NATIONAL INSTITUTE ON AGEING

The Underappreciated Burden of Influenza Amongst Canada's Older Population, and What We Need to Do About It

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National Institute on Ageing

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About the National Institute on Ageing

Founded in 2016, the National Institute on Ageing (NIA) is celebrating a decade of impact in our mission to improve the lives of older adults and the systems that support them. Over the past 10 years, the NIA has become Canada's leading voice on ageing policy — convening stakeholders, conducting research, advancing policy solutions and practice innovations, sharing information and shifting attitudes. Our vision remains clear: a Canada where older adults feel valued, included, supported and better prepared to age with confidence.



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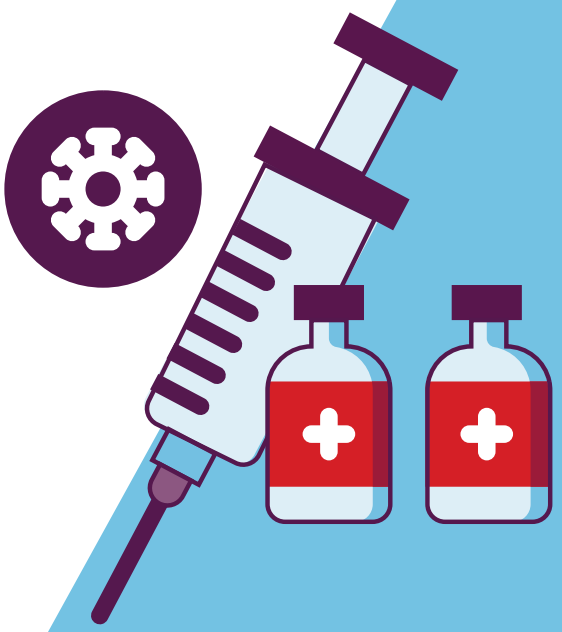
List of Acronyms

- Adult National Immunization Coverage Survey (aNICS)
- Food and Drug Administration (FDA)
- General Practitioner (GP)
- Global Influenza Surveillance and Response System (GISRS)
- Guillain-Barré Syndrome (GBS)
- Haemagglutinin (HA)
- Health Care Provider (HCP)
- Inactivated Influenza Vaccine (IIV)
- Inactivated Influenza Vaccine, Adjuvanted (IIV-Adj)
- Inactivated Influenza Vaccine, High-Dose (IIV-HD)
- Inactivated Influenza Vaccine, Standard-Dose (IIV-SD)
- Inactivated Influenza Vaccine, Standard-Dose, Cell Culture-Based (IIV-cc)
- Intensive Care Unit (ICU)
- Joint Committee on Vaccination and Immunisation (JCVI)
- Key Adult Populations Immunization Coverage (KAPIC)
- Live Attenuated Influenza Vaccine (LAIV)
- Major Adverse Cardiovascular Events (MACE)
- Myocardial Infarction (MI)
- National Advisory Committee on Immunization (NACI)
- National Institute on Ageing (NIA)
- Neuraminidase (NA)
- Organisation for Economic Co-operation and Development (OECD)
- Provinces and Territories (PT)
- Public Health Agency of Canada (PHAC)
- Recombinant Influenza Vaccine (RIV)
- Recombinant Subunit Vaccine (RZV)
- Respiratory Syncytial Virus (RSV)
- Sentinel Practitioner Surveillance Network (SPSN)
- Varicella Zoster Virus (VZV)
- World Health Organization (WHO)

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Executive Summary



Canada's National Advisory Committee on Immunization (NACI) recommends annual influenza vaccination for everyone aged six months and older without contraindications, with enhanced influenza vaccines recommended for adults aged 65 and older.[1] Despite these recommendations, only 64% of Canadians aged 65 and older reported receiving an influenza vaccine during the 2025–2026 season,[2] below the Public Health Agency of Canada's national vaccination coverage goal of 80%.[3]

Influenza is a respiratory infection that can cause pneumonia, cardiovascular complications and the worsening of chronic conditions. Older adults are particularly vulnerable because of the age-related changes in immune function they experience, and the greater likelihood they will be living with frailty and chronic conditions.[1] A Canadian study estimated approximately 15,000 influenza-related respiratory hospitalizations occur annually.[4] In 2024, influenza and pneumonia together were Canada's sixth leading cause of death, accounting for 7,658 deaths, with adults aged 65 and older accounting for approximately 90% of these deaths.[5]

