Disparities in Lung Health Series

# Missed Opportunities

## Influenza and Pneumonia Vaccination in Older Adults

AMERICAN LUNG ASSOCIATION®
Fighting for Air

# Preface

No one in the United States should die from influenza or pneumonia. Yet, each year some of our own friends, neighbors and family die from these respiratory diseases.

Many of these deaths, especially those in older Americans, can be prevented through the simple and effective use of vaccinations.

Unfortunately, there are disparities in the number of these vulnerable Americans who are getting their life-saving vaccinations. There are many factors that create the disparities and, as a result, older African Americans and Hispanics are immunized at significantly lower rates than whites. Patient knowledge and awareness, patient beliefs and social influences, access to care along with health care provider beliefs and medical practice systems work to exacerbate these lung health disparities.

The American Lung Association has been fighting for those with lung disease for more than 100 years and we are proud to continue that fight to eliminate lung health disparities.

The document that you are holding is the third report in our *Disparities in Lung Health* Series. It focuses on vaccination for influenza and pneumonia in older adults. Influenza causes between 3,000 and 49,000 deaths a year, depending on the severity of the flu season. Adults age 65 and older make up ninety percent of those deaths. In addition, nearly 226,000 people are hospitalized annually due to influenza. Pneumonia kills an estimated 40,000 people in the U.S. each year.

The American Lung Association is deeply concerned that with the aging U.S. population, those numbers will dramatically increase over the next few decades. This report shows the impact that influenza and pneumonia have on our society in terms of medical costs, lost productivity and lost lives. It also shows the power of prevention, exposes myths about vaccinations and why it is crucial to recognize the lung health disparities that exist, as well as the importance of finding effective ways to bring the message of influenza vaccinations to our fellow citizens.

Thank you for reading this important document on influenza and pneumonia in older adults and we welcome you to join the American Lung Association in our fight to eliminate lung health disparities and to save lives.

H. James Gooden
*Chair of the Board, American Lung Association*

# Missed Opportunities

## Influenza and Pneumonia Vaccination in Older Adults

### Introduction

Influenza and pneumonia are infectious respiratory diseases that cause massive expense, extensive illness and significant death every year in the United States. Influenza and its complications are responsible for an average of 226,000 hospitalizations and up to 49,000 deaths annually. All population groups are affected, but adults ages 65 and older are hit particularly hard. Ninety percent of the deaths from influenza are in this age group.

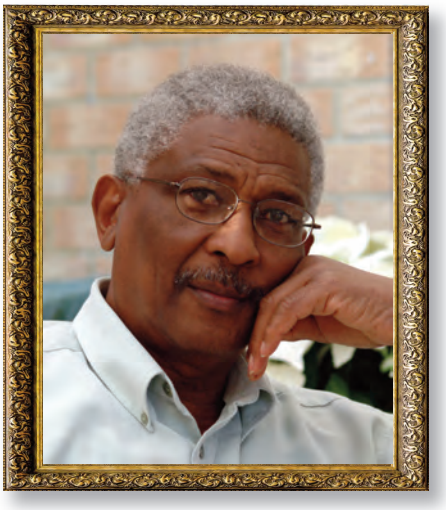
There is a powerful prevention tool already available, but not being used to its full potential. The vaccines for influenza and pneumonia are a safe, effective and cost-efficient way to dramatically reduce the burden of these diseases in older adults, and prevent tens of thousands of deaths. Unfortunately, the number of older adults who are protected from disease by these vaccines is far below national health goals. Older African Americans and Hispanics are in a kind of double jeopardy. They are more likely than whites to suffer from one or more chronic conditions, such as asthma, heart disease and diabetes, which increases their risk of severe illness and death if they get sick with influenza or pneumonia. At the same time, they are less likely than other population groups to get the vaccinations that would prevent these illnesses.

The core of the problem of vaccination disparities is missed opportunities: older adults of

all racial and ethnic groups get health care at about the same rate, but during their visits white patients are more likely to be vaccinated than others. Even though these vaccines are universally recommended, some patients are not asking for them, and clinicians are not recommending them. Why does this happen? There appears to be a complex combination of reasons, including patients' knowledge and attitudes, the beliefs and practices of health-care providers and the broader policy environment of health-care systems and governments.

Places that have successfully reduced vaccine disparities, like the Veterans Affairs Healthcare System, have focused on what happens during that visit to the doctor's office, to ensure that the opportunity does not get missed. Systems changes such as electronic medical records, automated reminders and allowing non-physician personnel to administer vaccines without a separate doctor's order increase the likelihood of vaccines being offered equally to all patients. And research has shown that if the older patient has a stable and trusting relationship with a health-care provider, he or she will most often accept the offer.

The toll from influenza and pneumonia is expected to increase dramatically over the next several decades, as the baby boom generation ages and overall life expectancy increases. Now is the time to take action. Government agencies, health systems, clinicians, community advocates and families all have a role to play in making sure that all of our elders are protected equally from these deadly but very preventable diseases.



## Influenza and Pneumonia: Deadly and Preventable

Influenza and pneumonia are infectious respiratory diseases that cause massive expense, extensive illness and significant death every year in the United States. All population groups are affected, but the toll is highest among adults ages 65 and older, especially those who have underlying medical conditions. In 2007, influenza and pneumonia together were the eighth leading cause of death for all age groups and the seventh leading cause of death in adults age 65 and older.[1]

