Lifesaving Opportunities Missed: The Challenge of Vaccinating Older Americans for Pneumococcal Diseases and Influenza

Introduction

Pneumonia and influenza together represent the sixth leading cause of death in the United States. Approximately 90 percent of those who die due to these conditions are persons age 65 and older. Vaccines, however, are available against both of these diseases. The pneumococcal vaccination, for pneumonia and other diseases caused by the same bacteria, is a one-time intervention in most cases; the influenza vaccine must be repeated each year to be effective for the annual “flu season.”

The Centers for Disease Control and Prevention (CDC) recommends annual flu shots for everyone over age 50 and the pneumococcal vaccination for everyone over age 65. In addition, other high-risk groups with high rates of hospitalization and death are included in the recommendations for both vaccinations.

Vaccinations present a cost-effective alternative to potentially deadly conditions that are costly to treat. Yet they are underutilized across the United States, even by those at highest risk. This Issue Brief provides information about both pneumococcal diseases and influenza, and about the costs, coverage, and current rates of utilization of the vaccinations. Further, the paper discusses public policy initiatives designed to improve adult vaccination rates, especially for older persons.

Vaccine-Preventable Diseases in Older Adults

Pneumococcal diseases

Pneumococcal diseases are potentially fatal bacterial infections that can affect the lungs, resulting in pneumonia; the blood, resulting in bacteremia; or the covering of the brain, resulting in meningitis. These diseases kill more people in the United States each year than all other vaccine-preventable diseases combined – 40,000 Americans die each year from these infections.

The CDC estimates that 1 in 20 people with pneumococcal pneumonia, 2 in 10 with bacteremia, and 3 in 10 with meningitis will die from the infection; high-risk populations have higher mortality rates.

A one-time shot of pneumococcal polysaccharide vaccine (PPV), which can be given at any time during the year, protects against 23 types of these bacteria. It is estimated that around half of deaths from pneumococcal infections could be prevented by PPV.

Serious reactions to the vaccine are extremely rare, but mild swelling and redness at the injection site occur in about half of those who receive PPV. Revaccination after five years is recommended for some of those age 65 and over who were vaccinated before age 65, and those with weakened immune systems caused by underlying conditions or medications. Studies have shown that
while local injection-site reactions occur more frequently following revaccination, the rate of serious adverse reactions is no greater than the rate after the first vaccination. Thus, this higher risk for injection-site reaction should not be seen as a reason to not revaccinate, i.e., the risk does not outweigh the benefits of revaccination.\(^8\)\(^9\)

**Influenza**

Influenza, the “flu,” is a highly contagious respiratory infection. Its symptoms include fever, chills, headache, sore throat, cough, congestion, and muscle aches. The flu can also cause extreme fatigue for up to a week or more. The CDC estimates that at least 20,000 people die in the United States annually from the flu and its complications; during epidemic years, the figure is much higher.\(^10\)\(^11\)

Influenza viruses are continually changing due to rapid viral gene mutations. Each year, the vaccine must be updated to protect against the anticipated viral strains. The flu shot is most effective when given during October and November, preceding the flu season.\(^12\)

There is only a very slight risk associated with receiving a flu shot. Some people experience soreness and swelling at the injection site, fever, or aches for one or two days following the shot. Serious allergic reactions are extremely rare.\(^13\)

**High-Risk Groups**

As noted above, pneumococcal infections and the flu are especially dangerous conditions for older persons, for whom mortality rates are significantly higher. Because morbidity and mortality from the flu begin to rise significantly after age 50, the CDC’s Advisory Committee on Immunization Practices (ACIP) began, in 1999, to recommend the flu shot for persons age 50 and older.\(^14\)

Persons of any age with underlying chronic conditions such as asthma, COPD (chronic obstructive pulmonary disease), CHF (congestive heart failure), or diabetes are at particularly high risk for hospitalization and death due to pneumococcal diseases and the flu. Some 24 percent of the U.S. population between the ages of 50 and 65 have a high-risk condition.\(^15\)

Hospitalization and death rates from the flu were found to be highest among persons age 45 to 64 with underlying conditions, according to a 1999 study. Yet the vaccination rates of this population are low. Only about 30 percent receive flu shots annually.\(^16\)\(^17\)

Health care workers and any individuals who are in regular contact with high-risk persons are advised to receive annual flu shots. According to the 1997 National Health Interview Survey, only 34 percent of health care workers reported receiving a flu shot that year.\(^18\)

**Cost Implications and the Use of Preventive Services**

Pneumonia and influenza are the principal reasons for more than 500,000 emergency room visits by Medicare patients each year, 83 percent of which resulted in
hospital admission in 1996. These diseases are responsible for over 4.2 million hospitalization days each year in the Medicare population, which is more than for any other diagnosis, including congestive heart failure and stroke.\(^{19}\)

Over $2.2 billion was spent on inpatient care of Medicare patients with pneumonia in 1996.\(^ {20}\) Medicare costs for influenza-related hospitalizations can reach up to $1 billion each year.\(^ {21}\) These spells of illness place a repeated strain on hospitals during the peak of flu season.

