International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2025: 7.089

Current Approaches to Geriatric Immunization: A Narrative Mini-Review

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Abstract: ***As the global population ages, the implementation of a "life-course immunization" approach has become a critical pillar for maintaining functional capacity and ensuring healthy aging. Current 2025-2026 guidelines emphasize a strategic transition to trivalent influenza vaccines and the routine administration of novel Respiratory Syncytial Virus vaccines for high-risk geriatric cohorts. Furthermore, clinical protocols prioritize high-dose or adjuvanted formulations to overcome immunosenescence and provide robust protection against invasive pneumococcal disease, herpes zoster, and COVID-19 subvariants. Despite these advancements, significant disparities in vaccine access and public awareness persist, particularly in low- and middle-income countries. Strengthening national immunization schedules through the integration of these next-generation vaccines is essential to alleviate the burden on healthcare systems and reduce preventable mortality. Ultimately, the shift toward personalized immunization strategies aims to ensure that every older adult achieves optimal seroprotection and a higher quality of life.***

Keywords: Geriatri, Geriatric İmmünization, Life-Course Immunization, Current Approaches, Current Vaccines

1. Introduction

The proportion of the elderly within the total population is steadily increasing, leading to a global demographic aging process. This phenomenon significantly impacts the social, healthcare, and economic structures of nations. In response to the aging global population, the World Health Organization and national health authorities have adopted the “Life-course Immunization” approach. Vaccination serves as a critical factor in extending life expectancy and reducing mortality resulting directly from infectious diseases and the complications of comorbid chronic conditions [1-3].

While national immunization programs focus predominantly on reducing morbidity and mortality rates among children, the greatest burden of vaccine-preventable diseases actually rests upon adults. Despite this, adult vaccination rates remain insufficient worldwide. In the geriatric population, immunization aims not only to prevent disease but also to preserve functional capacity and promote “healthy aging”. In addition to expanding the reach of existing adult vaccines, new-generation vaccines and combinations targeting multiple respiratory viruses are currently being developed. It is imperative that countries strengthen their existing immunization frameworks by integrating these newly developed and underutilized adult vaccines into their national programs [1-7].

Elderly individuals are at significant risk for vaccine-preventable diseases (VPDs), including influenza, pneumococcal pneumonia, herpes zoster, and pertussis. The World Health Organization (WHO) emphasizes the critical importance of adult immunization in ensuring healthy aging; however, adult vaccination is frequently overlooked, particularly in low and middle-income countries (LMICs). Although the WHO recommends vaccines against diseases such as influenza, COVID-19, pneumococcal disease, tetanus, and Respiratory Syncytial Virus (RSV) for various adult population groups, access to these vaccines remains inequitable. Many LMICs have yet to integrate adult-oriented vaccines into their national immunization schedules, leaving millions of older adults vulnerable to these pathogens [1-4].

Globally, while 58.8% of countries report the inclusion of the influenza vaccine in their adult immunization programs, the prevalence of other vaccines-such as those for pneumococcal disease, herpes zoster, and hepatitis B-remains notably low. Several barriers hinder vaccination among older adults, including a lack of public awareness regarding vaccine benefits, misconceptions concerning adult immunization and healthy aging, and limited information about subsidized vaccines. Furthermore, logistical challenges related to vaccine distribution persist, such as an insufficient supply of age-specific vaccines, complex vaccination procedures, difficulties in determining the appropriate timing and type of vaccines, and a lack of funding for vaccines or clinical visits [1-7].

During the COVID-19 pandemic, adult immunization became a subject of global debate. Routine vaccination programs experienced significant disruptions, leading to a de-prioritization of non-emergency vaccines. This period necessitated fundamental shifts in policies, attitudes, and healthcare systems that had traditionally focused on childhood immunization. The pandemic exposed the fragility of healthcare infrastructures, the insufficiency of investments in preventative strategies-including vaccination-and the failures in expanding vaccine coverage for the elderly [1-7].

By the end of 2023, more than 13.6 billion doses of COVID-19 vaccines had been administered worldwide, reaching 89% of healthcare workers and 84% of older adults. However, this momentum has not yet translated to other adult vaccinations. Although seasonal influenza causes 3 to 5 million severe cases and up to 650,000 deaths annually, only 8% of low-income countries offer influenza vaccination

to older adults. In contrast, high-income countries have integrated these vaccines into 87% and 89% of their national immunization programs for these respective groups [1-4].

The WHO reports that vaccination not only saves lives but also enhances the quality of life for adults, increases their productivity within communities, and alleviates the burden on already overstretched healthcare systems. It is projected that through adequate immunization programs in the coming years, nations will ensure that everyone, everywhere, and at every age, benefits from vaccines. Expanding adult immunization programs will not only benefit the elderly population but also strengthen "life-course immunization" frameworks by enhancing healthcare worker capacity, improving infrastructure, and increasing public confidence in vaccines [1-5].

Under the Immunization Agenda 2030 (IA2030), the WHO aims to extend vaccination beyond childhood to include adult and geriatric age groups. Furthermore, adult vaccination protocols are increasingly trending toward 'personalized immunization' strategies, tailoring vaccine delivery to individual risk profiles and health needs [1-5].

