International Federation on Ageing

Vaccines 4 Life

Driving Adult Vaccination Policy Series

Executive Summary

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Context

The International Federation on Ageing (IFA) has for over a decade been working to improve the global adult vaccination uptake rates by influencing policy and practice change. In the midst of apandemic, the IFA remains extremely concerned that there is insufficient policy dialogue about improving adult vaccination coverage through an integrated approach at the country level, informed by the UN Decade of Healthy Ageing, the Immunization Agenda 2030 and the WHO Global Report on Ageism. Targeted towards civil society, government, and intergovernmental agencies, the IFA convened a three-part webinar series entitled Driving Adult Vaccination Policy. The series included the following webinars which were built around issues for which immunisation policy and/or action will improve and save the lives of potentially millions of older people:

1. Immunosenescence a proxy for high-risk populations in immunisation policy
2. Combatting ageism as a policy lever in the delivery of vaccines in long-term care facilities
3. Global equity in vaccination as a sustainable solution towards a healthier global population

Webinar Summary

Webinar 1: Immunosenescence a proxy for high-risk populations in immunisation policy

The process of immunosenescence, the natural age-related weakening of protective immune responses, places older adults (65 years of age and older) at an increased risk of serious complications and life-threatening consequences from vaccine preventable diseases (VPDs).[1] Vaccination is a safe and effective public health intervention against VPDs and a key component of healthy ageing. Yet, the uptake rates of adult vaccination remain suboptimal globally.[2] The purpose of the webinar "Immunosenescence a proxy for high-risk populations in immunisation policy" was to improve understanding of the increased risk of infectious diseases with age and to inform a more comprehensive public health strategy that considers age as a high-risk factor for infectious diseases.

This webinar was moderated by Dr. John Beard, ARC Centre of Excellence in Population Ageing Research, University of New South Wales, Australia. Presentations were led by key experts including: Dr. Melissa Andrew, Staff Geriatrician and Professor of Medicine and Geriatrics, Dalhousie University, Canada; Dr. Antonio Torres, Head of the Respiratory Intensive Care Unit and Full Professor in Medicine at the University of Barcelona, Spain; and, Dr. Martin Friede, Coordinator, Initiative for Vaccine Research, World Health Organization, Switzerland.

Dr. Melissa Andrew explored the link between age, frailty and immunosenescence to increase understanding of populations that are at high-risk of serious complications from VPDs. Frailty is defined as a state of increased vulnerability to poor resolution of homeostasis after a stressor event, which increases the risk to adverse outcomes.[3] Understanding the impact of frailty is essential to measure vaccine effectiveness among older adults. Data shows that although the impact of frailty on vaccine effectiveness varies, generally, lower effectiveness is linked to higher frailty.4 However, it is important to remember that health status varies among older adults- most older adults are not frail and benefit significantly from vaccination.[4] Chronic conditions, older age (due to immunosenescence) and frailty are all factors that increase the risk of morbidity and mortality from VPDs. Dr. Andrew highlighted that increasing understanding of the impact of VPDs on frailty and function is critical to understand their burden. The outcomes of VPDs are usually considered in the short-term, however, the long-term impact of illness such as persistent functional decline, worsening frailty and need for long-term care must be considered to improve infection prevention and care. This is essential to ensure healthy ageing and to add life to years by driving effective policies that increase uptake of adult vaccination.

Dr. Antonio Torres increased understanding of the burden of pneumonia among at-risk populations and highlighted recommendations to prevent against infection. The incidence of pneumonia increases with increasing age and is higher among persons with chronic conditions.[5] Vaccination is an effective public health measure against VPDs. Pneumococcal pneumonia vaccinations are recommended for all adults aged 65 years and older.[6] There are two vaccines for pneumonia, including the PCV13 conjugate vaccine and the PPV23 vaccine.[6] Data shows that these vaccines are effective among at-risk groups including older people and patients with CRD.[8] Yet, the uptake rates of adult pneumonia vaccination remains suboptimal globally.[1] Dr Torres stressed the need to implement national actions and policies to increase the uptake of pneumonia vaccines, especially in-light of the high incidence of pneumonia among older people and those with chronic conditions who are at high risk of serious complications from infection.

