Influenza vaccinations have been shown to effectively prevent hospitalizations and death among persons aged 65 and older as well as in persons aged 18-64 with medical conditions that increase the risk for influenza related complications.\(^1\) Currently, 220 million individuals (73% of the United States population) are recommended for an annual influenza vaccination. This includes all persons 50 years of age or greater. From 1989 to 1999, influenza vaccination coverage for persons 65 years of age or greater increased from 33% to 66%. Since 1997, vaccination rates have stalled at 63% to 66%.\(^1,2\)

Ten physician groups participating in the Physician Group Practice (PGP) Demonstration recently met to discuss strategies for increasing vaccination rates in high risk populations. The vaccination rates for these physician groups are similar to national trends (see Figure 1). On average the physician groups have shown a marked increase in influenza vaccination rates from the base year of the demonstration to the first performance year.

**Figure 1. Physician Group Practice Demonstration Influenza Rates Base Year to Performance Year One**


The virtual breakout session was hosted by the Centers for Medicare & Medicaid Services (CMS) on November 30, 2007. The primary goal of the session was to share and discuss strategies and methods used by various physician groups to increase influenza vaccination rates in the over 65 population. The proceedings of this meeting are summarized below.

**Vaccination Models**

Each of the ten physician groups participating in the PGP Demonstration presented current outpatient vaccination models used during the flu season. Basic models employed at each of the physician groups are described in this section. Vaccination models were unique at each site and developed and adapted to work with the organizational structure of the group. Several physician groups indicated that they have staff designated to developing and implementing influenza vaccine programs throughout the year. “The Flu Crew” at The Everett Clinic, for example, consists of the Medical Director, an operations director, materials management individual, marketing staff, nurses, receptionists and business office representatives (for billing, scheduling and customer service).

Physician groups indicated that preparation for the influenza season begins early in the year with initial vaccination orders for the next influenza season being placed as early as January. Influenza vaccination outreach and administration has generally been concentrated during the months of August through December for the physician groups participating in this meeting. While important, it has historically been difficult to “sell” the vaccination after the winter holiday season.

Several physician groups indicated the use of a wave approach to their influenza vaccination outreach. These groups focus initially on the delivery of vaccinations to elderly patients with specific comorbidities and then shift focus to less high risk patients as the season progresses.

Geisinger Clinic, for example, focuses first on patients over 65 years with diabetes, congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD) and end-stage renal disease (ESRD). The clinic then moves to all other patients over age 65 followed by patients under the age of 65 with chronic disease and finally all patients 50-64. With this type of model and strategy in place Geisinger Clinic showed that they were able to administer over 30,000 influenza vaccinations each year and increase vaccination rates annually in the over 65 population. Note that there was a severe vaccine shortage reported in 2004-2005 which had a significant effect on vaccination rates that year.

The University of Michigan Faculty Group Practice started a new initiative to maximize influenza vaccination rates during the flu season. Medical assistants (MAs) utilize daily reports
to indicate to physicians which patients coming in to the office today are still in need of the influenza vaccination. This new process starts dialogue between the patient and physician and allows for proper and thorough documentation of vaccine administration, particularly when the vaccination has been administered elsewhere (see Figure 2).

**Figure 2. University of Michigan Daily Immunization Report Model**

*Maximizing Vaccination Rate During Flu Season*

- Patient arrives, identified as eligible for vaccine, offered vaccine
  - Patient accepts
    - MA screens for contraindications
      - Yes
        - None
          - Vaccinate and document
          - Document and consult with provider
      - No
        - Document
  - Patient declines vaccine
    - Document
    - Medical Assistant uses immunization daily report to mark patients on physician schedules who need influenza vaccine or pneumovax prior to clinic
    - Patient had vaccine elsewhere
      - Document

*Clinic prepared to use daily immunization report*  
*University of Michigan*

**Physician Office Flu Shots**

In this type of vaccination model, influenza shots are provided at all physician offices. Materials management offices generally distribute required materials to each of the physician offices and the vaccinations are administered by existing office staff. Key benefits to using this type of model are that patients are not required to travel and that the vaccinations are administered in a familiar setting. Benefits to providers include a sense of control over patient’s vaccination. This type of model is particularly effective for small organizations and small offices.

