

COMMENTARY

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## Barriers to adult immunization and solutions: Personalized approaches

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### ABSTRACT

Immunization is an important component of preventive healthcare services aiming to prevent and eventually eradicate infectious diseases by immunizing people before they become infected. Although immunization is an integral part of children's healthcare, this fact is underrated, even ignored in adults. In Turkey, adult immunization is available only for certain high risk groups such as health care professionals and populations aged > 65 y and under certain conditions including pregnancy, military service, travel-pilgrimage, and employment procedures. The fact that diseases such as pneumococcal pneumonia, influenza, rubeola, varicella, hepatitis A, and tetanus, which could be associated with severe complications in adults, are vaccine-preventable indicates the importance of adult immunization. In addition to the healthcare providers' knowledge about immunization, effective policies of related professional associations and the management of this issue by regulatory authorities, people's awareness in protecting their own health is of utmost importance in achieving the targeted level of adult immunization. This article focuses on the characteristics of the individuals as one of the 3 main cornerstones (individual, healthcare providers, regulatory authorities and supporting organizations) of immunization practices and discusses barriers to adult immunization and recommends solutions.

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Immunization is an important component of preventive healthcare services that aims to prevent and eventually eradicate infectious disease by immunizing people before they get an infection. Immunization should be integrated into the general health system as a long term, sustainable service.<sup>1</sup> Although immunization is an integral part of children's healthcare, this fact is underrated, even ignored in adults. However, a number of vaccines are recommended for the overall adult population or high-risk adult populations. Adults may receive vaccines as a primary immunization, if they have never been vaccinated or vaccines may be administered as booster doses when necessary, if they have been previously vaccinated.<sup>2</sup>

Healthcare providers' knowledge about immunization, effective policies of related professional associations and the management of this issue by regulatory authorities (promotion and standardization of the practice of widespread vaccination, reimbursement of vaccines by healthcare payers) are all important in achieving the targeted level of adult immunization. However, people's awareness in protecting their own health is of utmost importance (Fig. 1). This article focuses on the characteristics of individuals as one of the 3 main cornerstones of immunization practices.

The attitude and behavior of individuals are influenced by their knowledge of health. A study on health literacy conducted in Turkey using the European Health Literacy Survey demonstrated that 64.6% of the adult population had problematic or inadequate health literacy.<sup>3</sup> Furthermore, even for people who

had a college or doctoral degree, the health literacy was not perfect. Problematic health literacy is known to be associated with decreased rates of utilization of healthcare services. The ease of access to health care services is another factor that determines the utilization of preventive healthcare services. The accessibility of health care services, along with its financial and logistical dimensions, is closely related to the national health policies and is beyond the scope of this article.

Provided that changes in doses and intervals can be done according to the age group and risk factors, the vaccination schedule recommended by the US Centers for Disease Control and Prevention for people aged >18 y includes following vaccines; influenza (flu), diphtheria, pertussis, tetanus, varicella, human papillomavirus, herpes zoster (zona), rubella, rubeola, mumps, 13-valent conjugated pneumococcal vaccine, 23-valent conjugated pneumococcal polysaccharide vaccine, meningococcus, hepatitis A, hepatitis B, Haemophilus influenza type b.<sup>4</sup> Turkish Ministry of Health initiated the Expanded Immunization Program (EIP) in 2009, but this did not include any schedule or recommendation about adult immunization.<sup>5</sup> However, the Geriatric Health, Diagnosis and Treatment Guidelines for Primary Health Service Providers that includes an analysis of the socioeconomic and living conditions and underlying diseases of the elderly as well as recommendations for obtaining a detailed medical history and vaccine recommendations, was issued by the Ministry of Health in 2010;<sup>6</sup> yet, no formal adult immunization program has been developed,

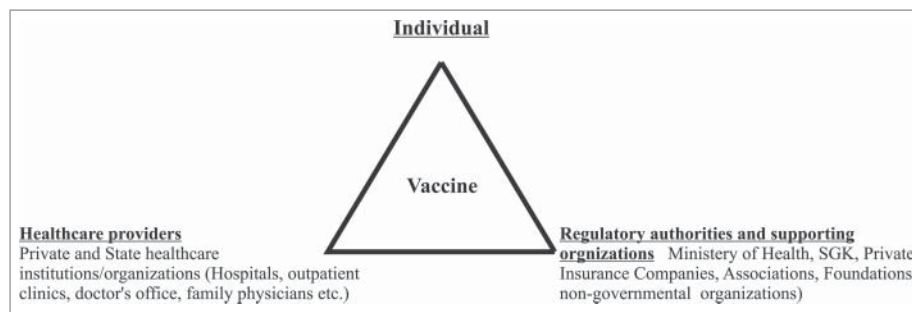


Figure 1. Three effective cornerstones of immunization practices.

which has frequently been criticized by the specialists working in this field.<sup>2,7-9</sup>

