunity expected**
- **Vaccine effectiveness needed to estimate protection**



Weekly Influenza Activity Estimates Reported by State & Territorial Epidemiologists

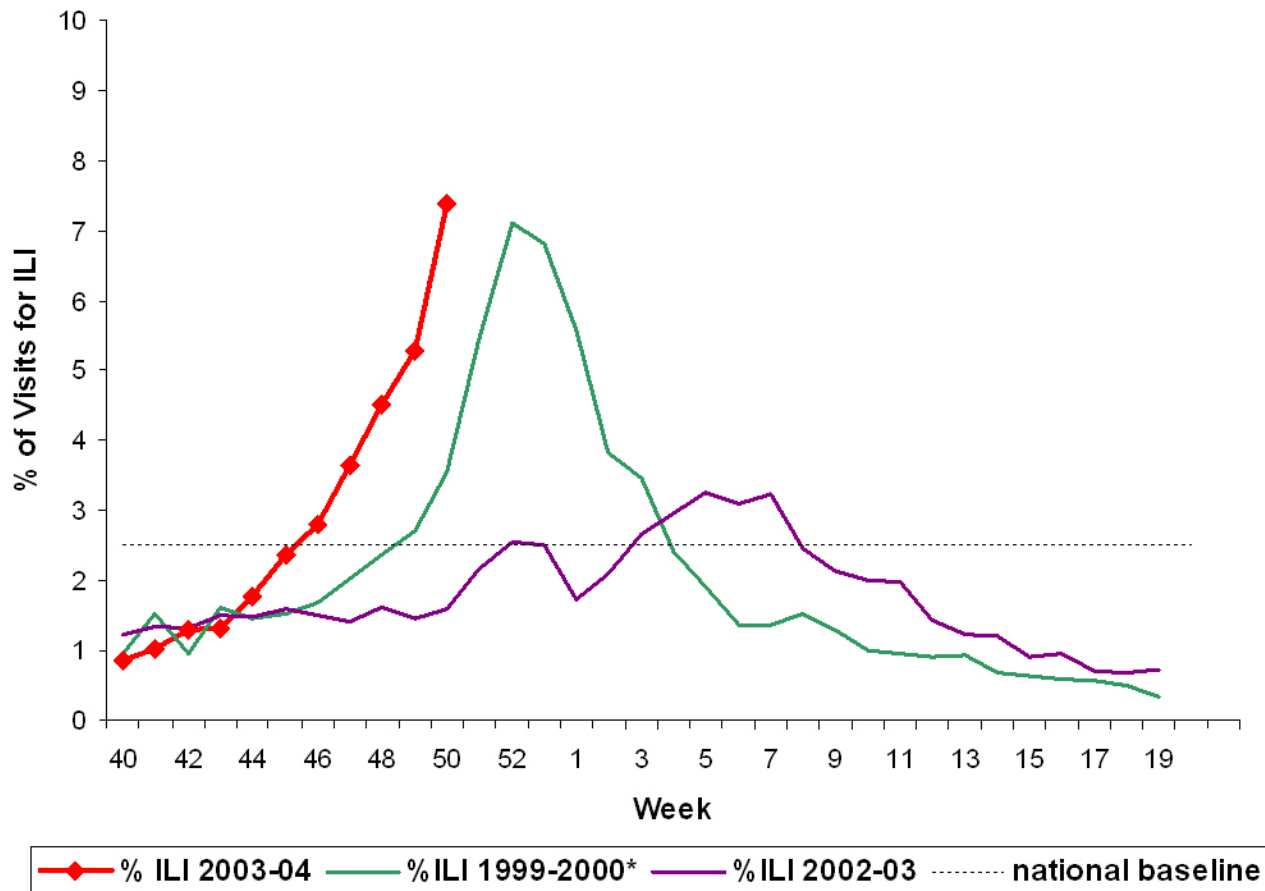
Week ending December 13, 2003 - Week 50



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Percentage of Visits for Influenza-like Illness Reported by Sentinel Providers National Summary, 2003-04

