

## Background

As populations age, protecting older adults from vaccine preventable diseases (VPDs) becomes increasingly important. The immune system weakens with age, which is a process termed immunosenescence, making older individuals more vulnerable to infectious disease <sup>(1)</sup>. Additionally, older adults are more likely to have chronic comorbidities that increase their risk of VPDs. Vaccination helps prevent disease and reduces the risk of serious complications, improving health outcomes and quality of life. Strengthening vaccine access and uptake among older adults is a key strategy for supporting healthier ageing and easing pressure on already overburdened health and social systems. Prioritizing vaccination, such as for pneumococcal pneumonia, is essential to protecting Canada's ageing population from serious, yet preventable disease, including invasive pneumococcal disease (IPD), which disproportionately affects older Canadians <sup>(1)</sup>.

## Burden of Pneumococcal Disease Amidst Canada's Ageing Population

Pneumococcal disease is an underprioritized VPD that greatly affects older Canadians and includes IPD, a severe and potentially life-threatening infection. IPD can manifest in several serious conditions such as pneumonia, meningitis and bacteremia. It primarily affects older adults, young children, and individuals with certain medical conditions (e.g., chronic lung disease, heart disease, diabetes, or immunocompromising conditions).

In 2022, together with influenza, pneumonia was the 8<sup>th</sup> leading cause of death in Canada, accounting for 5,093 fatalities, with individuals over 80 years of age accounting for 67.2% of these deaths <sup>(2)</sup> <sup>(3)</sup>. In 2023 Alberta reported 681 hospitalizations due to IPD and 62 deaths related to pneumococcal disease <sup>(4)</sup>. This burden is likely underestimated as many remain undiagnosed due to the lack of emphasis on testing and surveillance. Subsequently, Statistics Canada, reported the number of adults aged 45 to 64 that visited the emergency department due to pneumonia was 13,491 and those aged 65 and older was 27,300 <sup>(5)</sup>. This is alarming as current research demonstrates individuals, especially older adults, face a fourfold increase in the risk of heart attack, stroke, or death from heart disease in the month following a pneumonia hospitalization <sup>(6)</sup>.

## Addressing the Gap in Pneumococcal Vaccination Among Older Adults in Alberta

The Canadian Chronic Disease Surveillance System estimates that in 2021, the 6.3 million adults aged 65 years and older will be living with chronic conditions <sup>(7)</sup>. Studies also show approximately one-third of adults aged 65 years and older had one or more chronic conditions, predisposing them to IPD (including diabetes, chronic kidney, lung, heart or liver disease, smoking and/or alcohol use disorder) <sup>(8)</sup>.

Canada's pneumococcal vaccination goal includes achieving an 80% coverage rate among adults aged 65 years of age and older by 2025 <sup>(9)</sup>. Alarming, the 2023 Adult National Immunization Coverage Survey, revealed that only 42.3% of adults aged 65 and older, as well as those aged 18 to 64 with at least one chronic condition, in Alberta had received the pneumococcal vaccination <sup>(10)</sup>. This is significantly below the recommended target, highlighting a critical gap in vaccination efforts for older adults and those at higher risk.

## **Burden of Healthcare Cost Associated with Canada's Ageing Population**

The lack of attention to pneumococcal vaccination is particularly concerning given that with an average life expectancy of 83.02 years and 18.9% of the population aged 65 or older as of 2024, Canada is witnessing an ageing population, projected to comprise nearly one quarter of the total population by 2040 <sup>(11) (12) (7)</sup>. The healthcare costs associated with an ageing population are significant, averaging \$12,000 CAD per older person annually, compared to \$2,700 CAD per person for the rest of the population <sup>(13)</sup>. Key drivers of rising health service demand over the next decade include population growth, ageing, improvements in care quality, and inflation in healthcare costs.

Provinces and territories are struggling to meet the care needs of our ageing population and over the next 10 years, an estimated additional \$93 billion in healthcare costs is anticipated <sup>(13)</sup>. Adult vaccination can greatly support reducing this burden through the prevention of VPDs and their serious consequences such as hospitalization, loss of functional ability and promotion of health, well-being and independence. A study conducted by the Adult Vaccine Alliance, showed that adult vaccines, such as those for pneumococcal disease, COVID-19, influenza, shingles, respiratory syncytial virus (RSV) and human papillomavirus (HPV) can bring \$2.5 billion in health care and economics benefits to Canada <sup>(14)</sup>.

## **Responding to the Needs of Older Adults on Pneumococcal Vaccination**

In Alberta, adults aged 65 years and older are eligible for the publicly funded routine pneumococcal vaccination program <sup>(15)</sup>. On November 15, 2024, the National Advisory Committee on Immunization (NACI) released recommendations regarding pneumococcal vaccines for adults. A strong recommendation was made for adult pneumococcal immunization programs, indicating that all adults aged 65 years and older receive a single dose of a pneumococcal vaccine regardless of pneumococcal vaccination history <sup>(8)</sup>. Additionally, adults under 65 who are at increased risk of IPD should also receive pneumococcal vaccination <sup>(8)</sup>.

Following the release NACI's most recent recommendations on pneumococcal vaccination, the International Federation on Ageing (IFA) calls for tailored immunization strategies to drive pneumococcal vaccination uptake in older adults and at-risk populations across Canada and hopes to see provinces and territories implement these recommendations within their programs, including access to the latest vaccine options which are most appropriate to protect older adults.