There are, however, some challenges that present themselves with this type of vaccination model. Specifically, patients will need to schedule an appointment for receiving their vaccination and there is a risk that small offices may run out of supplies. Additionally, this type of model makes use of current staff who may already be stretched thin in terms of the tasks they need to accomplish for the day. Several difficulties exist for the organization as well, these include: late start of vaccine administration due to the time required to fill pipeline need, ensuring adequate
supply of multiple vaccine types, personnel costs, lack of supply control, greater inventory waste and administration/billing errors.

Several groups mentioned that small physician offices are starting to tell patients to obtain the vaccination wherever they can as opposed to relying on the physician office. This is because the logistics for ordering and offering influenza vaccinations are difficult to organize and act as a disincentive for this type of delivery model. Physicians believe that reimbursement does not cover the costs for the administration of vaccines and potential for financial loss are high, particularly when too much vaccine is ordered and goes unused for the season.

**Centralized Hybrid Model: Mass Clinics and Physician Office Flu Shots**

This type of model involves the organization of mass clinics early in the influenza season followed by in-office shots at individual physician offices later in the season. Mass clinics often utilize volunteer resources for the administration of vaccines. These types of clinics are convenient to patients because appointments are not required, wait times are minimal, vaccines are available early and fewer errors are bound to occur due to the existence of dedicated vaccination clinic staff. Additionally, mass clinics prevent vaccination waste since supply and distribution can be better controlled.

Challenges with mass clinics include a loss of convenience for patients who are unwilling or unable to travel to specified locations to obtain their vaccination on specific dates. Under this type of model, providers have less control of the administration of vaccines, which may be an issue. Finally, organizations may find it challenging to arrange for appropriate staffing and ensure a robust supply chain management system.

**Outsourcing Hybrid**

This type of model involves the organization of mass clinics in all primary care groups as well as in office shots for primary care and some specialty departments. In this type of model, visiting nurses to The Everett Clinic provide 75% of the vaccinations in the individual clinics and the materials management office provides only 25% of the vaccination supplies. This type of model is beneficial for patients because they are not required to make an appointment and vaccines are available early in the season at all locations on scheduled dates. There is less pressure on office staff with the presence of the visiting nurses and the reduced supply management responsibilities. This type of model is particularly convenient for large organizations; it makes early mass clinics possible, reduces staffing requirements and ensures equitable management across the organization.
On the other hand, some patients may find it inconvenient to return to the clinic if a clinic is not scheduled for the same day as their physician appointment. A major challenge for the organization arises in insurance billing and record integration since external resources are being used for the coordination and administration of the vaccinations. Generally, the use of external resources requires significant planning and coordination for the creation of a seamless vaccination program. Choice of vaccination administration partner is a critical decision for the well-being of clinic patients.

**Challenges with Current Models**

Despite vaccinations being delivered to tens of thousands of patients at the physician groups participating in the demonstration, challenges for the effective coordination of programs and delivery of influenza vaccinations persist. Each of these challenges contribute to the vaccination rate plateau that has been reached nationwide. Some of the challenges identified by the physician groups include:

- Screening for risk factors and the rationing of influenza vaccinations during shortage years is very difficult for patients and clinic staff
- Lack of patient acceptance of the influenza vaccine, particularly among younger patients
- Fears of the use of thimerosal in vaccines contribute to patient declines
- Low health care professional vaccination rates present a poor role model to patients
- Low reimbursement rates do not compensate for the extensive efforts required for outreach, coordination and delivery of influenza vaccinations.
- Lack of documentation of influenza vaccinations provided on an in-patient basis or outside the primary care office.
- Supply issues including shortages, staggered manufacturer delivery schedules and inability to return unused vaccines.

**Strategies that Work**

The groups participating in the PGP Demonstration identified specific strategies that work best for patients, providers and organizations for the annual administration of the influenza vaccinations. These strategies are highlighted below.