Dr. Martin Friede explored the causes of immunosenescence and its impact on vaccination among older people. Ageing is associated with increased risk of infection and decreased efficacy of vaccines. For example, the Covid-19 vaccine was effective among older people indicated by a decrease in the incidence of infections after vaccination. However, data shows that approximately 38 weeks after vaccination, the effectiveness dropped with some older people getting reinfected, whereas effectiveness was still high among the younger age-groups.[9] This is because immunosenescence impacts the response to vaccines. Although there are multiple causes of immunosenescence, one of the main drivers is the thymus gland where T-cells are made. In older age, thymic involution occurs which is the progressive reduction in the size of thymus due to depletion of cortex and medulla. Thymic involution has major consequences on the immune system, ultimately leading to reduced ability to respond to infection, immune stimuli, and new immunological events.[10] This is because with ageing (>50 years of age), there are almost no naïve T-cells left which are essential to respond to a new infections.[11] However, it is important to remember that all older people are not the same.

The ratio of T-cells varies among older people which impacts the response to vaccines – this is not linked to chronological age.[12] Many factors (chronic infections across life, possibly nutrition, genetics, etc.) can affect the speed of depletion of naïve T-cells and accelerate or delay immunosenescence but these are currently poorly understood. There is a need for diagnostic tools to help measure immune age as well as research on diagnostic markers and screening. Dr Friede stressed that although immunosenescence reduces the effectiveness of vaccines, it is critical to vaccinate older adults since their susceptibility to infection is much higher so even partial or transient protection is useful.

Webinar 2: Combatting ageism as a policy lever in the delivery of vaccines in long-term care facilities

Older people have been disproportionately impacted during the pandemic with a majority of Covid-19 related deaths linked to long-term care (LTC) facilities. Ageism has been visible in the policy actions and measures implemented throughout the pandemic globally. Concerted effort is needed to combat ageism in the policy dialogue on immunization in order to protect the health and well-being of older people. The purpose of the webinar "Combatting ageism as a policy lever in the delivery of vaccines in long-term care facilities" was to increase understanding of the impact of ageism on the health of older people in LTC facilities and highlight the importance of routine immunisation as an intervention that saves lives and money.

This webinar was moderated by Dr. Jane Barratt, Secretary General, International Federation on Ageing. Presentations were led by key experts including: Prof. Liat Ayalon, Professor in the School of Social Work, Bar Ilan University, Israel; Dr. Luis M. Gutiérrez Robledo, Director General of the National Institute of Geriatrics, National Institutes of Health, Mexico; and Dr. Peter Lloyd-Sherlock, Professor of Social Policy and International Development, University of East Anglia, United Kingdom.

Prof. Liat Ayalon identified the role of ageism in vaccination policies in LTC during the pandemic and provided key recommendations for policies in times of scarce resources. Ageism refers to the stereotypes (how we think), prejudice (how we feel) and discrimination (how we act) towards others or oneself based on age.[13] During the pandemic, ageism manifested in various ways globally. In LTC settings, Covid-19 morbidity and mortality rates were disproportionately high and many residents experienced functional decline and poor mental health due to the drastic lockdown measures implemented.[14] Moreover, positive or negative ageism was evident in the vaccine prioritization policies implemented worldwide. In some countries older adults were a high priority group for vaccination, while in others they were not specifically prioritized, particularly during the early stages of the pandemic, despite the high-risk of serious complications from infection.

Research analyzing public sentiments towards prioritization of older age in the context of limited vaccines found that majority of people believed that individuals contributing more to the economy should be prioritized, with LTC residents ranking low in the priority order.[15] Self-ageism was also evident with some older people preferring to be deprioritized often due to the perception that they are weak.[15] Prof Ayalon highlighted that these findings are not surprising as older people are often expected to step aside especially during times of scarce resources. To combat ageism and provide protection through rights-based policies, Prof Ayalon expressed the need for a UN Convention on the Rights of Older People - the pandemic is not a reason for human rights violations and certainly the rights of older people, especially those in LTC facilities, have been violated.

