

NATIONAL  
COLLOQUIUM  
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AFRICAN AMERICAN  
HEALTH



# Adult Immunizations

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Increasing Immunization Rates  
among African-American Adults

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HEALTH

## Adult Immunizations

### Increasing Immunization Rates among African-American Adults

#### ADULT IMMUNIZATION CONSENSUS PANEL

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**ISSUE:** Immunizations have been primarily viewed as a preventive health measure for children, however, there has been no concentrated effort to promote immunizations as a preventive health measure to effectively decrease this national health disparity among African American adults.

**OBJECTIVE:** To examine the problem of consistently low levels of immunization rates among African Americans compared to those of Whites and other minorities while taking into account, higher rates of certain medical conditions such as cardiovascular and sickle cell disease. These immunization issues were examined to effectively recommend policy, address barriers, best practices, and intervention strategies for the National Medical Association, its physician members and their communities.

**CONSENSUS PROCESS:** A literature review was conducted with assistance from the Wyeth Ayerst medical library and the National Medical Association's Immunization Clearinghouse examining over 110 pieces of immunization literature from 1980 to 1999, which addressed immunization issues from an African American and/or minority perspective. A draft of the immunization paper was submitted to panel participants to review before the panel was convened, June 24-26, 1999.

The Consensus Panel was also asked to include additional immunization material, which was not included in the first draft, relevant to the immunization issues that were selected for inclusion in the immunization paper.

The panel then devised a short list of the most relevant issues affecting African Americans and recommendations were developed to address key areas, which included:

- Immunization disparity rates;
- Current literature on risk factors for under immunization;
- Barriers to immunization;
- Missed opportunities; and
- Intervention strategies, including the establishment of institutional and physician best practices.

**SUMMARY:** Racial and ethnic disparities in adult immunization may reflect a differential effect on African Americans when coupled with underlying socioeconomic or cultural differences that can create barriers to health care access and discourage immunizations as a preventive health measure. Scientifically based, culturally appropriate intervention strategies need to be implemented by physicians and institutions/organizations to increase immunization rates among African American adults.

## Part I: Mission Statement and Purpose

The National Medical Association (NMA) is the oldest and largest national organization representing African American physicians and health professionals in the United States. Established in 1895, the NMA is the collective voice of more than 22,000 African American physicians and the patients they serve. Since its inception, the NMA has been committed to improving the health status and outcomes of minority and disadvantaged people. While throughout its history the National Medical Association has focused primarily on health issues related to African Americans and medically underserved populations; however, its principles, goals, initiatives and philosophy encompass all sectors of the population.

Today, more than 100 after its founding, the National Medical Association is firmly established as a leader in medicine. The NMA serves as a catalyst for the elimination of disparities in health and the leading force for parity in medicine.

Immunizations have been primarily viewed as preventive medicine tool for use in children, and this has led to under utilization among African American adults. Although there is growing awareness and numerous strategies have been developed to address under-immunization in adults, there has been no concentrated effort to promote immunization as a preventive health measure among adult African Americans and other minority groups.

Consequently, the NMA is

concerned about consistently lower levels of immunization rates of African-Americans compared to those of Whites and other minorities. Of additional concern are higher rates of certain conditions such as diabetes and cardiovascular disease, which coupled with clinical treatment disparities, places African-Americans at higher risk for complications resulting from vaccine-preventable illnesses.

The NMA believes that too few African American adults are immunized. Despite increasing influenza and pneumococcal vaccination levels over the past ten years among adults aged 65 years or greater in all racial and ethnic groups, immunization levels among African American remain significantly below the Healthy People 2000 objective, which was achieved among Whites in 1997. Pneumococcal vaccination levels are especially low among older African Americans, and younger adults with medical conditions placing them at risk for complications from influenza and pneumococcal disease.

Further, little progress has been made in hepatitis B vaccination of adults who are at high risk for infection; hepatitis B among African American adults is higher than among the majority population. These disparities heighten the need to address this critical health problem in the African American community.

Accordingly, in 1998 President Clinton included adult immunization as one of the six key areas to address in the "Initiative to Eliminate Racial and

Ethnic Disparities in Health." It was a step in the right direction, but much more must be done to reach the all time high immunization levels that have been achieved among children. To this end, the NMA has assessed this health disparity in order to recommend proactive steps that can be undertaken by the Association and its membership. On June 24-26, 1999 in Washington, DC, the NMA convened the **Adult Immunization Consensus Panel** comprised of the top experts on adult immunization in the country. During this panel, we drew on the knowledge of these experts and looked at the following areas:

- the disparity rates for vaccination;
- current literature on risk factors for under vaccination;
- disease conditions and complications;
- barriers to immunization;
- missed opportunities for vaccination; and
- intervention strategies, including the establishment of institutional and physician best practices.

In this paper, we first review information on the burden of vaccine-preventable diseases of adults, current recommendations for vaccination, effectiveness and cost effectiveness of vaccination, racial and ethnic disparities in vaccination coverage levels, barriers to and missed opportunities for vaccination, intervention strategies, and selected demonstration projects. We conclude with NMA recommendations for increasing vaccination of African American adults.

## Part II: Review of Adult Immunization Issues, Barriers and Opportunities

### A. Burden of Adult Vaccine-Preventable Diseases

Vaccine-preventable diseases are responsible for as many as 39,000 adult deaths each year in the U.S. (20,000 from complications of influenza infection, 14,000 from pneumococcal disease, and 5,000 from chronic hepatitis B infection) (CDC, unpublished data). By comparison, childhood immunization programs have drastically reduced the number of vaccine-preventable deaths among children, with fewer than 500 deaths reported each year.<sup>1</sup> Pneumonia and influenza together are the fifth leading cause of death in those aged 65 years and older.<sup>2</sup>

During 11 of 23 annual influenza epidemics from 1972 through 1995 in the U.S., more than 20,000 deaths, 90 percent among persons aged 65 years or more, were attributed to complications of influenza infection such as exacerbation of underlying medical conditions or secondary pneumonia due to bacterium such as *Streptococcus pneumoniae* (*S. pneumoniae*).<sup>3</sup> An estimated 110,000 hospitalizations a year are related to influenza.<sup>3</sup>

In addition to the human cost, the health care and lost productivity costs to society have been estimated at \$3 billion to \$5 billion for an average influenza epidemic, with direct medical costs accounting for 20 percent to 30 percent of the total cost.<sup>4</sup> The estimated cost of pandemic influenza in the United States would be \$71 billion to \$167 billion.<sup>5</sup>

*S. pneumoniae* causes 25–35 percent of hospitalizations for community-acquired bacterial

pneumonia, and an estimated 50,000 cases of pneumococcal bacteremia and 3,000 cases of meningitis annually in the U.S.<sup>6</sup> Among adults with pneumococcal bacteremia, 60 percent–87 percent also develop pneumonia, and up to 40 percent die. An estimated 14,000 deaths result from severe pneumococcal disease annually. The risk for invasive pneumococcal disease is higher among African Americans compared to Whites. African American adults have a threefold to fivefold higher incidence of bacteremia than Whites, and have twice the incidence of pneumococcal meningitis.<sup>6</sup> Possible reasons for these higher rates among African Americans include lower levels of pneumococcal and influenza vaccination, higher prevalence of certain conditions (e.g., diabetes, heart disease, HIV infection)<sup>7–9</sup> that are associated with higher risk for severe pneumococcal disease, delayed access to care, or higher chance of exposure associated with environmental conditions.

Estimates of influenza-associated hospitalizations and deaths have thus far not been computed by racial or ethnic group. However, higher rates of influenza complications are expected among African Americans compared to Whites because of lower vaccination levels among African Americans and the higher prevalence of certain conditions (e.g., diabetes, heart disease, HIV infection) among African Americans that are associated with higher risk for influenza complications. It is unlikely that there are racial differences in exposure,

susceptibility and risk of complications from influenza, controlling for medical conditions.

Influenza and pneumococcal vaccinations have become increasingly important for two reasons. First, prevalence of drug-resistant strains of *S. pneumoniae* have become more common in the U.S., with 15 percent to 38 percent of isolates in selected sites nonsusceptible to penicillin in 1997.<sup>10</sup> This emerging antimicrobial resistance further emphasizes the need for prevention of invasive pneumococcal disease by vaccination. Secondly, it is anticipated that another influenza pandemic will eventually occur.<sup>11</sup> The influenza pandemic of 1918 caused 20 million deaths, many of them in younger adults. During this pandemic, the disease affected one in four adults. As a currently under-immunized group, African Americans lack the infrastructure support to promote widespread immunizations in the event of a pandemic. Additionally, existing community beliefs/attitudes about immunizations might hamper the acceptance of mass immunization campaigns for adults.

