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A review of the key factors to improve adult immunization coverage rates: What can the clinician do?

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ABSTRACT

Adult immunization coverage rates remain low in the United States and internationally, despite obvious benefits to vaccinating and maintaining a well-vaccinated adult population. Broad policy changes are required to identify and address gaps in financing, in immunization infrastructure, and patient and provider awareness and knowledge to improve the protection of our adult and aging population from vaccine-preventable diseases. There is good evidence that efforts are now underway both within the United States and across the world to advance these policy changes. There are successful interventions that have been demonstrated to improve rates in the pediatric population that must be translated into the adult patient population to meet the critical gaps that remain at the interface of the delivery of vaccinations to adults. Improvements in overall policy will only increase adult immunization coverage rates if interventions are adapted and implemented for adult patients. Often, these same interventions will be applicable to adolescent patients as well. These interventions have been reviewed by the United States Preventive Services Task Force and recommended interventions fall into three categories: (1) Enhancing Patient Access to Vaccination; (2) Improving community/patient demand; and (3) Provider- and healthcare system-directed interventions. Specific interventions that have been demonstrated successful for the adult population include interventions such as reducing patient out-of-pocket costs for vaccinations, patient or family incentive rewards, and implementation of quality measures and quality improvement interventions. Addressing the poor performance in adult immunizations requires approaches predicated on not repeating previous efforts and will require innovative thinking to integrate multiple interventions that have been successful separately, into a holistic approach to support and automate immunization assessment, recommendation, and administration. This can then lead to increased valuation of adult and adolescent immunizations within the priorities of a healthcare system, and improvements in clinic efficiency within a practice.

1. Introduction

It is well-accepted that vaccines are one of the most important life-saving public health interventions of all time [1,2]. The United States has a robust pediatric immunization program that has created a strong social norm to protect children against vaccine-preventable diseases. Consequently, for children entering kindergarten, the national immunization coverage rates for most vaccines recommended by the Advisory Committee on Immunization Practices, ACIP, which makes vaccine use recommendations in the U.S., hover at or above 90 percent [3,4].

Internationally, the World Health Organization's Expanded Program on Immunization (EPI) was launched in 1974 to develop and expand pediatric immunization programs around the world. Because of this effort and the commitment of countries across the world to protect children from vaccine preventable diseases, by 2005, 80% of children across the world were immunized in their first year against the 6 targeted diseases in the EPI program [5].

The successes seen with U.S. and international efforts to immunize children have led to dramatic reductions in pediatric vaccine preventable diseases – EPI efforts are estimated to prevent 3 million deaths/year. Vaccines have been so effective at preventing, and even eradicating, diseases like smallpox and polio that the public, policy makers, and many physicians, take them for granted. Unfortunately, despite evidence-based recommendations for adult vaccination in the United States and internationally [6,7], adult populations are not well vaccinated, resulting in significant morbidity, mortality for patients, and impressive costs to our healthcare system [8–14].

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This review focuses in adult immunizations and discusses best practices to improve coverage rates, particularly by focusing on interventions at the provider/clinician level.

2. Universal challenges for adult immunizations

There is current acknowledgment of the many barriers in the way of improving use of recommended adult vaccines [8]. The multitude of identified causes run the gamut from often complicated public health recommendations regarding vaccinations, limited public and provider awareness of recommended adult immunizations, the fragmented and inconsistent way by which adults access healthcare, particularly preventive the lack of a vaccine delivery infrastructure, and personal financial considerations [8].

It has been argued previously that if we step away from the multitude of individual barriers and looking at the adult immunization challenge as a whole, there are three major barriers that need to be addressed in coordination in order to achieve a paradigm change in adult immunization. These three challenges are [8]:

1. The Undervaluation of Adult Immunization
   There is a lack of appreciation for the burden of adult vaccine preventable disease. Internationally, this is partially due to lack of surveillance and epidemiological studies to provide data on this burden [15–17]. Even when recommendations for vaccination of adults are present, providers and the public they serve often are not aware of them, and thus do not follow them. Finally, there remains misinformation, much perpetuated by the anti-vaccine movement, about the safety and efficacy of vaccines and vaccination [18,19].
2. Inadequate Infrastructure to Support Adult Vaccination
   To ensure that the life-saving benefits of vaccines are fully harnessed, there needs to be a strong vaccine infrastructure to research and develop new vaccines that ultimately can be delivered into the arms of patients. Unfortunately, that infrastructure, while much better established for pediatric vaccines, is not well developed for adult vaccines [15,17,20]. Infrastructure to support the continued intellectual and fiscal investment in research and development, to address liability and compensation for adult vaccines, to identify gaps in vaccination practice and address them (for example, through quality improvement), and to establish comprehensive disease and vaccine use/supply surveillance systems is necessary.
3. Inadequate Payment for Adult Vaccines and Vaccination
   Adequate payment for the cost of vaccines and paying providers to offer counsel and to administer adult vaccines is essential. However, there are few systems in place within both private and public sector payers to ensure that appropriate payment to providers occurs [17]. Requiring patients to pay out of pocket for vaccines is also a barrier to improving coverage rates. While the Affordable Care Act (ACA) has improved access to adult vaccines for patients by removing co-payments for ACIP-recommended vaccines, there is current uncertainty as to which components of the ACA will remain intact. Additionally, the ACA does not address whether payment to providers for administering the vaccines is adequate. With no provider incentive to immunize, many may reduce their efforts to immunize adults and some may even stop immunizing.

The good news is that there are efforts now in play to improve and advance these three issues simultaneously [8]. These include efforts within the United States by the Centers for Disease Control and Prevention, the National Adult and Influenza Immunization Summit [21], multiple physician groups including the American College of Physicians and the American College of Obstetricians and Gynecologists [8], and the Department of Health and Human Services [22]. In the United States, the introduction of the new Standards for Adult Immunization Practice sets a new stage for practice improvement that considers the current and evolving environment for adult immunizations [22]. Internationally, there are now strong consistent efforts in both Europe and Asia, such as those led by European Scientific Working Group on Influenza (ESWI) and the Asian-Pacific Alliance to Combat Influenza (APACI) to improve influenza awareness and ultimately influenza immunizations [23,24]. These efforts are an important first step towards an overall goal of establishing national systems that will promote and sustain not just influenza, but also adult, vaccinations.

3. Successful interventions at the clinician level

Even as progress is being pursued at the policy level to improve the adult immunization environment [8,25,26], there is a need to provide the practicing clinician with the tools and interventions to improve the administration of vaccines to adults within the clinical setting. This review will focus on these proven interventions.

There have been best practices identified, including those reviewed and summarized by the United States Community Services Task Force and several other publications [21,22,27–29]. Many of these interventions were first developed for the pediatric population and after demonstrated success, were adapted for adult patients as well [30]. However, with the low awareness of, and consequent lack of interest in, adult immunizations, these best practices have not always been well adopted within practices serving the adult population. Considering that the recently revised Standards for Adult Immunization Practice advocates that every provider of care to adults has a responsibility to assess, recommend, administer (or refer for administration to an immunizing provider), and document adult vaccinations [22], it is imperative that these processes be better implemented within clinical practice.

Interventions shown to improve immunization coverage rates include: strategies to enhance patient access to vaccines, such as reducing patients' out-of-pocket costs for getting vaccinated; strategies to increase community demand for vaccines, such as patient reminder/recall systems or incentives; and strategies directed at the provider or the healthcare system, such as the use of standing orders, provider reminder systems, and provider assessment and feedback [27,31]. These interventions work whether done individually or in combination. Organizational changes to create a supportive environment for adult immunizations, such as the complete implementation of standing orders (including the integration of standing orders within electronic medical records), providing patients with increased access by creating vaccination-only visits, and harnessing patient reminder-recall systems, are most effective.

The following interventions have been shown to be successful at increasing immunization rates and are recommended by the United States Community Services Task Force and other authoritative bodies [27]. Table 1 summarizes these recommended interventions and highlights resources to help with implementation of these processes.

3.1. Enhancing patient access to vaccination

- Home Visits to Increase Vaccination Rates – These initiatives bring the vaccination provider into the homes of patients thus increasing patient access to vaccines [27,32,33]. When in the patient's home, the provider will assess the patient's vaccination status, counsel on recommended vaccinations, and