Influenza vaccination remains the most effective way to prevent influenza and its complications, and authorized vaccines in Canada have favourable safety profiles.[1] Enhanced vaccines provide additional protection for older adults compared with standard-dose vaccines.[6] Public funding for influenza vaccination, including enhanced vaccines for older adults, has expanded across Canada over the past decade. Nevertheless, uptake remains below national coverage goals and varies considerably across jurisdictions and population groups.[2] A low perceived risk of influenza, concerns about vaccine safety and effectiveness and difficulties accessing appointments continue to limit the uptake of this vaccination.[2,7–9]

Health care providers play an important role in building vaccine confidence, and their recommendations are associated with higher uptake.[8–10] However, opportunities to discuss influenza vaccination, including enhanced vaccines, and to offer co-administration remain underused.[8,11] Vaccination among health care providers is also a national priority for protecting patients and supporting continuity of care, yet nationally, only 56.5% of health care workers reported receiving the influenza vaccine during the 2022–2023 season,[12] well below the 80% national coverage goal for this group.[3]

Canada has well-established influenza surveillance systems, but incomplete population coverage limits an understanding of the full burden of this illness and its associated severe outcomes.[13,14] Vaccination monitoring also relies heavily on self-reported surveys,[15] while registry-based reporting does not cover all jurisdictions.[16]

Drawing on this evidence, the National Institute on Ageing (NIA) proposes eight policy and practice recommendations to strengthen

influenza prevention, improve vaccination uptake and better protect older Canadians:

1. Improve Influenza Prevention Practices
2. Improve Surveillance of Influenza and Its Impact on Health Care Systems Across Canada
3. Improve Reporting and Monitoring of Influenza Vaccination Rates
4. Continue Working Towards Developing Better Influenza Vaccines
5. Provide Clinical Education and Support for Primary Care Providers and Pharmacists to Deliver Vaccinations
6. Recommend the Influenza Vaccine for All Health Care Providers
7. Recommend the Administration of the Influenza Vaccine in Conjunction With Other Recommended Vaccines to Improve Uptake and Compliance
8. Enhance Vaccine Access and Provision Across and Within Canada's Provinces and Territories



Background and Context

Influenza, commonly known as the flu, is a respiratory infection caused by influenza A and B viruses. In Canada, seasonal influenza activity typically occurs during the fall and winter, although its timing and duration vary from season to season.[1]

Influenza spreads primarily through exposure to respiratory particles released when an infected person coughs or sneezes. Symptoms include fever, cough, muscle aches, headache, chills, fatigue and sore throat. Symptoms may differ in older adults and individuals who are immunocompromised. Most people recover within seven to ten days, but influenza can cause serious complications, including pneumonia, cardiovascular complications and the worsening of chronic conditions.[17]

Annual vaccination is the most effective way to prevent influenza and its complications.[1] Additional protective measures can help reduce exposure and transmission. These include regular handwashing, limiting contact with others when ill, covering coughs and sneezes, improving indoor ventilation and disinfecting frequently touched surfaces. Wearing a well-fitting mask is also recommended when individuals have symptoms and need to interact with others, receive health care services or enter a public setting.[17]

Antiviral medications are recommended for individuals with influenza symptoms who are severely ill or belong to high-risk groups. Treatment should begin as soon as possible, ideally within 48 hours of symptom onset.[17]

Populations at Greatest Risk of Severe Influenza

Groups at Increased Risk

The National Advisory Committee on Immunization (NACI) identifies several adult populations at increased risk of influenza-related complications or hospitalization. These include adults aged 65 and older, pregnant individuals, residents of chronic care facilities, people with certain chronic health conditions and individuals in or from Indigenous communities.[1]

Older Adults

Older adults are at increased risk because of the combined effects of ageing, and the greater likelihood they will be living with frailty and chronic health conditions. Age-related changes in the immune system, known as immunosenescence, can increase susceptibility to infectious diseases and reduce protection from vaccination. Frailty, which involves a decline in physiological function, further contributes to the risk of severe illness and difficulties with recovery.[1]

Various factors also increase risk within the older adult population. A Quebec study estimated that influenza-related hospitalization rates were three times as high among adults aged 75 to 84 and six times as high among those aged 85 and older compared with adults aged 65 to 74.[18] A Canadian study of adults aged 65 and older hospitalized with influenza or another acute respiratory illness also found that greater frailty was associated with functional decline and death.[19]

Canadians aged 65 and older have consistently accounted for approximately 90% of annual deaths attributed to influenza and pneumonia, while those aged 85 and older accounted for more than half of these deaths.[5]