Thus, at this time, adult immunization in Turkey is limited to certain high risk groups such as health care professionals and populations aged >65 y. In addition, adults get vaccines under certain conditions, including pregnancy, military service, travel-pilgrimage, and employment procedures. However, any routine and widespread practice of immunization in adults has not been implemented yet. Routine immunization services have been provided by the Ministry of Health against 13 diseases and based on the recent data, the vaccination coverage was reported as 96% in the pediatric age group in 2014.<sup>10</sup> However, vaccination coverage in adults are far lower than expected, even in the high risk groups. Thus, the rates of vaccination against pneumococcal infections and influenza among diabetics were reported as 0.1% and 9.1%, respectively. In chronic obstructive pulmonary disease patients, the rate of vaccination against pneumococcal infections at tertiary care facilities has been reported as 10–15%<sup>11,12</sup> and the rate of vaccination against influenza is 14.9%.<sup>13</sup>

Major issues concerning adult immunization and the recommended solutions were discussed in the National Immunization Workshop that was held by the Ministry of Health and Infectious Diseases Society in March 2014 with the participation of 3 government agencies, 23 associations and 6 industrial corporations.<sup>14</sup> Lack of knowledge of people, lack of knowledge of physicians or inability to take action in spite of their knowledge, gaps in vaccine coverage provided by Social Security Organization were all underlined as barriers to adult vaccination. The solutions recommended for routine and widespread vaccination were as follows: education programs for healthcare professionals on adult vaccination and public counseling services, getting the support of public leaders, raising public awareness about the benefits and risks of vaccines, convincing anti-vaxxers to vaccinate, implementing legal regulations for misinformation and unfavorable publications, regular follow-up and structured medical records, the provision of an adequate amount of vaccine, the inclusion of an adult vaccination schedule in the EIP, and vaccination for free.<sup>14-16</sup>

Following the Workshop, 3 task forces by the Adult Vaccine Expert Group were established to clearly define the barriers to adult vaccination and to propose solutions in order to overcome these barriers at the individual patient level, at the healthcare provider level, and at the administrative level. Thus, Table 1 summarizes the report on the issues at the individual level and the solution recommendations, as discussed by the related group.

Barriers to adult vaccination and recommended solutions have also been discussed worldwide. An analysis of the adults' behavior regarding influenza and tetanus vaccines revealed that the risk perception is the major factor that determines the individuals' vaccination. Besides, in several studies conducted in the United States of America, participants (n = 2002) explained their reasons for not receiving vaccine as follows; lack of physician recommendation and erroneous beliefs such as the futility of the vaccination of healthy people, while health care providers (n = 200) stated that adults were avoiding vaccination due to the fear of side effects, needle phobia, coverage gap etc.<sup>17</sup> Another US study which included people aged >65 years, reported higher rates of vaccination when they were advised to be vaccinated by their physician,<sup>18</sup> or when medical records were properly monitored.<sup>19</sup> Similarly, in another study conducted in the Western European Countries, lack of physician recommendation was identified as the main reason for not being vaccinated, while the age of patients and their medical conditions and lack of a concrete proposal from regulatory

Table 1. Adult immunization issues and recommended solutions.

Issue	Solution
Adults do not know that they have to be vaccinated	Run public service ads in printed media, on radio, television and on the Web, hold campaigns, raise people's awareness by making community leaders and experts speak about adult vaccination and give precise information through web pages.
They have concerns about the safety of vaccines	Using the sources stated above, give evidence-based and speculation free information about the effects and side effects of vaccines.
Vaccination fees lead to a decrease in request	Vaccination should be free or should be accessed with a little contribution, based on the Expanded Immunization Program
Disorganized immunization services are provided by separate units	A regular immunization service may be included in the system of general practitioners. An adult vaccination schedule should be included within the scope of the Expanded Immunization Program, adults should use vaccination charts and records should be monitored through a commonly accessible electronic medium. People should be accessed through the phone tracking system. When accessing patient information, a reminder screen may help the physician in making suggestion to the patient.

authorities and expert organizations were defined by physicians as the main factors for not recommending vaccination to adult.<sup>20</sup>

The workshops have recently raised awareness on the poor status of adult immunization in Turkey. Thus, soon after the National Immunization Workshop, the Ministry of Health decided to provide adult immunization program for the adult risk groups. This gives hope as a first step toward overcoming all barriers and promising healthy aging to all citizens.

## Abbreviation

EIP Expanded Immunization Program

## Disclosure of potential conflicts of interest

Dr. D. E. Alici is the employee of Pfizer İlaclari Ltd. Sti.

Dr. A. Sayiner received honoraria for lectures in meetings sponsored or organized by Pfizer and Sanofi Pasteur and has been a member of advisory board for Pfizer.

Dr. S. Unal has received honorarium for speaking at symposia and lecture organized by Gilead, MSD, member of advisory board Gilead, xMSD, and received travel Grants form 3M and Gilead to participate conferences.

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