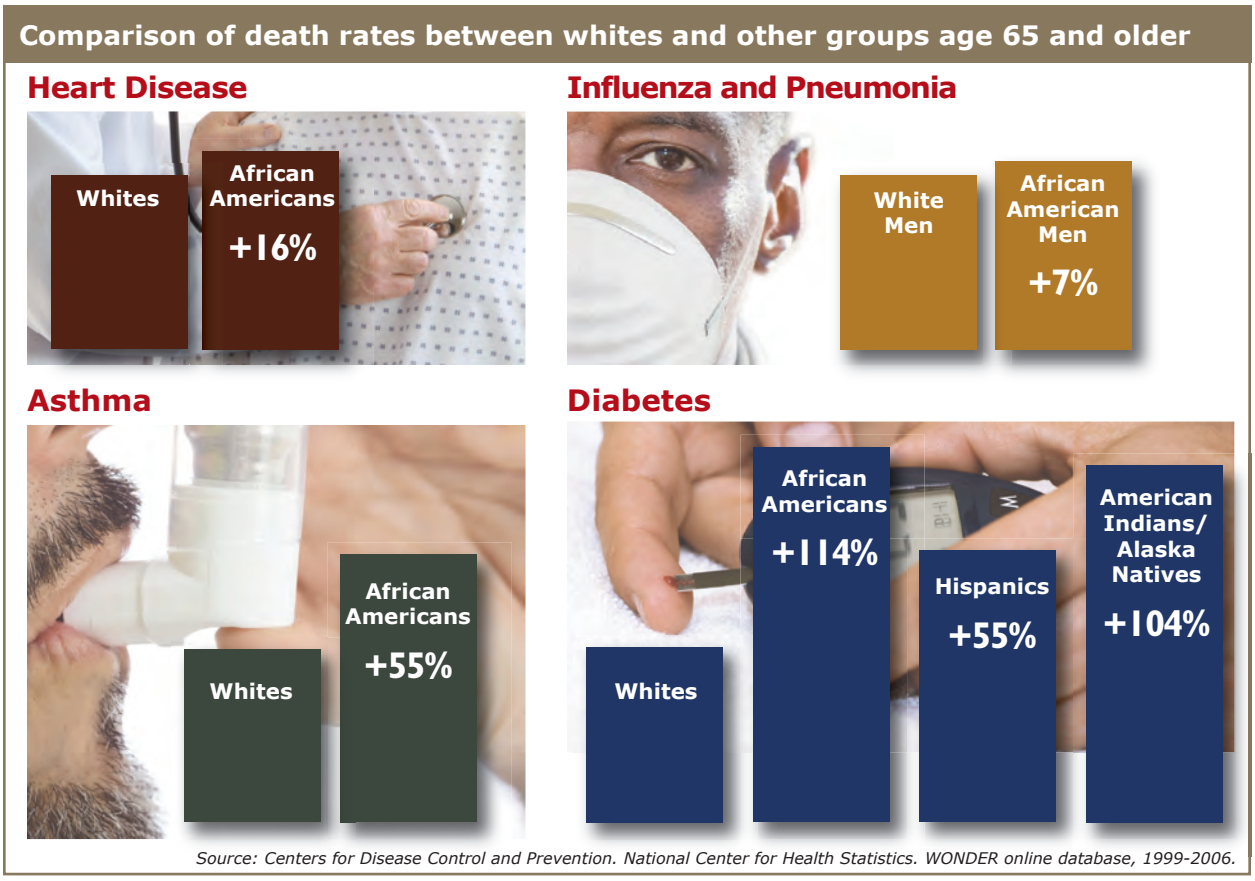
Much of this suffering could be easily prevented if older adults got the vaccinations that are available to them. But that is not the case.

**The burden of disease**

Influenza is sometimes confused with the common cold and other milder viruses, but in actuality it is a serious and potentially fatal illness. Because the strains of the influenza virus are changing constantly, the number of people who get sick and the severity of their illness varies widely from year to year. In the United States, between 15 to 61 million people contract influenza every year, resulting in an average of 226,000 hospitalizations and anywhere from 3,000 to 49,000 deaths annually.[2]

While the exact number of people who get pneumonia every year is unknown, health records show that in 2006 over 1.2 million people were discharged from the hospital after being treated for pneumonia.[3] Pneumonia can be viral, bacterial or fungal in origin. Pneumococcal pneumonia, which is the type that is most common among older adults, kills more people in the United States each year than any other vaccine-preventable bacterial disease, with an estimated 40,000 deaths annually.[4]

Because influenza can lead to pneumonia, especially in adults 65 years and older, the two diseases are often grouped together in data collection, health studies and prevention efforts. Most of the serious illness and death caused by influenza and pneumonia occur among older adults and others living with chronic illness.[5] Adults age 65 and older are much more likely to be hospitalized with these diseases than younger people. Nearly 90 percent of deaths caused by influenza and its complications occur in this age group.[6]




Older adults in some racial and ethnic groups are at higher risk of complications caused by influenza and pneumonia than others, including African Americans and American Indians/Alaska Natives.[7] The reasons for this are not fully understood, but researchers speculate that it is due in part to the fact that these groups suffer higher rates of a host of chronic diseases, including asthma, heart disease and diabetes.[8] The concern about health disparities and chronic disease is justified among those age 65 years of age and older. Death rates for African Americans are 16 percent higher for heart disease, 55 percent higher for asthma and 114 percent higher for diabetes than among whites. Hispanics are 55 percent and American Indians/Alaska Natives are 104 percent more likely to die from diabetes compared to whites. In 2006, black men 65 years of age and older were nearly 7 percent more likely to die from influenza and pneumonia than white men in the same age group.[9]

## A Ticking Time Bomb?

Public health officials are concerned by several trends pointing to an increase in the toll from influenza and pneumonia in the future. First, the elderly population will increase dramatically over the next several decades, as the baby boom generation ages and overall life expectancy increases. At least one study, from 2003, has suggested that an increase in the number of influenza-associated deaths in the 1990s can be attributed to the substantial growth in the older population during that time.[10] Secondly, the number of people living with chronic conditions is also growing. Finally, there is an emerging problem of pneumococcal resistance to commonly used antibiotics, which is making it harder to successfully treat pneumonia.[11]

## About Influenza and Pneumonia

### Influenza

Influenza, also known as the "flu," is a highly contagious respiratory illness caused by various strains of influenza viruses. Influenza infection can cause mild to severe illness, and even death. Flu symptoms include fever, chills, muscle or body aches, cough, sore throat, runny or stuffy nose and headaches. Some people, most often children, also suffer nausea, vomiting and diarrhea. Influenza viruses are passed from person to person through sneezing, coughing or other contact with the eyes, nose or mouth. It is possible for someone to be contagious before even showing any symptoms of illness, and as long as seven days after becoming sick. Most people recover from the illness in a week or so. But unfortunately, many people go on to develop serious health complications, including pneumonia. Older adults, young children, pregnant women and people with chronic health conditions, such as asthma, diabetes or heart disease, are at especially high risk.

The most effective way to prevent influenza is to get an influenza vaccination during flu season, which in the United States runs from October to March. Because the circulating influenza virus strains change from year to year, the Centers for Disease Control and Prevention recommends that everyone 6 months and older be vaccinated each fall with the new vaccine. There are two types of influenza vaccine that are safe for older adults. The most familiar is the standard flu shot, which can be administered to people of all ages. The Food and Drug Administration (FDA) has also recently approved a new higher-dose vaccine called Fluzone, made especially for people 65 and older. Both are made from inactivated virus that cannot cause illness.[12]

### Pneumonia

Pneumonia is a serious infection of the lungs. The air sacs in the lungs become inflamed and fill with pus and fluid, making it difficult for them to absorb oxygen. Over 30 different agents can cause pneumonia, including bacteria, viruses, fungi and various chemicals. About half of pneumonia cases, including the majority in young children, are believed to be caused by viruses. Viral pneumonia is usually less severe than pneumonia caused by bacteria. The most common form of bacterial pneumonia is caused by a type of bacteria called *Streptococcus pneumoniae*, also called pneumococcus. This bacteria is normally found in the noses and throats of healthy people. If a person's immune system becomes weakened, such as when they get sick with influenza, the pneumococcus bacteria can easily multiply and infect the lungs. Symptoms of pneumococcal pneumonia include fever, cough, shortness of breath and chest pain. The disease can be quite prolonged and severe, especially in the elderly and in people with chronic health conditions. It requires treatment with antibiotics, and may call for hospitalization.

