Commentary

Adult Vaccination—A Commentary

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On January 23, 2008 the Centers for Disease Control and Prevention (CDC) held a press conference in Washington, D.C. to release the results of the most recent National Immunization Survey. The news was grim. Too few American adults receive recommended vaccines that protect against a variety of communicable diseases.[1] Survey results presented by the National Foundation for Infectious Diseases (NFID) at the same conference showed that American adults could not name more than one or two vaccines they should receive for preventing communicable diseases.[1] CDC officials mentioned cost as a contributing factor,[2] but cost is only part of the problem. Improving adult vaccination rates and reducing mortality from vaccine preventable diseases (VPDs) will require the coordinated efforts of health care providers and public health professionals, including health educators. These groups must address barriers including low awareness, complacency, misinformation, and limited access to care.

Traditionally, vaccines have been associated with childhood. Historically, many of our most-feared communicable diseases attacked infants and toddlers, and those who survived were generally protected from those diseases as adults. During the past century tremendous advances in vaccination spared millions the morbidity and mortality associated with such dreaded diseases as diphtheria, polio and measles. Today, only 300 children die each year from VPDs in the United States.[3] This number reflects a greater than 99% reduction in mortality since the pre-vaccine era.[4]

Despite these successes in addressing vaccine preventable diseases for children, vaccination for U.S. adults has been severely neglected. As shown in Table 1, there are currently ten vaccines recommended by the CDC for healthy adults aged 19 and older.[5] According to the Institute of Medicine, 50,000 to 70,000 U.S. adults die each year from VPDs.[3] Adults die 300 times more often than children from diseases that are vaccine preventable. Although greater than 99% of all VPD deaths occur in adults,[3] until recently, little attention has been paid to this problem. There are several identified and potentially other unidentified barriers to adult vaccination that must be studied to tailor appropriate and effective interventions. The responsibilities and competencies outlined by the National Commission for Health Education Credentialing (NCHEC) provide a useful framework for health educators working to improve U.S. adult vaccination levels. These responsibilities and competencies include: (1) assessment of needs; (2) planning; implementation and administration of programs; (3) evaluation and research; (4) serving as a health education resource; and (5) advocacy for health.[6]

As illustrated by the NFID's survey results,[1] adults are unaware of the recommendations for continued vaccination throughout life. Although parents and pediatricians know that vaccination is a normal and necessary part of children's preventive health needs, vaccination is not an emphasized component of adult health care.[7] Just as cholesterol screening, mammograms and colonoscopies have become routine, vaccination must become a routine component of preventive health care for adults. Whereas health care providers must address adult vaccination at the individual patient level, health educators must work to educate communities and the public-at-large. Evaluation and research must be conducted to identify specific adult populations with low vaccination awareness, so that interventions and programs can target those groups to increase awareness and generate greater demand for adult vaccination services.

Closely tied to low awareness levels is adult complacency toward vaccination. Probably because of their historical association with childhood, communicable diseases have received little attention in adult health care. Even if adults hear about vaccine availability or benefits, many do not see how the risks and benefits apply to them. The rise of chronic diseases such as heart disease and cancer has shifted adults' health focus away from communicable diseases. Although chronic diseases are responsible for significant U.S. morbidity and mortality, one must remember that chronic diseases increase both susceptibility and severity where communicable diseases are concerned. This relationship is an important one because the message has not received much publicity to date. Health educators must serve as information resources in demonstrating the relationship between communicable diseases and chronic illness, and in showing how vaccination can prevent or lessen the severity

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Table 1. Recommended Vaccines for Adults Aged 19 and Older

	Schedule for healthy adults lacking evidence of immunity[a]	Chronic illnesses necessitating vaccination for all affected adults ≥ 19
Hepatitis A	2 doses men who have sex with men, injection drug users, travelers to endemic areas	Liver disease
Hepatitis B	3 doses health care workers, men who have sex with men, injection drug users, household & sexual contacts of infected persons	HIV or AIDS, Liver disease, kidney disease
Human papillomavirus (HPV)	3 doses Women aged 19 to 26b	
Influenza	1 dose each year Age ≥ 50	HIV (not AIDS), diabetes, heart disease, chronic pulmonary disease, alcoholism, asplenia, liver disease, kidney disease
Measles, mumps, rubella (MMR)c	1 dose Age ≤ 50	HIV (not AIDS), diabetes, heart disease, chronic pulmonary disease, alcoholism, asplenia, liver disease, kidney disease
Meningococcal	1 dose Military recruits, college students in dormitories, travelers to endemic areas	Asplenia
Pneumococcal	1 dose Age ≥ 65	HIV (not AIDS), diabetes, heart disease, chronic pulmonary disease, alcoholism, asplenia, liver disease, kidney disease
Tetanus & diphtheria (Td) or Tetanus, diphtheria & pertussis (Tdap)	1 dose every 10 years Age ≥ 19 (May substitute Tdap for 1 dose of Td in adults < 65)	
Varicella (chicken pox)c	2 doses Age ≥ 19	HIV (not AIDS), diabetes, heart disease, chronic pulmonary disease, alcoholism, asplenia, liver disease, kidney disease
Zoster (shingles)c	1 dose Age ≥ 60	

