

CALL TO ACTION

Adult Vaccination Saves Lives

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Vaccines are underused in adults, leading to unnecessary sickness and death

The Centers for Disease Control and Prevention (CDC) recommends vaccinations from birth through adulthood to provide a lifetime of immunity.¹ But while childhood vaccination rates are relatively high, most adults are not vaccinated as recommended, leaving them needlessly vulnerable to illness, long-term suffering, and even death.

While death is the most extreme consequence of infections that vaccines can prevent, there are also hundreds of thousands of hospitalizations each year because of these diseases. Millions more Americans get sick and miss work, cannot care for their children or elderly parents, and risk passing their infections on to others.

Vaccination is most closely associated with infants and toddlers, but many vaccines are recommended for adults. Influenza and combination tetanus, diphtheria, and pertussis (Tdap) vaccines are recommended for all adults. Pneumococcal vaccine is recommended for adults 65 and older and younger adults who smoke or have other risk factors, like asthma. The shingles vaccine is for everyone 60 and older. Human papillomavirus (HPV) is for women 19 to 26, men up to age 21, and for MSM and men who are immunocompromised through age 26. Hepatitis B vaccine is recommended for adults up to age 59 with diabetes, sexually active adults who are not in a long-term mutually

monogamous relationship, and many others based on risk conditions or behaviors. Other vaccines are recommended for certain at-risk adults or as “catch up” for adults not fully vaccinated previously. CDC updates its childhood, adolescent, and adult immunization schedules regularly; they are available at: <http://www.cdc.gov/vaccines/recs/schedules/default.htm>.

With so many safe and effective vaccines available, Forbes magazine proclaimed, “A new golden age of vaccines is at hand,”² bringing with it new opportunities for Americans to take an active role in their long-term health. Taking advantage of this new opportunity and increasing immunization rates in adults will require a broadly coordinated effort that includes not only the general public but federal, state, and local governments; healthcare providers; public health officials; and policy makers. As our country grapples with healthcare reform we need to work together to ensure good preventive care, including all recommended vaccinations, is included as an essential element of public health.

Low adult immunization rates have a high price tag: pain, disability, death, and dollars

Infectious diseases have a direct impact on individuals who get sick, on their families and friends, and on society as a whole (Table 1).³⁻¹³ Influenza, for example, causes 200,000 hospitalizations and can kill up to 49,000 Americans every year.^{3,4} The majority of these deaths are among adults, despite the fact that influenza infection rates are highest among

Table 1
Impact of Vaccine-Preventable Diseases in the US

Disease	Burden of Illness
Influenza	3,300 to 49,000 deaths and more than 200,000 hospitalizations annually; over \$10 billion in costs associated with a moderately severe seasonal outbreak ^{3,4,13}
Pertussis (Whooping Cough)	Estimated 1 to 3+ million cases annually; reported cases increasing in adults and adolescents; ⁵⁻⁷ infants exposed to pertussis are at greatest risk of death; in 2010 alone, 25 US infants younger than one died of whooping cough ⁸
Pneumococcal disease	Causes pneumonia and invasive diseases (bacteremia and meningitis); estimated 44,000 cases of invasive disease resulted in 5,000 US deaths in 2009 ⁹
Human papillomavirus (HPV)	Over 6 million new infections annually; HPV strains cause 70 percent of all cervical cancers, and also cause cancer of the anus, penis, mouth, and throat ^{10,11}
Shingles	About 1 million cases annually; frequency of shingles and post-herpetic neuralgia, a very painful and hard to treat pain, increase with age ¹²
Hepatitis B	Hepatitis B-related liver disease kills about 5,000 people and costs \$700 million annually (includes healthcare and productivity-related costs) ¹³

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The choice our nation faces is... whether to pay more for the costs of treating cases of preventable disease, or less for preventing these diseases from occurring in the first place. The evidence to date indicates that adult immunization is highly cost-effective. –National Vaccine Advisory Committee¹³

children. The opposite is true for pertussis or “whooping cough.” Overall rates of pertussis have been on the rise in the US and an increasing number of infections are being identified in adults and adolescents.⁵⁻⁷ But while adults can suffer morbidity from pertussis infection, the real concern is passing the infection on to infants, who are at the greatest risk for serious complications and death. In 2010, 25 infants, all younger than one year of age, died of pertussis in the US.⁸

Pneumococcal disease has a sizable impact on individuals and their families. It can cause pneumonia, meningitis, and bacteremia.⁹ There are over 6 million new HPV infections annually in the US^{10,11} While short-term consequences of infection are appreciable, its long-term effects are most troubling. **HPV infection** is the most common cause of cervical cancer.¹⁴ HPV also causes cancer of the anus, penis, mouth, and throat.^{10,11}