After influenza and pneumococcal infection, hepatitis B is the third major vaccine-preventable disease among adults. Annually between 1988–1994, an estimated average of 335,000 persons, primarily young adults, were infected with hepatitis B virus.<sup>12</sup> Currently, annual incidence of the disease may be as low as 100,000.<sup>12</sup> For those persons affected by hepatitis B:

\* Between 8,400 and 19,000 require hospitalization,

- 6 percent to 10 percent become chronic carriers,
- About 25 percent of chronic carriers develop chronic active hepatitis,
- Each year in the U.S., about 4,000 persons die from hepatitis B-related cirrhosis, and
- 1,000 die from hepatitis B-related liver cancer.

During 1988-1994, the estimated average annual incidence rate of hepatitis B infections among African Americans was four times higher than the rate for Whites.<sup>12</sup>

### **B. Immunization Recommendations**

To reduce the burden of influenza, pneumococcal, and hepatitis B infections, specific immunization recommendations have been developed.<sup>3,6,13,14</sup> For example, annual influenza vaccination and one dose of pneumococcal polysaccharide vaccine are recommended for persons at increased risk for complications from pneumococcal and influenza infections, including all persons aged 65 years or more and younger persons with chronic conditions such as heart disease, lung disease and diabetes. The American Academy of Family Physicians also has recommended annual influenza vaccination of all persons starting at age 50.<sup>15</sup> The Advisory Committee on Immunization Practices (ACIP) is reviewing data on the risk of influenza-related complications among persons aged 50-64 years, the prevalence of high-risk medical conditions among persons in this age group, and the cost-effectiveness of this recommendation.<sup>3</sup> The ACIP also recommends scheduling a prevention visit for every patient at the age of 50 years to assess vaccination status and take other preventive measures.<sup>16</sup> Hepati-

tis B vaccination is recommended for adults at high risk for exposure through sexual contact, injection drug use, or occupations involving possible contact with human blood.<sup>13</sup>

Additional disease burdens of importance for persons who were not infected or immunized during childhood may be at increased risk for measles, mumps, rubella, and varicella and their complications as adults. Other adults enter special high-risk groups as a result of disease, occupation, behavior, or increasing age; all require immunizations or booster doses not routinely provided in childhood.<sup>17</sup> For example, a booster vaccination against tetanus and diphtheria is recommended every ten years for all adults. Supplementary adult immunization recommendations are summarized in Figure 1.

### **C. Vaccine Effectiveness and Cost-Effectiveness**

#### **INFLUENZA VACCINE**

The Influenza vaccine has reduced death, hospitalization, and clinical illness in years when vaccine and epidemic strains are similar.<sup>3</sup> Influenza vaccine is up to 90 percent effective in preventing illness in young, healthy adults.<sup>3</sup> Among institutionalized, high-risk older persons, those vaccinated experience a 30 percent to 40 percent reduction in incidence of illness; a 50 percent-60 percent reduction in hospitalization; and up to 80 percent reduction in death.<sup>3,18</sup>

The Office of Technology Assessment concluded that vaccination of persons aged 65 years or older would save money and improve health.<sup>19</sup> Optimizing vaccination programs in nursing homes could prevent about 70,000 cases of

influenza in a typical epidemic, saving more than \$50 million in direct costs.<sup>20</sup> More recently, it has been estimated that vaccination of older adults saved an estimated \$30 to \$60 in hospitalization costs per \$1 spent on vaccination.<sup>21</sup>

#### **PNEUMOCOCCAL POLYSACCHARIDE VACCINE**

Estimated effectiveness of pneumococcal vaccine against invasive pneumococcal disease caused by serotypes in the vaccine has ranged from 56 percent to 84 percent.<sup>6</sup> Effectiveness was demonstrated in specific patient groups at higher risk for pneumococcal disease, including persons with diabetes, coronary heart disease, congestive heart failure, chronic pulmonary disease, and anatomic asplenia. Data on effectiveness against invasive pneumococcal disease are not compelling for certain groups of immunocompromised patients, such as those with sickle cell disease or chronic renal failure. However, these studies are limited by the small numbers of unvaccinated persons with these illnesses.

Vaccination against pneumococcal bacteremia can improve the health of elderly persons at a reasonable cost and would save money if the vaccine were administered under a public program (saving \$8.27 per person vaccinated).<sup>22</sup> Vaccination of persons aged (65 years can result in reduced medical expenses; additional years of healthy life; and save society millions of dollars. Pneumococcal vaccination is likely to result in even more cost saving for African Americans because of the higher rates of pneumococcal bacteremia and lower pneumococcal vaccination levels compared to the majority population.

*Continued on page 9*

**FIGURE 1**

## Summary of Adolescent/Adult Immunization Recommendations

<i>Agent/Indications</i>	<i>Primary Schedule</i>	<i>Contraindications</i>	<i>Comments</i>
<b>Tetanus and Diphtheria Toxoids Combined (Td)</b>			
<p>a. All adults.</p> <p>b. All adolescents should be assessed at 11-12, or 14-16 years of age and immunized if no dose was received during the previous 5 years.</p>	<p>Two doses 4-8 weeks apart, third dose 6-12 months after the second. No need to repeat doses if the schedule is interrupted.</p> <p>Dose: 0.5 mL intramuscular (IM).</p> <p>Booster: At 10-year intervals throughout life.</p>	<p>Neurologic or severe hypersensitivity reaction to prior dose.</p>	<p>Wound Management—Patients with three or more previous tetanus toxoid doses:</p> <p>a. Give Td for clean minor wounds only if more than 10 years since last dose.</p> <p>b. For other wounds, give Td if over 5 years since last dose.</p> <p>Patients with less than 3, or unknown number of prior tetanus toxoid doses—give Td for clean, minor wounds and Td and TIG (Tetanus Immune Globulin) for other wounds.</p>
<b>Influenza Vaccine</b>			
<p>a. Adults 65 years of age and older.</p> <p>b. Residents of nursing homes or other facilities for patients with chronic medical conditions.</p> <p>c. Persons <math>\geq 6</math> mo. of age with chronic cardiovascular or pulmonary disorders, including asthma.</p> <p>d. Persons <math>\geq 6</math> mo. of age with chronic metabolic disease (including diabetes), renal dysfunction, hemoglobinopathies, immunosuppressive or immunodeficiency disorders.</p> <p>e. Women in their 2nd or 3rd trimester of pregnancy during influenza season.</p> <p>f. Persons 6 mo.–18 years of age receiving long-term aspirin therapy.</p> <p>g. Groups, including household members and care givers, who can infect high-risk persons.</p>	<p>Dose: Dose: 0.5 mL intramuscular (IM).</p> <p>Given annually, each Fall.</p>	<p>Anaphylactic allergy to eggs.</p> <p>Acute febrile illness.</p>	<p>Depending on season and destination, persons traveling to foreign countries should consider vaccination. Any person <math>\geq 6</math> mos. of age who wishes to reduce the likelihood of becoming ill with influenza should be vaccinated. Avoiding subsequent vaccination of persons known to have developed GBS within 6 weeks of a previous vaccination seems prudent; however, for most persons with a GBS history who are at high risk for severe complications, many experts believe the established benefits of vaccination justify yearly vaccination.</p>
<b>Pneumococcal Polysaccharide Vaccine (PPV)</b>			
<p>a. Adults 65 years of age and older.</p> <p>b. Persons <math>\geq 2</math> years of age with chronic cardiovascular or pulmonary disorders, including congestive heart failure, diabetes mellitus, chronic liver disease, alcoholism, CSF leaks, cardiomyopathy, COPD, or emphysema.</p> <p>c. Persons <math>\geq 2</math> years of age with splenic dysfunction or asplenia, hematologic malignancy, multiple myeloma, renal failure, organ transplantation or immunosuppressive conditions, including HIV infection.</p> <p>d. Alaskan Natives and certain American Indian populations.</p>	<p>One dose for most people. Persons vaccinated prior to age 65 should be vaccinated at age 65 if 5 or more years have passed since their first dose. For all persons with functional or anatomic asplenia, transplant patients, patients with chronic kidney disease, immunosuppressed or immunodeficient persons, and others at highest risk of fatal infection, a second dose should be given at least 5 years after the first dose.</p> <p>Dose: 0.5 mL intramuscular (IM) or subcutaneous (SC).</p>	<p>The safety of PPV during the first trimester of pregnancy has not been evaluated. The manufacturer's package insert should be reviewed for additional information.</p>	<p>If elective splenectomy or immunosuppressive therapy is planned, give vaccine 2 weeks ahead, if possible.</p> <p>When indicated, vaccine should be administered to patients with unknown vaccination status. All residents of nursing homes and other long-term care facilities should have their vaccination status assessed and documented.</p>

*Continued*

Figure 1 Adapted from the recommendations of the Advisory Committee on Immunization Practices (ACIP). Foreign travel and less commonly used vaccines such as typhoid, rabies, and meningococcal are not included.