One of the best ways to prevent pneumococcal pneumonia is to vaccinate against it. The pneumococcal polysaccharide vaccine (PPSV) is recommended for anyone age 65 and older, anyone who smokes, those with serious long-term health problems and anyone with lowered resistance to infection.[13] There is also another type of pneumonia vaccine, called pneumococcal conjugate vaccine (PCV), that is recommended for infants and young children. Most adults need to receive the pneumococcal vaccination only once. Those patients at high risk should consult their physician to find out if they may need a second vaccination. The pneumonia vaccine is considered very safe and is effective at preventing severe disease, hospitalization and death.

## The Power Of Prevention

One of the principles of public health is that it is always better to prevent disease than to have to treat it. Vaccines are one of the most powerful strategies for prevention available. They are also, if delivered consistently, a way to reduce health disparities, since vaccines have the potential to protect all racial and ethnic groups equally. The vaccines for influenza and pneumococcal pneumonia are safe and effective. They are widely available, fully covered by Medicare and heavily promoted. Unfortunately, the number of people who get vaccinated for both diseases is far below national health goals. African Americans and Hispanics are furthest behind. Every year that the nation falls short of meeting these vaccination goals, thousands of older adults suffer and die needlessly.

**Vaccination trends**

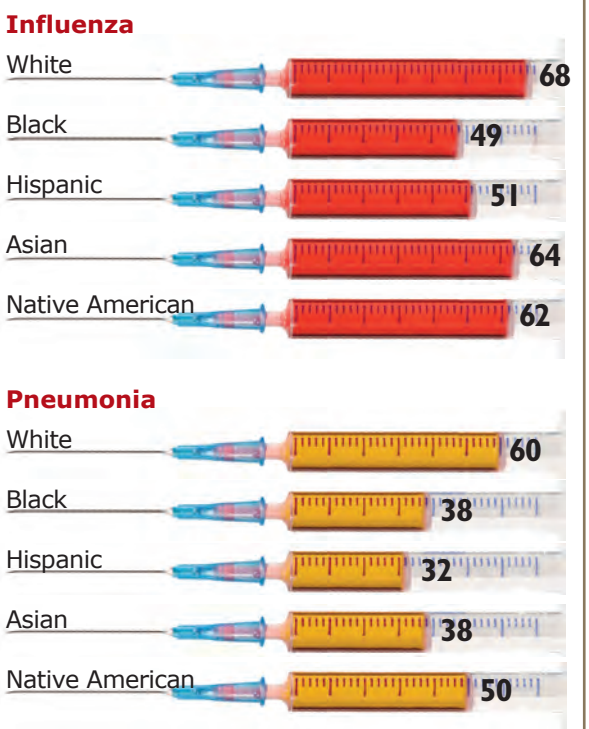
When the U.S. Department of Health and Human Services published its vision for health improvement for the first ten years of the 21st century in the *Healthy People 2010* report, the baseline rate for vaccination in older adults was 64 percent for influenza and 46 percent for pneumonia. The target for 2010 was to increase to a 90 percent vaccination coverage rate among adults age 65 and older for both diseases.[14] Some progress has been made in the last decade, but there is a long way to go.

Flu shots have been available to the public since the 1950s, and the public health community has been promoting annual vaccination for high-risk populations, including older adults, for many years, with incremental success. The percentage of older adults who reported receiving the flu vaccine in the past 12 months increased steadily from 30.4 percent in 1989 to 65.7 percent in 1999, and then leveled off for a few years. There was a sharp drop to 59.6 percent in 2005, when there were shortages of vaccine due to production problems.[15] Since that time the rate has been on the rise again, and was at 66.8 percent in 2009.[16]

Fewer older adults get the pneumonia vaccine, even though it is recommended for everyone 65 years and older, and only needs to be given one time. The pneumonia vaccine for adults, pneumococcal polysaccharide vaccination (PPSV) has been available since 1983, and although vaccination rates have increased over time, they are still low. The percentage of adults age 65 and older who reported having ever received the vaccine increased from 14 percent in 1989 to 61 percent in 2009.[17]

Older African Americans and Hispanics have consistently lagged behind whites in getting both of these life-saving vaccines. In fact, the percentage of African Americans who got a flu shot actually dropped from 2007 to 2008, from 55.3 to 50.4 percent. This was at a time when the vaccination rate for other groups increased. On average, when looking at the last eleven years of data combined, blacks are 28 percent less likely than whites to be vaccinated against influenza and 37 percent less likely to be vaccinated against pneumonia than whites. Hispanics are 24 percent less likely than whites to be vaccinated against influenza and 46 percent less likely to be vaccinated against pneumonia than whites.[18]

**Percentage of older adults vaccinated, by race and ethnicity**




*Source: CDC. NCHS. NHIS data from IHIS. 1999-2009*

It is more difficult to track the trends in vaccination rates for Asians and Native Americans. They represent much smaller proportions of the overall U.S. population, and when the national survey data is broken down by age group, the sample sizes are so small that there are concerns about the accuracy of the numbers. However, the eleven year average shows these groups to be doing less well than whites but better than African Americans and Hispanics on influenza vaccination. American Indians and Alaska Natives were for some years a priority population for pneumonia vaccination, which seems to be reflected in their relatively high rates of pneumonia vaccination compared to Asians, African Americans and Hispanics.[19]

