

6-10-2016

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

Anusha G. Govinda, MD

Department of Internal Medicine, Thomas Jefferson University Hospital, anusha.govinda@jefferson.edu

Anita Modi, MD

Department of Internal Medicine, Thomas Jefferson University Hospital, anita.modi@jefferson.edu

Emma Biegacki

Department of Infectious Diseases at Thomas Jefferson University Hospital, emma.biegacki@jefferson.edu

Bryan Hess, MD

*Department of Infectious Diseases at Thomas Jefferson University Hospital, bryan.hess@jefferson.edu*Follow this and additional works at: <http://jdc.jefferson.edu/patientsafetyposters>Part of the [Medicine and Health Sciences Commons](#)

Recommended Citation

Govinda, MD, Anusha G.; Modi, MD, Anita; Biegacki, Emma; and Hess, MD, Bryan, "Improving Influenza Vaccination Rates in the HIV Population at an Academic Clinic" (2016). *House Staff Quality Improvement and Patient Safety Posters*. Poster 9. <http://jdc.jefferson.edu/patientsafetyposters/9>

This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's [Center for Teaching and Learning \(CTL\)](#). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in House Staff Quality Improvement and Patient Safety Posters by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: JeffersonDigitalCommons@jefferson.edu.



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

Anusha Govind MD¹, Anita Modi MD¹, Emma Biegacki², Bryan Hess MD²

¹Department of Internal Medicine at Thomas Jefferson University Hospital

²Department of Infectious Diseases at Thomas Jefferson University Hospital

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 influenza².** While reduced in number, such complications still arise in the post-HAART era³.

- **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 adults³.
- **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%⁴.
- **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 season⁶.

This information prompted current Centers for Disease Control and Infectious Diseases Society of America guidelines recommending early vaccination with inactivated influenza vaccine in HIV-infected patients^{2, 7}.

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 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 patients 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

1. Dolin R. Perspectives on the role of immunization against influenza in HIV-infected patients. *Clinical Infectious Diseases*. 2011;52(1): 147-149.
2. Centers for Disease Control and Prevention. (2015). HIV/AIDS and the Flu. Retrieved April 20, 2015, from <http://www.cdc.gov/flu/protect/hiv-flu.htm>.
3. Lin J, Nichol K. Excess Mortality Due to Pneumonia or Influenza During Influenza Seasons Among Persons with Acquired Immunodeficiency Syndrome. *Archives of Internal Medicine*. 2001;161: 441-446.
4. Anema A, Mills E, Montaner J, et al. Efficacy of influenza vaccination in HIV-positive patients: a systematic review and meta-analysis. *HIV Medicine*. 2008; 9(1): 57-61.
5. Blair JM, Fagan JL, Frazier AL, et al. Behavioral and clinical characteristics of persons receiving medical care for HIV infection – Medical monitoring project, United States, 2009. *MMWR*. 2014;63(5):1-23.
6. Durham MD, Buchacz K, Armon C, et al. Rates and correlates of influenza vaccination among HIV-infected adults in the HIV Outpatient Study (HOPS), USA, 1999-2008. *Prev Med*. 2011;53(1-2):89-94.
7. Infectious Diseases Society of America. Guidelines for the Prevention and Treatment of Opportunistic Infections In HIV-Infected Adults and Adolescents. *AIDSinfo*. 2015; 1-282.

Root Cause Analysis

Patient characteristics

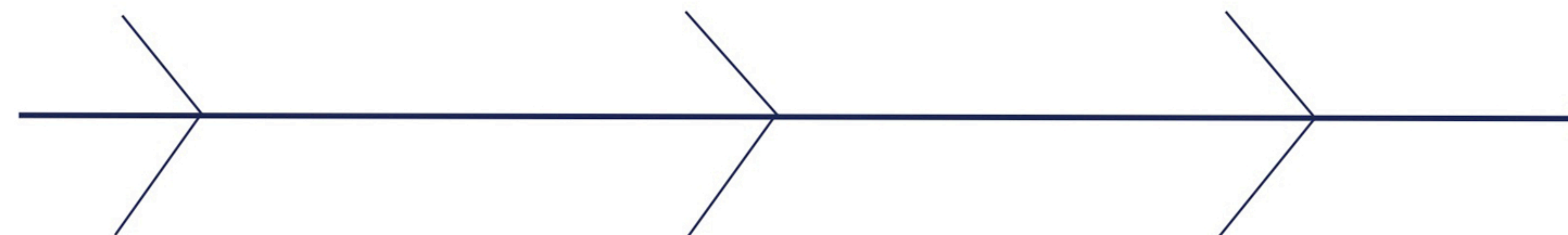
- Lack of education on vaccine importance
- Forgot previous receipt of vaccine
- Refusal, inability to wait
- Inaccurate contact information

Team

- Poor communication on need for vaccine
- Poor communication about vaccine status and delivery including office and outside administration

Provider

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



Work Environment

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

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).



Total Number of HIV Patients in ID Clinic		516
Patients with Documented Vaccination	421 (81%)	
Documented at Clinic Appointment	346 (67%)	
Documented via Patient Outreach	75 (14%)	

