Promoting older adults immunization:
A pathway to healthy aging in the Asia Pacific

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Abstract

Despite the growing aging population in Asia Pacific, the uptake of adult immunization within the region remains low. Adult immunization is a critical part of life-course immunization, which supports health promotion, as well as disease prevention and management throughout people's life span. It has many advantages, such as promoting healthy aging, reducing economic burden of illness-induced wage and productivity loss, strengthening herd immunity and providing the infrastructure to achieve universal health coverage. While some countries in Asia Pacific have improved adult immunization guidelines, many are still dealing with issues, such as the lack of vaccine awareness among older adults, healthcare professionals and vulnerable populations, sustainable vaccine financing, convenient access to vaccination services and relevant data. There is an opportunity to strengthen public receptivity and demand for adult immunization in the region by increasing targeted communication for older adults and healthcare professionals, supporting multidisciplinary and cross-sectoral coordination, encouraging political commitment and building robust data to inform policies and programs.

Key takeaways

Informed by best practices from existing global and regional initiatives and interviews with key experts, demand for adult immunization can be strengthened in Asia Pacific by:

1. Implementing targeted communication strategies aimed at older adults
2. Engaging healthcare providers (HCPs) to act as advocates of adult vaccination
3. Increasing political commitment towards sustainable vaccine financing
4. Increasing data collection and surveillance
5. Creating convenient vaccines access
6. Ensuring right representation of healthcare experts in immunization advisory groups

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A pathway to healthy aging in the Asia Pacific

Background

Immunization is a global health and development success story, saving 2-3 million lives each year. It plays a key role in primary health care by reducing disease risks for people of all ages and enabling them to live longer and healthier lives through vaccines. It also underpins global health security through the prevention and control of infectious-disease outbreaks and the fight against antimicrobial resistance.

With the advancement of therapeutic vaccines, more solutions are now available to protect health beyond infancy into adulthood. In line with this development, the World Health Organization (WHO) has adopted recommendations for a life-course approach to immunization and healthy aging as its vision for the WHO Immunization Agenda 2030 and the UN Decade of Healthy Ageing programs.

Life-course immunization is particularly important in Asia Pacific as its population ages at an unprecedented pace, with the number of older persons (aged 65 and older) expected to more than double, from 535 million in 2015 to about 1.3 billion in 2050.[1] Despite the widespread benefits of vaccines for older adults, immunization uptake rates remain low across Asia Pacific (Figure 1). The uptake of influenza vaccine within Asia, for instance, is reported to only have a median uptake rate of 14.9% among the general population and 37.3% among high-risk groups. This is far below the WHO target rate of 75%.[2]

As older adults are at a greater risk of getting vaccine-preventable diseases (VPD), there is an urgent need to understand the benefits of adult immunization, identify missed opportunities and promote uptake of immunization among older adults to build strengthened and sustainable health systems.

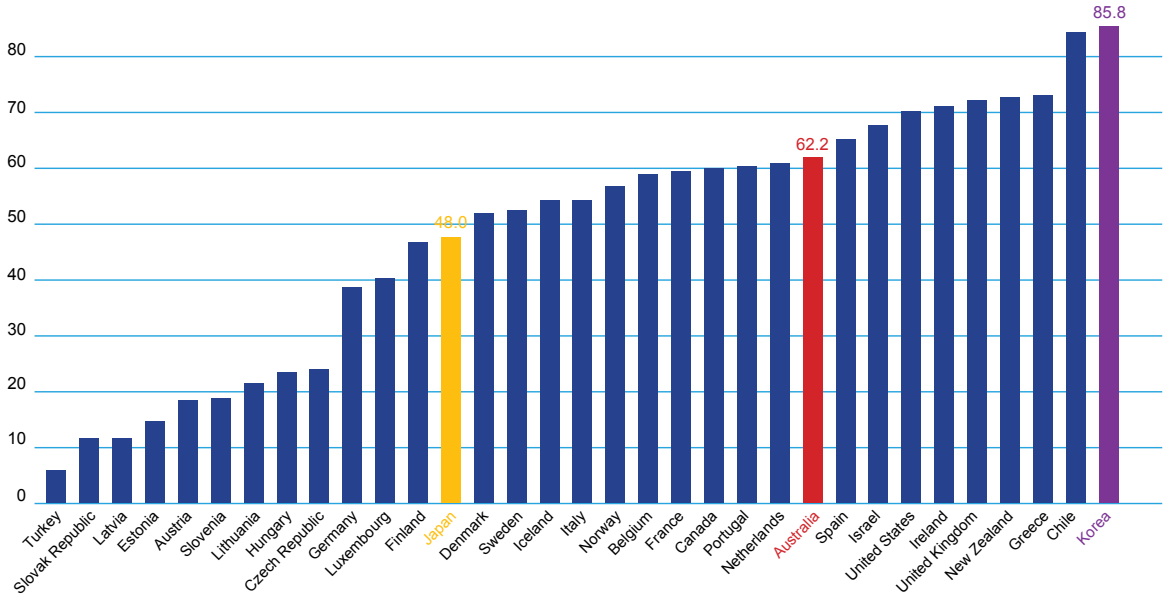

Figure 1: Influenza Immunization rates for over 65s. OECD, Health indicators 2020.

What is a life course approach to immunization?

According to WHO, life-course immunization stresses the importance and interconnectivity of all stages of life and supports health promotion, disease prevention and management throughout life.[3] The WHO Immunization Agenda 2030 promotes a life-course approach to immunization with a commitment to reduce mortality and morbidity from VPDs throughout the life span, as well as equitable access to and increased uptake of new and existing vaccines.

