

Flu Alert: Influenza Vaccine Alerts for Providers in the Electronic Health Record

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Organization:	Columbia University
Mechanism:	PAR: HS08-270: Utilizing Health Information Technology to Improve Health Care Quality Grant (R18)
Grant Number:	R18 HS 018158
Project Period:	August 2009 – July 2012
AHRQ Funding Amount:	\$1,198,851
Summary Status as of:	December 2010

Target Population: Low SES/Low Income*, Medicaid, Pediatric*, Racial or Ethnic Minorities*: Latinos

Summary: The Advisory Committee on Immunization Practices recommends that all children age 6 months and older receive the influenza vaccine. Despite this recommendation, vaccine delivery rates at pediatric clinics are low, even when the vaccine is available. This project aims to tailor, implement, and evaluate influenza vaccine alerts in an electronic health record (EHR) for pediatric providers serving minority, low-income populations at four community health centers.

Each of the four study sites is affiliated with the New York-Presbyterian Hospital Ambulatory Care Network (ACN) and Columbia University and is located in a federally-designated Health Professional Shortage Area. All providers in the study are part of the same General Pediatric Group Practice and receive uniform influenza vaccine-related provider education. In 2008, the practices had a volume of nearly 64,000 visits by approximately 22,000 children, 87 percent of whom were covered by Medicaid and the majority of whom were Latino. The Vaccine for Children Program provides the majority of vaccines given at the practices. All four study sites use the Certification Commission for Health Information Technology-certified product Eclipsys Ambulatory Care Manager EHR and the New York Presbyterian Hospital Immunization Registry, EzVAC.

In Year 1, focus groups; individual interviews; and surveys of health care providers, nurses, and parents were conducted to elicit information for customizing the content, format, and features of the electronic alerts (FluAlert). The alerts were iteratively refined and piloted among beta users based on end-user feedback. In Year 2, the alerts began pilot testing within the four pediatric ACN community health centers of New York-Presbyterian Hospital using a cluster cross-over design. In Year 3, the alerts will be further assessed. Throughout the study period, process indicators will be tracked to follow the implementation of the system, and feedback with clinical sites will be regularly exchanged. At the end of the project, user satisfaction will be assessed through surveys. Cost will be measured by comparing alert costs with published vaccine effectiveness and cost data for influenza-associated hospitalizations, outpatient visits, and impact on parent productivity.

Specific Aims:

- Integrate tailored provider influenza vaccine alerts into the EHRs of urban pediatric community health centers. **(Achieved)**

- Evaluate the impact of tailored provider influenza alerts on pediatric influenza vaccine delivery rates. **(Ongoing)**
- Evaluate the impact of tailored provider influenza alerts on pediatric influenza coverage rates. **(Ongoing)**

2010 Activities: The development of the FluAlert application and its integration into the EHR was completed this year. The FluAlert reminder functions with Eclipsys to retrieve immunization information from the EzVAC immunization registry, which is synchronized with New York City’s Department of Health Citywide Immunization Registry. This ensures that the alert is based on the most recent patient-specific influenza vaccine information. Additionally, FluAlert’s graphical user interface (GUI) was designed, evaluated, and revised to reflect feedback from the provider supervisory panel. The GUI alerts the provider to the patient’s influenza immunization status and allows the provider to order an influenza vaccine or document why the vaccine was not given. The alert also allows providers to access important clinical information, such as allergies and immunization history.

Following development of the FluAlert application, the research team met with physicians and nurses to present and improve FluAlert. In response to the information collected from these meetings, the research team added some non-core functions, including print buttons and visual effects. The team also improved upon non-functional aspects of FluAlert, such as performance time, security, and usability.

An end-to-end data transfer mechanism between FluAlert and Eclipsys was also developed. This data transfer mechanism allows FluAlert to pass information back to Eclipsys, where it is automatically included in the provider notes, and facilitates documentation of vaccinations.

Grantee’s Most Recent Self-Reported Quarterly Status (as of December 2010): Overall the project is mostly on track and is meeting most of its aims and milestones. The project is on track but slightly underspent due to late distribution of funds.

Preliminary Impact and Findings: Analysis of the transcripts from focus groups with physicians about their experiences giving the flu vaccine identified several barriers to influenza vaccine delivery, including clinic resource issues, problems with multiple sources of immunization information, and lack of time to complete the vaccination process. They also identified ways to improve the computerized reminder, such as timing of presentation, ability to access multiple sources of immunization records, and facilitation of vaccine ordering and documentation.

Focus groups were also held with parents to learn more about their experiences with the flu vaccine and their thoughts about how to improve communication with providers. Parents indicated the importance of hearing about both benefits and potential risks of the vaccine, especially when vaccine safety is a concern. Preliminary thematic analysis indicates that parents want to learn about their child’s risk for influenza and the side effects, safety, effectiveness, and timing of the vaccine.

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to improve health care decisionmaking through the use of integrated data and knowledge management.

Business Goal: Knowledge Creation

* *AHRQ Priority Population*