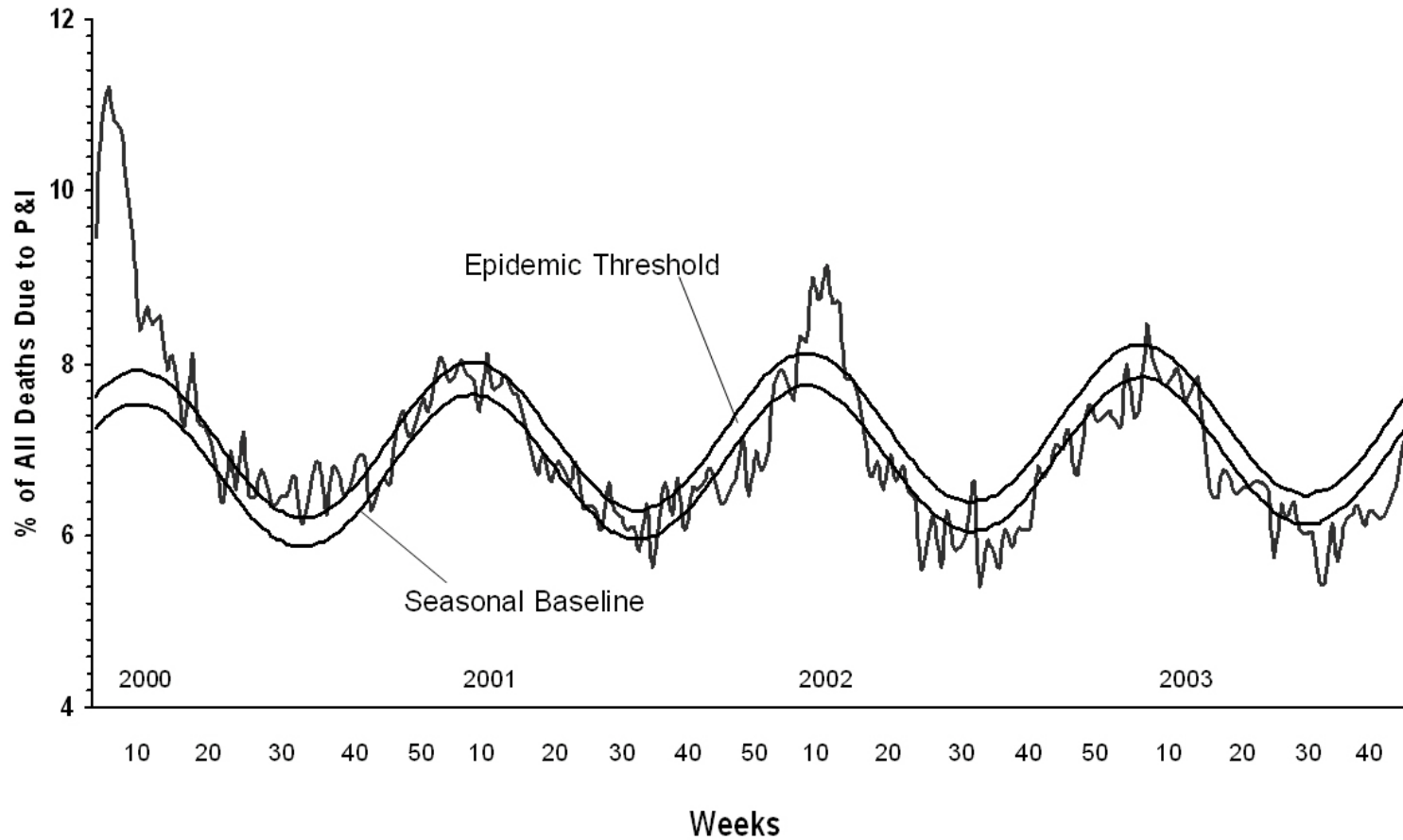


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Pneumonia and Influenza Mortality for 122 U.S. Cities

Week Ending 12/13/03



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Influenza-Associated Deaths in Children, Oct. – Dec., 2003

- 42 deaths children <18 years
- Mean age 6; Median age 4
- 20 male; 21 female
- Located in several states
- All with confirmed flu infections
- 17 (40%) underlying conditions
- 21 (50%) no known conditions
- Secondary bacterial infections
- Investigations underway



Influenza FAQ

- **Is this year's influenza season going to be more severe than previous years?**
 - **Virus activity widespread earlier than usual**
 - **H3N2-predominant years typically more severe**
 - **No evidence that A/Fujian is more virulent than other H3N2 viruses**



Influenza Vaccine Supply and Recommendations

Raymond Strikas, MD



Influenza Vaccine

- **Three companies produce influenza vaccine for the United States**
- **Two of these companies produce only inactivated injectable vaccine**
- **87 million doses of all influenza vaccines produced for the 2003-2004 season**