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A pathway to healthy aging in the Asia Pacific

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Aging population and burden of disease in Asia Pacific

Asia Pacific is witnessing a rapid increase in older adults (Figures 2 and 3). In 2020, 13.6 per cent of the population in Asia Pacific was aged 60 years and over. By 2050, it is projected to increase exponentially, with one in four people over the age of 60 and the "oldest-old" (80 years or older) will constitute about one fifth of all older persons.

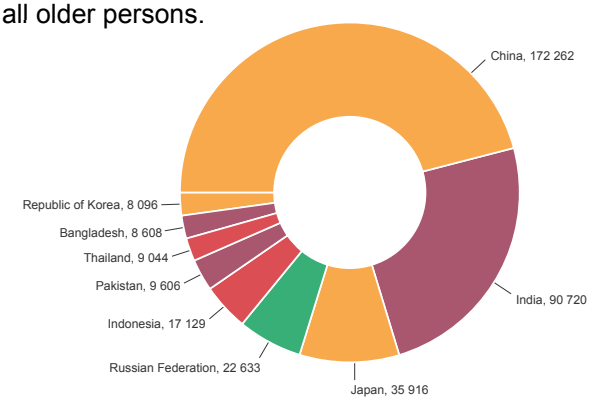

Figure 2: Top 10 countries with the highest number of people aged 65+, 2020 (thousands), ESCAP calculations based on: United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition

Research has shown that people who live longer also spend a longer period of their life with a disability and consequently, the number of older people who will require long-term care will rise.[4] It is crucial for older adults to achieve healthy aging by 'developing and maintaining functional abilities that enables well-being in older age'[5], as this leads to an improved quality of life and productivity. Hence, older adults need to maintain an adaptive and resilient immune system to respond to health challenges.

From the WHO mortality database, the broad categories causing death among older adults aged 65 and above in China, Hong Kong, Japan, Republic of Korea and Singapore from 2010 to 2018 were stroke, heart diseases, cancer, respiratory disease, diabetes, infectious diseases and other causes.[6] Influenza and pneumococcal pneumonia were also the fifth leading cause of death globally among adults over age 70.[7] In Singapore, 3,000 to 3,750 elderly persons died from pneumonia each year between 2013 to 2017, and this made up about 25% of the total deaths among elderly persons.[8]

Age-related changes of the immune system contribute to increased incidence and severity of infections in the elderly. Vaccination is the most effective measure to prevent infections. However, some countries in the Asia Pacific do not proactively recommend vaccines for older adults in their national immunization schedules. Life-course immunization, beyond paediatric vaccinations, continues to be severely under-utilized in the Asia Pacific. Therefore, systematic vaccination programmes are imperative to protect older adults who may have a lower immune response and pre-existing chronic conditions from getting VPDs, such as pneumococcal pneumonia, influenza, herpes zoster, tetanus and hepatitis B, among others.[9]

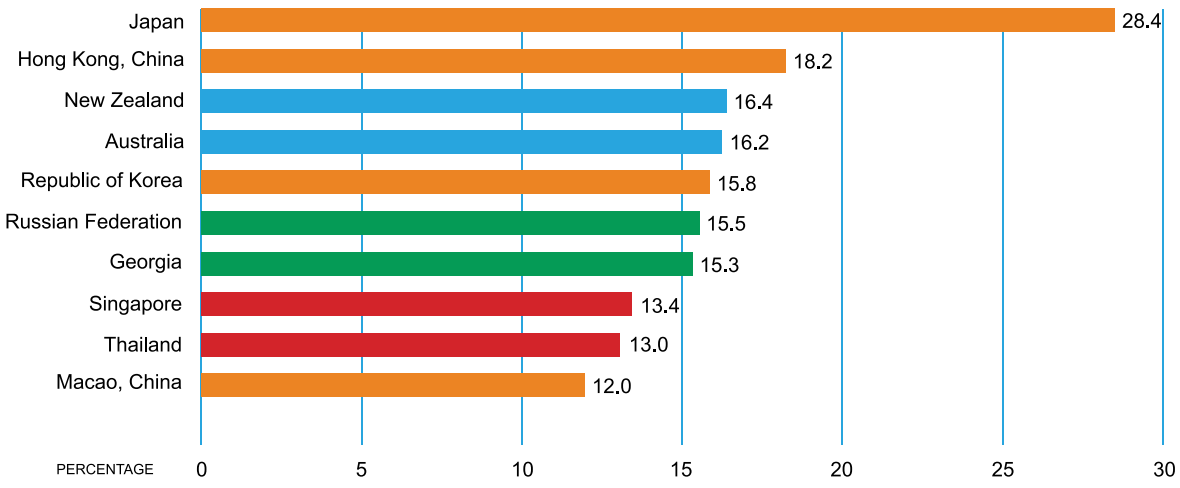

Figure 3: Top 10 countries with the highest percentage of 65+, 2020, ESCAP calculations based on: United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition

Promoting older adults immunization:
A pathway to healthy aging in the Asia Pacific

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Advantages of adult immunization

Healthy aging

Immunization throughout the life-course enables adults to age with reduced risk to disease, thereby enabling healthier, more active and more productive aging.[10] Immunization of older adults against targeted infectious diseases, including pertussis, shingles, influenza, and pneumococcal disease, can help to reduce morbidity and premature mortality. As populations age, there is a rise in the incidence of chronic health complications, such as heart disease, cancer and diabetes. These chronic diseases often coexist with endemic infectious diseases, making older adults particularly vulnerable to an increased risk of developing health complications. Apart from protecting older adults from contracting VPDs, evidence suggests that immunization can protect against secondary diseases and certain cancers, as well as reduce deaths among older adults with co-morbidities or underlying health conditions since they are at a higher risk of severe infectious diseases.[11] Vaccination in older adults also contributes to the promotion of healthy aging, enabling them to assist their family with, for instance, childcare, as well as delays functional decline and has related impacts on health and welfare expenditure.