People Living With Chronic Health Conditions

Chronic health conditions identified by NACI include heart and lung diseases such as asthma and cystic fibrosis, diabetes, cancer and other immunocompromising conditions, renal disease, and class 3 obesity.[1]

One study estimated that people with comorbid conditions had an influenza-related hospitalization rate seven times that of individuals without these conditions.[18] Research has also found that people living with cardiovascular disease face an increased risk of adverse outcomes following influenza infection, including heart failure and death.[20,21] An Ontario study noted that heart attack hospitalizations were approximately six times as frequent during the first week after laboratory-confirmed influenza compared with control periods.[22]

The Burden of Influenza

Illness, Hospitalizations and Deaths

Globally, seasonal influenza causes an estimated three to five million cases of severe illness and 290,000 to 650,000 influenza-associated respiratory deaths annually.[23] A Canadian study estimated that influenza causes approximately 15,000 respiratory hospitalizations annually, with estimates ranging from 5,000 to 24,000 depending on the season.[4] In 2024, Statistics Canada ranked influenza and pneumonia together as Canada's sixth leading cause of death, accounting for 7,658 deaths, with 90% of them being amongst older adults.[5]

Health System, Economic and Societal Costs

A Canadian study of adults hospitalized with laboratory-confirmed influenza during the 2010–11 to 2012–13 seasons estimated average health care costs of C$14,612 per case. Costs averaged C$39,477 among patients requiring intensive care.[24]

Beyond health care costs, Canadian surveys of adults aged 50 and older documented disruptions to paid work, volunteering and unpaid caregiving among respondents reporting influenza or influenza-like illness.[25] Indeed, a 2024 modelling study further estimated the annual economic burden of seasonal influenza in Canada at approximately C$2.6 billion. This total included C$375.9 million in direct health care costs, C$581.2 million in productivity losses from illness and premature deaths and C$1.68 billion representing the cost of quality-adjusted life years lost due to premature deaths.[26]

Vaccination

How do Influenza Vaccines Work?

Immunity against influenza involves both humoral and cell-mediated immunity. Humoral immunity relies on antibodies that target the virus's haemagglutinin (HA) protein to prevent entry into cells and its neuraminidase (NA) protein to limit viral spread. Cell-mediated immunity involves T cells that target other viral proteins and help clear infected cells.[27] Natural infection stimulates both types of immunity, while influenza vaccination generally focuses on humoral immunity, particularly antibodies targeting the HA protein.[27,28]

Influenza vaccines are designed to protect against specific strains of the virus.[27,28] These strains may change each year as influenza viruses evolve. Vaccines have historically contained three or four strains, referred to as trivalent and quadrivalent vaccines, respectively.[27] These formulations include two influenza A strains and one or two influenza B strains. As the B/Yamagata lineage has not been detected in natural circulation since March 2020, influenza vaccines currently being used in Canada are trivalent.[1]

The World Health Organization (WHO) recommends vaccine strains to be included in the development of subsequent influenza vaccines through its Global Influenza Surveillance and Response System (GISRS), which assesses millions of specimens worldwide each year.[29] Every February, it announces the strains recommended for the coming winter in the Northern Hemisphere.[28] Vaccine manufacturers must confirm to Health Canada that their vaccines contain the recommended strains.[1]

What are the Different Platforms of Influenza Vaccines?

Influenza vaccines are currently being produced using three main platforms.

Inactivated Influenza Vaccines (IIV)

These vaccines contain HA and NA proteins from influenza viruses that have been inactivated and processed.[30] Most are produced using viruses grown in eggs, a well-established manufacturing method. They are administered by intramuscular or deep subcutaneous injection.[29]

IIV formulations differ in their antigen content, use of an adjuvant and production methods:

- **Standard-dose (IIV-SD):** Contains 15 µg of HA per strain.
- **Cell culture-based:** Uses viruses grown in mammalian cell lines rather than eggs.
- **Adjuvanted (IIV-Adj):** Contains the MF59 adjuvant, which recruits phagocytes to the injection site and strengthens the antibody response.
- **High-dose (IIV-HD):** Contains 60 µg of HA per strain, four times the amount in a standard-dose vaccine.[1]

Live Attenuated Influenza Vaccine (LAIV)

LAIV contains weakened influenza viruses and is administered as a nasal spray. It mimics natural infection and induces both humoral and cell-mediated immune responses.[27,29] The currently licensed LAIV product is manufactured using eggs.[28]

Recombinant Influenza Vaccine (RIV)

RIV uses genetic sequence data to produce the target HA antigen.[30] It contains 45 µg of HA per strain, three times the amount in a standard-dose IIV, and is administered intramuscularly. RIV is not currently authorized or available for use in Canada during the 2026–27 season.[1]

What are Enhanced Influenza Vaccines?