**FIGURE 1** *continued*

## Summary of Adolescent/Adult Immunization Recommendations

<i>Agent/Indications</i>	<i>Primary Schedule</i>	<i>Contraindications</i>	<i>Comments</i>
<b>Measles and Mumps Vaccines*</b>			
<ul style="list-style-type: none"> <li>a. Adults born after 1956 without written documentation of immunization on or after their first birthday.</li> <li>b. Health care personnel born after 1956 who are at risk of exposure to patients with measles should have documentation of two doses of vaccine on or after the first birthday or of measles seropositivity.</li> <li>c. HIV-infected persons without severe immunosuppression.</li> <li>d. Travelers to foreign countries.</li> <li>e. Persons entering post-secondary educational institutions (e.g., college).</li> </ul>	<p>At least one dose. (Two doses if in college, in health care profession or traveling to a foreign country with second dose at least 1 month after the first.)</p> <p>Dose: 0.5 mL subcutaneous (SC).</p>	<ul style="list-style-type: none"> <li>a. Immunosuppressive therapy or immunodeficiency, including HIV-infected persons with severe immunosuppression.</li> <li>b. Anaphylactic allergy to neomycin.</li> <li>c. Pregnancy.</li> <li>d. Immune globulin preparation or blood/blood product received in preceding 3-11 months.</li> </ul>	<p>Women should be asked if they are pregnant before receiving vaccine, and advised to avoid pregnancy for three months after immunization.</p>
<b>Rubella Vaccine*</b>			
<ul style="list-style-type: none"> <li>a. Persons (especially women) without written documentation of immunization on or after the first birthday or of seropositivity.</li> <li>b. Health care personnel who are at risk of exposure to patients with rubella and who may have contact with pregnant patients should have at least one dose.</li> </ul>	<p>One dose.</p> <p>Dose: 0.5 mL subcutaneous (SC).</p>	<p>Same as for measles and mumps vaccines.</p>	<p>Same as for measles and mumps vaccines.</p>
<b>Hepatitis B Vaccine</b>			
<ul style="list-style-type: none"> <li>a. Persons with occupational risk of exposure to blood or blood-contaminated body fluids.</li> <li>b. Clients and staff of institutions for persons with developmental disabilities.</li> <li>c. Hemodialysis patients.</li> <li>d. Recipients of clotting-factor concentrates.</li> <li>e. Household contacts and sex partners of those chronically infected with HBV.</li> <li>f. Adoptees from countries where HBV infection is endemic.</li> <li>g. Certain international travelers.</li> <li>h. Injecting drug users.</li> <li>i. Men who have sex with men.</li> <li>j. Heterosexual men and women with multiple sex partners or recent episode of sexually transmitted disease.</li> <li>k. Inmates of long-term correctional facilities.</li> <li>l. All unvaccinated adolescents.</li> </ul>	<p>Three doses: second dose 1-2 months after the first; third dose 4-6 months after the first.</p> <p>No need to start series over if schedule is interrupted. Can start series with one manufacturer's vaccine and finish with another's.</p> <p>Dose (Adult): intramuscular (IM)</p> <ul style="list-style-type: none"> <li>• Recombivax HB®: 10 µg/1.0 mL (green cap)</li> <li>• Engerix-B®: 20 µg/1.0mL (orange cap)</li> </ul> <p>Dose (Adolescents 11-19 years): intramuscular (IM)</p> <ul style="list-style-type: none"> <li>• Recombivax HB®: 5 µg/0.5 mL (yellow cap)</li> <li>• Engerix-B®: 10 µg/0.5mL (light blue cap)</li> </ul> <p>Booster: None presently recommended.</p>	<p>Anaphylactic allergy to yeast.</p>	<ul style="list-style-type: none"> <li>a. Persons with serologic markers of prior or continuing hepatitis B virus infection do not need immunization.</li> <li>b. For hemodialysis patients and other immunodeficient or immunosuppressed patients, vaccine dosage is doubled or special preparation is used.</li> <li>c. Pregnant women should be sero-screened for HBsAg and, if positive, their infants should be given post-exposure prophylaxis beginning at birth.</li> <li>d. Post-exposure prophylaxis: consult ACIP recommendations, or state or local immunization program.</li> </ul>

*Continued*

\* These vaccines can be given in the combined form of measles-mumps-rubella (MMR). Persons already immune to one or more components can still receive MMR.

**FIGURE 1** *continued*

## Summary of Adolescent/Adult Immunization Recommendations

<i>Agent/Indications</i>	<i>Primary Schedule</i>	<i>Contraindications</i>	<i>Comments</i>
<b>Poliovirus Vaccine: IPV—Inactivated Vaccine, OPV—Oral (Live) Vaccine</b>			
<p>Routine vaccination of those <math>\geq 18</math> years of age residing in the U.S. is not necessary. Vaccination is recommended for the following high-risk adults:</p> <ol style="list-style-type: none"> <li>Travelers to areas or countries where poliomyelitis is epidemic or endemic.</li> <li>Members of communities or specific population groups with disease caused by wild polioviruses.</li> <li>Laboratory workers who handle specimens that may contain polioviruses.</li> <li>Health care workers who have close contact with patients who may be excreting wild polioviruses.</li> <li>Unvaccinated adults whose children will be receiving OPV.</li> </ol>	<p>Unimmunized adolescents/adults: IPV is recommended - Two doses at 4-8 week intervals; third dose 6-12 months after second (can be as soon as 2 months).</p> <p>Dose: 0.5 mL intramuscular (IM) or subcutaneous (SC).</p> <p>Partially immunized adolescents/adults: Complete primary series with IPV or OPV (IPV schedule shown above). OPV schedule is three doses given 6-8 weeks apart; if accelerated protection is needed, minimal interval between doses is 4 weeks.</p>	<p>IPV—</p> <p>Anaphylactic reaction following previous dose or to streptomycin, polymyxin B or neomycin.</p> <p>OPV—</p> <ol style="list-style-type: none"> <li>Anaphylactic reaction following previous dose.</li> <li>Immunodeficiency disorders or altered immune states resulting from malignant disease, or compromised immune systems, such as radiation or HIV infection.</li> </ol>	<p>In instances of potential exposure to wild poliovirus, adults who have had a primary series of OPV or IPV may be given 1 more dose of either vaccine.</p> <p>Although no adverse effects have been documented, vaccination of pregnant women should be avoided. However, if immediate protection is required, pregnant women may be given OPV or IPV in accordance with the recommended schedule for adults.</p> <p>If inadvertent administration of OPV to a household contact of an immunocompromised person occurs, avoid close contact for 4-6 weeks.</p>
<b>Varicella Vaccine</b>			
<ol style="list-style-type: none"> <li>Persons of any age without a reliable history of varicella disease or vaccination, or who are seronegative for varicella.</li> <li>All susceptible health care workers.</li> <li>Susceptible family contacts of immunocompromised persons.</li> <li>Susceptible persons in the following groups who are at high risk for exposure: <ul style="list-style-type: none"> <li>Persons who live or work in environments in which transmission of varicella is likely (e.g., teachers of young children, day care employees, residents and staff in institutional settings) or can occur (e.g., college students, inmates and staff of correctional institutions, military personnel).</li> <li>Nonpregnant women of childbearing age</li> <li>International travelers</li> </ul> </li> </ol>	<p>For persons &lt;13 years of age, one dose.</p> <p>For persons 13 years of age and older, two doses separated 4-8 weeks. If &gt;8 weeks elapse following the first dose, the second dose can be administered without restarting the schedule.</p> <p>Dose: 0.5 mL subcutaneous (SC).</p>	<ol style="list-style-type: none"> <li>Anaphylactic allergy to gelatin or neomycin.</li> <li>Unrelated, active TB.</li> <li>Immunosuppressive therapy or immunodeficiency (including HIV-infection).</li> <li>Family history of congenital or hereditary immunodeficiency in first-degree relatives, unless the immune competence of the recipient has been clinically substantiated or verified by a laboratory.</li> <li>Immune globulin preparation or blood/blood product received in preceding 5 months.</li> <li>Pregnancy.</li> </ol>	<p>Women should be asked if they are pregnant before receiving varicella vaccine, and advised to avoid pregnancy for one month following each dose of vaccine.</p>
<b>Hepatitis A Vaccine</b>			
<ol style="list-style-type: none"> <li>Persons traveling to or working in countries with high or intermediate endemicity of infection.</li> <li>Men who have sex with men.</li> <li>Injecting and non-injection illegal drug users.</li> <li>Persons who work with HAV-infected primates or with HAV in a research laboratory setting.</li> <li>Persons with chronic liver disease.</li> <li>Persons with clotting factor disorders.</li> <li>Consider food handlers, where determined to be cost effective by health authorities or employers.</li> </ol>	<p>HAVRIX®—</p> <p>Two doses, separated by 6-12 months.</p> <ul style="list-style-type: none"> <li>Adults (19 years of age and older)—Dose: 1.0 mL intramuscular (IM).</li> <li>Persons 2-18 years of age—Dose: 0.5 mL intramuscular (IM).</li> </ul> <p>VAQTA®—</p> <ul style="list-style-type: none"> <li>Adults (<math>\geq 18</math> years of age): Two doses separated by 6 months—Dose: 1.0 mL intramuscular (IM).</li> <li>Persons 2-17 years of age: Two doses separated by 6-18 months—Dose: 0.5 mL intramuscular (IM).</li> </ul>	<p>A history of hypersensitivity to alum or the preservative 2-phenoxyethanol.</p>	<p>The safety of hepatitis A vaccine during pregnancy has not been determined, though the theoretical risk to the developing fetus is expected to be low. The risk of vaccination should be weighed against the risk of hepatitis A in women who may be at high risk of exposure to HAV.</p>