2. Recommended Geriatric Vaccinations

Influenza inactivated (aIIV3; HD-IIV3)/Influenza recombinant (RIV3)

For the 2025-2026 season, the WHO recommends a transition to trivalent influenza vaccines, reflecting a shift in circulating viral strains-specifically the sustained absence of the B/Yamagata lineage. For individuals aged 65 years and older, clinical protocols now prioritize the administration of high-dose (HD-IIV3), recombinant (RIV3), or adjuvanted (aIIV3) vaccines over standard-dose formulations to elicit a more robust immune response. A single dose should be administered annually, preferably during the autumn months (October–November). While HD-IIV3, RIV3, or aIIV3 are the preferred modalities for this demographic, any age-appropriate influenza vaccine may be utilized if these specific options are unavailable. Furthermore, given that antibody titers decline more precipitously in older adults, it is clinically recommended that vaccination occurs immediately prior to the onset of the flu season, rather than prematurely in August or September, to ensure peak protection during periods of high viral circulation [8-12].

Respiratory Syncytial Virus (RSV)

The introduction of novel RSV vaccines, approved during the 2024-2025 period, has established their critical role within 2026 immunization schedules. In alignment with the WHO and various national health authorities (including those in the United States, Ireland, and Norway), a single dose of the RSV vaccine is recommended for all individuals aged 75 years and older, as well as for high-risk cohorts within the 60-74 age range. While adults aged 60 and above may receive the vaccine at any point during the year, clinical consensus suggests that optimal timing for administration is during the late summer and early autumn. This strategic scheduling ensures that peak protective immunity is achieved prior to the seasonal surge and community transmission of RSV [8-10, 13-15].

Individuals Aged 60-74 Years:

- Unvaccinated with Elevated Risk: A single dose of an approved RSV vaccine (Arexvy, Abrysvo, or mResvia) is indicated for those at increased risk of severe RSV-related disease. Currently, supplemental or booster doses are not recommended.
- Previously Vaccinated: Revaccination is not indicated at this time. There is currently a paucity of longitudinal data to determine the necessity or timing of subsequent doses [8-10, 13-15].

Individuals Aged 75 Years and Older:

- Unvaccinated: A single dose of an RSV vaccine (Arexvy, Abrysvo, or mResvia) is recommended for all individuals in this age cohort. Similar to the younger cohort, additional doses are not recommended following the initial administration.
- Previously Vaccinated: Additional doses are not currently advised. Further clinical evidence is required to inform the potential need for future booster regimens [8-10, 13-15].

COVID-19

The WHO maintains the classification of the elderly population as a high-priority cohort for COVID-19 immunization. For the 2025-2026 period, clinical guidelines recommend the administration of updated Omicron subvariant-adapted vaccines-specifically mRNA or protein subunit formulations. To ensure sustained protective immunity, it is advised that these boosters be administered at an interval of 6 to 12 months following the most recent döşe [4, 8-10].

Pneumococcal (PCV15, PCV20, PCV21, PPSV23)

The Streptococcus pneumoniae bacterium represents a significant clinical threat to the geriatric population, potentially leading to invasive diseases such as meningitis and sepsis. To mitigate these risks, contemporary clinical protocols utilize two primary approaches for immunization: Pneumococcal Conjugate Vaccines (PCV) and Pneumococcal Polysaccharide Vaccines (PPSV). Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older: 1 dose PCV20 or 1 dose PCV21 at least 5 years after the last pneumococcal vaccine dose [8-10, 16].

Tetanus, Diphtheria, Pertussis (Td/Tdap)

Administering the Tdap (Tetanus, Diphtheria, and Acellular Pertussis) vaccine at least once during adulthood is a critical public health strategy to mitigate the transmission of pertussis from older adults to vulnerable infants-a practice often referred to as 'cocooning.' This is particularly significant for geriatric individuals in close contact with grandchildren, as they may serve as asymptomatic reservoirs for the pathogen. Following the initial Tdap dose, a booster of the Tetanus-Diphtheria (Td) or Tdap vaccine is clinically recommended at decennial intervals (every 10 years) to maintain protective antitoxin levels [8-10, 17].

Herpes Zoster

The recombinant zoster vaccine (RZV), a non-live (inactivated) formulation, is recommended for all adults aged 50 years and older, irrespective of prior history of

herpes zoster or previous vaccination with live-attenuated alternatives. To ensure peak efficacy and long-term protection against viral reactivation and post-herpetic neuralgia (PHN), the RZV is administered as a two-dose series, with the second dose ideally scheduled 2 to 6 months following the initial injection [8-10, 18].

2-dose series recombinant zoster vaccine (RZV, Shingrix) 2-6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon), regardless of previous herpes zoster or history of zoster vaccine live (ZVL, Zostavax) vaccination [8-10, 18].

Hepatitis B

Adults aged 60 years and older, regardless of known risk factors, may elect to receive the Hepatitis B vaccine to prevent infection. In this demographic, immunization is often guided by shared clinical decision-making for those without identified risk profiles. Depending on the specific vaccine formulation utilized (such as the 2-dose adjuvanted series or the standard 3-dose recombinant series), the protocol may consist of a 2, 3, or 4-dose regimen to achieve optimal seroprotection [8-10, 19].

Hepatitis A

Hepatitis A vaccination is particularly relevant for older adults with specific risk factors, such as chronic liver disease, travel-related exposure, or other indications defined in national guidance. Standard monovalent hepatitis A schedules typically use two doses, whereas combined hepatitis A–B schedules differ by product and indication. Vaccine choice and timing should follow the applicable product information and local recommendations [8–10, 20].

3. Conclusion

Immunization is a central component of preventive care for older adults. Influenza, RSV, COVID-19, pneumococcal, herpes zoster, and other indicated vaccines should be considered through an individualized assessment of age, comorbidities, prior vaccination, and local recommendations. Clear communication and equitable access are essential to improve uptake. Because vaccine schedules evolve, recommendations must be confirmed against current national guidance before clinical use.

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