

Achieving Immunization in Adults: Opportunities Presented by Travel Clinics in the US

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Need for Adult Immunization

Immunization is an important weapon in the medical arsenal against infectious disease, yet interest in immunization is predominately limited to protecting children. Despite its potential benefits, adult immunization in the US has not been given the attention it deserves, and adult immunization programs remain few and far between. As a result, immunization of adults falls well below target levels, whereas US vaccine coverage estimates for children approach or exceed national goals.¹⁻³

The consequences are simple: inadequate vaccination results in deaths and serious illness from preventable diseases. Each year in the US alone, between 50,000 and 70,000 adults die of diseases that can be prevented by vaccination, predominately pneumococcal infection (which causes meningitis, bacteremia, and pneumonia), influenza, and hepatitis B.⁴⁻⁶ The total cost of treating adults for these three diseases alone exceeds \$10 billion annually, excluding the value of lost lives.⁷ The potential for improvement is vast.

Some vaccinations are particularly appropriate to certain high-risk populations that comprise a relatively small proportion of the population. In these groups, the risk of disease is associated with factors such as occupation, lifestyle, living conditions, and overall health and well-being.⁸ Thus, prisoners, healthcare workers, and people with multiple sexual partners are at greatly increased risk of hepatitis B infection, whereas alcoholics, organ transplant patients, and residents of nursing homes are at greater risk of influenza and pneumococcal infection. Other vaccinations, such as tetanus, are appropriate to the general adult population. High immunization rates for

some vaccines are required to keep the incidence of such infections under control, and provide herd immunity for individuals unable to receive such vaccines for medical reasons (e.g., immunocompromised individuals). In fact, the number of vaccinations relevant to adult immunization is relatively small. At present, the Centers for Disease Control and Prevention (CDC) and other US organizations are primarily promoting immunization against influenza, pneumococcal disease, hepatitis B, and measles.^{9,10}

Reasons for Inadequate Adult Immunization

One reason the immunization status of many adults is less than optimal is that the public perceives immunization to be for children, not adults. Whereas children visit healthcare providers to receive preventive care, adult healthcare is generally symptom-driven and adults rarely visit a primary care physician unless they are ill. This prevents an adult's inadequate immunization status being recognized and reversed. Some adults may have missed childhood vaccinations against diseases such as polio, whereas others have missed booster vaccinations against measles, tetanus, or diphtheria, for example. Furthermore, rates of immunization vary between socioeconomic groups. Thus, only 29.7% of black adults aged ≥ 65 years reported receiving pneumococcal vaccine, compared with 47.3% of whites in the same age group.¹ In general, members of economically disadvantaged, innercity, and minority populations receive less protection by vaccination, perhaps because they often lack a "medical home" where they have regular contact with a healthcare provider.

A major problem preventing large-scale vaccination is that the members of the public are generally unaware of their own vaccination status. This situation is compounded by the fact that primary care physicians may not consider the vaccination status of their adult patients. As a result, visits to a primary care physician often represent lost opportunities to catch up on missed and overdue immunizations. In any case, few primary care physicians are equipped with the appropriate vaccines, storage facilities, staff, or comfort level to deliver the range of immunizations that may be required. There is a need to raise awareness of the importance of adult immunization with the public and primary care health providers.

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Opportunities Presented by Travel Clinics

As part of a move to increase levels of adult vaccination, growing numbers of adults are receiving vaccines in nontraditional settings, ranging from pharmacies to churches and grocery stores.⁷ Although some nontraditional venues may have some problems (e.g., inadequate emergency staff and medications), they are easily accessible to high-risk populations. They are an important means of raising awareness of the benefits of vaccination, particularly among people who do not regularly visit a healthcare provider. Among the nontraditional settings best equipped to vaccinate adults against preventable diseases are travel clinics.

The traveling public of all ages is generally aware of the need for vaccination prior to travel to many foreign destinations. Many people visit travel clinics to obtain relevant vaccinations, such as hepatitis A and B, typhoid, meningitis, yellow fever, and rabies.¹¹ Travel clinics, whether public, private, or corporate, are serving increasing numbers of the traveling public. Nevertheless, very few travelers currently leave the US with adequate vaccination status, either because they do not receive all the necessary immunizations, or because they do not seek vaccination at all.¹² Since travel clinics necessarily focus on vaccination, they provide a good opportunity to check on a patient's immunization status and to administer missed vaccinations as necessary. Ensuring that travelers have received adequate childhood vaccinations will ensure they are not infected abroad and subsequently infect contacts at home. In the US, most cases of measles are now imported from abroad. In 1998, 71% of cases of measles were imported or importation-associated.¹³ Indeed, many travel vaccines, such as those against hepatitis A and B, are also of benefit at home.

Travel clinics are among the safest nontraditional settings for adult vaccination. They are well equipped to store and administer vaccines. They are likely to include staff well trained to advise on, and respond to, adverse reactions to vaccination, which can range from mild fever to anaphylactic shock. They will also be able to provide the vaccinee with appropriate information about the risks and benefits of vaccination during vaccination screening interviews.

Travel medicine is becoming a recognized speciality in its own right, as reflected in the recent growth in travel clinics and the advent of associations such as the International Society of Travel Medicine. Recognition of the importance of adult immunization may well lead to further expansion of these clinics and should help improve adult immunization rates. International travelers form a significant proportion of the population of developed countries. Worldwide, half a billion travelers

cross national boundaries each year, a number which includes 40 million Americans.¹¹

However, travel clinics need not rely on treating travelers alone. By marketing more widely, they may attract additional nontraveling customers and generate a more even flow of work, particularly during the quieter winter months. By making the general public aware of the need for adult immunization, travel clinics may help decrease the unnecessary morbidity and mortality associated with vaccine-preventable illnesses.

Immunization as an Alternative to Antimicrobial Agents

This growth in adult immunization through travel clinics comes at a particularly appropriate time, as the limitations of antibiotics in the treatment of infection are becoming more and more apparent. The problem of resistance to established antimicrobial agents is becoming widespread, as resistance to new antibiotics emerges rapidly after their release into clinical use. This is a problem that is unlikely to be solved by the development of further antibiotics.

The emergence of multidrug resistant organisms such as pneumococci is especially worrying. In the US, pneumococcal disease is responsible for more deaths than any other bacterial disease for which a vaccine exists.⁵ It causes 50,000 cases of bacteremia in the US each year, for which the adult mortality rate is between 15 and 20%.¹⁴ Pneumococcal pneumonia in the US causes a further 40,000 deaths per year.⁵ Pneumococcal vaccination provides a means of overcoming the problems of antibiotic resistance and preventing the significant mortality and morbidity associated with this infection. Pneumococcal vaccine has been shown to have a protective efficiency of 56% in adults who receive it.¹⁵

The potential of vaccines to overcome the problems of antibiotic resistance is now being recognized and is leading to the development of further new vaccines against other infectious agents. A new attitude towards adult vaccination will be required for the full potential of such vaccinations to be realized.

Vaccination as a Lifetime Investment

For adult vaccination to truly succeed, the general public must recognize vaccination as a significant lifetime investment in protection against infection and illness. This belief already exists with regard to vaccination for travel. The challenge now facing public health professionals is to extend that belief to illnesses encountered at home.

Travel clinics are well equipped to support the health of their customers at home as well as abroad.

With the growing number of people traveling abroad, travel clinics have the potential to make significant improvements in the health of the population through adult vaccination.

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