### HEPATITIS B VACCINE

The overall effectiveness of vaccine in preventing viremic hepatitis B infection is 85 percent to 95 percent among susceptible adults.<sup>23</sup> If a protective antibody response develops after vaccination, vaccine recipients are virtually 100 percent protected against clinical illness.<sup>13</sup> Long-term studies of healthy adults and children indicate that immunologic memory remains intact for at least 10 years, and offers protection against chronic hepatitis B infection, even though anti-HBs levels may become low or decline below detectable levels.<sup>13,24</sup> For children and adults whose immune status is normal, booster doses of the vaccine are not recommended.<sup>17</sup> The possible need for booster doses will be assessed as additional information becomes available.

Analysis indicates vaccinating susceptible persons would be cost-saving for populations with annual attack rates above 5 percent and would be cost-effective (or cost saving when indirect costs are included) for populations with attack rates as low as 1 percent to 2 percent.<sup>25</sup> Annual attack rates for high-risk groups are likely to be well above these thresholds.<sup>26</sup>

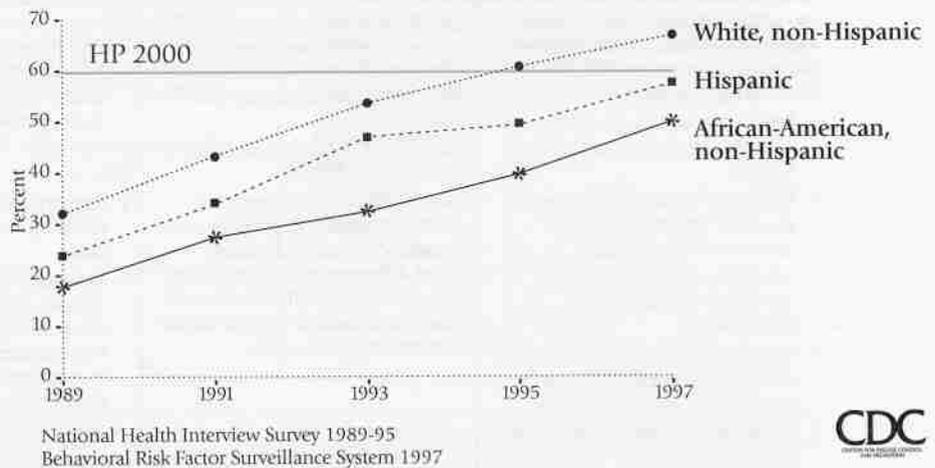
### D. Disparities in Vaccination Levels

#### INFLUENZA AND PNEUMOCOCCAL VACCINATION OF PERSONS AGED ≥65 YEARS

To reduce morbidity and mortality caused by influenza and pneumococcal disease, Healthy People 2000 objective 20.11 called for at least 60 percent vaccination against these

**FIGURE 2**

#### INFLUENZA VACCINATION COVERAGE LEVELS AMONG PERSONS AGED 65 AND OLDER, BY RACE/ETHNICITY



CDC

diseases among persons at high risk for complications, including all persons aged ≥65 years.<sup>27</sup> From 1989 through 1997, influenza and pneumococcal vaccination levels among non-institutionalized persons aged 65 years or older increased steadily in each racial and ethnic group, but remained significantly lower in each year for African Americans and Hispanics compared to non-Hispanic Whites (Figures 2 and 3).<sup>28-29</sup> In 1997, the influenza vaccination level was 67.2 percent among Whites compared to 50.2 percent among African Americans, with pneumococcal vaccination levels lower in both groups (47.3 percent for Whites and 29.7 percent for African Americans).<sup>29</sup> Proposed objectives for Healthy People 2010 include a 90 percent coverage target for influenza and pneumococcal vaccination among persons aged 65 years and older.<sup>30</sup>

Using data from the 1995 National Health Interview Survey, these disparities between

African Americans and non-Hispanic Whites persisted when stratified by poverty status, level of education, frequency of contact with physicians, sex, and age.<sup>31</sup> In most states where sample sizes were sufficient for reliable estimation after combining 1995 and 1997 data from the Behavioral Risk Factor Surveillance System (26 for influenza and 22 for pneumococcal), non-Hispanic Whites were more likely than non-Hispanic African Americans to report receiving influenza and pneumococcal vaccinations.<sup>31</sup>

The Healthy People 2000 objective 20.11 also called for at least 80 percent influenza and pneumococcal vaccination of chronically ill or older persons in adult long-term care facilities.<sup>27</sup> Using data from the 1995 National Nursing Home Survey, estimated coverage was at least 61 percent for influenza vaccination and at least 22 percent for pneumococcal vaccination.<sup>32</sup> Coverage did not differ by racial/ethnic group.

### INFLUENZA AND PNEUMOCOCCAL VACCINATION OF HIGH-RISK PERSONS AGED 18-64 YEARS

In 1995, vaccination levels among adults under age 65 years with one or more high-risk medical conditions were lower than vaccination levels of persons aged 65 years and older.<sup>31</sup> Among persons aged 50-64 years with one or more vaccine-indicated chronic conditions, non-Hispanic African Americans were significantly less likely than non-Hispanic Whites to report receipt of influenza vaccination (24.5 percent vs. 40.4 percent) or pneumococcal vaccination (11.7 percent vs. 21.5 percent). In younger adults with high-risk conditions, there were no differences by racial/ethnic group.

### HEPATITIS B VACCINATION OF HIGH-RISK ADULTS

Healthy People 2000 objective 20.11 called for hepatitis B immunization among selected high risk populations, including at least 90 percent among occupationally exposed workers, and at least 50 percent among injecting drug users in drug treatment programs and men who have sex with men.<sup>27</sup> National data does not exist to estimate hepatitis B vaccination in these and other high-risk groups. At least 70 percent of adults with occupational exposure to hepatitis B virus are estimated to have been vaccinated.<sup>33</sup> However, surveys of young men who have sex with men show high rates of hepatitis B infection and low and only a small proportion of STD clinics, drug treatment programs, and correctional facilities routinely offer hepatitis B vaccination.<sup>35</sup>

### TETANUS TOXOID USE IN PERSONS AGED $\geq 18$ YEARS

The Healthy People 2000 objective 21.2 called for 62 percent of adults to be up-to-date for the 10-year tetanus booster.<sup>27</sup> The proportion of non-Hispanic African Americans in 1995 who reported receiving tetanus toxoid (with or without diphtheria toxoid) during the past ten years decreased significantly with age, from 60.5 percent among those aged 18-49 to 43.9 percent among those aged 50-64 and 36.9 percent among those aged  $\geq 65$  years.<sup>31</sup> Tetanus coverage levels were significantly higher for non-Hispanic Whites aged 18-49 years (68.9 percent) and aged 50-64 (56.0 percent).

