

Influencing Action on Shingles Vaccination Policy

IFA Technical Report

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Introduction

Population ageing is progressing at a rapid pace worldwide and poses challenges for countries' economies, with the health of older populations being of considerable concern. There is currently more than 1 billion people over the age of 60 years, representing 14% of the global population.⁽¹⁾ By 2050 this population will have more than doubled to 2.1 billion. With increasing age comes changes to functional ability and an increasing vulnerability to chronic comorbid conditions. To foster well-being into older age and to decrease health system costs, it is imperative to establish comprehensive public health responses that focus on developing and maintaining intrinsic capacity and functional ability across the life course.

Vaccinations are one of the most effective public health interventions of our time, and key to preventing disease, maintaining function, and fostering healthy ageing. Despite intergovernmental agendas such as the WHO Immunisation Agenda 2030 and the UN Decade of Healthy Ageing where a life course approach to immunisation and ageing is central, globally, the uptake rates of routine adult immunisation against shingles, influenza, pneumococcal pneumonia, and pertussis are suboptimal.

Shingles, also known as herpes zoster, is a particularly debilitating vaccine-preventable disease (VPD) which significantly impacts a person's function and quality of life. Beyond the typical rash, Herpes Zoster may cause excruciating pain.⁽²⁾ Post-herpetic neuralgia is the most frequent complication that can last months and years. Shingles is caused by the reactivation of varicella zoster virus (VZV), also known as the virus that causes chickenpox. Reactivation usually occurs decades after the primary infection due to waning immune responses.⁽³⁾ Anyone who has had chickenpox is at risk of experiencing shingles.⁽³⁾ Current data illustrates that one in three adults will experience shingles in their lifetime, most being over the age of 50 years.⁽⁴⁾ The prevalence of shingles will continue to impact a significant proportion of older people and generations of older people to come. Despite the proven efficacy of the shingles vaccine in preventing and reducing the severity of disease; its value has been hindered by a lack of awareness and integration into robust immunisation policies.

The study *Influencing Action on Shingles Vaccination Policy* aims to assess the status of shingles vaccination policy in fourteen countries across Europe, highlighting gaps and informing a call to action on the importance improving awareness of vaccine-preventable diseases such as shingles and the need to increase uptake rates of adult vaccination as a key preventative action towards maintaining the health and well-being of older adults.

The Burden of Shingles in Older Adults

Older adults are at the greatest risk of shingles, with the highest burden in those aged 50 years and over. Approximately 24% to 30% of individuals will develop shingles over their lifetime^(5,6), however this risk increases with age, rising sharply at 50 years of age and over.^(7,8) VZV infection occurs globally, however most epidemiological data has been collected in high-income countries, with a lack of data and attention in low-and-middle income countries.⁽⁹⁾ Equally, there is lack of data on shingles prevalence outside high-income countries. From the available data, incidence of shingles varies across countries, however the increase in prevalence with age is markedly demonstrated across studies.⁽¹⁰⁻¹³⁾

Prior to the implementation of routine childhood vaccination against VZV in many countries, contracting VZV across the life course was commonplace. In Europe, over 95% of the adult population has evidence of previous VZV infection.⁽¹⁴⁾ In the United States, more than 90% of adults over 50 years have the virus, which can reactivate at any time, resulting in shingles, particularly among high-risk populations such as older adults.⁽⁵⁾

Beyond the characteristic rash, shingles may result in more severe complications, such as prolonged neuropathic pain⁽¹⁵⁾, vision complications (due to the characteristic rash occurring around the eyes), other complications such as cardiovascular and cerebrovascular events, Ramsay Hunt syndrome and others, as well as, hospitalization.^(2,11,16) Most commonly, post-herpetic neuralgia (PHN) may occur following a shingles outbreak and is defined by persisting and severe pain which may last months or even years.⁽¹⁷⁾ PHN is often debilitating, and can have devastating impacts on function and quality of life. PHN can also be exceedingly difficult to manage as there is no reliable treatment.⁽¹⁷⁾ PHN incidence increases with age, with age being the primary risk factor for this complication with approximately 80% to 85% of cases occurring in individuals 50 years of age and older.⁽¹⁸⁾