These calls for action are echoed by older Canadians and advocates, as exemplified by the recent survey by the Canadian Association of Retired Persons (CARP) indicating strong public support for enhanced vaccination programs, with over 90% of respondents advocating for increased funding of provincial and territorial vaccination efforts, and 94% believing the government should fund all NACI recommended vaccines for older adults <sup>(16)</sup>.

Additionally, accessibility and awareness must be central to these efforts, with targeted educational efforts that inform at risk populations about the importance of pneumococcal vaccination, availability, and eligibility.

## Conclusion

Canada is facing a significant challenge in meeting its pneumococcal vaccination goal of 80% coverage among adults aged 65 and older by 2025 <sup>(9)</sup>. Given the projected increase in the older adult population to nearly 1/4 (25%) by 2040 and the rising healthcare costs associated with ageing, the need for tailored vaccination strategies is urgent <sup>(7)</sup>.

The high mortality rate from pneumonia underscores the urgency of NACI's recommendations. Public support for increased government action is clear, with strong backing for enhanced funding and awareness to support pneumococcal vaccination at the provincial and territorial level.

A targeted approach that prioritizes immunization for older adults and high-risk individuals, alongside improved accessibility and educational outreach, is vital. Immediate action is necessary to reduce the burden of pneumococcal disease and improve health outcomes for Canada's ageing population. Enhancing access to pneumococcal immunization is also part of a right-based approach to ensuring older adults have access to adequate, appropriate and equitable health services.

## About the International Federation on Ageing

The International Federation on Ageing (IFA) is an international, non-governmental organization (NGO) with a unique membership base comprising government, NGOs, academics, industry, and individuals in over 80 countries. Over the last 45 years, the IFA has become known as a leading and innovative organization that works across disciplines and sectors toward common goals that improve the lives of older people. Through its Vaccines4Life program, IFA has worked alongside committed organizations to address barriers to improve adult vaccination rates in the context of healthy ageing.

## References

1. Privor-Dumm LA, Poland GA, Barratt J, Durrheim DN, Deloria Knoll M, Vasudevan P, Jit M, Bonvehí PE, Bonanni P. A global agenda for older adult immunization in the COVID-19 era: A roadmap for action. *Vaccine*. 2021;39(37):5240-5250. doi:10.1016/j.vaccine.2020.06.082. Available from: <https://www.sciencedirect.com/science/article/pii/S0264410X20308859>
2. Statistics Canada. Leading causes of death, total population, by age group [Internet]. Statcan.gc.ca. 2023. Available from: <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310039401>
3. Government of Canada, S. C. (2023, November 27). *The Daily — Deaths, 2022*. Wwww150.Statcan.gc.ca. <https://www150.statcan.gc.ca/n1/daily-quotidien/231127/dq231127b-eng.htm>
4. CBC News. Serious bacterial infections causing pneumonia, meningitis on the rise in Alberta. CBC News. Published December 5, 2024. Available from: <https://www.cbc.ca/news/canada/calgary/alberta-pneumococcal-disease-1.7106435>
5. ED visits due to pneumonia by age group Canada 2022 [Internet]. Statista. Available from: <https://www.statista.com/statistics/1400942/ed-visits-for-pneumonia-in-canada-by-age-group/>
6. Harvard Health. Heart attack risk rises after a bout of pneumonia. Harvard Health. 2015 Mar 17. Available from: <https://www.health.harvard.edu/heart-health/heart-attack-risk-rises-after-a-bout-of-pneumonia>
7. Public Health Agency of Canada. Aging and chronic diseases: A profile of Canadian seniors [Internet]. www.canada.ca. 2021. Available from: <https://www.canada.ca/en/public-health/services/publications/diseases-conditions/aging-chronic-diseases-profile-canadian-seniors-report.html>
8. National Advisory Committee on Immunization (NACI). Recommendations on the use of pneumococcal vaccines in adults, including PNEU-C-21. Public Health Agency of Canada; 2024 Nov 15. Cat. HP40-373/2024F-PDF. ISBN: 978-0-660-74241-0.
9. Gilmour H. Factors associated with shingles and pneumococcal vaccination among older Canadians. *Health Rep*. 2024 Jan 1;35(1):14–24.
10. Adult National Immunization Coverage Survey (aNICS): 2023 results - Canada.ca [Internet]. [cited 2024 Oct 22]. Available from: <https://www.canada.ca/en/public-health/services/immunization-vaccines/vaccination-coverage/adult-national-immunization-coverage-survey-2023-results.html>
11. Bush O. Life Expectancy Statistics in Canada [Internet]. Made in CA. 2024. Available from: <https://madeinca.ca/life-expectancy-statistics-canada/>
12. Demographic estimates by age and gender, provinces and territories: Interactive dashboard [Internet]. [cited 2024 Oct 22]. Available from: <https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2020018-eng.htm>
13. Meeting the Care Needs of Canada’s Aging Population. [cited 2024 Oct 22]; Available from: [www.e-library.ca](http://www.e-library.ca).
14. Canada in. Adult Vaccine Alliance - Alliance Vaccins pour Adultes [Internet]. Adult Vaccine Alliance - Alliance Vaccins pour Adultes. 2014 [cited 2024 Nov 22]. Available from: <https://www.adultvaccinealliance.ca/value-of-vaccines-study>

15. Alberta Health Services. Pneumococcal conjugate immunization orientation presentation. Alberta Health Services. Published [date unknown]. Available from: <https://www.albertahealthservices.ca/assets/info/hp/cdc/if-hp-cdc-ppo-pneu-conjate-imm-orientation-ppt.pdf>
16. Pestrak, N. (2024, February 5). One easy action to protect your health. CARP. <https://www.carp.ca/2024/02/03/180901/>