Benefits to public health

One of the most important benefits of vaccination is herd immunity – when high vaccination rates in a population reduce the risk of transmission to individuals who are unvaccinated. Enhanced vaccination across the population may have an important role in reducing the threat of antimicrobial resistance by preventing infectious diseases that would require antibiotics. Successful vaccination policies, particularly if effective over the life-course, may have a vital role in preventing the rise of resistant infections. In United States, for example, the introduction of a new pneumococcal vaccine in 2010 was associated with a decline in resistant infectious pneumococcal disease by 64% among adults over the age of 65.

Economic benefits

For societies and governments, significant savings can result from a life-course approach to immunization. Vaccination remains one of the most cost-effective interventions available to protect against several diseases. Additionally, prioritizing vaccinations for older adults yields significant dividends. It reduces health burden, particularly in the areas of physician fees, drugs and hospitalization costs[12], and lowers economic burden of illness-induced wage and productivity loss. A recent study that evaluated the health and economic impact of a potential fully funded influenza vaccination program for older adults in China indicates that it would be highly cost-effective, reducing quality-adjusted life year loss[13] and productivity loss due to premature deaths.[14] Cost-effectiveness studies suggest that for influenza and pneumococcal vaccinations, cost savings can be as high as USD 50,000 per quality-adjusted life year gained in countries such as the United States.[15] An analysis of data from the Netherlands considered the wider benefits of vaccination of people aged 50 years and older, such as reduced mortality, work days gained, increased tax returns and healthcare costs saved, and found an approximately fourfold return on investment.[16]

Healthcare systems strengthening and universal health coverage

At a health system level, a life-course approach to immunization provides a platform to improve the effectiveness and reach of universal health coverage. It can provide the infrastructure around which other primary healthcare services can be delivered while reaching vulnerable communities who lack access to these services.[17]

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Barriers to adult immunization

Vaccine and disease awareness

Misperceptions and a lack of knowledge around adult immunization and diseases can lead to a low vaccination uptake. A lack of awareness of the benefits of adult immunization is a key barrier. In Australia, for instance, low rates are attributed to the belief that vaccinations are not necessary for adults, have severe side-effects and are not very effective.[18] In a survey of older adults in Singapore, a perceived lack of vulnerability, fear of side effects and trivialization of influenza were common reasons for not taking the vaccine.[19] A study in Taiwan found that the "concern of adverse reactions" to the influenza vaccine was a dominant factor in the low rates.[20]

"Academia needs to educate people and encourage the uptake of vaccination." – **Prof Kazunori Oishi**, *Director of Toyama Institute of Health, Imizu, Toyama Prefecture*

Influence of healthcare providers (HCPs)

"…the most powerful predictor on whether a patient is going to get vaccinated was their belief that vaccination works, and secondly it was the recommendation of the doctor" – **Associate Professor Michael Woodward AM**, *Director and Clinical Head of Aged Care Research, Heidelberg Repatriation Hospital, Austin Health; Director, Memory Clinic and Director, Chronic Wound Management Clinic, Austin Health*

Studies suggest that HCPs including doctors, nurses, community health workers and pharmacists are trusted sources of information regarding vaccines. Vaccine hesitancy (the continuum between vaccine acceptance and vaccine refusal) recognizes the importance of the HCP-patient relationship among the many strategies required to address this complex issue.[21] However, knowledge and attitudes toward adult vaccination among HCPs vary, leading to suboptimal recommendations and consequently lower uptake. A study on the perceptions of Singapore healthcare workers on influenza vaccine, for instance, found that notions such as vaccines can cause influenza, lack of perceived risk, as well as poor awareness around the preventative value of health care workers being vaccinated as a method for patient protection, are prevalent among HCPs.[22]

Cost

One of the main reasons for low adult immunization in Asia Pacific is cost at the individual and government-level. Governments in Asia Pacific face challenges in establishing sustainable immunization financing while relying on domestic resources. While childhood routine immunization is fully subsidized under national immunization programs in most Asian Pacific countries, adult vaccinations are either partially subsidised or not covered at all. In addition, immunization programs in the region are either not included or have limited inclusion in public insurance schemes. At an individual level, high costs and unwillingness to pay out-of-pocket for vaccines are major deterrents.[23]

Lack of infrastructure and convenient access to vaccination services

The lack of options to access vaccination services at community health centers, after-hour clinics or pharmacies can lead to low adult vaccination rates among those who find difficulty accessing a consistent primary care provider. In addition, complex immunization schedules and a lack of reminder systems can also lead to low compliance.

Lack of data

There are significant gaps of age-segregated records on adult immunization in national health data systems, including the collection and interpretation of information required to develop coherent and meaningful adult immunization policies.

Lack of tailored and targeted communications

Population-wide communication campaigns on adult immunization do not always resonate with the needs and attitudes of specific groups, including older adults who need certain types of vaccinations. While mass information campaigns that use social media may have broad reach, these channels may not be accessible to older people. Rather, multi-component interventions that combine home-based vaccinations, reminder calls and community outreach programmes are the most successful interventions to increase vaccination uptake among older adults.[24]

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A pathway to healthy aging in the Asia Pacific

"Until recently, most people think that vaccines are for kids and not something you have to worry as an adult. There is also a belief that I am too healthy, I am strong and I am not going to get the vaccine, and diseases preventable by vaccines are just a nuisance and not potentially fatal. Some people believe that vaccination might weaken the immune system and it is better to get a natural infection than a vaccination against it. There may also be some access issues for older people and perceptions among HCPs that the vaccines are not very helpful or effective."