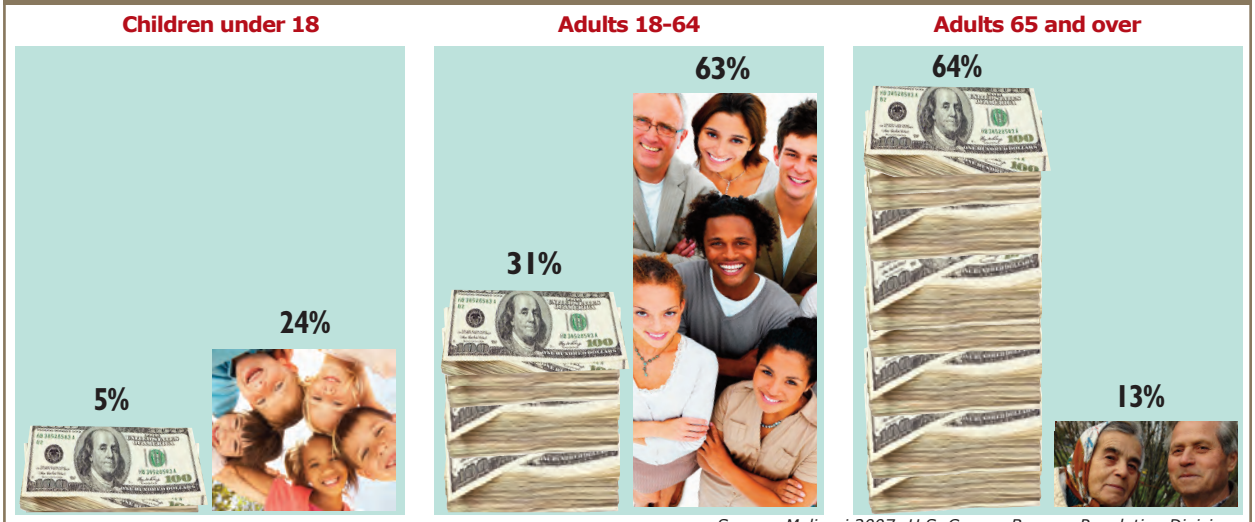
**Potential lives and dollars saved**

Although estimates of the health benefits of immunization vary from study to study, research has shown that the flu vaccine can be up to 70 percent effective in preventing hospitalization for both influenza and pneumonia.[20] Preventing influenza through vaccination also reduces illness and death from other chronic conditions that are commonly aggravated by the flu, most notably heart disease and stroke. One large study of older adults in Minnesota found that influenza vaccination reduced hospitalization for heart disease by 19 percent and stroke by 23 percent. The overall risk of death from all causes was 50 percent lower among the vaccinated group than among those who had not been vaccinated.[21]

In what they called the first-ever study of the impact of influenza vaccine disparities on mortality in older adults, researchers from the University of Rochester calculated that if African Americans and Hispanics achieved vaccination rates equal to that of whites, over 25 percent of the influenza-related deaths in those populations would be prevented. More than 1,800 lives would be saved. Achieving the *Healthy People 2010* goal of 90 percent vaccination rate would prevent nearly 4,000 deaths. That would be the equivalent of completely eliminating deaths from kidney disease in African Americans and liver disease among Hispanics.[22]

The influenza vaccine is one of the most cost-effective health interventions possible for people 65 years and older. Most studies indicate that vaccination reduces or minimizes health-care, societal and individual costs and the productivity losses associated with influenza illness. One research team calculated the economic burden of influenza across all age groups in the U.S. to be $87.1 billion annually, including $10.4 billion in direct medical costs. They estimated that 64 percent of the total cost, or $64.7 million, was incurred by illness in older adults, even though they make up less than 13 percent of the population. Their portion of the cost is so high because of the increased rates of hospitalization and deaths among older adults.[23]

**Percentages of health costs of influenza and of total U.S. population by age group**




*Source: Molinari 2007; U.S. Census Bureau, Population Division.*

## Missed Opportunities: Understanding Vaccination Disparities

The public health community has studied the problem of low rates of vaccination in older African Americans and Hispanics for a number of years, and has come to some understanding of the reasons behind it. The crux of the issue seems to be one of missed opportunities: older adults of all racial and ethnic groups utilize health care at about the same rate, but during those visits, white patients are more likely to get vaccinated than are African Americans or Hispanics. Even though these vaccines are universally recommended, some patients are not asking for them, and the clinicians are not providing them.[24]

This is not as simple as it sounds. What does or does not happen in the doctor's office is shaped by the patients' knowledge and attitudes, the personal beliefs and priorities of the clinicians, the way the office is managed and the broader policy environment established by health-care systems and governments.

A deeper investigation of the role these factors play in determining why older African Americans and Hispanics receive fewer influenza and pneumococcal vaccinations may lead to important solutions to decrease missed opportunities, and ensure everyone has equal protection from these diseases.

**Patient factors**

The factors that determine whether or not an individual seeks out health services are essentially universal, crossing all demographics and health issues. The health service or treatment needs to be, or at least perceived to be important, beneficial to the individual, available and affordable. All of these factors have been investigated by researchers seeking to identify the patient-related causes of vaccine disparities among older adults.

Interestingly, issues of cost and access to care have been shown to be less important than awareness and personal beliefs.[25] Researchers who looked at patients' socioeconomic status and education level did not find that they made much of a direct difference in vaccination rates. However, it is possible that they play an indirect role, since they can affect the social norms of a person's

community, friends and family, their attitudes toward the health-care system and vaccines and where they get their care.[26,27]

***Patient Knowledge and Awareness***

According to the CDC, the leading reason for not receiving a flu vaccine, reported by over 20 percent of Medicare beneficiaries, was "not knowing it was needed."[28] Awareness of the pneumonia vaccine is even lower. In a study of Medicare beneficiaries, the most commonly reported reason for not receiving the pneumococcal vaccine was not realizing the vaccine was recommended.[29] Another study found 50 percent of the participants who had not been vaccinated for pneumonia gave as their reason that they did not know they needed it.[30]

There is little available data specifically comparing the levels of vaccine awareness among older adults of different racial and ethnic groups. But researchers have found that white Medicare beneficiaries were up to five times more likely than African Americans and Hispanics to seek out an appointment with their healthcare provider for the primary purpose of receiving the influenza vaccination. They speculated that this difference in patient motivation was because white patients were more likely to be aware that vaccine is recommended, to recognize that they were vulnerable and to believe that the vaccine prevents illness.[31]

"It is important to understand that most recent Hispanic immigrants who have come here from rural areas have lower levels of health literacy, and have never been exposed to basic health messages like the benefits of vaccination."