A diverse array of factors contributes to the increased susceptibility of older adults to shingles and its severe complications. Firstly, the waning of the immune system that occurs with age, termed immunosenescence, limits the ability to mount a strong cell-mediated immune response against VZV, resulting in reactivation of the virus and the development of shingles.⁽¹³⁾ Secondly, adults 50 years of age and older often experience an increased prevalence of concurrent or immunosuppressive conditions, which increase the likelihood of developing shingles.⁽¹³⁾ Exemplifying this point, a number of studies describe the occurrence of shingles following COVID-19 diagnosis or hospitalization due to COVID-19.⁽¹⁹⁾ A retrospective cohort study validated these findings, demonstrating that COVID-19 diagnosis in those 50 years or older significantly increased the risk of developing shingles.⁽²⁰⁾ In the midst of a global pandemic, in which older adults are already at increased risk, prevention must be prioritized.

The Value of a Shingles Vaccine

Shingles vaccination has proven effective in preventing shingles and its complications years post-vaccination. A study in the *New England Journal of Medicine* found that vaccination in older adults was 97% effective in reducing the risk of shingles.⁽²¹⁾

Prevention of a disease which is painful, debilitating and limiting to functional ability and capacity has immense benefits in creating environments which allow people 50 years of age and older to do what they have reason to value and live in good health and well-being. While mortality due to shingles is rare, the disease causes significant morbidity and, as a result, heavily burdens individuals and societies.⁽²²⁾ The consequences of shingles result in significant economic burden, due to costs to healthcare systems, and perhaps more consequential, volunteerism, workdays and productivity lost for the patient and family caregiver due to the debilitating nature of the disease.⁽²³⁻²⁶⁾ In Germany on average, an Herpes zoster patient taking sick-leave stayed off work for 12.5 days, this was increased to almost 2 months for those with post-herpetic neuralgia.⁽²⁷⁾ Considering this evidence, studies indicate that shingles vaccination is cost-effective and successful in adding quality-adjusted life years.⁽²²⁾

Beyond the societal burden, shingles can have a grave impact on the overall well-being of older people, impacting not only physical but mental health, reducing quality of life, daily functioning and the ability to socially engage and participate.⁽²⁸⁾ Given its effectiveness, shingles vaccination must be considered in a comprehensive national immunisation program to ensure healthy ageing across the life course.

Status of Shingles Vaccination in Europe

Despite the known benefits of shingles vaccination, comprehensive national immunisation programs are sparse resulting in diminished awareness, access, and uptake of shingles vaccination. Integration of shingles vaccination within immunization policies vary across Europe and while sometimes included in national programs, data on coverage rates is often poor or absent. Even recommendations from the European Centre for Disease Prevention and Control fall short, recommending only childhood varicella vaccination⁽²⁹⁾, while the World Health Organization's (WHO) latest guidelines were published in 2014 and are not reflective of new information around shingles vaccinations.⁽³⁰⁾

Similarly, reimbursement of the shingles vaccine (full or partial) varies widely across Europe. Even in countries where shingles vaccination is recommended, it is not always funded, which poses a significant barrier to receiving vaccination due to the high out-of-pocket costs creating inequity to access to vaccination. Increased work is needed to ensure awareness of the life-altering consequences of shingles and the benefits of vaccination. The limited evidence that exists indicates that awareness and knowledge of shingles remains startlingly low.⁽³¹⁾

There is also a need to optimize and increase pathways to vaccination. Currently, recommendation by a physician has been found to be the greatest influence on whether an individual seeks and receives a vaccination.⁽³²⁾ While physicians are a valued provider of vaccinations, sources of information on shingles vaccination and points of delivery can be expanded, such as through pharmacists or ongoing vaccination campaigns.

Methodology

The *'Influencing Action on Shingles Vaccination Policy'* project is a three-phase initiative that gathered information on the current status of shingles policies across 14 countries within Europe. The countries selected were Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, and Switzerland.