Additional Influenza Vaccine Supply

- **DHHS purchased 100,000 additional doses of adult Aventis Pasteur vaccine – being shipped now**
- **150,000 pediatric doses available in January**
- **375,000 adult Chiron/Evans vaccine available in mid-January**
- **Live attenuated vaccine available now for public health purchase through CDC contract**



Priorities for Inactivated Influenza Vaccine

- **First priority is persons at high risk for complications from influenza**
 - all children aged 6-23 months
 - adults aged ≥ 65 years
 - pregnant women in their second or third trimester during influenza season
 - persons aged ≥ 2 years with underlying chronic conditions



Priorities for Inactivated Influenza Vaccine

- All children at high risk, including those aged 6-23 months, who report for vaccination should be vaccinated with a first or second dose, depending on vaccination status
- Doses should not be held in reserve to ensure that two doses will be available



Priorities for Inactivated Influenza Vaccine

- **Next priority should be given to vaccinating those persons at greatest risk for transmission of disease to persons at high risk, including household contacts and healthcare workers**



LAIV Schedule

Age Group

Number of Doses

5 - 8 years, no
previous influenza
vaccine

2
(separated by
6-10 weeks)

5 - 8 years, previous
influenza vaccine *

1

9 - 49 years

1

* LAIV or inactivated vaccine



Persons Who Should Not Receive LAIV

- Children <5 years of age*
- Persons ≥ 50 years of age*
- Persons with asthma, reactive airways disease or other chronic pulmonary condition*
- Persons with cardiovascular disease*

*These persons should receive inactivated influenza vaccine

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Persons Who Should Not Receive LAIV

- **Persons with underlying medical conditions***
 - metabolic diseases (e.g. diabetes)
 - renal disease
 - hemoglobinopathy (e.g. sickle cell disease)
 - Children and adolescents receiving chronic salicylate therapy

*These persons should receive inactivated influenza vaccine



Persons Who Should Not Receive LAIV

- **Immunosuppression (e.g. HIV, immunosuppressive drugs)**
- **Pregnant women**
- **Severe allergy to egg or any other vaccine component**
- **History of Guillain-Barre syndrome**



Use of LAIV Among Close Contacts of High-risk Persons

- **Inactivated influenza vaccine is preferred for household members, healthcare workers, and others who have close contact with immunosuppressed individuals**
- **No preference for vaccination of healthy persons aged 5-49 years in close contact with all other high-risk groups**



Influenza FAQ

- **How much protection will one dose provide to children?**
 - **Antibody studies indicate that 1 dose produces antibody in some children**
 - **One dose might provide some protection for many children**
 - **No 1-dose efficacy studies**



Influenza FAQ

- **Can I use Evan/Chiron vaccine (Fluvirin) for children <4 years of age?**
 - **No**
 - **Neither ACIP nor FDA recommends or approves the use of Fluvirin in children <4 years**



Influenza FAQ

- **Can I double a pediatric dose of Aventis influenza vaccine and give it to a person who needs an adult dose?**
 - Yes
 - Should be given as 2 separate shots
 - **NEVER** attempt to transfer vaccine into another syringe



Influenza FAQ

- **Can I split an adult dose of Aventis influenza vaccine into two pediatric doses?**
 - **No - 0.5 mL doses must not be split**
 - **EXCEPTION: Drawing a 0.25 mL dose from a 10 dose vial is acceptable**
 - **NEVER attempt to transfer vaccine into another syringe**



Influenza FAQ

- **Can providers who have a contraindication to LAIV administer LAIV?**
 - Environmental contamination with live influenza vaccine virus is probably unavoidable
 - No data on the risk of infection with vaccine virus for the person administering the vaccine
 - Prudent that providers who have a contraindication to LAIV avoid administering the vaccine



Influenza Diagnostics

Keiji Fukuda, MD



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Influenza Vaccine

- **Viral culture**
- **PCR**
- **Immunofluorescence antibody tests (DFA, IFA)**
- **Rapid antigen detection tests**



Influenza Diagnostic Tests

- **Appropriate samples include nasopharyngeal or throat swab, nasal wash, or nasal aspirates**
- **Samples should be collected within the first 4 days of illness**



Influenza Diagnostic Tests

- **Rapid influenza tests provide results within 30 minutes**
- **Viral culture provides results in 3-10 days**



Influenza Diagnostic Serology

- **Acute sample within the first week of illness**
- **Convalescent sample 2 – 3 weeks later**
- **Infection diagnosed by >4 increase in convalescent sample**