*Hugo Alvarez, M.D., Access Community Health Network*

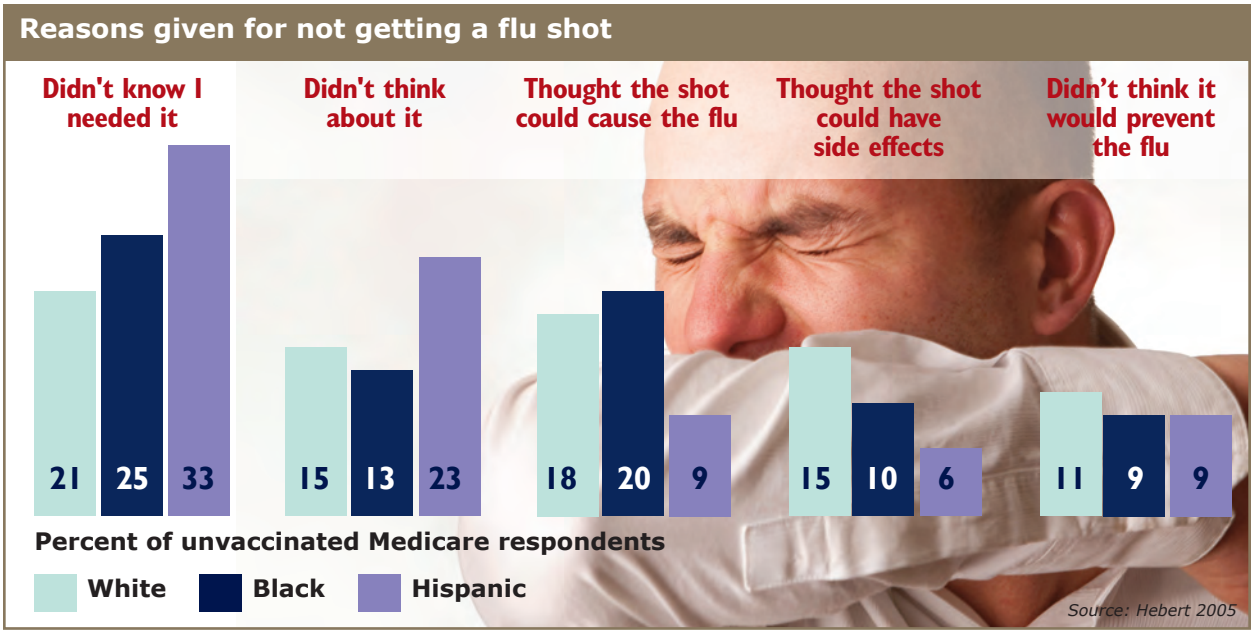
One small study exploring African-American and Hispanic attitudes toward vaccination found that among their focus group participants, a lack of knowledge about the benefits of the vaccines was directly tied to increased fears and concerns of adverse events, as well as perceived barriers fitting vaccination in their schedules.[32]

***Patient Beliefs and Social Influence***

Multiple studies have found the primary reasons cited by patients for resisting vaccination include thinking that the vaccine can cause disease, concern about side effects and not believing the vaccine will prevent the illness.[33,34] Personal beliefs and patient preferences are influenced by previous experiences with vaccinations, as well as the opinions and suggestions of friends, family and trusted community members. Not surprisingly, believing or being told that the vaccine is beneficial makes people more likely to get it, whereas negative experiences or stories from others discourage vaccination.[35]

Previous experience is the best predictor of whether or not an older adult gets these vaccinations. A person is most likely to gets the influenza vaccination if they have gotten it in previous years. There is also evidence that older adults are more likely to get the pneumonia vaccine if they have gotten a flu shot in the past.[36] The reverse is also true. A study of older adults in inner-city health centers found that the main reason given by patients for not getting vaccinated was having had a previous adverse reaction to influenza vaccine.[37] Clearly this previous negative experience was a major disincentive for these patients to receive another vaccination.

There appears to be a "ripple effect" that can either aggravate or alleviate disparities in communities. A study on African-American elders' perceptions of the influenza vaccine found that negative word of mouth about the flu shot was the biggest barrier to getting vaccinated.[38] A small survey of older African Americans found that the majority of the participants who had not been vaccinated believed that the vaccine caused



## Dispelling Myths

### Influenza

***Myth*** Influenza is kind of like the common cold … it's not a big deal.

***Truth*** Influenza, commonly called the "flu," is a severe respiratory illness that is easily spread and can lead to severe complications or even death.

***Myth*** The flu shot can give me influenza.

***Truth*** It is absolutely impossible for the flu shot to give you influenza because it does not contain the live virus. Some people may experience slight side effects, such as mild soreness, redness or swelling at the injection site and rarely a headache or low-grade fever.

***Myth*** I am healthy and never get the flu, so I do not need to get the flu shot.

***Truth*** Even healthy people can get influenza and it can be serious. Everyone 6 months of age and older is recommended to get vaccinated for influenza each year. This means you!

***Myth*** The flu shot does not keep people from getting influenza.

***Truth*** The flu shot does not guarantee that you will not get influenza, but it significantly reduces your risk. There are multiple types of influenza viruses circulating in the community and they change from year to year. The flu shot protects you from several of the most common types of influenza, and is very effective at preventing flu.

### Pneumonia

***Myth*** Pneumonia is not very common or serious.

***Truth*** Bacterial pneumonia is very serious and kills thousands of people in the United States each year, particularly older adults.

***Myth*** The vaccine can give me pneumonia.

***Truth*** It is absolutely impossible for the pneumococcal vaccine to give you pneumonia. Some people may experience slight side effects, such as mild soreness, redness or swelling at the injection site, and rarely a headache or low-grade fever.

***Myth*** Only people with serious health problems need to get the pneumococcal vaccine.

***Truth*** Everyone age 65 and older should get the pneumococcal vaccine.

***Myth*** If you are age 65 and older, you need to get a pneumococcal vaccine every year.

***Truth*** Most people age 65 and older only need to get the pneumococcal vaccine one time.

**Vaccinations for influenza and pneumonia are safe and effective and are the best way to help prevent getting sick and experiencing health complications from these dangerous illnesses.**

"African Americans have always had a lower rate of immunization for the flu. They've been a bit more hesitant to get the vaccine due to a long history of how they have interacted with the health system. The challenge is in making sure that everyone understands the safety of the vaccine."

*Garth Graham, M.D., M.P.H., Deputy Assistant Secretary for Minority Health, U.S. Office of Minority Health*

illness.[39] Positive perceptions can have the opposite effect. One study found that among patients age 65 and older, the strongest predictor of influenza vaccination was the belief that friends and relatives thought they should be vaccinated.[40]

It is important to note that these studies were not comparing belief structures across racial and ethnic groups, or attempting to demonstrate that vaccination disparities are caused by individual attitudes and beliefs. But the researchers concluded that targeted education to dispel myths and alter community perceptions should serve to increase the rates of vaccination in underserved populations. It seems plausible that, because of the ripple effect, once vaccination rates start to rise in a community, every individual who is successfully vaccinated, and shares their story, has the potential to accelerate change.

***Access to Care***

Having access to care means that a patient has a health-care provider or facility available, has the transportation or other support needed to get there and has the ability to cover the costs of visits and treatments needed. Most vaccine disparities research has not found the availability of health-care to be a significant factor. As mentioned above, older patients of different racial and ethnic groups are going to the doctor at similar rates. Affordability should not be an issue for most older adults, because both influenza and pneumonia vaccines are fully covered by Medicare.

What has been shown to make a difference is having a medical home: one stable place to go for regular care, preferably by a primary care physician. One study of Medicare beneficiaries found that those patients who had been seeing the same physician for at least three years were significantly more likely to receive the pneumonia vaccine than those who were in less stable situations.[41] Without the continuity in care provided by a medical home, a patient's vaccine documentation and medical history may be disjointed and spread across multiple practices. Patients may have less regular contact with providers, and they may lack the trust and openness in communication that maximizes the patient-provider relationship.

