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Documenting the Missed Opportunity Period for Influenza Vaccination in Office-based Settings

Joel Greenspan*[1] and Silvia Valkova[2]

[1]Martin, Blanck & Associates, Atlanta, GA, USA; [2]IMS Health Government Solutions, Fairfax, VA, USA

Objective

This paper describes the results of formative research to develop a new metric for public health officials to use in near-real-time tracking of the weekly participation of office-based providers in community influenza vaccination campaigns.

Introduction

Missed opportunities for influenza vaccination in office-based settings occur when patients (who are inclined to accept influenza vaccination if a provider recommends it) remain unvaccinated after a fall/winter healthcare visit. Healthcare providers can be very influential in encouraging patients to obtain influenza vaccination, but little is known in real-time during annual campaigns of how many and what type of providers are actually giving vaccinations in office settings. Many factors affect the ultimate population coverage including taking advantage of opportunities to vaccinate during medical visits. This suggests that provider vaccination behavior, if leveraged, could result in higher rates of influenza vaccine coverage. "Big" healthcare data in the form of high volume streams of electronic healthcare reimbursement claims (eHRCs) can potentially be used to track influenza vaccine administration practices in office-based settings in near real-time, thus empowering public health officials to provide this feedback to practitioners and potentially modify behaviors.

Methods

We used eHRC data from the IMS Health integrated data warehouse (IDW) for 85+ million patients visiting office-based practices for any reason between July 2006-June 2010 in the State Georgia and its Core Based Statistical Areas. Data were aggregated by age group and provider specialty for each geographic area. We identified all Current Procedural Terminology (CPT) codes used in eHRCs indicating that seasonal influenza vaccine was administered during a healthcare visit. Using these data we calculated on a weekly basis the number and % of primary care providers (PCPs) (FP/GP, IM, PED) who vaccinated any patients with influenza vaccine (%MDVAX). To examine timeliness and reliability of these measures, for any given week of service we observed the cumulative % of claims arriving at the IDW daily from the end of a service week through 28 days of claims accumulation. We compared the %MDVAX metric from partially accumulated claims at the end of weekly 7-day service periods with comparable metrics after 28 days of claims accumulation.

Results

During the study period there were ~6354 active patient-care PCPs in GA office–based practices that could submit eHRCs. We were able to document a weekly average of 4030 unique GA PCPs (a 63% sample) whose claims could be evaluated for influenza vaccine administration (or any other procedure or condition). We determined that for any Sunday through Saturday service week, 58% of FP/GPs, 62% of internists, and 64% of pediatricians submitted some eHRCs that were in the IDW by the end of the service week. %MDVAX calculated from these early submitters had an R^2 = >0.99 compared with %MDVAX calculated 28 days after the end of the service period for all three PCP groups. Annually, in non-pandemic years, office-based PCPs begin to administer seasonal influenza vaccine starting in weeks 32-37. Peak weeks for %MDVAX range from week 42 to 49. Pediatricians have the highest %MDVAX at peak and sustain high %MDVAX longer than other PCPs. In non-pandemic years there was a large missed opportunity window of 14-18 weeks between peak %MDVAX and peak %ILI among GA PCPs that occurred during the winter holidays and early new year.

Conclusions

We propose a novel metric that provides a near-real-time estimate of % of providers who are administering influenza vaccines in office-based settings. We welcome feedback from the public health community on how this metric can be used to encourage more influenza vaccinations each year, especially before influenza becomes widespread in communities.

Keywords

Infuenza vaccination; healthcare claims; ILI

*Joel Greenspan
E-mail: greenspan@comcast.net