Influenza FAQ

- **Can a recent influenza vaccination cause a false positive rapid diagnostic test?**
 - **Inactivated influenza vaccine will not cause a false positive rapid antigen detection test but could affect serology tests**
 - **A recent vaccination with LAIV could cause a false positive with rapid antigen detection and other tests**



Influenza Antiviral Drugs

Keiji Fukuda, MD



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Adamantane Derivatives

- Amantadine and rimantadine
- Orally administered
- Approved for treatment and chemoprophylaxis of influenza A
- Not effective against influenza B viruses



Adamantane Derivatives

- Amantadine
- Treatment of influenza A in persons ≥ 1 year of age
- Rimantadine
- Treatment of influenza A in persons ≥ 13 years of age
- Both drugs
- Prophylaxis to prevent influenza A in people ≥ 1 year of age



Zanamivir (Relenza®)

- Neuraminidase inhibitor
- Orally inhaled powdered drug
- Approved for treatment of influenza in persons ≥ 7 years
- Not approved for prophylaxis



Oseltamivir (Tamiflu®)

- Orally administered capsule or liquid suspension
- Approved for treatment of influenza in persons ≥ 1 year of age
- Approved for prophylaxis in persons ≥ 13 years of age



Use of Influenza Antiviral Drugs

- **Should be used:**
 - **Groups at increased risk of serious complications given priority**
 - **Treatment and prophylaxis of residents or patients and staff to control outbreaks within institutions**



Use of Influenza Antiviral Drugs

- **Should be considered:**
 - **Treatment of persons ≥ 1 year at high-risk of complications who have been ill for <48 hours**
 - **Prophylaxis of unvaccinated high-risk persons ≥ 1 year of age during community outbreaks**
 - **Prophylaxis of unvaccinated healthcare workers who have close contact with influenza-infected patients**



Use of Influenza Antiviral Drugs

- **Should be considered:**
 - **Treatment or prophylaxis of high-risk or healthy individuals in a variety of other settings**



Influenza Infection Control

L. Clifford McDonald, MD



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Influenza Transmission

- **Large respiratory droplets**
- **Requires close contact for spread**
- **Direct contact with visible secretions**
- **Limited data to suggest airborne route**



Recommended Isolation of Persons With Influenza

- **Standard precautions**
 - Careful attention to hand hygiene
 - Gown and/or gloves: anticipated contact with secretions
- **Droplet precautions**
 - Private room or place ill patients together
 - Use of a surgical mask within 3 feet of patient



Other Key Strategies to Prevent Influenza Transmission

- **Vaccinate healthcare workers**
- **Limit visitors with respiratory symptoms**
- **Restrict ill healthcare workers**
- **Develop a respiratory hygiene/cough etiquette policy**



Respiratory Hygiene/Cough Etiquette: Measures For Patients

- **Patients should be instructed via visual alerts and verbal instructions to:**
 - **Inform staff if they have symptoms of a respiratory infection**
 - **Cover nose and mouth when coughing or sneezing with tissues or a surgical mask**
 - **Perform hand hygiene frequently, especially after handling tissues**



Respiratory Hygiene/Cough Etiquette: Measures For Providers

- Offer masks to coughing persons
- Encourage coughing persons to sit ≥ 3 feet from others in common waiting areas, when possible
- Ensure adequate supply of tissues, masks, hand hygiene products and no-touch waste receptacles
- Droplet precautions when interacting with patients with respiratory symptoms



Healthcare Facility Outbreaks

- Cohort patients with confirmed or suspected influenza apart from asymptomatic patients
- Use droplet precautions
- Offer vaccine to unvaccinated staff and patients
- Restrict staff movement between units
- Prescribe antiviral prophylaxis



Unresolved Issues

- **Use of airborne isolation precautions**
 - **Airborne Infection Isolation (negative pressure) rooms may not add benefit**
 - **Current evidence is insufficient to make a recommendation**
 - **Other measures (hand hygiene, droplet precautions) of likely much greater importance**



Unresolved Issues

- **Use of live attenuated vaccine in healthcare workers**
 - **Inactivated vaccine preferred**
 - **Can vaccinated healthcare workers reasonably avoid contact with immunocompromised patients?**



Additional Influenza Information

- **Hotline.....(800) 232-2522**
- **Email.....nipinfo@cdc.gov**
- **Website.....www.cdc.gov/flu**