Hispanics as a group have been shown to be more affected by access issues than either African Americans or whites. When using a very broad definition of access that included English proficiency and convenience factors like clinic hours, office wait time and proximity to transportation, researchers found that these factors made little difference in the vaccination disparity between older whites and blacks, but did explain about a third of the disparity between whites and Hispanics. Hispanics were also four times more likely to be uninsured than older adults in the other groups, which is presumably tied, at least in part, to immigration status.[42]

## FACES OF INFLUENZA®

**Hugo Alvarez, M.D.**

*Deputy Medical Officer, Access Community Health Network, Chicago, Illinois*
*American Lung Association in Illinois*

Hugo Alvarez, M.D., knows all too well the dangers influenza and its related complications can cause for people of all ages, and especially older adults — even more so when families are not educated about the dangers of influenza and the need to get vaccinated. Every year, Dr. Alvarez works with the American Lung Association in Illinois to reach the Hispanic community with important educational information on how to help protect themselves and their loved ones. He is especially concerned that older adults with asthma and certain chronic medical conditions get vaccinated annually.

> "If we're talking about missed opportunities, then the burden falls upon the providers themselves and the health-care systems in which they work."
>
> *Raymond Strikas, M.D., Senior Advisor, Immunization Services Division, National Center for Immunization and Respiratory Diseases, CDC*

**Provider and Practice Factors**

A doctor's recommendation has a strong influence on a patient's decision to be vaccinated, even when the patient comes in with a resistant attitude toward vaccination. Unfortunately, research has shown that many physicians and other health-care providers do not routinely recommend vaccines to their adult patients, despite evidence showing that the vast majority of patients will receive vaccinations if their health-care provider recommends them.[43,44] The reasons for this missed opportunity include clinicians' personal beliefs and priorities, as well as the culture and systems of their practices.

***Provider Beliefs and Behaviors***

Researchers investigating the role of provider behavior in vaccination disparities have not found racial bias or discrimination to be a significant factor in why some patients get vaccinated with more regularity than others. Rather, physicians just tend not to prioritize adult immunizations and other preventative services in their practice. This can be due to time constraints, resource constraints or personal beliefs about the importance of pneumococcal and influenza vaccinations.[45,46]

Health-care providers communicating a positive attitude toward vaccination, and more importantly getting vaccinated themselves, send an encouraging message to patients that helps build trust. Even though clinicians routinely expose themselves to illness, and also risk transmission of disease to vulnerable patients, the rate of influenza vaccination in the health-care workforce was only 62 percent in 2009-10, with black health-care workers significantly less likely to be vaccinated than whites.[47,48] A study exploring racial disparities in adult vaccinations found that physicians in practices serving mostly whites reported receiving the annual influenza vaccine themselves more often than physicians in practices serving mostly minorities.[49]

Clinicians serving in communities where skepticism is high and vaccination rates are low may over time get worn down by patient resistance. According to Dr. Kevin Fiscella from the University of Rochester, this negative experience and skepticism are real and can affect provider behavior. If they have had a number of older African-American patients refuse the vaccine, after a while they may unconsciously decide not to offer vaccination to this population. The problem can be compounded when clinic staff from the community share some of the same skeptical attitudes.[50]

***Systems Used by Practices***

The way a doctor's office or larger health system functions can make a critical difference in whether or not a patient gets offered vaccination. There are differences in office support operations, information technology capabilities and staffing that all may play a role in vaccine disparities among older adults. Practices that build in an organized program for vaccination screening, provider reminders and patient education are more likely to have higher rates of patient acceptance, across racial and ethnic groups.[51]

Providers often are unsure of whether or not their patients are in need of vaccinations. Lack of knowledge of a patient's immunization status creates barriers to immunization, especially for the pneumonia vaccine, which only needs to be given once. Little is known about the possible adverse effects of getting the shot multiple times, and providers may not feel comfortable offering a strong recommendation for it to patients whose vaccination status is unknown.[52] Failures to assess and record immunization history, status and prior discussions with patients may contribute to missed opportunities to vaccinate. Provider practices with enhanced vaccination documentation often report higher vaccination rates among their older patients.

"By applying standardized methods, it means everybody is asked in an encouraging and supportive way."

*Kevin Fiscella, M.D., Department of Family Medicine/Community and Preventive Medicine, University of Rochester School of Medicine and Dentistry*

For practices without electronic medical records, simple health maintenance flow sheets that provide a standard format for recording routine preventative services, such as vaccinations, directly in the patient chart are a useful and effective system for improving documentation.[53]

Standing orders, which allow non-physicians in the practice to vaccinate without a physician's specific order, are another practice that can increase vaccination rates and reduce disparities. One study that compared physician and practice factors and their relationship to vaccination disparities in a sample of inner-city, urban and suburban practices found that compared to physicians in practices serving minorities, physicians working in practices with a majority of white patients more frequently reported using office support systems including standing orders, patient reminders and a designated immunization screener, all of which have been shown to be effective in improving practices' vaccination rates. None of the physicians working in practices serving mostly minority patients reported to use standing orders for adult vaccinations. The researchers speculated that the difference was primarily the result of differing attitudes among the staff about the importance of vaccination and the benefit of the practice.[54]

**Public Health Policy Factors**

Federal, state and local public health laws and policies have the potential to impact vaccine disparities by creating a strong and sustainable infrastructure that can raise public awareness, gather and analyze data to anticipate trends and identify problems and ensure that effective treatments are developed and disseminated equally nationwide. There are some aspects of public health policy that are working well for vaccine parity among older adults, notably coverage of both the vaccines by Medicare. CDC and the states have also dedicated resources for annual awareness campaigns, including a focus on underserved communities. But if the nation is to be prepared to meet the health needs of the rapidly growing population of older adults, more needs to be done to make sure the public health infrastructure for influenza and pneumonia vaccination is in place in time.