Associate Professor Michael Woodward AM, *Director and Clinical Head of Aged Care Research, Heidelberg Repatriation Hospital, Austin Health; Director, Memory Clinic and Director, Chronic Wound Management Clinic, Austin Health*

Photo: Asian Development Bank

Current landscape of adult immunization in Asia Pacific

Despite the benefits of life-course immunization and a growing aging population, uptake rates of adult immunization in Asia Pacific continue to be low despite some increases over the years (Figure 5). Older adult immunization rates in different Asia Pacific countries vary due to differences in perceptions, vaccination guidance, recommendations from HCPs and government funding and expenditure.

Perceptions of the value of vaccines and corresponding risks vary in different countries. For example, Australian adults remain under-vaccinated in view of the recommended vaccines and only 51% of older Australian adults receive government-subsidized vaccinations each year.[25]

> *"There is a need to increase conversations with the central government to improve and expand the adult immunization programme and encourage active targeted recommendations of adult vaccines, especially among older adults in Japan."*
>
> **Prof Kazunori Oishi**, *Director of Toyama Institute of Health, Imizu, Toyama Prefecture*

Photo: Asian Development Bank

One of the main reasons for not taking the influenza vaccine among adults include misperceptions such as "it brings on the flu/I may get the flu".[26] In Taiwan, the "concern of adverse reactions" was a dominant factor in low vaccine uptake. Lastly in Japan, the influenza vaccine coverage rate is only at 50.2% among the elderly population, despite the availability of co-payment support, and the pneumococcal vaccine coverage rate is even lower at 37.8%.[27] A Japanese study conducted among adults aged 60-69 years reported the belief of not being at risk of influenza and that if infected, it would not become severe.[28]

The difference in perceptions among HCPs has indirectly contributed to the varied rates. A Singaporean study on HCPs' perceptions of the influenza vaccine reported that they think influenza is not serious and the vaccine can cause influenza. These perceptions reflect poor awareness of the preventative value of the vaccine, hence leading to low recommendations by HCPs.[29] In China, the rate among HCPs who actively recommended patients for influenza vaccination has been low, with a rate of 29.09%.[30]

Complicated vaccination funding and reimbursement strategies have also hindered vaccination uptake. The influenza vaccine uptake in China has been very low due to complicated reimbursement strategy that differs between regions.[31] In addition, most adults are unwilling to pay out-of-pocket for vaccines. Taiwan's adult populations remain under-vaccinated due to the low take up of non-government funded vaccines for shingles, pertussis, and hepatitis A and B.

Lastly, in terms of cost, routine immunization expenditure among governments in Asia Pacific is still low.[32] There are also varying levels of investments in immunization programs across different countries due to different landscapes, levels of efficiency and national schedule sizes.

During the recent COVID-19 pandemic, the uptake vaccinations was slower in Asia Pacific as compared to global peers due to scepticism over the newly developed vaccines and a lower sense of urgency to obtain the vaccine (Figure 6).[33] Taiwan's vaccination rate for COVID-19 amongst the elderly above 75 years old has been lagging with only 68% of the vulnerable demographic being vaccinated[34] and the government has offered an incentive worth up to NT$500 for the elderly to get their first, second or third vaccine dose.

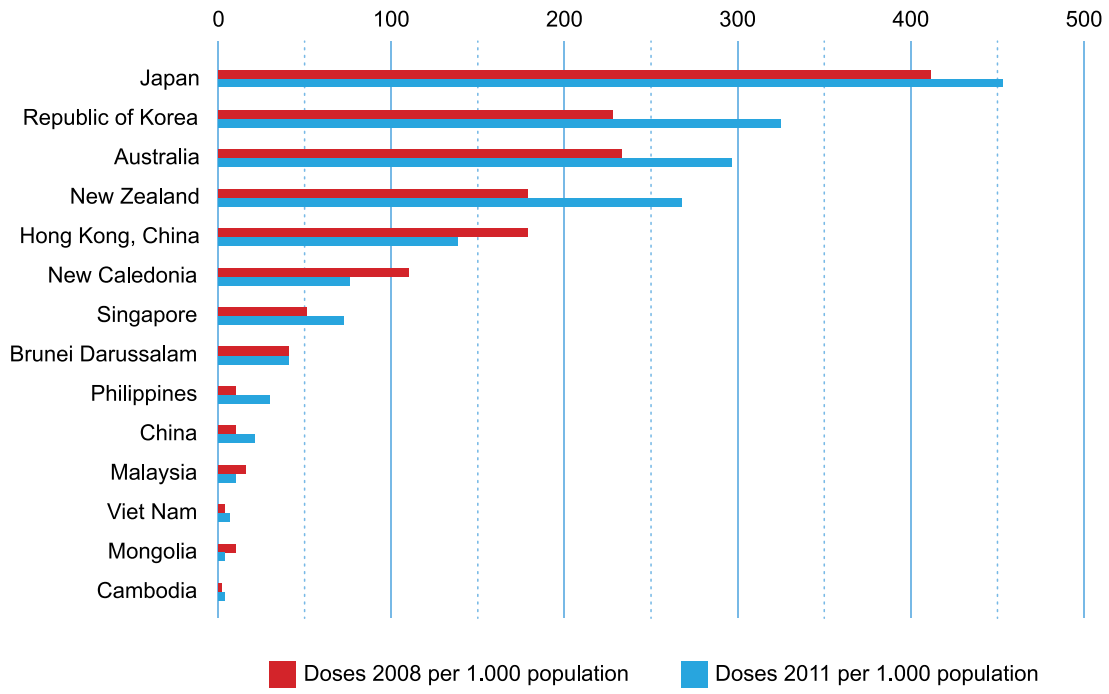

Figure 5: Change between 2008 and 2011 in the number of doses of seasonal influenza vaccine distributed per 1000 population in the WHO WPRO region.