Phase One: Environmental Scans and Gap Analysis

For each of the fourteen countries studied, information was obtained, including whether there is an established National Immunisation Technical Advisory Group (NITAG), and its criteria or processes for recommending the addition of a vaccine to the national immunisation plan; shingles vaccine recommendations across age groups; funding; vaccination coverage rates; processes for monitoring vaccination coverage; and pathways to receive shingles vaccination.

Data was gathered systematically from publicly available government immunisation schedules and supplemented with information from the websites of the national Ministries of Health for each country.

Phase Two: Expert Interviews

To further understand the context of the environmental scans, a series of interviews were conducted with experts in the fields of infectious diseases and immunology. These interviews aimed to explore the barriers to adult vaccination in general, and specifically to shingles vaccination, and discuss what actions should be taken to improve the uptake of shingles vaccination and support its inclusion within national immunisation programs. Ten interviews were conducted with experts from Finland, France, Italy, Norway, Portugal, Spain, and Sweden.

Each interview was designed to take 15-30 minutes and was conducted virtually (see Appendix A Interview Guide). Key themes and patterns from each interview were identified and considered to help further inform a call to action.

Phase Three: Webinar and Discussion

Lastly, the findings of Phase One and Phase Two were synthesized into a webinar to be held during Shingles Awareness Week 2023. The webinar will share the findings of this report and host an expert panel discussion. This provides a mechanism for robust knowledge exchange and ends with a call to action based on the key findings of the *Influencing Action on Shingles Vaccination Policy report*.

Findings

The *Influencing Action on Shingles Vaccination Policy* project aimed to comprehensively review the status of shingles vaccination across Europe as a mechanism to better understand current barriers and challenges that may be experienced when seeking vaccination in these countries. Findings from the study will help influence and shape immunisation policy towards the inclusion of shingles as an important component of a comprehensive program.

Phase One Findings

Ultimately, through the analysis of the policy landscape across nations, as it relates to shingles immunisation, this study will help improve the uptake rates of routine immunisation among those most vulnerable and those with declining capacity. The policy analysis examined the degree to which: there are federal recommendations for older adults to receive shingles vaccination; shingles is included within the national immunisation plan; shingles vaccinations are funded. (Appendix B)

All countries studied had a National Immunisation Technical Advisory Group (NITAG) which provided the national Ministries of Health with evidence-based vaccine-related recommendations. Some of the criteria for the NITAGs to introduce a new vaccine into the national immunisation plan (NIP) include: the disease burden, vaccine efficacy and, cost-effectiveness evaluation. While the shingles vaccine is available for use in all the countries studied, the inclusion and funding of the shingles vaccine in the NIP varied broadly.

In Belgium, and the Netherlands, the shingles vaccine is recommended by respective NITAGs but is not included within the NIP and is not publicly funded for adults 50 years and older. In the Netherlands, public funding is only available for adults who are immunocompromised. The shingles vaccine is recommended and included in the NIPs of Austria and Spain but is not publicly funded in Austria and funded only for 65 and 80 year old age cohort in some regions of Spain. In Germany, Greece, Italy, France, and Switzerland the vaccine is recommended, included, and fully funded (with the exception of France where the vaccine is only partially subsidized). There were no recommendations for the shingles vaccine in Finland, Sweden, Denmark, Norway and Portugal.

The type of vaccine recommended for use against shingles also differed across countries. The non-live adjuvanted recombinant subunit vaccine (RZV) was used in Austria, Belgium, Denmark, Finland, Germany, the Netherlands, and Sweden. In France and Greece, the live attenuated vaccine (ZVL) was recommended. The ZVL is limited in its use and it cannot be used in immunocompromised patients. Italy, Norway, Spain, and Switzerland recommended both RZV and ZV.

To understand access to vaccination the various pathways to obtain vaccines were examined across each country. In Belgium, Denmark, France, Greece, Switzerland, Italy and Norway vaccines are administered by the general practitioners and nurses. Vaccines can also be administered in regional and local counselling centers, primary care centers and vaccination clinics as seen in Austria, Finland, and Sweden. In addition to the primary care centers and vaccine clinics, vaccines can be administered by community pharmacists in Greece, Italy and, France.

