

## Elderly Immunization: A Global Priority and Key Component of Healthy Ageing

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### Editorial

Global ageing is exponentially increasing in both developed and developing countries. The global demographic trends and the population statistics reveal the impressive gains that society has made in terms of human longevity. This has been mostly attributed to better living standards and the advances in medicine. As a country's population ages, the demand for healthcare services tends to grow, and the working-age population tends to shrink. By 2025, globally the geriatric population is expected to rise more than 1.2 billion with about 840 million of these in developing countries [1]. Also the percentage of elderly people worldwide has increased from 8% in 1950 to 10% in 2000; this trend is expected to continue, with 21% of the population being elderly by 2050 [2]. During the same period, in Europe, the increase in size of population above 60 years is predicted to reach 160% [3]. As per the projections by the UN Population Division, there will be two elderly persons for every child in the world by 2050. An aging population puts an increased burden on the resources of a country.

### Need of Immunization for Elderly

The aging population is both medical and sociological problem. The intrinsic as well as extrinsic changes that occur as a consequence of ageing in the individual makes him vulnerable for infections. The elderly population suffers high rates of morbidity and mortality due to infectious diseases. Influenza, pneumococcal disease and herpes zoster have their highest mortality rates in older adults [4]. The elderly suffer from more frequent and severe infections than younger people with a higher tendency to experience poor outcomes from infections in comparison to the younger population [5]. One of the main reasons for the increase in infections observed in the elderly is believed to be immunosenescence [4-6]. It refers to the immune system's diminished function with age, which leads to a decline in the response to infection by both the innate and adaptive immune systems. Apart from this, it is due to a variety of factors such as underlying chronic medical conditions and unwillingness among individuals to get vaccinated or take booster injections [6]. Waning immunity contributes to the increased risk of certain vaccine preventable diseases in older adults. Reduced immunity in adults due to incomplete or missed childhood vaccine doses plays a role in the burden of disease. The highest numbers of measles cases are now recorded in young adults who grew up before routine provision for two doses of MMR vaccine [7]. While infectious disease is frequent in children, in older people it is a major cause of incapacity and death. Influenza is the fourth most common cause of death in the elderly, and is also associated with greater morbidity compared with the infection in younger individuals [5,8]. Also certain lifestyle behaviors can put adults at increased risk of vaccine preventable diseases. For example, the majority of hepatitis B cases are in young adults 25-29 years of age who have higher rates of

at-risk behaviors such as injection drug use [6]. A decline in immunity as well as age related physiologic changes leads to an increased burden of communicable diseases in the elderly. The prevalence of tuberculosis is higher among the elderly than younger individuals. As the immune response in the elderly declines and the outcome of infection is often poor, prevention of infections becomes critically important [5]. Hence the scientific evidence and emphasis on understanding immunosenescence are required to improve the satisfactory responses to vaccines in the elderly. Moreover, there is a lack of epidemiological data on the incidence rates and deaths attributable to vaccine preventable diseases among the geriatric age group [9]. In developing countries, large-scale vaccination schemes have focused on reducing childhood mortality from infectious diseases. Elderly vaccination continues to be a low priority as scarce funds go to programmes that centre on child and maternal healthcare. But in spite of the obvious benefits of immunization, vaccination rates differ dramatically across regions, countries and age groups. As a result, millions of elderly people worldwide continue to die from vaccine-preventable diseases. Most public health officials believe that preventive care for vaccine preventable diseases should be at the heart of healthy ageing programmes. But efforts to promote preventive care face multiple barriers, ranging from lack of resources to lack of infrastructure, from behavioral barriers to policy hurdles.

### A Global Priority

The vaccination programmes and schedules, well established in children, appear almost "forgotten" in the older population. For example, the WHO target for influenza vaccination in older persons will not be met in most countries. The public health consequences of decreased immune response are evident in elderly. Hence the strategies to modulate the immune response by immunization should be given the highest priority by both the developed and the developing countries. As stated this will lead to decrease the health burden in the elderly and improve their quality of life and ultimately to promote healthy ageing. Infectious diseases contribute significantly to morbidity in elderly patients that pose a major challenge to public health services. The implementation of vaccination in clinical practice is far from perfect in most of the countries. In fact in some countries more adults die from vaccine preventable diseases each year (70,000) than children (200) [10,11]. The causes are influenza, pneumococcal disease, tetanus, diphtheria, whooping cough, polio, herpes zoster, hepatitis A and B, and some tropical diseases [12]. It is also evident from research that vaccination reduces the morbidity and mortality due to infectious disease among them. Also it reduces costly hospitalizations and long term admissions and complications associated with chronic illness [10]. Despite an aging population, geriatric care is relatively new in many developing countries like India with many practicing physicians having little knowledge of the clinical and functional implications of aging [13-15]. Immunization providers play an important role in

promoting vaccination during adulthood and should seize every opportunity to identify and vaccinate eligible individuals. Vaccination can protect the elderly against diseases such as influenza, and in this case is recommended by the World Health Organization [16]. Also due to their financial dependence, elderly persons though are most vulnerable to infections have low priority for own health. Within the context of elderly health issues, the country carries a “double disease burden” of both non-communicable and infectious illnesses [15]. Given the challenges of an ageing population, the need for elderly immunization should be addressed by all stake holders. This can be done by reorienting our healthcare systems to take a timely approach to preventive strategies in which timely immunization against infectious diseases takes a highest priority. Health-care systems will need to shift their emphasis away from acute care to managing chronic diseases and to disease prevention by vaccination of elderly. Declining health status is a major symptom of an individual's aging process. Nations should develop their national guidelines for elderly immunization. They have to convey benefits of immunization and conduct social mobilization. While it is imperative to acknowledge the importance of immunization for elderly today; there is an urgent need to prioritize it at global level. It is time for policymakers around the world to put elderly immunization at the top of their agendas. It must be remembered that improving the quality-of-life of the elderly calls for immunization of elderly. This will be in true sense not only the need of the hour but also a global priority and key component of healthy ageing.

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