Offering flu shots to healthy, working adults in the workplace has been shown to offer economic benefits, according to some researchers.\(^ {22}\)\(^ {23}\) Others have expressed concern about the difficulty in accurately tracking the effectiveness of such an intervention in preventing the flu and reducing the number of days of work lost as a consequence. Still others contend that, although healthy adults under age 50 are not generally at high risk for serious complications from the flu, the decrease in overall flu incidence in the community indirectly benefits high-risk populations; thus, immunization can be viewed as economically sound.\(^ {24}\) The efficacy of these programs remains an area for further research.

**Coverage**

In light of the data on disease burden and cost for high-risk populations, experts have concluded that both PPV and annual flu shots are highly cost-effective preventive interventions. Medicare policymakers have adopted coverage rules and quality standards in recognition of the value of vaccinations. Medicare Part B fully covers the costs of PPV and annual flu shots, with no deductible or coinsurance required from beneficiaries.\(^ {25}\) Private insurance plans have adopted a variety of coverage policies and strategies for encouraging high-risk members to get vaccinated. Flu shots are increasingly available in shopping centers and at pharmacies for out-of-pocket costs, ranging from free to $18.\(^ {26}\) In some states, pharmacists are also giving PPV, which tends to cost more than the flu shot.

**Current Rates of Utilization**

While there has been an upward trend in recent years in the overall number of beneficiaries receiving vaccinations, the percentages are still low.

According to the CDC, in 1997 46 percent of persons age 65 and older reported ever receiving PPV.\(^ {27}\) Medicare claims data for 1997 show 26 percent of fee-for-service beneficiaries as ever having been vaccinated against pneumococcal diseases.\(^ {28}\)

In the case of the flu, 66 percent of persons age 65 and older reported receiving the shot in 1997, while claims data show that about 44 percent of fee-for-service beneficiaries received the shot in 1997.\(^ {29}\)\(^ {30}\)

The discrepancy between claims data and self-reported data reflect the fact that a Medicare claim is not necessarily generated for each vaccination reported. For example, about 17 percent of
Medicare beneficiaries are enrolled in Medicare+Choice managed care plans that receive capitated payments from Medicare.31 In addition, failure by providers to file or accurately code claims for the vaccinations could account for differences in reported utilization rates.

The Health Care Financing Administration (HCFA) requires Medicare+Choice plans to collect and report various performance measures, including utilization rates for flu shots. From September to December of 1998, 72 percent of Medicare+Choice enrollees reported receiving flu shots.32 33 Beginning in 2001, pneumococcal vaccination status for older adults will also be reported.34

Immunization rates in the Medicare population vary according to several factors, including care setting and race. For example, only 22 percent of nursing home residents had ever received the PPV by 1995, while 61 percent received a flu shot that year, according to the National Nursing Home Survey conducted by CDC.35

An analysis of PPV utilization rates between 1991 and 1998 by Medicare Part B beneficiaries was conducted by HCFA. During this period, 33 percent of white beneficiaries received PPV, compared to 18 percent of African Americans. In 1998, the most recent year for which data are available, 9 percent of white beneficiaries received their initial PPV, compared to 5 percent of African-American beneficiaries. Similarly, a significantly higher proportion of white older Medicare beneficiaries received a flu shot in 1998 than did African American beneficiaries (46 percent compared to 24 percent).36

![Figure 1: Vaccination of Medicare Beneficiaries by Type of Provider, 1998](image)

Vaccinations are currently given in a variety of settings by different types of providers. Primary care physicians provided 71 percent of PPV and 62 percent of flu shots to Medicare beneficiaries in 1998. Specialty physicians accounted for about 10 percent of both types of vaccinations. Immunization clinics, such as those

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**Figure 1**

**Vaccination of Medicare Beneficiaries by Type of Provider, 1998**

sponsored by hospitals, are the source for 12 percent of PPV and almost 17 percent of flu shots. Hospitals, home health agencies, and skilled nursing facilities provide 2 to 5 percent each of either type of vaccination. See Figure 1.

**Barriers to Immunization**

Cost is not widely reported by Medicare beneficiaries as a barrier to immunization. In fact, a CDC analysis of the 1996 Medicare Current Beneficiary Survey (MCBS) showed that less than 2 percent of beneficiaries gave costs or difficulty in reaching vaccination sites as reasons for not receiving them.

The most commonly reported reason (for 19 percent of beneficiaries not vaccinated for the flu and 57 percent not vaccinated for PPV) was not knowing that the vaccine was needed, according to the 1996 MCBS. For both flu shots and PPV, 10 to 15 percent reported that they just did not think of being vaccinated. Some 13 percent of those not receiving PPV gave their reason as lack of a doctor’s recommendation.