Across the countries studied information on shingles vaccination coverage rates was not publicly available.

Phase Two Findings

Throughout the structured interviews experts shared their perspectives on the barriers to adult vaccination in general, and specifically to shingles vaccination, to then inform actions to be taken to improve the uptake of shingles vaccination.

A lack of knowledge, cost and the impact of COVID-19 were consistently raised as barriers to awareness and access to shingles vaccines.

Key themes identified were the current lack of knowledge that individuals have around the shingles vaccine and infection. This includes a lack of knowledge from the public, policy makers, and even healthcare professionals about the efficacy of the shingles vaccine.

The primary barrier to receiving a shingles vaccination was identified as cost, which all experts agreed was the largest limiting factor for older adults. Additionally, many experts highlighted the role of the COVID-19 pandemic in renewing the sense of urgency for adult vaccination, and how this can be utilized to promote shingles vaccination for older adults to be included within national immunisation plans. At the same time, COVID-19 has been prioritized over other adult immunisations and health campaigns which have left older adults at risk to other vaccine preventable diseases. Experts also discussed the role of Civil Society as influencers in policy, and the important role of civil society organizations as advocates and trusted information sources for governments and policy makers.

Lack of Knowledge

There was a general lack of knowledge expressed by experts across the countries on the importance of adult vaccination and the shingles vaccine specifically. There was a clear call for larger health messaging campaigns around shingles and the role that vaccination plays in preventing the disease.

All experts noted the latest development in shingles vaccine, and many believe policymakers are not yet fully aware of the benefits of vaccination against this disease within national immunisation plans. While adult vaccination was identified by experts in each country as important, childhood immunisation remains more comprehensively funded and included within NIPs. Misconceptions from the public around the severity of shingles infection was highlighted by many interviewees. One expert shared that individuals are not likely to seek out preventative care regarding shingles, as they are not aware of the potentially debilitating consequences of the disease.

There is also a reported lack of knowledge and understanding from policy makers around the costs and benefits of the shingles vaccine to health and social care systems as well as the work force. Experts from a variety of countries suggested that these knowledge gaps have contributed to decisions not to include shingles in national vaccine schedules. Experts also highlighted a desire for policies to be harmonized across the European Union and for more comprehensive recommendations to be formed by the European Centre for Disease Control.

Cost as a Barrier

The greatest single barrier to shingles vaccination in Europe according to the experts is cost. Older adults, who are at the greatest risk of shingles infection, are often living on fixed incomes. The cost is prohibitive without at least a partial subsidy as evident in France. One expert also shared their belief that the cost of vaccination may be one reason why physicians may be hesitant to recommend the vaccine.

In Portugal there are ongoing deliberations to expand the NIP to include shingles vaccination, which would remove the cost barrier. Since pediatric immunisation is more comprehensively covered, the expert suggested that it is often viewed as more important than adult vaccination. In turn these views can exacerbate the lack of awareness around the severity of shingles.

Impacts of Covid-19

COVID-19 was seen as both a mechanism to support the conversation around adult immunisation, and a deterrent for current policy change due to governments prioritizing COVID-19 over other infectious diseases. One expert highlighted the role that COVID-19 has had in promoting more research grants, and general interest from both governments and the public around vaccine preventable diseases. They concluded that COVID-19 raised awareness of the importance of vaccination, however it spurred efforts of anti-vaccination movements which remain a vocal minority in many countries. COVID-19 provided evidence of the safety and efficacy of adult vaccination and reminded adults to check their vaccination status for other vaccine preventable diseases.

Despite the ways in which COVID-19 has raised the issue of adult vaccination, it has also taken up much of the efforts, resources, and priorities of governments and policy makers. Most of those interviewed reported that COVID-19 appears to have slowed the progress to include other vaccines in national immunisation schedules, as policy makers and healthcare professionals have been occupied with pandemic response initiatives. One expert suggested that COVID-19 has also resulted in adults falling behind on their routine immunisation due to widespread closures of healthcare centers during the pandemic. As a result, this may contribute to adults not seeking additional or elective vaccines such as the shingles vaccine.

