



Gateway Immunization Coalition

“Lickety Split”

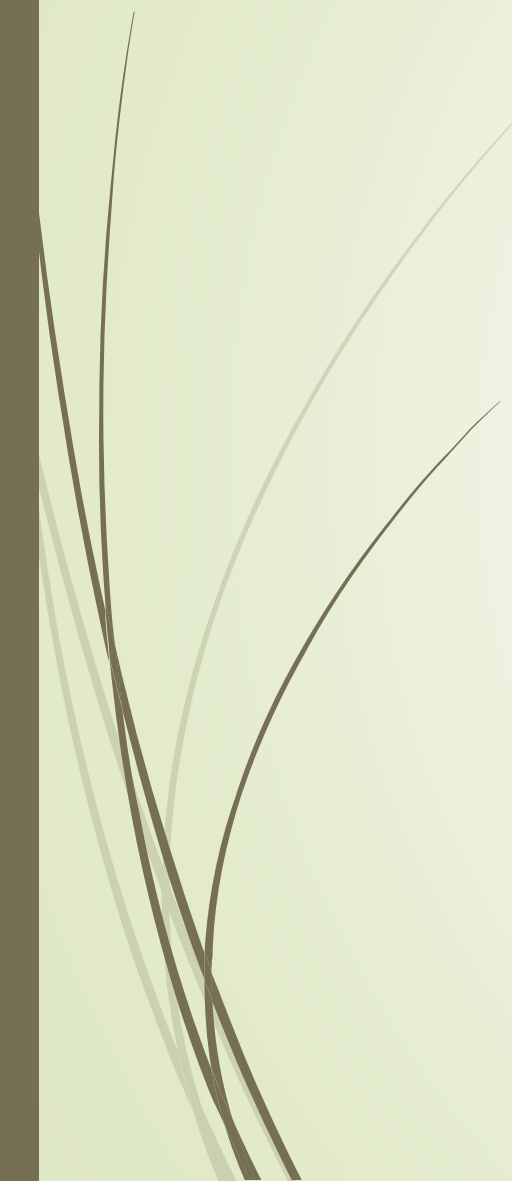
Update on Flu Vaccine

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Influenza/ Flu

- Highly infectious viral illness
 - First pandemic in 1580
 - At least 4 pandemics in 19th century
 - Estimated 21 million deaths worldwide in pandemic of 1918-1919
 - Virus first isolated in 1933
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2009 Influenza A (H1N1)

- April 2009, novel influenza A (H1N1) appeared; spread across North America
- Cause of the first influenza pandemic since 1968
- Ninety percent of hospitalizations and deaths occurred in persons younger than 65 years of age
- Pandemic monovalent influenza vaccine produced and deployed nationwide



Influenza Virus

- Single-stranded RNA virus
- Orthomyxoviridae family
- 3 types: A, B, C
- Subtypes of type A determined by hemagglutinin and neuraminidase



Influenza Virus Strains

Type A-moderate to severe illness

- all age groups
- humans and other animals

Type B-milder disease

- primarily affects children
- humans only

Type C-rarely reported in humans

- no epidemics



Influenza Pathogenesis

- Respiratory transmission of virus
- Replication in respiratory epithelium with subsequent destruction of cells
- Viremia rarely documented
- Virus shed in respiratory secretions for 5-10 days



Influenza Clinical Features

- Incubation period 2 days (range 1-4 days)
- 50% of infected persons develop classic symptoms
- Abrupt onset of fever, myalgia, sore throat, nonproductive cough, headache



Influenza Complications

- Pneumonia
 - Secondary bacterial
 - Primary influenza viral
- Reye syndrome
- Myocarditis
- Death is reported than less than 1 per 1,000 cases





Impact of Influenza - United States, 1976-2007

- ▶ The number of influenza-associated deaths varies substantially by year, influenza virus type and subtype, and age group
- ▶ Annual influenza-associated deaths ranged from 3,349 (1985-86 season) to 48,614 (2003-04 season), with an average of 23,607 annual deaths
- ▶ Persons 65 years of age and older account for approximately 90% of deaths
- ▶ 2.7 times more deaths occurred during seasons when A(H3N2) viruses were prominent



Impact of Influenza - United States

- ▶ Highest rates of complications and hospitalization among persons ≥ 65 , young children, and persons of any age with certain underlying medical conditions
 - ▶ Average of more than 200,000 influenza-related excess hospitalizations
 - ▶ 37% of hospitalizations among persons younger than 65 years of age
 - ▶ Greater number of hospitalizations during years that A(H3N2) is predominant
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Influenza Among School-Aged Children

School-aged children

- Typically have the highest attack rates during community outbreaks of influenza
- Serve as a major source of transmission of influenza within communities



Influenza Diagnosis

- Clinical and epidemiological characteristics
- Isolation of influenza virus from clinical specimen (e.g., throat, nasopharynx, sputum)
- Significant rise in influenza IgG by serologic assay



Influenza Epidemiology

- Reservoir
 - Human, animals (type A only)
- Transmission
 - Respiratory
 - probably airborne
- Temporal pattern
 - peak December - March in temperate climate
 - may occur earlier or later
- Communicability
 - 1 day before to 5 days after onset (adults)



Influenza Vaccines

Inactivated (IIV) – Given intramuscularly

Age requirements depend on brand

- Quadrivalent
- Cell-culture based quadrivalent
- Trivalent
 - Adjuvanted trivalent- age 65 and over
 - High-dose trivalent – age 65 and over
 - Recombinant trivalent – age 18 and over
- Quadrivalent intradermal – ages 18 through 64
- Live attenuated intranasal – not recommended this year



Inactivated Influenza Vaccine Efficacy

- About 60% effective among healthy persons younger than 65 years of age
- 50-60% effective in preventing hospitalization among elderly persons
- 80% effective in preventing death among elderly persons



Pregnancy and Inactivated Influenza Vaccine

- Risk of hospitalization 4 times higher than nonpregnant women
- Risk of complications comparable to nonpregnant women with high-risk medical conditions
- Vaccination (with IIV) recommended if pregnant during influenza season
- Vaccination can occur during any trimester



Inactivated Influenza Vaccine Contraindications and Precautions

- Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or following a prior dose of inactivated influenza
- Moderate or severe acute illness
- History of Guillian-Barré syndrome (GBS) within 6 weeks following a previous dose of influenza vaccine



Influenza Vaccine Adverse Events

IIV

- ▶ Local reactions – common
- ▶ Guillain-Barré syndrome – expected to be greater among persons with a history of GBS than among persons with no history of GBS

LAIV

- ▶ Nonspecific systemic symptoms – common



Inactivated Influenza Vaccine Adverse Reactions

- ▶ Local reactions (soreness, redness)
15%-20%
- ▶ Fever, malaise, myalgia
less than 1%
- ▶ Allergic reactions (hives, angioedema, anaphylaxis)
rare



Source:

- The pink Book-last updated on September 8,2015. Centers for Disease Control and Prevention. Retrieved from:
<http://www.cdc.gov/vaccines/pubs/pinkbook/flu.html>
- Prevention and Control of Seasonal Influenza with Vaccines Recommendations of the Advisory Committee on Immunization Practices – United States, 2016-2017 Influenza Season