Skepticism about the effectiveness of the vaccine is another barrier that researchers have identified as contributing to the underutilization of vaccines by high-risk groups. The MCBS reported about 40 percent of the beneficiaries who did not receive a flu shot that year doubted its effectiveness or were concerned about side-effects.

Studies of underutilization of vaccinations reveal that there are numerous “missed opportunities” to vaccinate high-risk persons when they enter the health care system, i.e., upon admission to nursing homes or hospitals. For example, in 12 western states, 65 percent of Medicare beneficiaries hospitalized for pneumonia during September to December 1994 did not receive PPV; 80 percent did not receive flu shots.

Among persons age 18 to 64 with high-risk medical conditions who were hospitalized in the preceding year, only 17 percent reported ever receiving PPV in 1997; 31 percent reported having a flu shot that year.

Uncertainty about who is at risk and lack of financial incentives are seen by providers as barriers to providing the vaccines. Also, traditions within the health care community emphasizing treatment over prevention of disease, as well as a lack of appreciation for the magnitude of the impact of vaccine-preventable diseases on adult morbidity and mortality, can be viewed as barriers to stronger immunization policy.

**Public Policy Initiatives**

The Department of Health and Human Services (HHS) announced national public health priorities in its report *Healthy People 2010*, which is designed to identify and address the most significant preventable threats to health. Priorities include the goal of reaching a 90 percent vaccination rate for both PPV and annual flu shots in high-risk populations by 2010. The *Guide to Community Preventive Services* was developed by an HHS task force to provide evidence-based tools for advancing the goals of the 2010 initiative.
Public officials and researchers have made several recommendations to address the types of barriers outlined in this Issue Brief. Some of these include the following:

♦ Collecting uniform data on vaccination coverage to inform public health officials and other health professionals, who can then identify gaps in coverage;
♦ Pursuing multicomponent educational interventions, with provider education, client and provider reminders, and expanded clinic hours to increase access;
♦ Making home visits to increase access for high-risk homebound persons; and
♦ Making vaccination a standard part of the admissions process to nursing homes. (States can mandate that nursing homes offer vaccines to all residents.)

In addition, federal public health officials advocate the widespread use of “standing orders” in health facilities such as hospitals and nursing homes. Standing orders would empower health care personnel to perform routine vaccinations without direct physician involvement. This would reduce the number of missed opportunities by bypassing an administrative barrier. HCFA’s “Healthy Aging Project,” designed to identify interventions that will improve the care of older Americans, has highlighted standing orders as an effective means to boost immunization rates. HCFA and the CDC are sponsoring pilot programs in nursing homes in nine states and the District of Columbia for the fall 2000 flu season. Standing orders for both PPV and flu shots will be placed in each resident’s records. It is anticipated that virtually every nursing home resident in this program will receive vaccinations.

For Medicare beneficiaries, HCFA allows “roster billing” by individual physicians for both vaccinations, so that a separate claim need not be filed for each shot given. The use of this streamlined billing procedure should encourage physicians to vaccinate all of their high-risk patients.

Under current policy, a Medicare beneficiary may visit a physician solely for a vaccination. The physician, however, can bill only for the vaccine itself and not for an office visit unless other services were provided. Some policymakers have discussed adopting Medicare coverage for an annual “wellness visit,” to include vaccinations, and other preventive interventions.

Vaccinations, however, can be and are delivered in a variety of settings. Empowering health care professionals other than physicians to deliver these vaccinations, such as nurses or pharmacists operating under standing orders at immunization clinics, increases access to care. However, according to a recent pharmacy trade publication, pharmacists are not authorized to administer PPV and flu shots in many states.

Many communities sponsor vaccination programs in various settings to increase awareness and access. In some cities, HCFA sponsors educational efforts targeting seniors at the community level through activities at churches and community centers.
Conclusions

Action must be taken to achieve significant improvements in older adult immunization rates over the next 10 years and to meet the Healthy People objectives. The ongoing commitment to children’s preventive health interventions that has led to the current record high vaccination rates in that population must be extended to adults. In the case of PPV, high-risk adults are vaccinated at rates about half that of the lowest rates of childhood immunizations.

Given the effectiveness of the vaccines for pneumococcal diseases and the flu, the continuing delivery failure presents a challenge to the policy and health care communities. Establishing adult immunizations as part of a standard of care for high-risk patients is essential in order to reduce high mortality rates and unnecessary health care costs. Outreach efforts and pilot programs, such as those sponsored by HCFA, the CDC, and various communities, must be monitored for success rates, with special attention paid to minority and special needs communities. Implementation of HHS and CDC recommendations must be a top priority for policy makers and the health care community. Prevention of pneumococcal diseases and influenza is clearly cost-effective, compassionate, and simply common sense.

Notes

7 See Note 5.
8 Ibid.
10 See Note 4.
13 Ibid.
14 Ibid.
18 See Note 12.


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Medicare Payment Advisory Commission, transcript of November 18, 1999 meeting.

See Note 26.


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