Leveraging and building upon the dialogues related to adult vaccination that were initiated during the COVID-19 pandemic represents a crucial opportunity for researchers and advocates. However, many experts noted that interest in this topic is waning as governments and the public experience greater levels of pandemic fatigue and begin to focus on other areas of health. In Norway, COVID-19 has resulted in overburdened hospitals and health centers, which has prevented healthcare providers and policymakers from being able to act on other infectious diseases such as shingles. The pandemic has resulted in a unique opportunity to capitalize on current interest from both policy makers and the public to expand NIPs to include shingles vaccination and to better protect high risk populations such as older adults. It is therefore necessary to take immediate action to build upon the opportunities created and the increased awareness of adult vaccination by COVID-19. Remaining vigilant and continuing to promote the conversation of adult vaccination post-pandemic is necessary to prevent lost progress.

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Role of Civil Society

Civil society was viewed as a crucial player in advocating for older adults and working with academia and government to promote the inclusion of shingles in NIPs. It was identified in the interviews that for many countries civil society has established a lasting relationship with the government, that can be used to influence policy change and raise awareness among government officials on the importance of vaccination. Patient organizations, ageing organizations, and professional associations are bodies of trusted information that can work to address gaps in knowledge for both members of the public and policy makers. Experts highlighted the importance of interdisciplinary collaboration, while noting how bureaucracy can hinder progress by preventing this collaboration. Interdisciplinary collaboration in this sense included using the evidence created by researchers to give more credibility to the campaigns of civil society and governments, which can foster greater trust in health messaging and bridge the identified gaps in knowledge.

Civil society can also bridge gaps between research and the public. Experts indicated the importance of knowledge translation, and the value of civil society in disseminating information in ways that are accessible for the public.

Discussion

Findings were consistent throughout both the environmental scans, and the expert interviews, highlighting a lack of consistent policies around adult shingles immunisation across Europe, including a lack of comprehensive government funding for shingles vaccination for older adults. Despite the majority of study countries^(11 of 14) recommending the vaccination to older adults, only 50% had shingles vaccination included within their NIPs and only 28% provided comprehensive funding for the vaccine.

This is crucially important as cost represented the most significant reported barrier to vaccination alongside lack of knowledge on the severity of shingles and associated risk. Overcoming these barriers will require increased attention and investment in health messaging and campaigns which can work to promote preventative action, such as vaccination, and raise awareness of the devastating impact and costs associated with shingles among individuals and policymakers. There are also emerging opportunities for sustained actions to be taken by government and civil society to create meaningful change to vaccine policy, in part because of the COVID-19 pandemic and the dialogue and attention COVID-19 vaccination has commanded from governments.

Sustained investment in population-wide immunisation programs is an effective way to improve vaccination access and uptake rates.⁽³³⁾ Yet, government funding for shingles vaccines was inconsistent across all countries studied and represents a substantial barrier, creating inequity in access to shingles vaccination. This is especially worrying as this barrier is likely to disproportionately affect those most at risk, adults 50 years of age and older. Older adults are more likely to be on fixed incomes than younger individuals and therefore may be unable to afford vaccination.

Previous studies have estimated that the total cost for governments to immunize a healthy individual in Europe with all NITAG recommended vaccines is 16.3 - 27.9 times lower than the costs of associated hospitalizations.⁽³⁴⁾ Further economic burdens can be attributed to absenteeism and presentism. One study found 64% of employed shingles patients missed work due to the infection, and 76% experiencing decreased effectiveness at work.⁽³⁵⁾ Therefore, costs to fund vaccination campaigns are a low-level investment with potential savings in reduced treatment costs and increased productivity. With this knowledge, and the understanding that having to pay out of pocket for vaccines is the largest identified barrier to immunization – working to promote government funding remains a crucial step in promoting access and uptake of adult immunisation for shingles.