Dr. Luis Robledo provided a geriatrician's viewpoint to combatting ageism as a policy lever in the delivery of vaccines in LTC facilities. The Covid-19 pandemic has been a multiplier of inequities including for older people. Ageism has played a visible role in the policies implemented in LTC and was manifested through: social exclusion and isolation measures, an institutional culture that does not support person centered care, systemic exclusion from social protection such as vaccination, and scarcity of research and national datasets on LTC. During the early stages of the pandemic, worldwide research and development blueprint was initiated to accelerate the development of Covid-19 vaccines. Yet, few considered the impact of frailty and ageing on vaccine development and frail older adults were underrepresented in vaccine trials. Despite the disproportionate morbidity and mortality rates among residents, older people in LTC were not recognized as a first priority group for vaccination in most countries. Although the WHO SAGE roadmap placed older adults as a priority group for vaccination, not a single mention of LTC was made in the document. Additionally, lack of data about LTC, especially during the early stages of the pandemic, led to difficulty analyzing the impact of vaccines on older people. However, recent evidence has demonstrated the effectiveness of Covid-19 vaccines older people.[16] Dr Robledo stressed that there is a great opportunity to take advantage of this data to implement a global research agenda focused on understanding effective immunity in ageing populations – this is critical to protect vulnerable populations against future infectious disease outbreaks. Taking the perspective of professionals involved in the care of older people, Dr Robledo highlighted the importance of the involvement of geriatricians in the vaccine development process, including contributing to the process of vaccine design, trial design, safety monitoring, analysis methods, communication, program implementation, etc.[17]

Dr. Peter Lloyd-Sherlock increased understanding of vaccination of older adults in LTC from a low- and middle- income country's (LMICs) perspective. There is often a misperception that there are very few LTC facilities in LMICs. In fact, there are large and rapidly growing LTC facilities and increasing demand for LTC in LMICs. However, these countries face unique public health challenges related to LTC including: scarce resources such as lack of trained staff and capacity, invisible care homes which are often informal and not registered with official agencies, and fragmented and uncoordinated responsibility for regulation.[18] During the pandemic, these challenges were further visible along with the growing need to protect the health of populations through effective measures. To address the potential effects of Covid-19 in LTC in LMICs, Dr Lloyd- Sherlock and his colleagues put together an emergency pandemic response strategy called the CIAT Framework.

The framework includes the following steps: 1) pandemic response strategy should be led by an interdisciplinary Task Force with coordination between health and social agencies, 2) locate and develop constructive engagement with all registered and unregistered LTC facilities in the area, 3) conduct an emergency survey of preparations and vulnerability of local LTC facilities to COVID-19, and 4) LTC facilities identified as high-risk should be given priority status for targeted support. 18 Dr. Lloyd-Sherlock and colleagues received funding to study implementation of the framework in various countries such as South Africa, Mexico, and Brazil. The research is still ongoing with the aim to study effectiveness and implementation in LMICs. For example, in Salvador, Brazil, implementation of the framework helped bring attention to invisible LTC facilities and as of July 2021 over 90% of residents were vaccinated in 80% of LTC facilities. Dr Lloyd- Sherlock stressed that with regard to LTC facilities in LMICs, it is important to recognize that there are complex and unique challenges which must be effectively addressed through policies at the national level.

Webinar 3: Global equity in vaccination as a sustainable solution towards a healthier global population

Reducing health inequities across populations, both within and across countries, is a long-awaited call for action from civil society organisations across sectors and disciplines. The COVID-19 pandemic has exposed the brutal impact of inequities on the health of populations and has highlighted the need to address these inequities through effective and sustainable policies. The purpose of the webinar "Global equity in vaccination as a sustainable solution towards a healthier global population" was to highlight that investment in immunization must be viewed as central component to universal health coverage and therefore contribute to ending inequities experienced at an individual, community, and population level.

This webinar was moderated by Prof Denise Eldemire-Shearer, Professor of Public Health and Ageing, University of the West Indies, Jamaica. Presentations were provided by key experts including: Dr. Ross Upshur, Professor, Department of Family and Community Medicine, University of Toronto, Canada; Dr. Asangaedem Akpan, Clinical Academic Community Physician, University of Liverpool, England; and, Dr. Chandrakant Lahariya, Medical Doctor, Epidemiologist and, Author, India.

Dr. Ross Upshur increased understanding of the concept of equity and its application with respect to vaccination of older adults. Health equity is identified as a principal goal in public health and health systems. The most influential definition of health equity is health differences that are unnecessary, avoidable, unfair and unjust.[19] Health equity requires two components including a descriptive (empirical) a normative (ethical) component.[20] The descriptive component identifies a 'difference in health' between populations and the normative component makes a judgement about 'why' that difference should be viewed as ethically wrong or unjust such that it is viewed as a health inequity. Dr Upshur introduced the concept of currency of justice and principles of justice and the link between them which is essential to achieve health equity.