Note: Adapted from the Centers for Disease Control and Prevention's "Recommended Adult Immunization Schedule."[5]
a. Adults who lack immunity are those with no documentation of vaccination and no evidence of prior infection.
b. The human papillomavirus vaccine is currently under Food and Drug Administration review to expand eligibility to women aged 27 to 45.[11]
c. MMR, Varicella, and Zoster are contraindicated in pregnant women and immunosuppressed persons.

of many potentially deadly diseases.

Overcoming complacency may be an achievable goal to motivate many adults to receive recommended vaccinations. However, addressing misinformation and fears is even more challenging. Some adults still believe that influenza vaccines cause the flu.[8,9] Even for persons who understand that vaccines do not cause disease themselves, many are skeptical regarding their effectiveness. Most vaccines are given as injections, and for many, the discomfort and inconvenience of vaccines outweighs the perceived benefits.

Health care providers must engage patients in candid dialogue regarding the goals, risks and benefits of vaccination. An essential component of this message is to address the misperception that vaccines are supposed to prevent 100% of infections. Vaccines are given to reduce the chance of symptomatic infections and to lessen the severity of diseases so that they are survivable. Patients must also be made aware of potential adverse effects and contraindications to vaccination. The most common adverse effects are low-grade fever or mild pain and redness at the site of injection. The two most common contraindications are to avoid (1) all vaccines for persons with current moderate or severe acute illness, and (2) live vaccines for persons with compromised immune systems. Health educators need to work with health care providers to identify common sources of misunderstanding and plan educational strategies that can be delivered by health care providers as well as public health practitioners. As patients learn the purpose and benefits of vaccination, they may be more willing to make informed choices to protect their health.

Another barrier is access. Even when patients are willing to be present for vaccinations, they may not have an accessible provider. Although children from low-income families are eligible to receive free vaccinations through the CDC's Vaccines for Children Program,[10] comparable programs are rarely available for adults. Cost or lack of health insurance prohibits many adults from seeking regular health care. Moreover, without regular contact with the health care system, some adults do not receive advice regarding preventive services such as vaccines. Consequently, they may not know how and where to obtain vaccines even if they were aware of their importance. Even for adults who have a regular health care provider, some vaccines may be prohibitively costly. For example, the Hepatitis A and Hepatitis B series each costs between $100 and $200 in the private sector.[7] The new human papillomavirus vaccine, which is currently under U.S. Food and Drug Administration review for use in 27 to 45 year old women,[11] costs nearly $400 for three injections.[7] Medicaid, Medicare and private insurances vary greatly on coverage levels for adult vaccines,[7] thereby leaving patients with some or all of vaccine costs. Variable reimbursement also may persuade health care providers that vaccine administration is unprofitable, thereby leading to decreased availability. Because VPDs are a major source of morbidity and mortality for adults, health educators must advocate for improved access for adults seeking vaccines. Influencing health policy regarding affordable adult vaccine availability is important in improving services for those who cannot afford the high price tag.

To improve adult vaccination rates, health educators must work with health care providers to address barriers. Health educators must: (1) evaluate and research population segments with low awareness to target for intervention; (2) serve as health information resources to address lack of knowledge that leads to complacency; (3) identify reasons for misinformation and plan strategies to address misinformation; and (4) advocate for improved access to adult vaccination services. Health educators can identify populations with low vaccination levels and through collaborations with community-based groups and governmental organizations use social marketing and targeted educational messages to decrease barriers. Health educators must also advocate for vaccination by engaging community-based and governmental groups to prioritize access to preventive services. Through these measures, educators and providers can help improve adult vaccination levels and decreased morbidity and mortality from VPDs.

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