Shingles is more common and severe in older persons.¹⁵ In addition to short-term effects, it also causes post-herpetic neuralgia (PHN), a severe, debilitating, and often long-lasting pain syndrome that is difficult to treat, even with narcotic pain medications. PHN may last for months or years after the shingles rash itself has healed.¹⁶⁻¹⁸

The financial burden of vaccine-preventable infectious diseases on society is sizeable. Consider influenza: the cost of a moderately severe seasonal influenza outbreak may be \$10 billion or more, not including the value of lost years of life.¹⁵ Projected lost earnings due to influenza illness and loss of life are more than \$16 billion.¹⁹

The tally grows with other vaccine-preventable diseases. Pneumococcal disease is the number one cause of community-acquired pneumonia (CAP); the yearly cost to our health care system from hospitalized cases of CAP among the elderly alone is \$8 billion.²⁰ Hepatitis B-related liver disease kills 5,000 people and costs an estimated \$700 million annually for health care and productivity-related losses.¹³ The real cost of HPV infection is realized decades after the initial infection when it leads to several types of cancer.

Table 2
Adult Immunization Rates in the US, 2010-11

Vaccine	Percent Vaccinated
Influenza (2010-11 Influenza Season) ²²	
≥19 years	40.5
50-64 years	44.5
≥65 years	66.6
Pneumococcal disease	
19-64 years, high risk ²²	18.5
≥65 years (Jan-Jun 2011) ²³	64.7
Human papillomavirus* ²⁴	
Women 19-26 years	20.7
Shingles ²⁴	
≥60 years	14.4
Td booster ²⁴	
19-64 years [†]	64
Tdap booster ²⁴	
19-64 years [‡]	52.3
Hepatitis A ²⁴	
19-49 years	10.7
Hepatitis B ²⁴	
19-49 years	42

*Percentage who received at least one dose.
†Percentage who had tetanus vaccination in the last 10 years.
‡Proportion of boosters that were Tdap during 2005-2009.
All data are from 2010 calendar year except as noted

Low adult coverage rates stand in contrast to childhood coverage

More than 90 percent of young children in the US receive most of the vaccines recommended for them.²¹ In contrast, lower adult immunization rates (Table 2)²²⁻²⁴ may indicate that (1) adults have a far greater appreciation for children’s immunization than their own and (2) the nation has not yet made the same sustained commitment to vaccination for adults as for children.

Challenging barriers must be overcome to boost adult vaccination rates

The adult immunization schedule may not be well understood by patients or providers. The first step to increasing vaccination rates is to communicate who should be vaccinated and when. Vaccination barriers exist at all levels in the public and private sectors and among healthcare providers and delivery systems. Some key barriers include:²¹

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Immunization for New Mothers: A Cocoon of Protection

Pregnancy presents a special opportunity to protect an adult and a newborn simultaneously. There is no evidence of risk to a developing fetus from inactivated vaccines given to the mother. CDC specifically recommends inactivated influenza vaccine for women who will be pregnant during influenza season. Also, pregnant women should be vaccinated against pertussis (whooping cough), a highly contagious disease that can be deadly for infants. The Tdap vaccine should be administered late in the second trimester or during the third trimester (after 20 weeks). If not vaccinated during pregnancy, then vaccination immediately after delivery, before discharge from the hospital or birthing center, is recommended.²⁵

Lack of awareness

Many adults are unaware of the potential risks of vaccine-preventable disease, the need for booster doses to maintain maximum protection, and the availability of newer vaccines. They may question the safety or effectiveness of vaccines or abdicate responsibility, leaving health-maintenance decisions to their healthcare providers. Finally, many are unaware that vaccines are recommended for perfectly healthy adults.

Lack of resources and knowledge

Many healthcare providers lack the resources to maintain an adequate supply of vaccine or do not keep up with vaccine guidelines—important issues because healthcare providers influence their patients' receptiveness to vaccines.²⁶ In National Foundation for Infectious Diseases (NFID) surveys, 88 percent of consumers said they were likely to be vaccinated if their doctor recommended it. However, while almost all primary care physicians say they initiate vaccine discussions with their patients, only about half of patients say they recall this discussion. This disconnect demonstrates the need for clear communication and simple, direct vaccine recommendations from doctors and all other healthcare professionals.^{26,27}

Lack of infrastructure

The healthcare system has not focused on developing the means to achieve high immunization rates in adults, with the exception of influenza vaccination. For influenza, a long-term effort from the government, medical

Consumer Awareness Survey on Adult Immunization²⁵

Reports from doctors and patients indicate a communication breakdown that leaves many adults unaware of the need for vaccines. According to NFID Physician and Consumer Surveys:

- 87% of physicians say they discuss vaccines with all patients but 47% of patients say they cannot recall discussing vaccines other than influenza.
- 99% of doctors say they or members of their staff initiate vaccine discussions, but 45% of patients say they (not their physician) bring up vaccine discussions at routine healthy visits.