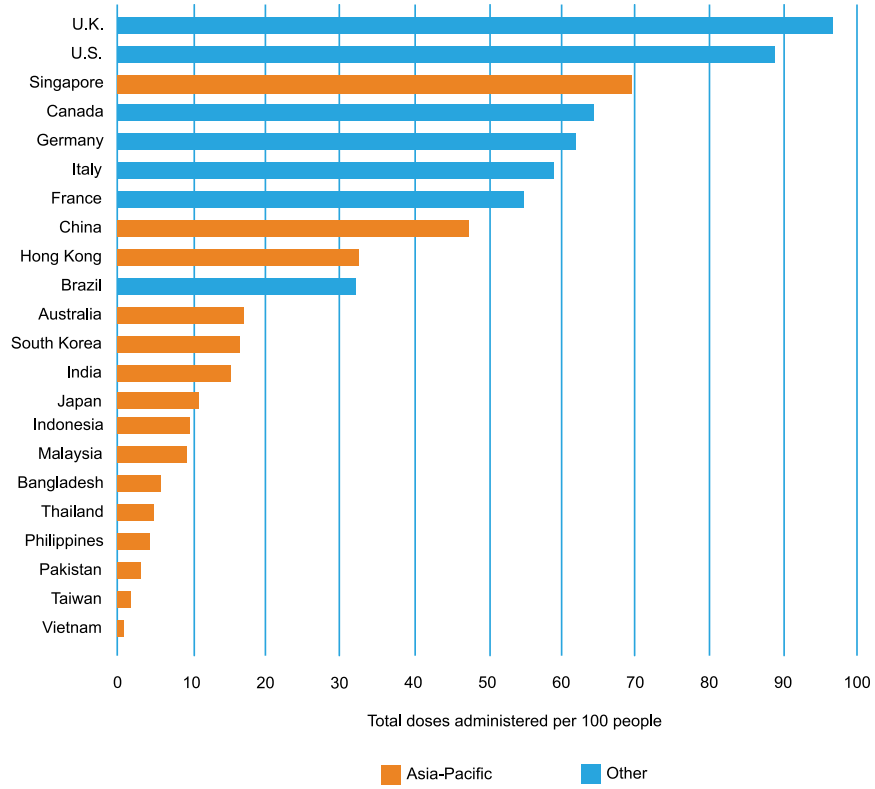

Figure 6: Covid vaccinations in major Asian economies vs. global peers. Our World in Data, CNBC, as of June 1, 2021.

On vaccination coverage, Asia Pacific only protects against 14.4 diseases on average through national immunization programs, which is below the European average of over 17.7 diseases. National vaccination recommendations in Europe and the US and some Asia Pacific countries such as Australia, Taiwan and Singapore have a comprehensive list of vaccines for older adults that include the varicella, meningococcal, hepatitis A and B and Tdap vaccines. However, most countries in Asia Pacific do not proactively recommend a range of vaccines that are important for older adults. For example, China, Hong Kong and Japan have only recommended the influenza and pneumococcal vaccines for older adults.

As populations across the region age, governments and healthcare providers need to expand the immunization schedule to accommodate the needs of older adults and the shifting burden of disease.[35] This includes adopting a comprehensive list of vaccines, as well as new vaccines that become available in the future with the potential to prevent serious respiratory and life-threatening diseases among the elderly, such as Respiratory syncytial Virus (RSV) and E. coli infections.

Problem statement: The underutilization of immunization for adults

Overall, the landscape for adult immunisation is lagging in Asia Pacific as compared to some Western countries, especially in the areas of introducing new and underutilised vaccines, establishing sustainable financing and increasing national commitment to facilitate access and uptake of immunization in later life.

There is a need to improve the uptake and access to vaccinations among adults in Asia Pacific. However, this requires collaboration and commitment from various stakeholders – elected representatives, policymakers, HCPs, civil society organizations and academia – to advocate the importance of adult immunization and improve the systems and processes within countries in the Asia Pacific region.

Best practices from global initiatives

Integration of adult immunization schedules and guidance in national immunization programs and health policies	• The US has a detailed immunization schedule for adults, which specifies vaccines according to age group and a range of medical conditions.[36] • In Brazil, the national health policy for older people highlights the importance of vaccination according to the national immunization program, which currently includes five different vaccines.[37,38] • In the UK, the National Health Service and Age UK (a charity) produced the 'Practical Guide to Healthy Ageing' to help improve the health of people, with a focus on people aged 70 and over.[39]

Data collection and availability of data to individuals and HCPs	• In France, several sources are used for assessing vaccine coverage in the population, including health records, vaccine sales data and various surveys.[40]
	• Detailed immunization information is available to individuals and HCPs in France and the US through MesVaccins.net and MyIR respectively. These initiatives helped increase vaccine uptake by empowering individuals to take ownership of their immunizations and support HCPs to give accurate and consistent advice.[41]
	  • MesVaccins.net is a web- and smartphone-based electronic vaccination record that stores an individual's vaccine records and makes personalized recommendations based on an individual's age and risk profile according to the national immunization schedule.[42]
	  • MyIR is an immunization-specific portal that provides free, on-demand access to official immunization records, immunization history and forecasting schedules of each state's Immunization Information Systems.[43] The portal was very successful and a survey of registered users found that 29% of respondents learned that they needed a vaccine through using the system and 41% of these respondents contacted their healthcare provider to schedule an appointment.[44]

Funding for adult immunization	• All vaccines on the immunization schedules, including those for older adults in Brazil and the UK are reimbursed and this has led to good vaccination uptake among older adults.