### E. Barriers to Adult Immunization

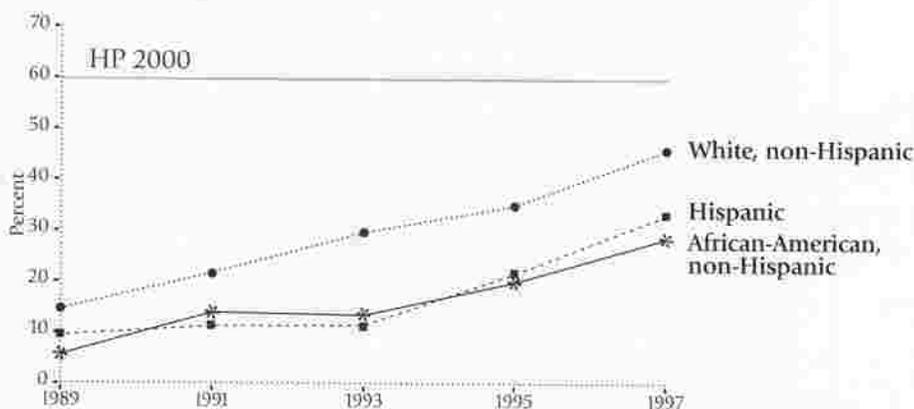
Several reasons have been given to explain under-utilization of vaccines among adults. First, some members of the public and health care providers do not perceive adult vaccine-preventable diseases as a significant public health problems. Sec-

ond, there are unnecessary fears among patients and providers concerning adverse events following vaccination. Third, unlike childhood immunization, adult immunization indications are selective, with different target groups for different vaccines. Fourth, there are no statutory requirements for adult immunization. Fifth, there are no comprehensive vaccine-delivery systems in the public and private sectors. Sixth, there are limited reimbursement levels for vaccination services and a lack of coverage for adult immunization by third party payers. Seventh, there is a failure to establish organized vaccination programs in settings (e.g. workplace) where adults congregate. Finally, there are missed opportunities to vaccinate adults during contacts with health care providers.<sup>1</sup>

Racial and ethnic disparities in adult immunization may reflect a differential effect of some or all of these factors on members of racial and ethnic minority groups, caused by underlying socioeconomic or

**FIGURE 3**

**PNEUMOCOCCAL VACCINATION COVERAGE LEVELS AMONG PERSONS AGED 65 AND OLDER, BY RACE/ETHNICITY**



National Health Interview Survey 1989-95  
Behavioral Risk Factor Surveillance System 1997

CDC

cultural differences. These differences can create barriers to health care access and discourage appropriate use of preventive health services on the part of patients (e.g., limited access to care, lack of knowledge and negative attitude toward immunization), providers (e.g., considering immunization of adults and other preventive services as low priority within their practice, differential treatment of patients), and organizations (e.g., constraints of the practice setting, lack of organized program for delivering preventive services).

#### PATIENT-RELATED BARRIERS

There are a number of potential patient-related attitudinal barriers to adult immunization, which include:

- A general lack of awareness that vaccines are necessary (e.g., provider has not recommended vaccination);
- There is a feeling that there are minimal health risks from vaccine-preventable diseases;

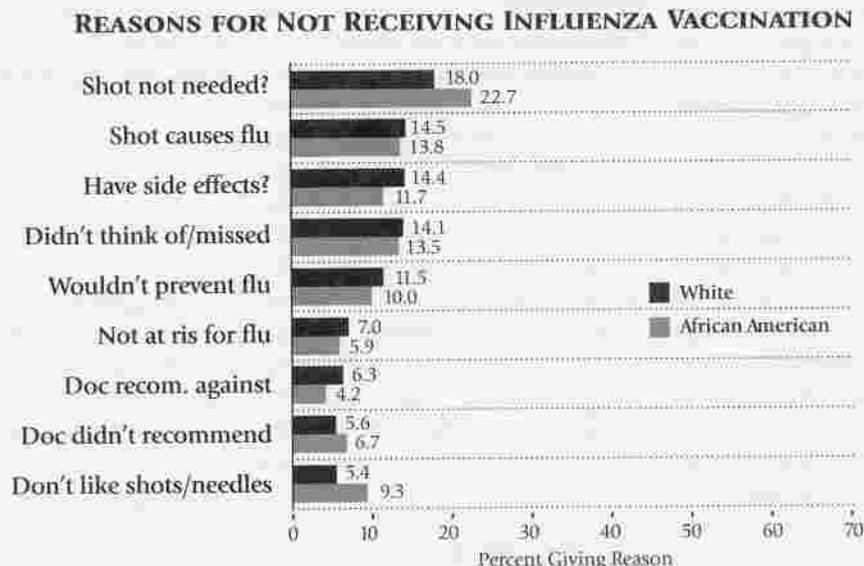
- Doubts about vaccine efficacy;
- Misperceptions about vaccine side effects (e.g., believing influenza vaccination can cause influenza);
- A dislike or fear of needles;
- Minimal concern for preventive health measures; and
- A distrust of health care providers, particularly among homeless, illegal aliens, or the poor coupled with health care providers of a different racial or ethnic group.

In addition, socioeconomic conditions such as lower levels of income and education; unemployment and living in impoverished areas can also create barriers to vaccination by limiting access to quality care. When patients lack adequate health insurance; or a usual source of care; have limited transportation, and rely on hospital emergency departments for acute medical care they tend to have lower vaccination rates. These factors accentuate attitudinal barriers to vaccination.

Among Americans aged 65 years or older, Medicare has

reduced many barriers to vaccination. Medicare provides influenza and pneumococcal vaccination at no cost to beneficiaries enrolled in Part B coverage. Members of racial and ethnic minority groups report contact with the health care system as often as do non-Hispanic Whites, yet African Americans have lower influenza and pneumococcal vaccination levels, even among those with more frequent contact.<sup>31</sup> In 1996, a nationally representative sample of Medicare beneficiaries was asked to provide reasons for not receiving influenza and pneumococcal vaccinations.<sup>36</sup> Although African Americans in the sample were less likely to report receipt of vaccination, the reasons they reported for lack of vaccination were similar to those reported by non-Hispanic Whites (Figures 4 and 5). Among persons of all racial and ethnic groups combined, of those not receiving the pneumococcal vaccine, 57 percent reported not knowing they needed the vaccine, 13 percent

FIGURE 4

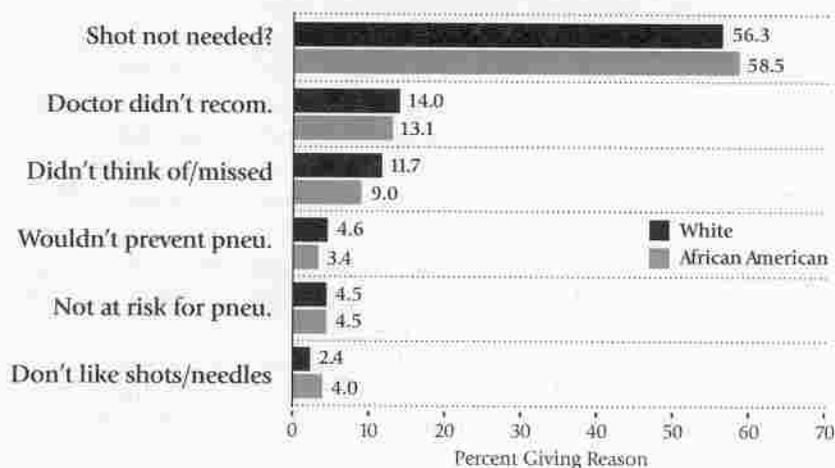


Reported by Medicare beneficiaries aged 65 years or more  
Medicare Current Beneficiary Survey, 1996



**FIGURE 5**

**REASONS FOR NOT RECEIVING PNEUMOCOCCAL VACCINATION**



Reported by Medicare beneficiaries aged 65 years or more  
Medicare Current Beneficiary Survey, 1996



stated that a doctor had not recommended the vaccine, and 11 percent did not think of it or missed it. Of those not receiving recent influenza vaccination, 19 percent reported not knowing they needed the vaccine, and 39 percent had misconceptions regarding vaccine safety or efficacy (thinking it could cause influenza or other side effects, or would not prevent influenza).

**PROVIDER-RELATED BARRIERS**

A doctor's recommendation for vaccination can have a strong influence on a patient's decision to be vaccinated, even among persons with negative attitudes toward vaccination.<sup>37-40</sup> Recent surveys of physicians have indicated that most were aware of and agreed with vaccination recommendations, but the main reason many cited for not delivering vaccines was oversight.<sup>41-43</sup> This indicates the need for organized programs for vaccination delivery, which would minimize missed opportunities to vaccinate when a patient vis-

its the healthcare provider for other problems.

Primary care providers at an ambulatory care clinic serving predominantly indigent African Americans had adequate knowledge of pneumococcal vaccine overall, and over half reported that patients accepted their recommendations for vaccination most of the time.<sup>43</sup> Other potential barriers to provider delivery of immunization services include: uncertainties about high risk groups that require immunization<sup>44</sup>; difficulty determining a patient's vaccination status<sup>42, 44</sup>; low priority for immunization<sup>44</sup>; requirements for written consent; low reimbursement for delivery of vaccination services creating physician disincentive; fears of adverse events following vaccination and related liability concerns; and beliefs that patients should be educated by mass media campaigns.