Physician advice is the most influential factor in motivating adults' vaccination decisions. Topping the list of motivators are:

- "A strong recommendation from my physician" (88%)
- "More knowledge about vaccine effectiveness" (83%)
- "Information about the link between vaccine-preventable diseases and cancer" (79%)

Gaps in knowledge about vaccine-preventable diseases still exist:

- 58% of Americans admit to a gap in awareness about which vaccines they need
- 19% of Americans think vaccination is generally not recommended for adults (except for influenza)

The consumer survey was conducted by telephone interviews with a sample of 1,013 adults (513 men, 500 women) and weighted by age, sex, geographic region and race to ensure accurate representation of US adult population. The physician survey was conducted online with 300 primary care physicians who spend at least two-thirds of their time seeing adult patients and whose practice administers vaccines to adults.

organizations, consumer groups, businesses, and the media has heightened awareness about the importance of immunization and vaccine availability. Although these efforts have produced significant gains in coverage, influenza vaccination rates fluctuate year to year and have never met established national goals, even for the elderly.

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Finally, special challenges exist in some populations. Adult immunization rates are generally lower among Hispanics and African Americans. Also, the nation's foreign-born residents often enter the country with gaps in vaccination that put them at greater risk for diseases such as hepatitis A and rubella.^{28,29} Infections can arrive on our shores very easily—but we can mitigate their impact by keeping our society well immunized.

Adult immunization must become a fundamental part of routine patient care

Healthcare providers should be familiar with the latest adult immunization schedule. They should make clear, strong recommendations for vaccines with all patients and immunize at all opportunities including well, sick and follow-up visits.

Opportunities exist for all healthcare professionals to support an adult immunization campaign: those who provide immunization services and others who can at least counsel patients to seek appropriate vaccines. Significant changes in immunization rates will require the commitment of all health care providers—physicians, nurses, nurse practitioners,

physician assistants, pharmacists, and any other professionals who come in contact with adult patients.

An adult immunization campaign must emphasize that widespread immunization can reduce illness, disability, and death in all adult populations, not just the elderly and high-risk groups. It must also educate healthier individuals about their potential for spreading disease to their more vulnerable family and friends if they choose to remain unvaccinated. A successful campaign should emphasize new vaccines and new recommendations while reinforcing longstanding immunization guidelines, such as those for influenza and pneumococcal disease.

Changing behaviors of healthcare providers and consumers alike is a long-term process of education and reinforcement. Consumers should know that research is revolutionizing the field of immunization and that they need to take charge of maintaining their own health. Healthcare providers should recognize that when they recommend and deliver, or refer patients for all appropriate vaccines, they are endorsing high-quality care and the safety of their patients and communities.³⁰

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Organizational Supporters

The following groups agree that immunization rates in adults need to be improved to reduce the impact of vaccine-preventable diseases in Americans of all ages.

- AARP
- AIDS Project Los Angeles
- American Academy of Family Physicians
- American Academy of Nurse Practitioners
- American Academy of Physician Assistants
- American Association of Diabetes Educators
- American College of Chest Physicians
- American College Health Association
- American College of Obstetricians and Gynecologists
- American College of Physicians
- American Heart Association
- American Medical Association
- American Nurses Association
- American Pharmacists Association
- American Public Health Association
- American Society of Health System Pharmacists
- American Society for Microbiology
- American Thoracic Society
- Asian and Pacific Islander American Health Forum
- Association for Professionals in Infection Control and Epidemiology
- Asthma and Allergy Foundation of America
- Centers for Disease Control and Prevention
- Gerontological Association of America
- Immunization Action Coalition
- Infectious Diseases Society of America
- National Association of Community Health Centers
- National Association of County and City Health Officials
- National Council on Aging
- National Hispanic Medical Association
- National Medical Association
- Partnership for Prevention
- Society for Adolescent Health and Medicine
- Society for Healthcare Epidemiologists of America
- The Society of Infectious Disease Pharmacists
- Visiting Nurse Associations of America

About the National Foundation for Infectious Diseases (NFID)

NFID is a non-profit, tax-exempt (501c3) organization founded in 1973 and dedicated to educating the public and healthcare professionals about the causes, treatment, and prevention of infectious diseases.

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