Targeted communications to the public and HCPs	• **Combating false information**
	  • Brazil's Ministry of Health tackled false information about vaccines on the social media platform, WhatsApp, with a 'Health without Fake News' campaign.[45] The service invites the public to send information they receive through social media to a dedicated WhatsApp account to confirm if the information is true or false.[46] In the first month of the program, the Ministry of Health received 416 messages and the most common were related to vaccines.[47]
	• **Collaborating with civil society organizations**
	  • In the US, vaccine-specific organizations, such as the Immunization Action Coalition, partner with organizations and professional societies, such as the Adult Vaccine Access Coalition, National Foundation for Infectious Diseases and others, to improve vaccine coverage across the country.[48,49]

Targeted communications to the public and HCPs	• **Educating, supporting and engaging HCPs**
	  • HCPs in France are educated through a website, vaccination-info-service.fr, developed by Publique France (Public Health France), where detailed information about immunization recommendations for all groups, included in the immunization program can be found.[50] MesVaccins.net is another digital resource in France that helps professionals give correct and consistent advice about vaccines.51,52
	  • The US implemented the 4 Pillars™ Practice Transformation Program that offers a suite of resources to support adult immunization in primary care settings. Medical practices are asked to implement one or more of the following four pillars: convenient vaccination services, communication with patients, enhanced office systems and motivation through a staff championing immunization in the practice. The success rate was high as practices that implemented the program had a significant increase in adult Tdap (tetanus, diphtheria, pertussis) immunizations by 12.7% and pneumococcal polysaccharide vaccination rates increased by 6.9%.53
	  • In some countries, such as France and the US, selected vaccines are mandatory for all healthcare workers54 and some healthcare facilities have initiated mandatory influenza vaccination for HCPs55 to increase vaccine coverage among HCPs.

Infrastructure for easy vaccine access	• France introduced a successful influenza vaccination program in pharmacies at selected Agences Régionales de Santé (Regional Health Agencies; ARSs) to increase the uptake of the influenza vaccine. The program permits pharmacists who attended specific training to administer the influenza vaccine at no cost to target groups.[56] Under this program, more than 743,552 people got the influenza vaccine and 23.5% of whom were getting the vaccine for the first time.[57] It has now become a nationwide program and vaccination training is made compulsory for all pharmacy students.[58,59,60] • The UK launched a 'Reaching Carers' influenza campaign to prevent carers from falling ill and passing infections to the vulnerable people they care for.[61] The campaign was delivered at community pharmacies and a range of resources and activities, including workshops, an online training tool, a conversation flowchart and computer system prompts, were developed to support pharmacists in delivering the intervention to potential carers.[62] With its success, the number of carers vaccinated increased by 61% over two influenza seasons.[63] • Brazil implemented the annual 'indigenous people's vaccination month' to reach out to vulnerable indigenous communities, including older adults, by sending vaccines to where they live and administering them as needed. This has successfully contributed to an increase in vaccination coverage of 30-40% among indigenous groups.[64]

Status of adult immunization policies in Australia, Hong Kong, Japan, Korea, Singapore and Taiwan

Policies	Australia	Hong Kong	Japan	Korea	Singapore	Taiwan
Integrating adult immunization schedules and guidance in national immunization programs	The National Immunization Program (NIP) gives clear guidance for adult vaccines. As a result, 74.6% of the population aged 65 years and above were vaccinated against seasonal influenza and 54.4% against pneumococcal disease in 2009.	The NIP provides guidance on influenza and pneumococcal vaccines for adults older than 65 years old and those between 50 to 64 years old.	The NIP provides guidance on influenza and pneumococcal vaccines for adults older than 65 years old and adults with underlying diseases between 60 to 64 years old.	The NIP currently includes coverage for 17 different vaccine preventable diseases, of which 7 are for older adults.	The National Adult Immunisation Schedule (NAIS) provides guidance on 11 important vaccinations for adults.	A seasonal influenza vaccination strategy is implemented for all adults aged 65 years and older with specific conditions and has since expanded to include all adults 50 years and older and other vulnerable groups.[65]
Data collection and availability of data	The Immunization Register gives individuals and their healthcare providers access to information about vaccines administered and those overdue. It also utilizes data on vaccination uptake rates across the life course to improve coverage based on socio-demographic and geographic factors.[66]	No adult vaccination data collection information found.	No adult vaccination data collection information found.	The Centers for Disease Control and Prevention developed computerized and standardized vaccination registration and management program for the management of the personal vaccination records. [67]	The Ministry of Health of Singapore encourages active surveillance of adverse events following immunization.	Data for the subsidized influenza vaccination can be tracked using Taiwan's National Health Insurance claims records.
Adult immunization funding	Seasonal flu vaccination is fully reimbursed for vulnerable people, including older adults and this had shown to improve vaccine uptake.[68]	The government funds multiple vaccination programs for older adults and covers influenza and pneumococcus vaccinations for staff and residents in elderly homes, homes for persons with disabilities and other select populations.[69]	A subsidy program covers 30% of the cost for routine influenza and pneumococcal vaccinations.	The NIP receives strong financial support from the national government through general taxes.	Medisave, the national medical savings scheme, can be used to pay for vaccinations recommended under the NAIS. Since the introduction of this scheme, around 24% of adults between 65 to 79 took up the vaccinations according to the National Health Population Survey 2019.	Immunization programs are financed through the National Vaccine Fund (NVF) that pools revenues from various sources including tobacco surcharge, fees for elective vaccines, and public budget allocation.