One major area where improvement is needed is the collection and sharing of immunization records. State and local health departments are responsible for maintaining registries that include data about who is getting vaccinated and where they live, as well as which clinicians are participating in the data collection system. These registries, also called immunization information systems (IIS), are extremely valuable for monitoring rates of immunization, managing vaccine inventories, tracking outbreaks and identifying underserved communities and population groups. To date, most of the effort to create and expand the IIS has been focused on children under the age of 6. In 2006, out of 56 state and municipal systems, only 39 had the capacity to enter data on adults, and fewer than 18 percent of adults age 19 or older had any vaccination data in the system.[55]

The severe shortage of influenza vaccine in 2005-06, combined with the emergence of the H1N1 influenza pandemic in 2009, has highlighted some longstanding concerns about inefficiencies and inequities in the vaccine distribution system. In a problem year, some areas of the country have too much vaccine, and other places scramble to get their orders filled. There is no one, efficient national tracking system to allow redistribution of unused doses. Large private-sector purchasers are able to place their orders before state and local health departments and individual practices, which may be more likely to serve those at highest risk. Smaller, rural and less affluent physician practices sometimes find the ordering system too cumbersome to bother with, to the detriment of their patients.[56]

## The Way Forward: Proven Effective Strategies

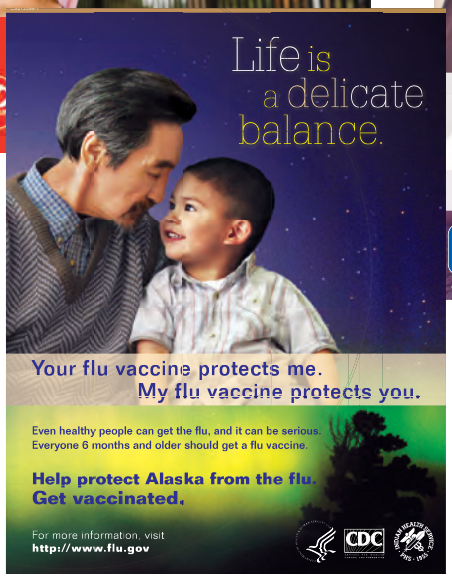
Although the rate at which older adults of all races and ethnicities get vaccinated against influenza and pneumonia has slowly increased over time, the disparity between groups had remained fairly constant. However, some health systems, pilot projects and progressive community leaders have been able to make a difference by implementing evidence-based educational strategies, provider and clinic-level approaches and public health policies. The American Lung Association encourages a concerted effort to replicate and institutionalize these promising strategies.

**Educational Strategies**

Educational strategies aimed at older adults can effectively raise awareness of the benefits of the vaccines, and of the recommendations for high-risk groups. This is best accomplished through a combination of public awareness campaigns specifically targeted to underserved communities, and patient education by health-care providers.

The CDC's annual influenza vaccination campaign has included tailored approaches and materials to target minorities and high-risk groups for a number of years. In advance of the 2010-11


[58] *Centers for Disease Control*




## The Racial and Ethnic Adult Disparities Immunization Initiative (READII) Program

The READII Program, led by the CDC, was a demonstration project to reduce racial and ethnic health disparities in influenza and pneumococcal vaccinations among older adults that was implemented in five sites in 2002-04. The program's three major objectives were improving the vaccination practices of providers, including nontraditional providers such as pharmacists; increasing access to immunization; and increasing the demand for influenza and pneumococcal vaccinations among older adults in minority populations. Each program site developed its own tailored program plan as a collaborative effort with the local Department of Public Health, local community organizations, city, state and federal government representatives, private practitioners and community members.

In Chicago, the READII Program used community outreach methods, meetings with key stakeholders and partners to create a comprehensive community plan with specific goals and objectives. Program activities included focus groups with minority senior citizens to identify beliefs and behaviors regarding adult vaccinations; targeted public awareness and education campaigns; provider education and clinic outreach and quarterly newsletters highlighting successes and challenges of participating practices; and partnerships with nontraditional partners including faith-based organizations, malls and pharmacies to provide vaccination clinics and community outreach. Preliminary evaluation results showed improvements in patient knowledge and awareness of influenza and pneumonia vaccinations, increased vaccination rates among participating minority communities and increased provider office-based quality improvement efforts.[62,63]

influenza season they engaged focus groups and surveys of different age, racial and ethnic groups to guide message development. This research reaffirmed the finding that African-American seniors respond positively to images that portray the older as protecting the younger and serving as role models for positive health behaviors, such as getting the annual influenza vaccine.[57]

Patient education and a strong recommendation for vaccination by health-care providers can address misconceptions, erase vaccine-related concerns, dispel myths and ultimately increase the likelihood of patients receiving the vaccines.[59] One research team that has been studying ways for providers to increase vaccination rates among older African Americans has found that it is critical to address patients' concerns about possible side effects and interaction with other drugs they may be taking to manage chronic illnesses. Patients may distrust the system, they found, but they trust their doctor.[60,61]

**Provider and Clinic Level Strategies**

There are a number of evidence-based clinical strategies that have been shown to increase adult vaccination rates and improve vaccine parity. Enhanced documentation systems, such as electronic medical records or health maintenance flow sheets in every patient chart, can improve tracking of patients' vaccine history and status. These systems also encourage routine screening of immunization status, enable use of provider reminders and recall systems in the clinic and flag the need for client reminders. Another highly recommended method for improving vaccine coverage rates at the clinic level is to use standing orders for non-physician personnel, such as medical

"For physicians taking care of older adults, the complex management of chronic diseases takes so much time that immunizations may get overlooked. Standing orders really are the single most effective way to improve vaccination rates."

*Mary Patricia Nowalk, Ph.D., RD, Dept. of Family Medicine and Clinical Epidemiology, University of Pittsburgh School of Medicine*

assistants and nurses, that allow them to administer routine vaccinations without a separate doctor's order.[64] All clinic-level systems changes and programs must be tailored to the particular practice and the community they serve, and staff should be integrally involved in the decision-making process and implementation of interventions.[65,66]

One best practice model of effective clinical systems change is the Veterans Affairs (VA) Healthcare System, which is the largest integrated health-care system in the United States, with over 1,000 combined medical centers and outpatient clinics serving 7.6 million enrollees. In 1995 they initiated a comprehensive effort to improve the quality of care for veterans, including development of performance measures and accountability standards for rates of preventative services, such as immunizations. Hospitals and clinics implemented multiple systems-based interventions to improve vaccination coverage rates, including clinical reminders, use of nursing staff for immunizations, feedback, the annual distribution of an influenza vaccination toolkit and national coordination of vaccine distribution. These systems were supported by the use of electronic health records. As a result, the proportion of VA users aged 65 and older receiving annual influenza vaccination improved to over 86 percent. These improvements in vaccination rates occurred across all geographic regions, types of hospitals and sociodemographic groups. No real differences in vaccination coverage remained for Hispanics and American Indian/Alaska Natives compared to whites, and few differences in coverage remained for African Americans.[67,68]

**Public Health Policy Strategies**

Many legislative and policy efforts have been made to reduce cost barriers to influenza and pneumonia vaccinations for older Americans. Medicare covers the cost of both vaccines for beneficiaries, and many third-party payers also cover these important vaccines.[69] The implementation of the Patient Protection and Affordable Care Act of 2010 strengthens the federal commitment to provide proven effective prevention strategies like vaccination to more Americans under public and private insurance. However, as the new health reform components are put into place, some people will remain uninsured and underinsured. It is important that Affordable Care Act regulations are monitored carefully, that efforts are continued to ensure that cost is not a barrier to older adults receiving the vaccines and that vaccines are made available at no cost for uninsured persons.

