

## Supplemental Digital Appendix 1

### BWH Department of Medicine Quality Program Outline and Specifications for Division Metric

**Division:** Division of Infectious Disease  
**Selected Metric:** Annual Influenza Vaccination of Patients with Human Immunodeficiency Virus (HIV)

#### Division Participants

xxx Clinical Director  
xxx Infectious Diseases Clinical Nurse  
xxx Division Administrator  
xxx Practice Manager

#### Goal

To increase the percentage of Brigham and Women's Infectious Disease (ID) Clinic patients with HIV who receive influenza vaccination during an influenza season.

#### Rationale

Patients with HIV are at greater risk from influenza-related complications, including an increased risk of hospitalization. To decrease influenza-associated morbidity and mortality, current Centers for Disease Control (CDC) guidelines recommend routine influenza vaccination of all HIV infected patients.

#### Measure

The percentage of ID Clinic patients with HIV that have a documented administration (or patient refusal) of influenza vaccination during an influenza season. Patients with evidence of allergy or prior reaction are excluded from this measure.

#### Primary Data Evaluation

1. The percentage of patients with HIV that have documented influenza vaccine administration at BWH
2. The percentage of patients with HIV that have a documented refusal of an influenza vaccine
3. The percentage of patients with HIV that have a documented administration of an influenza vaccine at a non-BWH site
4. The percentage of patients with HIV that have documented provider deferral on administration of influenza vaccine

#### Measurement Periods

- **Eligible Population:** A 24-month period prior to the selected date of measurement
- **Influenza Season:** From September 15 to March 31 of a selected influenza season (September 15 to March 31).

## DEFINITIONS

### Denominator

#### **Patients that Receive Care at the ID Clinic**

ID Clinic patients that receive their HIV care at the ID Clinic are defined as patients with a diagnosis of HIV and evidence of at least two ambulatory clinic visits to the ID Clinic in the most recent 24-month period regardless of whether or not they get their primary care at BWH, with at least one visit within the last 12 months.

#### **Infectious Disease Clinic Visit**

An ID Clinic visit is defined by an appropriate evaluation and management (E&M) service billed by ambulatory billing area of ID as recorded in IDX (a billing database). An E&M service is identified as any service billed with the following Common Procedural Terminology, version 4 (CPT-4) codes:

CPT-4 Code	Description
99201-99205	new patient visits
99211-99215	established patient visits
99241-99245	consultations

#### **Patients with HIV**

Patients with a billed E&M service that contains an International Classification of Diseases, 9<sup>th</sup> Revision Clinical Modification, 2008 (ICD-9) diagnostic code of 042 or V08, anywhere on the bill, are considered patients with HIV.

### Exclusions

Patients with evidence of allergy or prior reaction are excluded from this measure.

#### **Evidence of Patient Allergy or Previous Reaction**

- Longitudinal Medical Record (LMR, an EHR) Patient Chart: Summary: Health Maintenance: On the Influenza Vaccine row, the coded response is either “Possible allergy to vaccine” or “Previous reaction to vaccine.” The date does not have to be within any specific parameter.
- LMR Section: Patient Chart: Summary: Allergies (data fields include active and inactive allergens): Any active allergy to eggs or to the influenza vaccine. The date does not have to be within any specific parameter.

#### **Deceased Patients**

Patients who died before the beginning of the measured flu season will be excluded from the measure. Patients who died during the measured flu season will be included in the measure.

## **Numerator**

### **1. Evidence of Vaccine Administration**

- a) Documented Administration of Influenza Vaccine Administration at BWH
  - LMR Patient Chart: Summary: Immunization: On the Influenza Vaccine row, a dose date entry that occurs within the measured influenza season.
  - LMR Patient Chart: Summary: Health Maintenance: On the Influenza Vaccine row, the coded response is “Done” with a recorded dose date that occurs within the measured influenza season.
  - Electronic Medication Administration Record (eMAR): An Influenza Vaccine date entry in eMAR that occurs within the measured influenza season.
- b) Either of the following CPT or V code on any bill within the measured influenza season will constitute evidence of vaccine administration: V04.81 or 90471.

### **2. Evidence that Vaccination Was Declined**

- LMR Patient Chart: Summary: Immunization: On the Influenza Vaccine row, a dose date entry, followed by the letter “D” that occurs within the measured influenza season.
- LMR Patient Chart: Summary: Health Maintenance: On the Influenza Vaccine row, the coded response is “Patient declined” with a date that occurs within the measured influenza season.

### **3. Evidence of Vaccine Administration Elsewhere**

- LMR Patient Chart: Summary: Health Maintenance: On the Influenza Vaccine row, the coded response is “Done elsewhere” with a reported date that occurs within the measured influenza season.

### **4. Evidence of Provider Decision Not to Administer the Vaccine**

- LMR Patient Chart: Summary: Health Maintenance: On the Influenza Vaccine row, the coded responses “Provider deferred” or “Patient does not need vaccine” with a reported date that occurs within the measured influenza season.

## **Provider Assignments**

The assigned provider will be the one with whom the patient has had the most frequent visits. In those cases where the patient has seen multiple providers the same number of times, the assigned provider will be the one with the most recent visit.

## **Elements to Be Captured in Data Sample**

Staff in the Quality Data Management Group of Partners Information Systems will extract the clinical data for this metric from the Partners Health System (PHS) Quality Data Warehouse, a SQL database optimized for aggregate queries of information. The database regularly receives scheduled downloads from specific sections of the LMR as well as laboratory results from the Central Data Repository (CDR).

Billing data will be extracted information recorded in IDX, the Department’s application for the billing of physician services provided to patients at BWH.

Data Element	Data Source
Medical Record Number	Physician Online Reporting (POLR)
Date of Service	POLR
Provider Name	POLR
PCP Name	LMR
Clinic Name	POLR
LMR Patient Summary: Immunizations/Influenza Vaccine (Vaccine Doses Administered)	LMR
LMR Patient Chart: Health Maintenance/Influenza Vaccine	LMR
Data fields:	
<ul style="list-style-type: none"> <li>• Influenza vaccine date</li> <li>• Results</li> <li>• Comments</li> <li>• All coded reasons for not administering vaccine</li> </ul>	
Allergies	LMR
Influenza vaccine given during hospital admission	Electronic Medication Administration Record (eMAR)