Body System: Respiratory		
Session Topic: Influenza Update		
Educational Format		**Faculty Expertise Required**
REQUIRED	Interactive Lecture	Expertise in the field of study. Experience teaching in the field of study is desired. Preferred experience with audience response systems (ARS). Utilizing polling questions and engaging the learners in Q&A during the final 15 minutes of the session are required.
OPTIONAL	Problem-Based Learning (PBL)	Expertise teaching highly interactive, small group learning environments. Case-based, with experience developing and teaching case scenarios for simulation labs preferred. Other workshop-oriented designs may be accommodated. A typical PBL room is set for 50-100 participants, with 7-8 each per round table. Please describe your interest and plan for teaching a PBL on your proposal form.

Professional Practice Gap	**Learning Objective(s) that will close the gap and meet the need**	**Outcome Being Measured**
• Influenza vaccination rates are not optimal. • Knowledge gaps exist around providing effective counseling to patients who have safety/efficacy concerns regarding vaccinations. • Influenza vaccination schedules and recommendations are updates annually. • Knowledge gaps with regard to identifying patients for whom antiviral treatment is indicated and administer the appropriate treatment based on local patterns of influenza circulation in their communities. • Knowledge gaps with regard to when antiviral chemoprophylaxis is indicated in patients. • Knowledge gaps with regard to proper coding/billing of vaccine	1. Evaluate patients for whom seasonal influenza vaccination is recommended and determine which form of the vaccine is most appropriate. 2. Counsel patients on the importance of seasonal influenza vaccination, emphasizing motivational interviewing for patients with concerns regarding vaccination safety and efficacy. 3. Administer appropriate diagnostic tests for influenza when necessary. 4. Select appropriate antiviral therapy and/or chemoprophylaxis for influenza and administer when indicated.	Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.

administration. • New CDC guidelines on Use of RT-PCR and Other Molecular Assays for Diagnosis of Influenza Virus Infection		

ACGME Core Competencies Addressed (select all that apply)			
X	Medical Knowledge		Patient Care
X	Interpersonal and Communication Skills		Practice-Based Learning and Improvement
	Professionalism		Systems-Based Practice

Faculty Instructional Goals

Faculty play a vital role in assisting the AAFP to achieve its mission by providing high-quality, innovative education for physicians, residents and medical students that will encompass the art, science, evidence and socio-economics of family medicine and to support the pursuit of lifelong learning. By achieving the instructional goals provided, faculty will facilitate the application of new knowledge and skills gained by learners to practice, so that they may optimize care provided to their patients.

- Provide up to 3 evidence-based recommended practice changes that can be immediately implemented, at the conclusion of the session; including SORT taxonomy & reference citations
- Facilitate learner engagement during the session
- Address related practice barriers to foster optimal patient management
- Provide recommended journal resources and tools, during the session, from the American Family Physician (AFP), Family Practice Management (FPM), and Familydoctor.org patient resources; those listed in the References section below are a good place to start
  - Visit http://www.aafp.org/journals for additional resources
  - Visit http://familydoctor.org for patient education and resources
- Provide recommendations for evaluating patients for whom seasonal influenza vaccination is recommended and determine which form of the vaccine is most appropriate.
- Provide strategies and resources for counseling patients on the importance of seasonal influenza vaccination, emphasizing motivational interviewing for patients with concerns regarding vaccination safety and efficacy.
- Provide recommendations for administering appropriate diagnostic tests for influenza when necessary.
- Provide recommendations for use of antiviral therapy and/or chemoprophylaxis for influenza and when administration is/is not indicated.

Needs Assessment

Seasonal influenza is one of the most common contagious respiratory infections; it affects millions of patients of all ages. In 2011, 500 deaths occurred in the U.S. as a result of influenza infection.[1] As it is extremely unpredictable, influenza cases can range from mild to severe; the latter can cause serious complications in specific patient populations, such as young children, pregnant women, the elderly and those who have underlying health conditions (i.e., asthma,

diabetes and certain cardiovascular diseases). The most effective method of prevention is getting the seasonal flu vaccine, and although it does not prevent all strains of influenza, it is universally recommended by the Centers for Disease Control and Prevention (CDC)'s Advisory Committee on Immunization Practices (ACIP). However, vaccination rates remain below optimal levels. Currently only 45.3% of children 6 months to 17 years received an influenza vaccination during the past 12 months; only 27.2% of adults 18-49 years of age, 42.7% of adults 50-64 years of age, and 67% of adults 65 years and older have received an influenza vaccination during the past 12 months.[1] The AAFP recommends that physicians offer influenza vaccination as soon as it becomes available each year and continue to provide the vaccine throughout the flu season (i.e., as long as influenza viruses are circulating in the community).[2]