**Scheduling Strategies**

A good strategy for the delivery of the influenza vaccine is important but not useful if patients are not coming in for their vaccinations. An important factor for getting patients to come in for their vaccinations is convenience. In many circumstances, no schedule for vaccinations is the best schedule. Not requiring an appointment for receiving an influenza vaccination increases convenience for patients, allowing them to remain flexible and get in and out fairly quickly from
the physician’s office or vaccination clinic location. Additionally, time slot scheduling creates additional management work for clinic administrative staff. This time is particularly wasted when patients are a no-show for their vaccination. Some additional strategies for scheduling patients for their vaccinations include:

- Schedule weekend clinics. Weekend clinics are convenient for patients and works well with patient flow since there are not regularly scheduled physician appointments on weekends.
- Provide immunizations in community clinics and skilled nursing facilities
- Schedule by zone. Zone scheduling is good for years in which there is a short supply. Scheduling systems target patients in specific areas often referred to as “vaccination zones.”

**Vaccine Supply Strategies**

A predictable vaccine supply is high on the wish list for a better vaccination delivery system at the physician groups. However, given the difficulties with vaccine supply management, physician groups offer the following tips with managing the unpredictability of vaccine supply:

- Review historical information about manufactures
- Develop a contingency plan in the event of vaccine shortages
- Create networks with other nearby provider organizations and the local Health Department. Collaboration can be a savior.
- Start system wide ordering strategies early in the vaccination season
- Establish return policies for unused vaccine to limit the financial risks inherit during the influenza vaccination season. This is currently not-feasible at many physician groups.

**Documentation and Billing Strategies**

Documentation of the administration of the vaccine to a patient is important for clinical and tracking purposes. In the case of the PGP Demonstration, two of the quality measures focus on vaccination rates for influenza and pneumonia. If the vaccine administration is inappropriately documented this would impact the group’s quality measures. Proper documentation is often a hurdle, particularly when outsourcing the delivery of vaccine to visiting nurses or when patients receive their vaccinations at mass clinics held in and sponsored by, for example, grocery stores or pharmacies.

In addition, billing for the administration of vaccinations can be a very slow and an often delayed process, particularly when mass clinics offer vaccines to several thousand individuals in a single day. It is important to find ways to facilitate the billing process for clinic staff with minimal resources to devote to this task. Strategies for improving documentation and billing include:

- Improve administrative aspects of coordinating and conducting mass influenza vaccination clinics by utilizing roster billing systems.
• Compare billing records with clinical records to ensure that vaccination administration is being documented
• Automate documentation where ever possible (e.g., link billing systems with the administration of the vaccine).
• Use data systems to develop a patient registry
• Establish standards for documentation (e.g., must be documented within two weeks of administration by administering nurse)
• Enter into service agreements with pharmacies to fax the clinic when vaccines are administered to clinic patients and/or with mass clinic nurses to improve documentation.

**Targeting Medicare Beneficiaries**

The PGP Demonstration focuses on improving the quality and cost efficiency of care delivered to the Medicare fee-for-service population and therefore strategies for generating Medicare savings for this population are of particular interest. A successful influenza vaccination program will help reduce the incidence of preventable hospitalizations, particularly in Medicare beneficiaries with chronic illness. The physician groups discussed some strategies and useful tools for targeting this population. These tools and strategies include:

- Make use of the electronic health record (EHR) database and health alert systems to simplify structured documentation and target beneficiaries at risk.
- Create a prioritized patient pull strategy and identify patients by risk group (age and chronic disease). Make calls to prioritized and high risk patients
- Organize mass mailings providing instructions for scheduling an influenza vaccination. Incorporate messaging that the clinic is “Reserving you a flu shot” and provide instruction on next steps to receive it.
- Create an e-portal with broadcast flu messages and direct scheduling into influenza vaccination site