In addition to cost, expert interviews highlighted the lack of knowledge around the severity of shingles infection and the availability of a vaccination. Previous research indicates that individuals who are aware of the severity of shingles infection and have discussed vaccination with their doctors are more likely to receive the vaccination. Awareness and direct recommendation are also seen as crucial predictors of vaccine uptake among other vaccine-preventable diseases (such as influenza and pneumonia).⁽³¹⁾⁽³²⁾ Understanding the crucial role of knowledge in informing healthy behaviors, it is important to address the identified gaps in knowledge that currently exist regarding shingles vaccination. Effective vaccination campaigns should utilize diverse tools and channels to reach their audience, provide regular updates of relevant information, and utilize and leverage engagement of multiple stakeholders.⁽³⁶⁾ As stated previously it is also crucially important to ensure that all messaging is culturally relevant and tailored to maximize reach and ensure those most at risk are able to understand and access information. These best practices can work to provide greater awareness to the severity of shingles, and the increased risk of disease in older adults. Without concerted and sustained efforts to increase awareness and knowledge, it is expected that vaccination rates will remain low, and policy change will be hindered.

Lack of awareness is not a phenomenon seen exclusively among the general population; expert interviews also identified this as a key shortcoming among policy makers as well. This low level of awareness results from both a lack of messaging and information with respect to shingles but more importantly in the context of policy making a lack of data on coverage and uptake rates. Without this information, there is no knowledge base from which the burden of disease and cost associated can be properly understood in these countries. This in turn contributes to an under prioritization of shingles vaccination by national governments. The absence of robust monitoring systems may also hinder disease control since there will be no means to identify areas and groups that remain at risk and no means to understand the extent to which communities are protected from vaccine-preventable diseases.⁽³⁷⁾

Governments appear to be expending funds on surveillance systems for monitoring childhood vaccinations however little or no consideration is made for monitoring efforts among adult vaccination rates. Establishing systems to monitor shingles vaccine coverage rates is critical in helping countries prioritize and tailor vaccination strategies to address shingles immunisation gaps.

While there were many shortcomings observed, the environmental scans did highlight that pathways to vaccination are largely accessible and consistent across the countries studied. Pathways typically involved general practitioners and nurses recommending and administering the vaccine.

In Italy, France and Greece there is also the ability to receive the vaccine from pharmacists, which would be expected to increase accessibility in these countries, which was further supported by experts in these regions. Current pathways to vaccination were not identified by any experts as potential barriers to receiving shingles vaccination at this time. It is known that recommendations from healthcare providers greatly increase uptake rates providing an important opportunity to target healthcare providers with health messaging campaigns, to ensure they are communicating the risks associated with shingles and recommending vaccination to older adults where appropriate⁽³²⁾. While the diversity of vaccine pathways is encouraging, it is crucial that knowledge of these pathways is promoted and communicated broadly, especially for adult immunisation. Health care professionals alone cannot shoulder the burden of awareness raising efforts with respect to pathways. Over reliance on these professionals can further disadvantage vulnerable communities and those at risk, particularly those who may not have a family doctor. Integration of vaccine pathways must be included within health messaging that is relevant and culturally tailored to ensure all individuals are able to make informed decisions regarding vaccinations.⁽³⁸⁾

While the COVID-19 pandemic has had devastating impacts worldwide, including the tragic loss of life seen among older adults it has also spurred increased discussions, attention, and the investment of governments with respect to vaccination. The pandemic has also demonstrated the ability of all governments to develop, implement, and monitor immunisation policies for the health of all citizens and especially those most at-risk of serious complications and death. It has also highlighted the importance of ensuring that governments and policymakers consider the increased risk that older adults have to communicable diseases, and the increased burden of disease experienced by this population. COVID-19 has provided lessons on the importance of robust preventative measures being in place to mitigate health crisis, including the role of adult immunisation. This increased awareness and attention provides an opportunity to influence policy and work towards the inclusion of shingles vaccination within NIPs, including the importance of removing the barrier of cost through comprehensive government funding.

Conclusion

Immunisation remains a critical preventative intervention that works to promote the health of populations and reduce burdens on the healthcare system. Embracing immunisation throughout the life course provides comprehensive protection for the most vulnerable and promotes the health and well-being and functional ability of older adults.