Policies	Australia	Hong Kong	Japan	Korea	Singapore	Taiwan
Targeted communications at governments, public and HCPs	The National Immunization Program provides HCPs the Australian Immunization Handbook that includes evidence-based clinical practice guidelines for HCPs to advocate the safe and effective use of all vaccines available. An annual influenza campaign is organized by the Immunization Coalition and the government pro-actively puts out advertisements, brochures on influenza and pneumococcal vaccines.[70] All providers of residential aged care are required to provide the influenza vaccine to all care staff and volunteers.[71]	The 'Care for the Elderly programme' was introduced in partnership with the Hong Kong Council of Social Service to provide free influenza vaccinations to the underprivileged elderly.[72]	The Japan Medical Association launched a successful campaign to advocate for the incorporation of seven new vaccines into the routine NIPS, including the adult pneumococcus vaccine. The Ministry of Health, Labour and Welfare (MHLW) produced a series of campaign tools to convey the benefits of influenza vaccination to the general public and targeted messages to older adults.[73]	The national influenza awareness campaign under the Korea Centers for Disease Control and Prevention develops educational posters annually for older adults to recognize the need for yearly influenza vaccinations. People aged 75 years and over are encouraged to be vaccinated earlier than those in the 65 to 74 year group.[74]	The National Adult Immunization Schedule serves as a guide for doctors on the vaccinations they should recommend their patients and the Ministry of Health periodically reminds doctors to do so. Public healthcare institutions roll out vaccination awareness campaigns, conduct road shows and talks during the annual World Immunization Week to increase uptake of vaccinations.	A hotline called the Hotline 1922 program that allows individuals to ask questions related to vaccination free of charge at any time.[75]

Policies	Australia	Hong Kong	Japan	Korea	Singapore	Taiwan
Infrastructure for easy vaccine access	The government reminds older adults on vaccinations using the 'Over 70s healthcare check' where HCPs do a comprehensive check and discuss vaccination options with patients. The flat hierarchy of the healthcare industry allows nurses and other healthcare workers to recommend and administer vaccines.[76] On-site vaccination clinics are set up in aged care facilities to provide easy access to COVID-19 and influenza vaccinations for elderly with mobility issues. Visiting HCPs, such as a GP or pharmacist, can administer the vaccination to the elderly at the facilities.	Home COVID-19 vaccination services are available for elderly who are unable to leave their homes due to illness and disability.	The Japanese Society of Travel and Health (JSTH) launched travel clinics to improve access to travel vaccinations throughout Japan.[77]	The government provides vaccines under the NIP to private and public health facilities. On-site COVID-19 vaccination clinics are set up at nursing homes and long-term care hospitals nationwide to vaccinate the elderly.	Mobile vaccination teams are deployed to neighbourhoods to create easy COVID-19 vaccination access for older adults over 60 years.	The government provides vaccines under the NIP to private and public health facilities.

Policy and implementation recommendations

Challenge	Proposed strategy	Recommendations

Lack of public awareness and demand for adult immunization	**Targeted communication strategies** aimed at older adults	• Address community-specific concerns:
		  ◦ Disseminate regular surveys to assess vaccine-specific sentiments among older adults and conduct translational research to determine community-specific concerns on vaccinations and ways to approach older populations.
		  ◦ Survey analysis on knowledge, attitudes, and behaviours of older adults towards vaccinations should inform communication strategies aimed at increasing vaccine uptake.
		• Tailor messaging to the intended audience:
		  ◦ Clear messaging appropriate for target audiences' health literacy and relevant communication channels to be used to address the specific needs older people and vulnerable communities.
		• Use a range of dissemination channels
		  ◦ Regularly review new ways to communicate critical information on new or existing vaccines.
		  ◦ Involve policy makers, religious, community and civil society leaders when developing and communicating tailored messaging on the importance of vaccination.
		  ◦ Engage influential and credible people that are known to the targeted group to give testimonials of their experience with a certain disease and the importance of vaccination.

Limited education of HCPs	**Engage HCPs** as messengers of adult vaccination	• Engage HCPs to champion the safety and efficacy of vaccines for routine vaccination across the life course. • Targeted education for HCPs to understand the efficacy of existing and new vaccines. This can be done by providing updated disease and vaccine information from medical associations and government agencies to build their trust and guideline adherence.[78] • Encourage uptake of certain vaccinations among HCPs while increasing their competency in vaccine education.[79] • Segment clinicians by specialty or patient population to increase the relevance of vaccine information provided.[80] • Offer incentives (e.g., reimbursements) to HCPs to help increase vaccine recommendations.[81] "There should be more education in Japanese medical schools on the benefits of adult immunization". **Prof Kazunori Oishi**, *Director of Toyama Institute of Health, Imizu, Toyama Prefecture*