**Health Care Workers**

Health care worker vaccinations are also very important for the success of an influenza vaccination program. Health care workers receiving the vaccine act as good role models to patients. Additionally, the vaccine protects the employee who is at higher risk due to the nature of their profession. National health care worker vaccination rates are hovering around 40% and strategies should be adopted to improve these rates for the well-being of both the patients and the employees. Some strategies for increasing rates of vaccinations among this population include:

- Implement declination forms (i.e., all health care workers will receive the vaccination unless they sign a form declining the administration of the vaccine). Declination forms can improve their employee vaccination rates substantially from one year to the next.
- Provide small financial or non-financial incentives, such as gift cards to local coffee shops, or introducing competition among departments within the organization.
• If employee has contraindications for the influenza vaccination, require that he/she wear a mask throughout the flu season
• Provide education materials or lunch and learn type sessions for staff and make use of internal staff newsletters
• Make the vaccinations mandatory for employees. Consequences of non-vaccination may result in termination or suspension of employment.

Strategies to Avoid

The physician groups participating in the PGP Demonstration identified specific strategies that did not work well within their systems and that resulted in more confusion and difficulties throughout the influenza season. These strategies included:

• Early (premature) announcements of the availability of influenza vaccinations
• Mixed messages from internal partners about vaccine availability and delivery strategy. The clinic should have a single voice.
• Dwelling on past years failures and/or successes is not as helpful as one may think. Every flu shot season is different and the success of a program requires flexibility.

Conclusion

During the session, we were joined by a representative from the Centers for Disease Control and Prevention who commended the physician groups on the success of their outpatient vaccination models for the Medicare population and encouraged the continued use of evidence based practices for the delivery of vaccines.

The CDC encouraged physician groups to assess feedback from vaccination programs with a focus on obtaining information on why patients are not receiving recommended vaccinations or why they are choosing not to obtain them. The CDC also encouraged physician groups to continue to focus on increasing vaccination rates among health professionals, pointing out that it is particularly difficult to encourage vaccination when those administering the vaccines are not acting as the best role models. In turn, the physician groups encouraged CDC to develop a universal influenza vaccination program along with a national vaccine registry.

In closing, the influenza vaccination session initiated conversations between the physician groups participating in the PGP Demonstration. Several groups will be implementing lessons learned during the meeting to future influenza vaccination programs and mass clinics developed for their patients.

CMS would like to thank Dr. Yuan-Po Tu, Flu Shot Clinic Director at The Everett Clinic for chairing this enlightening session. Additional information regarding the Medicare Physician Group Practice Demonstration can be found by visiting the CMS website: www.cms.hhs.gov/DemoProjectsEvalRpts/ , click on “Medicare Demonstrations” and go to “Medicare Physician Group Practice Demonstration”.
General Tips and Strategies for Effective Influenza Vaccination Programs

Several additional strategies and tips for ensuring a successful influenza vaccination season are listed below. Each of these can help refine current delivery models or strategies currently in place.

For the Patients…

- Send out or distribute reminder cards for mass clinics or other trinkets such as buttons for medical staff, stickers, posters, etc.
- Offer several different options for a patient to obtain the vaccination (e.g., at the physician’s office and through mass clinics)
- Ensure ample parking
- Simplify check-in procedures
- Provide reminders of the receipt of pneumovax (e.g., dot on Driver’s License)
- Take the opportunity to co-immunize (influenza and pneumovax). Linking the two vaccines in the hearts and mind of clerical staff, clinical staff and patients is very helpful.

For the Providers and Organizations…

- Issue standing orders for nurses for both the influenza and pneumococcal vaccines
- Coordinate inpatient and outpatient activities. Particularly for inpatient services, it is important to audit services periodically to identify any patients that may not be receiving vaccines. This feedback process will be useful for enhancements to influenza vaccination outreach programs.
- Collaborate with external agencies. Develop good relationships with local media for promotion of mass clinics and increasing awareness.
- Initiate internal competition within your organization to encourage increased awareness and vaccination rates (e.g., traveling trophy for site with highest vaccination rate)
- Hold debriefing meetings at the end of each flu season to learn about what worked and what didn’t work.