Currencies of justice are factors that individuals are thought to have a moral claim to as a matter of justice, including: 1) outcomes - as a matter of justice, individuals have a moral claim to the achievement of a certain health state (a typical life expectancy, etc.), 2) opportunities - as a matter of justice, individuals have a moral claim to the opportunity to be healthy (educational opportunities, etc.), 3) resources - as a matter of justice, individuals have a moral claim to resources that are conducive to bring about health (vaccines, etc.) and 4) access - as a matter of justice, individuals have a moral claim to have access to the services that are conducive to bringing about health (public health services, primary care services, etc.).[21] The basis upon which these currencies of justice are distributed is called the principles of justice which include: 1) equality- as a matter of justice, we should aim to equalize the currency of justice, 2) sufficiency - as a matter of justice, we should aim to have everyone secure a sufficient amount of the currency of justice, 3) priority to the worst off (prioritarianism) - as a matter of justice, we should prioritize the worst off when distributing the currency of justice, and 4) maximization (utilitarianism): as a matter of justice, we should aim to achieve the greatest net balance of the currency of justice.[21] In terms of developing and implementing equitable health policies, it is essential for policy makers to be clear on what currency of justice is being distributed and through what principle of justice. Dr Upshur argued that in terms of vaccination, there is a clear need to ensure prioritization of older adults in immunization policy since ageing plays a role in increasing risk of serious complications from VPDs – this claim is both empirically and normatively justified. However, bigger issues of equity relate to global disparity in resources such that high income countries (HICs) have abundant access to resources and LMICs systems have limited access. Multiple lines of normative argumentation support addressing this global inequity as a priority.

Dr. Asangaedem Akpan explained the importance of the Capability Approach in vaccine equity and highlighted the impact of diversity in decision-making on global equity in vaccination. The capability approach is an important framework which considers, understands, and appreciates the internal and external barriers to resources that may limit the conversion of resources into valuable outcomes.[22] For example, in the case of vaccination, it is not enough to only deliver vaccines to countries, it is also crucial to address barriers that limit vaccine delivery and uptake (such as infrastructure, location of vaccine centers, distribution of vaccines, cultural factors, etc.). During the pandemic, despite the scarcity of Covid-19 vaccines, batches of vaccines had to be destroyed in various LICs, due to challenges with vaccine distribution.[23] So it is critical to account for the capability to convert resources to desired outcomes in policy measures. Dr Akpan also highlighted the lack of representation of diverse stakeholders in global decision making which inevitably impacts equity. A survey of more than 2000 boards members of global health organizations found that only 25% of the seats were held by people in LICs, only 1% of board members were women from LICs, and nearly 50% of the organizations had boards composed entirely of people from HICs.[24]

Considering that a majority of the world's population resides in LMICs, this lack of representation is alarming and inevitably impacts equity in decision-making. Dr Akpan highlighted key strategies to increase global equity in vaccination including: increasing clinical trials in LICs to help equitably distribute benefits of research, increase generalizability of results and enable trust in research; set up vaccine manufacturing plants in strategic locations around the world, run by the local workforce and aligned with an effective distribution and supply chain; and collaborate and partner with local champions who understand challenges and opportunities and can guide equitable decision making.

Dr. Chandrakant Lahariya highlighted vaccine inequity with a focus on distribution of and access to vaccines during the Covid-19 pandemic. Globally, the distribution of vaccines is shaped by challenging political, economic, social and health related matters. The pandemic highlighted the differences in access to vaccines worldwide, with low access in LMICs. LICs face unique challenges in equitable distribution of vaccines, including: identifying and locating high-risk and vulnerable groups; securing vaccine storage; scaling human resources; planning delivery; and, generating demand and uptake. Moreover, the economic aspect of vaccination is an important factor since ensuring equitable access to vaccines requires a substantial increase in healthcare spending which is difficult with a constrained budget and competing priorities. Dr Lahariya emphasized two key action areas to address challenges related to vaccine implementation and uptake in LMICs countries: 1) increasing understanding of vulnerable groups in society by collecting multi-dimensional data, and 2) developing prioritization options to better support national level vaccine rollout and vaccine microplanning. These actions are key to inform policies to increase access to and uptake of vaccines among at-risk populations.

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