Because older African Americans have frequent contact with health care providers, it is possible that disparities in vaccination levels could in part

result from lower quality of care. For example, in one study in New York City, physicians with a predominately African American or Hispanic population were less likely to recommend influenza and pneumococcal vaccination for patients aged 65 and older compared to physicians with a predominately White patient population (47 percent vs. 74 percent for influenza; 27 percent v. 54 percent for pneumococcal).<sup>45</sup> A shortage of primary care physicians resulting in higher patient loads and constraints in the practice setting, may contribute to lowered quality of care provided to African Americans living in urban or rural poverty areas.<sup>46</sup> Results from a recent study of adults belonging to a managed care organization showed that African Americans were much less likely than Whites to say their doctors involve them in health care decisions.<sup>47</sup> Although African Americans are much more likely to have a minority physician than Whites, the majority are treated by white physicians

(48,49). Another study showing lower rates of referral for cardiac catheterization when patients were African American provides other evidence for subtle forms of racial discrimination in the health care delivery system.<sup>50</sup>

### **F. Missed Opportunities**

Adults reporting more frequent contacts with the health care system are more likely to report vaccination, reflecting increased opportunities for vaccinations to be recommended by providers or requested by patients.<sup>31</sup> Williams et al. identified many opportunities to provide vaccines to adults that were being missed, despite availability of safe and effective vaccines.<sup>51</sup> Health care providers often fail to take advantage of opportunities to vaccinate during office, clinic, and hospital contacts and fail to organize programs in medical settings that ensure adults are offered the vaccines they need. More than one third of persons aged 65 years or more, or younger adults at increased risk for complications from influenza or pneumococcal infection, reported five or more contacts in the past year. However, except for persons aged 65 years or more receiving influenza vaccine, the majority had not been vaccinated against influenza or pneumococcal disease.<sup>31</sup> Also, influenza vaccination levels are higher than levels of pneumococcal vaccination. These data indicate missed opportunities by providers to offer vaccination services.

Because previous hospitalization is a risk factor for subsequent serious pneumococcal infection, administration of influenza and pneumococcal vaccines to inpatients has been recommended.<sup>3,6</sup> However, among

Medicare patients hospitalized for pneumonia in 12 western states in 1994, opportunities to provide pneumococcal and influenza vaccines were missed for up to 80 percent and 65 percent, respectively, of eligible persons.<sup>52</sup> Among a group of primarily indigent African American adults treated for invasive pneumococcal disease at a teaching hospital, up to one third of the cases could have been prevented if the pneumococcal vaccine had been administered during previous encounters with the hospital.<sup>53</sup>

Data show that opportunities to vaccinate are missed despite older African Americans having multiple doctor visits during the year. Target vaccination groups are shown to have visited the doctor five or more times during the year without receiving influenza or pneumococcal vaccines. African Americans when compared to their White counterparts were under immunized given both groups had the identical following indicators:

- seeing a physician a similar number of times during the year;
- the same educational level;
- had medical insurance; and
- had a medical home.

Missed opportunities also have been identified for administration of other vaccines, such as hepatitis B, measles, rubella, and tetanus toxoid.<sup>51</sup>

### **G. Intervention Strategies**

This pattern of missed opportunities has contributed to continued under-utilization of vaccinations among adults despite initiatives to improve vaccination levels. In 1990, the National Coalition for Adult Immunization issued the Stan-

dards for Adult Immunization (Figure 6), endorsed by the National Foundation for Infectious Diseases, the CDC, the NMA, and other agencies.<sup>54</sup> Beginning in 1994, national and state-based campaigns were initiated by the Health Care Financing Administration to increase influenza and pneumococcal coverage among Medicare beneficiaries.<sup>55</sup> In 1994, the National Vaccine Advisory Committee recommended the following to improve adult immunization: 1) improve public and provider education; 2) institute major changes in clinical practice; 3) increase financial support by public and private insurers; 4) improve surveillance of vaccine-preventable diseases and vaccine production and delivery; and 5) provide support for research on vaccine-preventable diseases, new and improved vaccines, immunization practices, and international programs for adult immunization.<sup>1</sup> The Department of Health and Human Services subsequently issued an Adult Immunization Action Plan outlining a proposal for collaboration among federal agencies, state and local agencies, health professional organizations, purchasers and providers of health-care, vaccine companies, and the public, to increase adult vaccination levels.<sup>56</sup>

In 1997, utilization of vaccines among adults had improved but remained sub-optimal, and racial and ethnic disparities persisted. To further improve vaccination levels and eliminate disparities, scientifically based and culturally appropriate intervention strategies are needed. The independent, nonfederal Task Force on Community Preventive Services

*Continued on page 18*

**FIGURE 6**

## STANDARDS FOR ADULT IMMUNIZATION PRACTICE

### PREAMBLE

**T**HE NATIONAL COALITION FOR ADULT IMMUNIZATION, recognizing that many adults become victims of vaccine-preventable diseases; and

Recognizing that influenza, pneumococcal and hepatitis B infections account for the majority of adult vaccine-preventable morbidity and death; and

Recognizing that influenza and pneumococcal infections may account for up to 60,000 deaths annually among adults; and

Recognizing that 200,000 to 300,000 cases of hepatitis B and 4,000 to 5,000 hepatitis B-related deaths occur annually; and

Recognizing that persons 15 years and older accounted for 34 percent of reported cases of measles and 36 percent of reported cases of mumps in 1990; and

Recognizing that approximately 11 million young women are unprotected against rubella; and

Recognizing that over 90 percent of reported cases of tetanus and over 60 percent of reported cases of diphtheria during 1985-90 occurred in persons over 20 years of age, most of whom were inadequately immunized; and

Acknowledging that safe, effective vaccines that could reduce disease incidence, morbidity, mortality, and health-care costs from these illnesses are available but are underutilized; and

Noting that health-care providers often miss opportunities to provide vaccines to adults for whom they are recommended; and

Noting that 40 percent to 50 percent or more of persons at high risk for, or who die from, influenza and pneumonia had received medical attention in health-care institutions during the previous year, and at least 75 percent attended outpatient clinics but failed to receive influenza vaccine; and

Noting that two-thirds or more of patients with serious pneumococcal infections have been hospitalized at least once within the previous three to five years but have not received pneumococcal vaccine;

Therefore, THE NATIONAL COALITION FOR ADULT IMMUNIZATION...

**FIGURE 6**

**STANDARDS**

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1. Encourages the promotion of appropriate vaccine use through information campaigns for health-care practitioners and trainees, employers and the public about the benefits of immunizations; and
2. Encourages physicians and other health-care personnel (in practice and in training) to protect themselves and prevent transmission to patients by assuring that they themselves are completely immunized; and
3. Recommends that all health providers routinely determine the immunization status of their adult patients, offer vaccines to those for whom they are indicated, and maintain complete immunization records; and
4. Recommends that all health-care providers identify high-risk patients in need of influenza vaccine and develop a system to recall them for annual immunization each autumn, and
5. Recommends that all health-care providers and institutions identify high-risk adult patients in hospitals and other treatment centers and assure that appropriate vaccination is considered either prior to discharge or as part of discharge planning; and
6. Recommends that all licensing/accrediting agencies support the development by health-care institutions of comprehensive immunization programs for staff, trainees, volunteer workers, inpatients and outpatients; and
7. Encourages States to establish pre-enrollment immunization requirements for colleges and other institutions of higher education; and
8. Recommends that institutions that train health-care professionals, deliver health care, or provide laboratory or other medical support services require appropriate immunizations for persons at risk of contracting or transmitting vaccine-preventable illnesses; and
9. Encourages health-care benefit programs, third-party payers and governmental health-care programs to provide coverage for adult immunization services; and
10. Encourages the adoption of a standard personal and institutional immunization record as a means of verifying the immunization status of patients and staff.