Challenge	Proposed strategy	Recommendations
Lack of immunization funding for older adults	**Increase political commitment** for vaccine financing	• More political commitment from heads of states and officials from ministries of health and national immunization programmes is needed to mobilize diverse and sustainable sources of domestic funding to develop fully costed and funded domestic immunization plans that are aligned with domestic health plans.[82] • The funding should be sufficient to enable access to new, innovative vaccines and build sustainable program capacity and infrastructure.[83] • Multi-sectoral collaboration is also needed to help identify financing challenges and develop innovative solutions to improve sustainable funding for universal health coverage, including immunization across the life-course.[84]
Lack of national-level data on adult immunization uptake	**Increase data collection of older adults** to improve vaccine coverage, achieve program effectiveness, and determine the need for new initiatives	• Routine, systematic collection of disaggregated data should be promoted to target vaccination to the most vulnerable populations and those at risk of exclusion, including older adults. • Regular longitudinal surveys to assess vaccine sentiments among public and HCPs should be conducted. This can provide a deep insight into drivers of vaccine hesitancy and uptake across all population groups, including older adults, enabling the government to tailor national communications and engagement tactics. • Data collection at the national and local levels to identify specific barriers to uptake of vaccination services due to age, location, accessibility, financial, social, cultural and gender-related factors. • Generate evidence on the disease burden among older age groups, the potential of vaccines to decrease it and the programmatic implications for introducing the vaccines.
Lack of immunization infrastructure	**Create convenient access to vaccines** in community and non-clinical settings	• A greater collaboration with other sectors to support vaccine delivery in non-clinical settings, such as pharmacies, mobile clinics, aged care homes and house-to-house vaccination services for older adults will provide convenience to those who have mobility issues. • Vulnerable populations, including older adults living in hard-to-reach areas can also be reached through special vaccination programs provided by community service providers. • Vaccination opportunities to be offered to older adults and those with chronic conditions during routine healthcare appointments through a trusted health professional to encourage vaccine uptake. • Authorities should work with family members, home care providers, care managers and paratransit operators to assist with vaccination arrangements for older adults.

Challenge	Proposed strategy	Recommendations
Lack of right representation within immunization advisory	**Ensure right representation** of healthcare experts **in immunization advisory groups**	• Health ministries to ensure the right representation of experts in the National Immunization Technical Advisory Groups (NITAGs), especially the need for geriatricians to advice on older adult vaccine recommendations. *"There is a lack of representation of geriatricians, as seen in the Australian Technical Advisory Group on Immunization (ATAGI), and this has indirectly affected the number of vaccines recommended for older adults in the National Immunization program."* **Associate Professor Michael Woodward AM**, *Director and Clinical Head of Aged Care Research, Heidelberg Repatriation Hospital, Austin Health; Director, Memory Clinic and Director, Chronic Wound Management Clinic, Austin Health* *"Many clinicians who work in the immunization industry in Japan are pediatricians."* **Prof Kazunori Oishi**, *Director of Toyama Institute of Health, Imizu, Toyama Prefecture*

Conclusion

In consideration of existing immunization policies in Asia Pacific, there is a need to address the barriers to adult immunization to mobilize a positive change in adult vaccination. While several countries in Asia Pacific have demonstrated consistent policies in adult immunization, more effort can be made in the following areas: communication to older adults and HCPs, political commitment towards financing adult vaccines, data collection, collaboration with civil society organizations to improve vaccine access and the representation of geriatricians in national immunization advisory groups, to successfully increase adult vaccination uptake in the region.

"An ideal immunization program will require effective vaccines, just like the COVID-19 vaccine that is 90% effective, to achieve a high uptake. Secondly, there is a need for education of healthcare professionals, including doctors and the public on the benefits and effectiveness of vaccines to reduce risks of disease and improve quality of life. This is particularly important for older people where vaccines can help overcome immunosenescence. Thirdly, the program needs to have the right people recommending the vaccine, be it the government, the General Practitioner or the local healthcare worker. There is also a need to get the general public talking about vaccinations in a sensible way to increase public demand. Lastly, appropriate vaccines need to be subsidized so that vulnerable communities in rural areas can get access."

Associate Professor Michael Woodward AM, *Director and Clinical Head of Aged Care Research, Heidelberg Repatriation Hospital, Austin Health; Director, Memory Clinic and Director, Chronic Wound Management Clinic, Austin Health*

Promoting older adults immunization:
A pathway to healthy aging in the Asia Pacific

Methodology

A literature review was conducted to determine the current life-course immunization landscape in Asia Pacific. The following questions were answered:

- Why is there an underutilization of life-course immunization in Asia Pacific?
- What are the benefits and barriers to life-course immunization?
- What are the existing initiatives in Australia, China, Japan, South Korea, Singapore and Taiwan that can inform learnings for other countries in the region?

Additionally, structured interviews were conducted with key stakeholders in the aged care research field to determine the opportunities and recommendations to promote an uptake in adult immunization in the region. The following experts were interviewed:

1. Associate Professor Michael Woodward AM, Director and Clinical Head of Aged Care Research, Heidelberg Repatriation Hospital, Austin Health; Director, Memory Clinic and Director, Chronic Wound Management Clinic, Austin Health
2. Prof Kazunori Oishi, Director of Toyama Institute of Health, Imizu, Toyama Prefecture

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About APIC

The Asia-Pacific Immunization Coalition (APIC) was formed in 2021 to protect and sustain the hard-fought vaccination gains and build confidence in new vaccines resilient immunization systems that are well-resourced, sustainable, equitable, and integrated into the wider national healthcare system. The coalition aims to achieve this by using an evidence-informed approach to advocacy, activities and research to instil the value of vaccines among consumers, policymakers and other heath stakeholders.

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