Enhanced influenza vaccines have features that improve immunogenicity, efficacy and/or effectiveness compared with standard-dose vaccines. Three formulations fall within this category: adjuvanted IIV, which includes an adjuvant; high-dose IIV, which contains more HA antigen per strain; and RIV, which uses recombinant technology.[30]

What is currently authorized and available in Canada?

Several influenza vaccines are authorized and available in Canada, with some products specifically authorized for particular age groups or populations (Table 1).[1]

Table 1: Currently Available Influenza Vaccines for the 2026–27 Respiratory Virus Season[1]

Product name	Vaccine Type	Enhanced Vaccine?	Authorized Age Group
Fluzone	Standard-dose inactivated (IIV-SD)	No	6 months and older
Fluviral	Standard-dose inactivated (IIV-SD)	No	6 months and older
Influvac	Standard-dose inactivated (IIV-SD)	No	6 months and older
Flucelvax	Standard-dose, cell culture-based inactivated (IIV-cc)	No	6 months and older
Fluad	Adjuvanted inactivated (IIV-Adj)	Yes	65 years and older
Fluzone High-Dose	High-dose inactivated (IIV-HD)	Yes	65 years and older
FluMist	Live attenuated, administered as a nasal spray (LAIV)	No	2–59 years

Vaccine Effectiveness

Influenza vaccination provides the best protection against influenza and is the most effective way to prevent infection and its complications.[1]

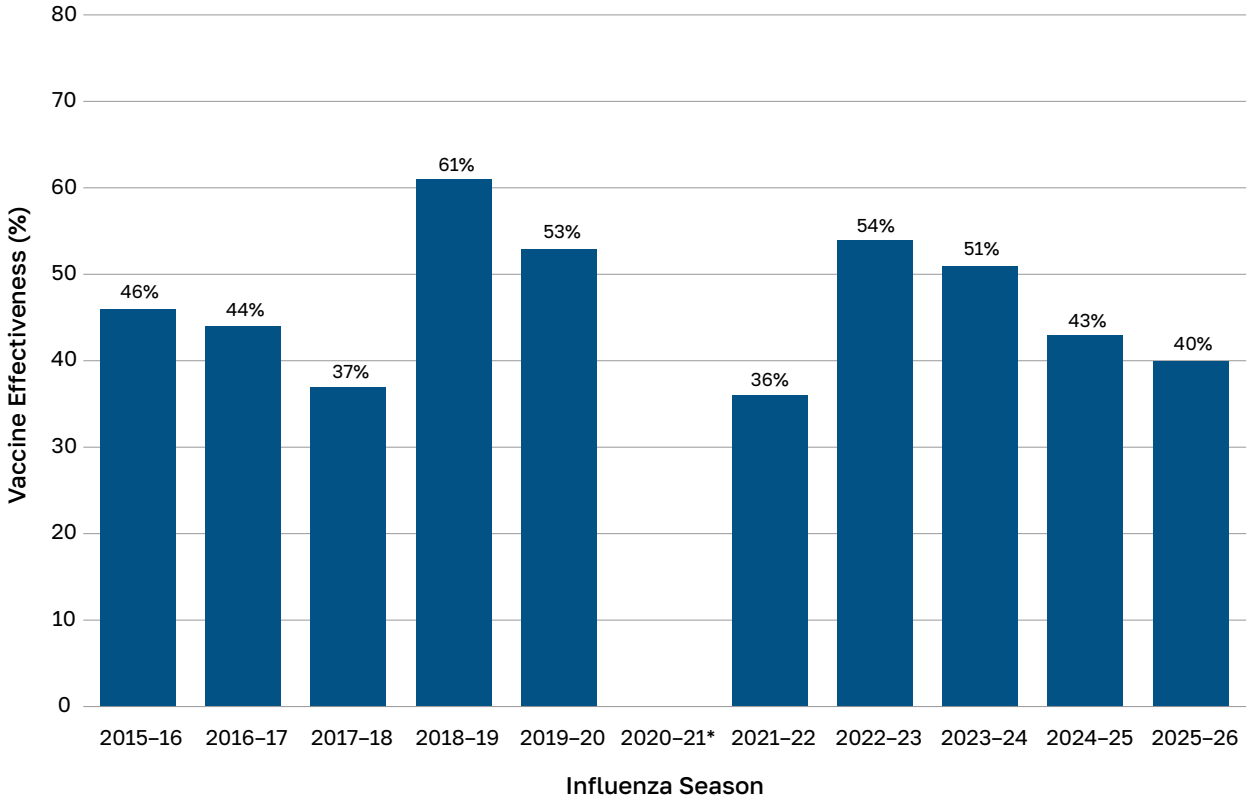
In the general population, influenza vaccination has been associated with reductions in influenza-related pneumonia, outpatient visits, emergency department visits, hospitalizations, intensive care admissions and mortality.[31–33] Evidence also supports its effectiveness against influenza infection and hospitalization among individuals with underlying respiratory diseases.[34] Among older adults, vaccination has been associated with reductions in medically attended influenza, influenza-related hospitalizations and mortality.[35,36]