*Adopted March 1990*

*Preamble Revised September 1992*

**FIGURE 6**

**STANDARDS FOR ADULT IMMUNIZATION PRACTICE**

Organizations who have endorsed the "Standards:"

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>American Association for World Health</li> <li>American College Health Association</li> <li>American College of Physicians</li> <li>American College of Preventive Medicine</li> <li>American Dental Association</li> <li>American Indian Health Care Association</li> <li>American Liver Foundation</li> <li>American Lung Association</li> <li>American Medical Association</li> <li>American Nurses Association</li> <li>American Pharmaceutical Association</li> <li>American Podiatric Medical Association</li> <li>American Public Health Association</li> <li>American Society for Microbiology</li> <li>American Society of Hospital Pharmacists</li> <li>American Society of Internal Medicine</li> <li>Association for Professionals in Infection Control and Epidemiology</li> <li>Association of State and Territorial Health Officials</li> <li>Association of Teachers of Preventive Medicine</li> <li>Biotechnology Industry Organization</li> <li>Catholic Health Association</li> <li>Centers for Disease Control and Prevention</li> <li>Connaught Laboratories, Inc., A Pasteur Merieux Company</li> <li>Harvard Community Health Plan</li> <li>Health Insurance Association of America</li> <li>Hepatitis Foundation International</li> <li>Immunization Action Coalition/<br/>Hepatitis B Coalition</li> <li>Infectious Diseases Society of America</li> </ul> | <ul style="list-style-type: none"> <li>Institute for Advanced Studies in Immunology and Aging</li> <li>March of Dimes Birth Defects Foundation</li> <li>Merck &amp; Co., Inc.</li> <li>National Association of County and City Health Officials</li> <li>National Association of School Nurses, Inc.</li> <li>The National Council on the Aging</li> <li>National Foundation for Infectious Diseases</li> <li>National Institute on Aging</li> <li>National Lesbian and Gay Health Association</li> <li>National Medical Association</li> <li>National Perinatal Association</li> <li>National Rural Health Association</li> <li>National Vaccine Program Office/HHS</li> <li>Partnership for Prevention</li> <li>Pharmaceutical Research and Manufacturers of America</li> <li>Phi Delta Chi Pharmacy Fraternity</li> <li>Program for Appropriate Technology in Health (PATH)</li> <li>Service Employees International Union, AFL-CIO, CLC</li> <li>SmithKline Beecham Pharmaceuticals</li> <li>Society for Adolescent Medicine</li> <li>Society for Hospital Epidemiologists of America</li> <li>St. Louis Department of Health and Hospitals</li> <li>State of Washington Division of Health</li> <li>U.S. Department of Defense</li> <li>Wyeth-Lederle Vaccines &amp; Pediatrics</li> </ul> |
|--|---|

#### RECOMMENDED INTERVENTIONS

- 1) **client reminder/recall systems** — reminding clients that vaccinations are due (reminder) or late (recall);
- 2) **provider reminder/recall** — use of client charts, computer-generated messages, or mail messages to remind those who administer vaccines that individual clients are due or overdue for specific vaccinations;
- 3) **assessment and feedback for vaccination providers** — retrospectively evaluating the performance of providers in delivering vaccinations to a client population and giving this information to providers;
- 4) **standing orders** — nonphysician personnel prescribe or deliver vaccinations to client populations by protocol without direct physician involvement at the time of the interaction;
- 5) **reducing out-of-pocket costs** — paying for vaccinations or administration or providing insurance coverage, as with Medicare Part B;
- 6) **multi-component interventions including education and one of above strategies** — provide knowledge to target population and/or providers, along with at least one other activity to improve vaccination coverage; and
- 7) **expanding access in medical or public health clinical settings when used as part of multi-component intervention** — reducing distance from target population, increasing or changing clinic hours, delivering vaccinations in clinic settings not previously used, such as emergency departments, inpatient units or subspecialty clinics, or reducing administrative barriers to obtaining vaccination services within clinics.

has completed a systematic review of 17 types of interventions designed to increase vaccination levels, and made recommendations for use of these interventions.<sup>57</sup> Of those 17 interventions, the boxed information above represents the strongly recommended interventions relevant to adult populations

These provider-based interventions can be used to increase pneumococcal vaccination levels to the same standard or higher as those that have been achieved for the influenza vaccination by facilitating delivery of pneumococcal vaccination when patients visit their health-

care provider for an annual influenza vaccination.

Recommended interventions included vaccination requirements for college attendance and home visits by health care workers.<sup>57</sup> There was insufficient evidence for the Task Force to recommend community-wide education alone; clinic based education only; client or family incentives; client-held medical records; or provider education alone. Further research is needed to assess the effectiveness of these interventions.

Planning for implementation of these Task Force recommendations in a specific com-

munity must take into account: observed problems; community preferences; community priorities; feasibility; activities currently being performed; current levels of vaccination coverage; causes of under immunization; and information regarding vaccine-preventable disease rates.<sup>57</sup> These strongly recommended interventions are primarily provider-based. However, increasing community demand for vaccination may be a useful additional strategy. This is particularly true, if lack of knowledge among clients regarding the need for vaccination contributes to low coverage, and if increased knowledge will lead clients to demand vaccination from their providers who otherwise might not offer it. Enhancing access to vaccination services may also be useful to facilitate optimal timing of influenza vaccination, or for segments of the population with limited access to the health care system. This can be accomplished by offering vaccinations in non-traditional settings such as emergency departments, community centers, shopping malls, supermarkets, pharmacies and churches. Significant proportions of African Americans are church members and are likely to take the advice and recommendations of their clergy.<sup>58</sup>

#### H. Demonstration Projects

Little data exist on the effectiveness of community-level interventions to improve vaccination coverage among African American adults. The NMA is working on a variety of projects with the CDC to increase immunization rates among minority adults. It plays a key role in involving other minority groups in this

effort, such as the National Black Nurses Association, the National Council of La Raza and the National Coalition of Hispanic Health and Human Services Organizations. Furthermore, some managed care organizations, including Grady Health Care in Atlanta, have implemented preventive health practice guidelines specifically for minorities. Demonstration projects to improve influenza and pneumococcal vaccination levels specifically among African American populations are described below. In each case, evaluations of the effectiveness of the interventions have not yet been completed.

#### HORIZONS PROJECT

Based on the premise that physician recommendation is the most powerful influential factor in immunizations, the Health Care Financing Administration (HCFA) is funding the Horizons Project in three states to increase influenza and pneumococcal vaccination rates among elderly African-Americans.<sup>59</sup> The thrust of the program is to encourage physicians, hospitals and other healthcare providers to implement system changes in inpatient and outpatient settings to encourage immunization.

These changes include creating standing orders, chart reminders, maintaining adult immunization records for each patient, billing Medicare for influenza and pneumococcal vaccines, encouraging healthcare providers to be aware of missed opportunities to vaccinate, and encouraging immunization at the points of hospital discharge, during the influenza season and year-round for pneumococcal vaccine, and during office and clinic visits and at nursing homes.

Under the auspices of the Horizon Project, HCFA backed a two-pronged immunization project in Baltimore that targeted both providers and Medicare beneficiaries.<sup>59</sup> The Good Neighbor Flu kick-off included major media coverage, provider and beneficiary education and the administration of flu shots in 26 flu clinics in predominately African-American neighborhoods in the City of Baltimore.

Providers received information and tools to facilitate delivery of vaccines, including: Medicare roster billing video and printed instructions; information on ordering the flu vaccine; adult immunization chart sticker reminders; "Flu" fact sheets; patient-targeted adult immunization alert fliers; sample patient materials; summary of adult recommendations; comebacks for patient reasons not to receive influenza vaccination; charts for collecting vaccine rates on a weekly basis; list of pharmaceutical companies that supply vaccines; chart flags; reminder letters to patients; adverse event tracking sheets and contraindication information; and billing workshops for office managers and nurses.

Interventions with beneficiaries included: working with churches (ministers and church nurses) to provide education and accurate information; conducting face-to-face presentations and using radio, public service announcements, local newspapers, community newsletters and television to promote vaccines. It also included participating in wellness and health clinics, community fairs and festivals; conducting focus groups of seniors to identify barriers; providing beneficiaries with information and reminders; and arranging media coverage of these activities.

#### ASSESSMENT AND FEEDBACK TO PROVIDERS OF MEDICARE BENEFICIARIES IN NEW JERSEY

Effective use of assessment and feedback to providers to improve influenza vaccination levels among patients in a managed care setting was documented by the Harvard Community Health Plan (now Harvard Pilgrim Health Care) in Boston during 1984-1987.<sup>60</sup> This approach is based on the premise that primary care physicians have the greatest influence over the health care choices of their patients and have the best opportunity to provide vaccinations. In the Boston project, the HMO sent letters to physicians listing their patients and influenza immunization status. Cards were sent to patients offering them free vaccines. Physicians were tracked and updated about the vaccine status of their patients, and received a report card at the end of the project. This model resulted in a 60 percent influenza vaccination level among persons 65 years or more at a time when the rate was 30 percent nationally.

The New Jersey Peer Review Organization is using this approach in a fee-for-service environment. Primary care physicians are selected using Medicare claims data and matched against a list of fee-for-service patients. A physician profile is developed showing the vaccination status of patients, and physicians are encouraged to improve existing rates by identifying vaccination opportunities within the office setting. This project has been expanded to focus on delivery of influenza vaccination, pneumococcal vaccination, mammography, and Pap screening among African American women residing in two counties with large African American populations.