Findings from the *Influencing Action on Shingles Vaccine Policy* study clearly illustrate that vaccination against shingles is under prioritized in many countries, underscoring the pressing need for national governments to consider more comprehensive and supportive vaccine policies. Despite consistent NITAG recommendations for the use of the shingles vaccines, many countries have not integrated the shingles vaccination within national immunisation plans and even fewer offer the vaccine free of charge.⁽³⁹⁾⁽⁴⁰⁾ Excluding the shingles vaccines from national immunisation plans may affect not only the access to vaccines but the awareness of the importance of the vaccine. There is a pressing need to prioritize not only the implementation of NITAG recommendations but also associated funding of these recommendations. Without this action it is expected that shingles vaccine awareness and uptake rates will remain suboptimal. A total absence of shingles vaccine recommendations in countries like Finland, Sweden, Norway, Denmark and Portugal leave these countries particularly vulnerable to low levels of protection against shingles infection. Some of these barriers may include low awareness on shingles among decision makers and the under prioritization of shingles vaccination by policymakers and health care professionals.

In addition to the lack of funding, there remains a disconnect between the knowledge created by researchers and the understanding of the public and policy makers around shingles vaccination, disease burden and the risks associated. Developing comprehensive vaccination campaigns and related knowledge translation efforts can work to bridge this gap and has highlighted the pivotal role that civil society can play towards improving shingles vaccination rates. The COVID-19 pandemic has raised awareness on the topics of vaccine-preventable diseases and adult immunization however proactive efforts are needed to ensure the lessons learned and opportunities provided are leveraged successfully. Discussions around shingles across multiple levels of government and among key stakeholders including civil society, should be encouraged, and fostered, representing a collective effort to push the agenda forward on the comprehensive inclusion of shingles within national policy frameworks.

Given the substantial socioeconomic burden of shingles among adults 50 years of age and older, and its grave impact on their overall well-being, there is an urgent and crucial need to prioritize shingles vaccination policy to ensure healthy ageing for current and future generations of older people.

Appendix A – Interview Guide

Access and Barriers

1. Is adult vaccination viewed (e.g., professional organization, health care providers, and policy makers) as important in your country?
2. Recommendations from the European Centre for Disease Prevention and Control (ECDC) are to *childhood* varicella vaccination. Why do you think that adult shingles immunisation is not reflected in this policy?
3. What do you or your organization identify as barriers to improving adult vaccination coverage and more specifically adult shingles vaccination?
4. What mechanisms are in place to increase access and simplify pathways to receiving shingles vaccination?

Policy

5. Is there a monitoring or surveillance system for vaccination rates in your country? If 'yes' does it collect age-disaggregated data on adult vaccination rates across routine immunisation including shingles?
6. In countries where shingles vaccination is recommended, it is not always funded, which presents poses a significant barrier.

In your country how are the costs of shingles vaccinations covered, for example governments, private insurers, and individuals? Does this situation increase inequity?

National Immunisation Programs

7. Vaccination is key to preventing disease, maintaining function, and fostering healthy ageing. Shingles is a vaccine-preventable disease (VPD) but is not part of the National Immunisation Programs (NIPs). What factors are hindering this policy change?
8. Has the Covid-19 pandemic created opportunities and evidence to build the case to include the adult shingles vaccine in NIPs? If so how and if not why not?

Stakeholders

9. What actions should be taken by whom and how to improve awareness, access, and uptake of adult shingles vaccination?
10. How can civil society influence policy makers to introduce and/or prioritize adult shingles vaccination in the NIPs?
11. How can your organization, or your profession, contribute to advocating for adult shingles vaccination to be included in the NIP?

Appendix B – Findings from Phase One: Environmental Scans and Gap Analysis

Country	Federal Recommendation for Shingles Vaccination (RZV and/or ZVL) for older adults	Shingles Vaccine Included in National Immunisation Schedule	Funding Provided
Austria			
Belgium			
Denmark			
Finland			
France			
Germany			
Greece			
Italy			
Netherlands			* limited to 18+ immunocompromised population
Norway			
Portugal			
Spain			* limited to 18+ immunocompromised and 65 y.o. and 80 y.o cohort in some regions
Sweden			
Switzerland			

- Fulfills requirement
- Partially fulfills requirement
- Does not fulfill requirement

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