A recent infusion of federal investment in the infrastructure needed for health information technology and electronic health records should make tracking of vaccinations and coordination of care possible on a much larger and more sustainable scale than in the past. These new initiatives are also providing assistance to states to develop information exchanges, as well as technical assistance to providers learning how to use electronic health records to improve the care they provide.

A number of efforts are underway to improve aspects of the vaccine distribution system. One example comes from Rhode Island, which became the first state to centralize distribution of influenza vaccine. Using a law passed in 2006, the state has taken on the role of purchasing and distributing vaccines to physicians, employers and others who provide vaccinations to the public. The intent is to stabilize pricing and supply for health care providers, which should make it easier for smaller and less affluent practices to offer the vaccine consistently from year to year.

Another development with potential policy implications for vaccine disparities in older adults comes from research findings on the link between immunization of children and rates of disease in older adults. When Japan repealed a longstanding law requiring the vaccination of all schoolchildren against influenza in 1994, they experienced a sharp increase in influenza-related deaths among the elderly.[70] More recently, when the new pneumococcal vaccine for young children was introduced a few years ago, public health officials observed an unexpected 38 percent decrease in the rate of pneumococcal disease in older adults.[71] Both of these results can be at least partially explained by the concept of "herd immunity." By preventing illness in children, it is possible to reduce the germs in circulation, and the likelihood that vulnerable seniors will get infected.

## FACES OF INFLUENZA®

**Tyra Bryant-Stephens, M.D.**

*Director and Founder, Community Asthma Prevention Program, Children's Hospital of Philadelphia, Pennsylvania*

Dr. Tyra Bryant-Stephens knows how dangerous the flu can be to children with asthma and other respiratory problems. Every day, she sees how influenza can worsen the health problems of her already-ill young patients. She also knows that children can transmit influenza to others, including their older grandparents, so that protection of the entire population, especially those at higher risk of hospitalization, is really important. That's why it is critical that everyone 6 months of age and older get immunized, including health-care professionals, to help protect the most vulnerable among us.

## Taking Action

The problem of influenza and pneumonia vaccination disparities is not insurmountable. There is sufficient evidence to demonstrate how to go about addressing and reducing these disparities. Each is an opportunity not to be missed. The American Lung Association calls on policymakers, health-care systems, clinicians, community leaders and families to take the following actions to ensure that all of our elders are protected equally from these deadly, but very preventable diseases:

- The federal government should continue to aggressively implement the Affordable Care Act, ensuring that Americans have access to immunization against influenza and pneumonia vaccination without cost.
- The Centers for Disease Control and Prevention (CDC) and state immunization programs should continue the efforts of annual influenza campaigns to ensure providers and the public have a clear understanding of the risks of influenza, and the benefits of annual influenza vaccination. It is particularly important to use targeted, culturally appropriate messages and messengers to reach under-served communities.
- The CDC should strengthen the recommendations to mandate annual influenza vaccination of all health-care providers who do not have a contraindication.
- Public health officials at the federal, state and local level should better coordinate and streamline vaccine management processes, especially ordering and distribution, to ensure that vaccines for influenza and pneumonia are readily available.
- State Immunization Information Systems should include people of all ages in their data collection in order to better monitor the rate of adult immunization, track vaccine distribution and identify pockets of need.
- Health systems and providers should establish systems to effectively track patient vaccination status. All Electronic Health Record systems should include key prevention fields, including influenza and pneumonia vaccination.
- Health systems and providers should implement standing orders for appropriate vaccinations for all patients.
- Health-care providers should give strong, clear recommendations to older adults to get vaccinated for influenza and pneumonia.
- African-American and Hispanic community and faith leaders should serve as role models to promote the benefits and dispel the myths of influenza and pneumonia vaccination.
- Families should make sure that everyone gets the influenza and pneumonia vaccines as recommended, since vaccinating the young helps protect the old as well.

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## Acknowledgements

*Missed Opportunities: Influenza and Pneumonia Vaccination in Older Adults* is the third report in the *Disparities in Lung Health Series* that takes an in-depth look at the needs of populations that bear an unequal burden of risk and disease. These reports build on the American Lung Association's long-standing commitment to saving lives and improving lung health and preventing lung disease for *all* Americans. For a compendium of information about lung disease in various racial and ethnic populations, see the *State of Lung Disease in Diverse Communities: 2010* report, available at www.lungusa.org.

As with all Lung Association reports, *Missed Opportunities: Influenza and Pneumonia Vaccination in Older Adults* was a collaborative undertaking, and we gratefully acknowledge the many contributors who made it possible:

In the American Lung Association National Headquarters: Katherine Pruitt, who supervised the work and was the primary author; Janine Chambers who directed the project; Elizabeth Lancet and Zach Jump, who helped compile and review the data; Lauren Wingo, who conducted research; Norman Edelman, M.D., Susan Rappaport, Janice Nolen, Paul Billings and Erika Sward who contributed research findings and reviewed the report; Jean Haldorsen, who supervised production and creative work; and Carrie Martin, Gregg Tubbs and Mary Havell who managed the media outreach for the report.

The American Lung Association especially thanks the following people who generously shared their expertise and experience:

Hugo Alvarez, M.D., Deputy Medical Officer, Access Community Health Network, Chicago, IL, and volunteer, American Lung Association in Illinois.

Tyra Bryant-Stephens, M.D., Director and Founder, The Community Asthma Prevention program, The Children's Hospital of Philadelphia, PA.

Kevin Fiscella, M.D., MPH, Professor, Family Medicine, Community & Preventive Medicine, and Oncology, University of Rochester School of Medicine and Dentistry and Wilmot Cancer Center; Associate Director, Research Division, Department of Family Medicine, Rochester, NY.

Garth Graham, M.D., MPH, Deputy Assistant Secretary for Minority Health, Office of Minority Health, U.S. Department of Health and Human Services, Rockville, MD.

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Designed by Barbieri & Green, Inc., Washington, D.C. Printed by hard Copy Printing, New York, NY

# WE ALL ARE "FACES" OF INFLUENZA

(Everyone 6 months of age and older should be immunized against influenza this and every year.)

We all are "faces" of influenza and are at risk of contracting the virus. The Centers for Disease Control and Prevention (CDC), with the support of leading health experts, now recommends that everyone 6 months of age and older be immunized.[1,2] Influenza is a serious respiratory illness that is easily spread and can lead to severe complications, even death, for you or someone with whom you come in contact.[1,3] Each year in the US, on average, influenza and its related complications result in approximately 226,000 hospitalizations and 36,000 deaths.[1]

**Vaccination is safe and effective, and the best way to help protect yourself and your loved ones against influenza and its complications.[1]**

Ask your health-care provider about vaccination. Get immunized!

To learn more about the American Lung Association's *Faces of Influenza* program, visit **www.facesofinfluenza.org**.

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MKT19915-1 6/10 Printed in USA

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