### REACH 2010

President Clinton's "Initiative to Eliminate Racial and Ethnic Disparities in Health" identifies adult immunizations as one of six critical areas of disparity to be eliminated by the year 2010 (the other areas include breast and cervical cancer screening, diabetes, cardiovascular disease, HIV infection and infant mortal-

ity).<sup>61</sup> In this effort, CDC is implementing the Racial and Ethnic Approaches to Community Health (REACH) demonstration projects designed to mobilize communities and organize their resources in support of effective and sustainable programs to eliminate health disparities. In the first year of the

project, 30 cooperative agreements will be funded to develop community action plans to address one or more of the six priority health areas. In subsequent years, selected grantees will implement and evaluate their action plans.

## Part III: Recommendations of the Adult Immunization Consensus Panel

The NMA has undertaken a study of this health disparity in order to recommend corrective actions. On June 24-26, 1999 in Washington, DC the NMA convened the Adult Immunization Consensus Panel comprised of the top experts on adult immunization in the country. During this study, we drew on the knowledge of these experts and looked at the following areas:

- data on the disparity rates for vaccination;
- current literature on this issue;
- disease conditions and complications;
- barriers to immunization;
- missed opportunities for vaccination; and
- intervention strategies, including the establishment of institutional and physician best practices.

### A. Who Should Be Vaccinated?

The NMA believes that every adult should consider vaccination for all preventable diseases to which they may be at risk. The influenza and pneumococcal pneumonia vaccines should especially be considered for adults, particularly those over 50. Specific vaccines, such as Hepatitis B should also be considered for certain high-risk groups as determined by lifestyle and occupation.

### INFLUENZA

The NMA recommends that the following groups be immunized annually for the prevention of influenza:

- Persons aged 50 and older
- Residents of long-term adult care facilities
- Persons with chronic heart disease
- Pregnant women who will be beyond 14 weeks gestation during the influenza season
- Persons with other significant diseases:
  - Diabetes mellitus
  - Hemoglobinopathies (e.g., sickle cell disease)
  - Immunosuppressed, (e.g. HIV/AIDS, leukemia, lymphoma, Hodgkins disease, multiple myeloma, generalized malignancy, those receiving immunosuppressive chemotherapy, organ or bone marrow transplant recipients, treatment with long-term steroids)
  - Chronic renal failure or nephrotic syndrome
- Individuals who represent a transmission risk to at-risk groups:
  - Healthcare personnel
  - Employees of chronic care facilities
  - Home health providers
  - Household members
  - College students
  - Teachers
  - Travelers, depending on the time of year and destinations
  - Homeless

### INVASIVE PNEUMOCOCCAL DISEASE

NMA recommends the following groups be immunized, for the prevention of invasive pneumococcal disease:

- Persons aged 65 and older
- Persons with chronic pulmonary disease (excluding asthma)
- Persons with chronic heart disease
- Persons with other significant diseases:
  - Alcoholism
  - Cerebrospinal fluid leaks
  - Chronic liver disease
  - Diabetes mellitus
  - Functional or anatomic asplenia (e.g. sickle cell disease or splenectomy)
  - Those in special environments or social settings (e.g. Alaskan Natives, American Indians)
  - Immunosuppressed, (e.g. HIV/AIDS, leukemia, lymphoma, Hodgkins disease, multiple myeloma, generalized malignancy, those receiving immunosuppressive chemotherapy, organ or bone marrow transplant recipients, treatment with long-term steroids)
  - Chronic renal failure or nephrotic syndrome
- Individuals who represent a transmission risk to at-risk groups:
  - Healthcare personnel
  - Employees of chronic care facilities
  - Household members

### HEPATITIS B

NMA recommends that the following groups be immunized for the prevention of Hepatitis B:

- Health care workers
- People with sexually transmitted diseases
- Men who have sex with men
- Intravenous drug users
- Persons at risk of exposure to blood-borne pathogens (other groups ACIP recommends, e.g., heterosexuals with multiple sex partners, prostitutes, long-term male prison inmates, etc).

### OTHER VACCINES

The NMA also recommends that adults should be assessed for immunity and vaccinated as needed against the following vaccine preventable diseases:

- Tetanus, Diphtheria
- Chickenpox
- Measles, Mumps, Rubella
- Other vaccines (e.g., hepatitis A, and meningococcal) may be indicated in certain circumstances.

### B. Changes to Additional Areas of Health Care

The National Medical Association recommends changes in the following areas of health care to increase the immunization rates of adult African Americans:

- Surveillance and Research
- Physician and Institutional Practices
- Immunization Incentives
- Information, Education and Trust
- Public Health Policy

### C. Surveillance and Research

The NMA is concerned with the relative paucity of information regarding racial/ethnic health disparities, and therefore recommends that additional information be gathered by relevant governmental agencies to assess and track the status of health disparities. With regard to immunization, the additional studies should focus on disparities in immunization rates, the barriers and missed opportunities for vaccination and intervention strategies that can effectively address them.

Specifically, the following additional information is needed:

- Disease and surveillance, by gender and race/ethnicity at the state, local and national levels
- Disease and surveillance for vaccine preventable diseases in which there is little data (i.e., hepatitis B).
- Immunization rates surveillance, by gender and race/ethnicity at the state, local and national levels
- Tracking of immunization delivery, especially linking non-traditional with traditional care sites

*Continued*

- Attitude and practice surveys and focus groups of NMA physicians, including a study of charts to determine the actual immunization practices of NMA physicians
- Attitudes and practice survey and focus groups of patients to determine the barriers to immunization acceptance, and
- Research to improve the safety, efficacy and delivery systems for vaccines.

#### **D. Physician and Institutional Practices**

The NMA recommends that adult immunization practices be incorporated as a standard of care adopted by all physicians and healthcare settings.

The NMA believe that institutionalizing best practices for immunization can successfully eliminate missed opportunities and ensure vaccination of all persons who should be immunized. Recommendations include:

- Physicians should assess patient's vaccination status and capture all opportunities to vaccinate.
- Physicians should establish practices that systematically offer recommended vaccines to their adult patients.
- Providers should establish standing order and protocols in their practices to allow non-physician medical personnel to deliver vaccinations to patients.
- Physicians should develop reminder systems for themselves, staff and patients, particularly annual influenza vaccination of high-risk patients.
- Physicians should expand access to vaccination services through drop-in clinics convenient hours, and vaccination in hospitals at discharge and in other settings.
- Physicians should develop and promote immunization records.
- Physicians should post information on vaccines in their offices.
- Physicians should work to eliminate all immunization disparities.
- Physicians should establish immunization as a standard of care.
- Physicians and patients should be educated and informed about the benefits of vaccines.
- Each NMA physician and their staff should be fully immunized.

- Physicians should address the vaccine safety concerns of their patients.
- Physicians should be better educated and informed about vaccines.
- Health care systems should promote immunization model programs.
- The NMA should encourage model immunization programs throughout NMA chapters.
- NMA should promote evaluating the performance of physicians and other providers in delivering vaccination services in clinics, hospitals, nursing homes and offices and feedback of this information to the providers.

#### **E. Incentives**

The National Medical Association recommends the following incentives, which may increase compliance and increase immunization rates:

- Shift incentives for physician practice changes.
- Adult vaccines should receive coverage in the National Vaccine Injury Compensation system.
- Adult vaccination services should be reimbursed at the same dollar level as pediatric vaccines.
- States should be rewarded for reaching target immunization rates.

#### **E. Information, Education and Trust**

The need for extensive information, education and trust concerning vaccines within the African American community is clear. The NMA views this as an important issue and one that is fundamental to the success of physician and community vaccine programs.

- The NMA, CDC, and manufacturers should "market" vaccination to the African American community as a safe, beneficial, preventive health practice.
- Physicians should develop relationships with churches and faith-based organizations to promote preventive health practices including vaccination.
- Physicians should educate and influence patients about the benefits and risks of vaccination.

- The NMA and manufacturers should create useful, culturally competent information on vaccination for patients.
- Physicians and public health officials must work to build trust among patients.
- NMA physicians should become spokespersons on immunization within their communities.

### **G. Public Health Policy**

Concerning current public health policies, the NMA recommends:

- Heightened attention to adult immunization policies.
- The NMA recommends that all licensing/

accrediting agencies support the development by health care institutions of comprehensive immunization programs for staff, trainees, volunteer workers, inpatients and outpatients.

- The NMA and the CDC should target the African American population for influenza pandemic preparedness.
- The number of health professionals delivering immunization services should be increased.
- Government should purchase vaccines for high-risk, uninsured adults.
- Private insurers, health care benefit programs, and third party payers should cover all adult immunization services as a preventive health measure for patients.

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