Data from a recent American Academy of Family Physicians CME Needs Assessment survey indicate that family physicians have statistically significant gaps in the medical knowledge necessary to optimally manage influenza, novel influenza, vaccinations, managing emerging infectious disease, and providing effective patient education regarding prevention of influenza.[3] More specifically, CME outcomes data from 2012 AAFP Assembly: *Influenza*, and 2014 AAFP Assembly: *Influenza Prevention and Management: 2014 Update* sessions suggest that physician have knowledge and practice gaps regarding current immunization schedule recommendations; counseling parents regarding the safety and efficacy of influenza vaccines; practice staff compliance with influenza vaccination requirements; protocols to ensure influenza vaccination of cardiac patients; and guidelines for the use of antiviral agents for the treatment and chemoprophylaxis of influenza.[4,5]

Physicians are encouraged to follow evidence-based recommendations for the management and prevention of influenza:

- **Prevention, Diagnosis, Chemoprophylaxis and Treatment[2,6-19]**
    - Follow AAFP / CDC Committee on Immunization Practices (ACIP) vaccination recommendations
    - Identify those patients who are at high risk for complications from influenza, and be prepared to strongly encourage that they receive vaccination. Examples of high risk patients are as follows:
        - Pregnant women
        - Children younger than age 5, with special attention to those younger than two years of age
        - Adults over the age of 65 and especially those who reside in nursing homes or long-term care facilities
        - People of any age who have chronic illnesses, including diabetes, asthma and chronic obstructive pulmonary disease (COPD); certain neurological disorders; cardiovascular disease; and certain blood, kidney, liver and metabolic disorders
        - People who have weakened immune systems due to underlying disease (i.e., HIV/AIDS) or medication (i.e., on chronic steroids)
        - People younger than 19 years of age who currently receive long-term aspirin therapy
        - People who are morbidly obese (with a body mass index >40)

        - Healthcare workers or household contacts of persons at high risk for complications from the flu
        - Household contacts and caregivers of children younger than 6 months of age
        - High-Dose Vaccine Reduces Clinical Influenza in Older Adults Compared with Standard Dose
        - Children six months to eight years of age will require two vaccine doses this season, unless they had at least one dose during the 2013–2014 season or two doses in a single season since July 2010, or have received two doses in a season with at least one H1N1-containing vaccine.
        - The preferred vaccine in children two through eight years of age, unless contraindicated, is the live attenuated influenza vaccine.
        - Trivalent recombinant influenza vaccine (non-egg based) is available for persons 18 through 49 years of age with a history of allergic reaction to eggs.
        - Treatment of children with oseltamivir will decrease symptom duration by approximately one day, but will not reduce hospitalizations and does not seem to be effective in children with asthma. In adults, symptom reduction is less striking (less than one day), and hospitalization will not be decreased. Vomiting in both groups is more likely with treatment.
- Recognize the signs and symptoms of complicated progressive influenza
    - Cardiovascular
        - Chest pain
        - Hypotension
    - Central nervous system
        - Altered mental status
        - Lethargy
        - Seizures
        - Severe weakness or paralysis
    - Respiratory
        - Cyanosis
        - Hemoptysis or colored sputum
        - Hypoxia (measured by pulse oximetry)
        - Labored breathing (on examination)
        - Shortness of breath (exertional or resting, as reported by the patient)
    - Other
        - Decreased urine output
        - Dehydration
        - Persistence or worsening of initial symptoms beyond 72 hours
        - Persistent high fever (longer than 72 hours)
- Be prepared to order diagnostic tests for influenza
    - Direct and indirect immunofluorescence assays (Antigen detection)
    - Rapid influenza diagnostic test (Antigen detection)
    - Real-time reverse transcriptase polymerase chain reaction tests (RNA detection)
    - Viral culture (Virus isolation and identification)

