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Improving Influenza Vaccination Rates in the HIV Population at an Academic Clinic

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Improving Influenza Vaccination Rates in the HIV Population at an Academic Clinic
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Introduction

Influenza-related illness is a significant cause of morbidity and mortality, especially in vulnerable patient populations. Patients infected with HIV (human immunodeficiency virus) similarly face increased rates of morbidity and mortality, paralleling those of patients aged 65 years and older. Studies conducted prior to the widespread use of HAART (highly active antiretroviral therapy) showed an increased risk of cardiac and pulmonary complications including bronchopneumonia and sepsis, in HIV-infected patients who contracted influenza. While reduced in number, such complications still arise in the post-HAART era1.  

- 2001: Multiple Cause-Of-Death data determined excess death rates due to pneumonia or influenza in HIV-infected patients were up to 150 times greater in HIV-infected patients than in age-matched healthy adults 2.  
- 2008: A meta-analysis determined the efficacy of influenza vaccination in preventing disease in HIV-infected patients and found a relative risk reduction between 41% and 66%3. 
- 2011: The HIV Outpatient Study (HOPS), conducted from 1999 to 2008, calculated that 25%-44% of HIV patients had been vaccinated against influenza. Most vaccinations occurred between October and November with a decline in vaccination rates in the subsequent months of influenza season4. 

This information prompted current Centers for Disease Control and Infections Diseases Society of America guidelines recommending yearly vaccination with inactivated influenza vaccine in HIV-infected patients2. At Thomas Jefferson University Hospital, HIV-infected patients are seen by the Jefferson Infectious Diseases clinic. Data from 2012 to 2014 demonstrates a vaccination rate of 50-55% in this population (Figure A).

2014-2015 Influenza Season
Interventions and Description of Work Flow:

- Physicians were reminded of CDC and IDSA guidelines at the beginning of the influenza season and encouraged to vaccinate patients. 
- A dedicated form regarding influenza vaccination status was created to be filled out by a Medical Assistant (MA) during each patient’s pre-visit check-in. This form was left in the patient’s chart for the physician to review prior to the visit to determine if a vaccine should be ordered. 
- Electronic documentation of each patient’s vaccination status was assigned to be completed by the MA at the end of each visit. 

Barriers to higher vaccination rates included inadequate documentation of vaccine status for patients who receive the influenza vaccine elsewhere and who did not have scheduled follow-up appointments between November 2014 and March 2015.

AIM

Performance measure: Percentage of HIV-infected patients with documentation of influenza vaccination in Allscripts 
Numerator: Number of HIV-infected patients who have obtained an influenza vaccine during influenza season 
Denominator: Total number of HIV-infected patients at the Jefferson Infectious Disease (ID) clinic 

Patient exclusions: Those who are allergic to eggs or have had allergic reactions to the influenza vaccine in the past 

Goal: “75% of HIV-infected patients at the Jefferson ID clinic will be vaccinated against influenza and documented in Allscripts during influenza season.”

References


Root Cause Analysis

Patient characteristics: 
- Lack of education on vaccine importance 
- Poor communication on need for vaccine 
- Refusal, inability to wait 
- Inaccurate contact information

Team 
- Limited time to address vaccination status and/or administer vaccine 
- Limited staffing to both administer vaccine and document delivery

Provider 
- Forgetting to ask about vaccination status 
- Forgetting to order vaccine 
- Forgetting to document vaccine delivery including outside administration

Work Environment 
- No formal reminder to ask vaccine status
- Annual visits outside of influenza season
- Lack of vaccine inventory
- Inaccurate contact information

Organizational 
- No formal reminder to ask vaccine status
- Annual visits outside of influenza season
- Lack of vaccine inventory
- Inaccurate contact information

Technology 
- No standard location on EMR to document vaccination
- No documentation of outside administration
- Use of both paper charts and EMR

Low Influenza Vaccination Rates

2015-2016 Influenza Season
Interventions and Description of Work Flow:

- All interventions implemented during the 2014-2015 influenza season were reemployed during the 2015-2016 influenza season. 
- Walk-in clinics were planned every Friday afternoon throughout influenza season at the Jefferson Infectious Diseases main office. 
- All patients were sent a letter encouraging them to call the office about their vaccination status and advertising the weekly walk-in clinics. 
- All patients who were not documented as having received the influenza vaccine by January 2016 were called to verify if they had received the influenza vaccine elsewhere and/or encourage vaccination in the remaining months of influenza season.

While walk-in clinics failed to vaccinate any additional individuals, patient outreach captured those who had received the influenza vaccine elsewhere and increased rates of documented vaccination this season by 14% (Figure B). Next season, Epic will be used to streamline both patient outreach and documentation efforts within the office as well as provide a means of accessing outside documentation of vaccination. Contacting patients who were unable to be reached, a large portion of those without documented vaccination by the season’s end, will remain a challenge (Figure C).