- Assess the indications and contraindications for influenza chemoprophylaxis and treatment
    - **Consider** antiviral chemoprophylaxis if close contact has occurred with an infected person during the infectious period
        - Health care workers
        - Persons at risk of complications from influenza
        - Pregnant women
    - Do **not** prescribe antiviral chemoprophylaxis
        - Healthy children and adults
        - Persons who had close contact with an infected person outside the infectious period
        - Persons whose last close contact with an infected person was more than 48 hours before presentation
    - Prescribe **antiviral** treatment
        - The decision to begin antiviral treatment should be based on the clinical diagnosis of influenza, not on test results.
        - Patients at risk of complications from influenza should begin antiviral treatment within 48 hours of symptom onset.
        - The choice of antiviral agent should be based on local patterns of virus activity and susceptibility.
        - Hospitalized patients with severe, complicated influenza-like illness or laboratory-confirmed influenza
        - Outpatients with influenza-like illness or laboratory-confirmed influenza who are at risk of complications
        - Outpatients with severe, complicated influenza-like illness or laboratory-confirmed influenza
    - Physicians should be provided an overview of recommendations for current FDA approved antiviral agents for influenza chemoprophylaxis and treatment
- Remain up to date on current, novel and emerging influenza strains

Prior to administering the selected vaccine, however, family physicians should be aware of possible contraindications, which include the following and are relevant to any influenza vaccine:[20]

- Severe allergy to chicken eggs (Note: Trivalent recombinant influenza vaccine (RIV3) is considered egg-free and may be given to persons aged 18 through 49 years who have no other contraindications.)[21]
- Severe reaction to prior influenza vaccination
- Development of Guillain-Barré syndrome within 6 weeks of prior influenza vaccination
- Age younger than 6 months
- Moderate-to-severe illness with a fever

Side effects of the flu shot include low-grade fever, aches and soreness, redness or swelling at the injection site. Side effects of the nasal spray in children include runny nose, wheezing, headache, vomiting, muscle aches and fever. Side effects in adults include runny nose, headache, sore throat and cough.[20]

Beginning in January 2015, the US Food and Drug Administration allowed use of the test in non-traditional laboratory sites, including physicians' offices, emergency rooms, health department clinics, and other healthcare facilities.[22] Rapid influenza diagnostic tests are available for use in the outpatient setting, but the ability of these tests to detect the flu varies. Influenza tests conducted by laboratories include viral culture, polymerase chain reaction, rapid antigen testing and immunofluorescence. The CDC recommends that tests be used to establish that flu is present in a patient population. Testing in individual patients should be reserved for people at high risk from serious influenza complications for whom diagnostic or therapeutic decisions could be life-saving.[11] Physicians should not wait for laboratory confirmation of influenza before beginning treatment; it is most effective when started within 48 hours of illness.

Physicians often lack training in motivational interviewing and other techniques to illicit behavioral changes in their patients, particularly when patients have misunderstanding about the safety and efficacy of vaccinations; therefore, family physicians should receive continuing education to assist them in providing effective consultation to patients.[23] Additionally, physicians often have practice-related barriers to optimal management of influenza, such as confusion about coding for flu shots and the potential for lost revenue, as well as concerns about getting an adequate vaccine supply.[24-26] Physicians should receive continuing education on appropriate coding and billing for influenza vaccinations, and information about CDC resources on influenza vaccine supplies.

Resources: Evidence-Based Practice Recommendations/Guidelines/Performance Measures

- AAFP Clinical Recommendations: Influenza[2]
- AAFP Immunization Schedules[19]
- CDC Preventing Seasonal Flu With Vaccination[6]
- Influenza vaccination of health care personnel working with older patients[8]
- Influenza in the nursing home[9]
- Vaccines for preventing influenza in older patients[10]
- Management of influenza[11]
- FDA Influenza (Flu) Antiviral Drugs and Related Information[12]
- CDC Seasonal Influenza: Treatment - Antiviral Drugs[13]
- Seasonal Influenza: Information for Health Professionals[14]
- AAFP Prevention and Control of Seasonal Influenza With Vaccines[21]
- CDC Weekly U.S. Influenza Surveillance Report[27]
- CDC Guidance for Clinicians on the Use of RT-PCR and Other Molecular Assays for Diagnosis of Influenza Virus Infection[28]
- AAFP Medicare Part B Vaccine Coverage[29]
- AAFP Coding for Vaccine Administration[30]
- Encouraging patients to change unhealthy behaviors with motivational interviewing[23]
- Coding flu shots: immunize against lost revenue[24]
- Documenting and coding preventive visits: a physicians' perspective[25]
- Vaccine administration: making the process more efficient in your practice[31]
- FamilyDoctor.org. Colds and the Flu | Overview (patient resource)[32]

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