Variation in Vaccine Effectiveness

Vaccine effectiveness varies from season to season. Over a ten-year period, community-based evaluations conducted by the Canadian Sentinel Practitioner Surveillance Network (SPSN) have reported effectiveness estimates ranging from 36% to 61% (Figure 1).[37] Similar seasonal variation has been observed in the United States.[38]

Effectiveness depends on several factors, including how closely the vaccine matches circulating virus strains, the vaccine formulation and the recipient's age and overall health.[1,29] Effectiveness is generally higher against influenza A(H1N1) and influenza B than against influenza A(H3N2).[31,39–41]

Figure 1: Canadian Sentinel Practitioner Surveillance Network Influenza Vaccine Effectiveness Estimates, 2015–16 to 2025–26[37]



* No estimate available for 2020-2021.

Effectiveness also varies by age, with higher estimates generally reported in children than in adults.[31,32,34] One systematic review estimated vaccine effectiveness at 48.6% among children younger than 18, 36.7% among adults aged 18 to 64 and 30.6% among adults aged 65 and older.[31]

Duration of Protection

Vaccine effectiveness generally peaks within the first two to three months after vaccination and gradually declines thereafter. Nevertheless, vaccination generally continues to reduce the risk of illness and complications throughout a typical influenza season.[1]

Older adults generally experience a lower peak in effectiveness and a greater decline over time than younger age groups. An age-related weakened immune system and a greater likelihood of living with comorbidities may contribute to this pattern.[1]

Cardiovascular Benefits

A review identified high-quality evidence supporting influenza vaccination as an effective preventive measure for reducing the burden of cardiovascular disease. Among individuals at high risk of cardiovascular events, influenza vaccination was associated with significant reductions in the risk of cardiovascular death, major adverse cardiovascular events (MACE), myocardial infarction (MI) and stroke compared with no vaccination (Table 2).[42]

Potential mechanisms include preventing influenza from triggering systemic inflammation and worsening existing cardiovascular disease, as well as preventing secondary infections that can aggravate cardiovascular conditions.[42]

Table 2: Cardiovascular Risk Reductions Associated With Influenza Vaccination Among High-Risk Individuals[42]

Cardiovascular Outcome	Reduction in Risk
Cardiovascular death	23%–47%
Major adverse cardiovascular events (MACE)	26%–37%
Myocardial infarction (MI)	29%–34%
Stroke	13%–19%

Enhanced Influenza Vaccines

Enhanced influenza vaccines include the IIV-HD, IIV-Adj and RIV versions. NACI's latest review of the evidence for adults aged 65 and older has found that these vaccines provide greater benefits than IIV-SD for outcomes such as laboratory-confirmed influenza and influenza-related hospitalization. Evidence also suggests that they may reduce vascular events compared with IIV-SD.[6]

Few studies directly compare the three enhanced formulations, leaving insufficient evidence to establish a preference for one enhanced vaccine over the others.[6] A recent systematic review similarly reported modest additional protection against influenza-related hospitalization among adults aged 65 and older, without identifying clear differences between enhanced vaccines.[43]

Across reviews, substantially more evidence is available for IIV-HD than for IIV-Adj or RIV.[6] Reviews comparing IIV-HD with IIV-SD among adults aged 65 and older have consistently found reductions in hospitalization for influenza, laboratory-confirmed influenza and cardiorespiratory disease (Table 3).[44]

Table 3: Relative Effectiveness of IIV-HD Compared With IIV-SD Among Adults Aged 65 and Older[44]

Outcome	Relative Vaccine Effectiveness
Influenza hospitalization	38.5%
Laboratory-confirmed influenza hospitalization	31.2%
Cardiorespiratory disease hospitalization	7.5%

Vaccine Safety

All authorized influenza vaccines have a favourable safety profile, with most reactions being mild and short-lived. Allergic reactions and serious adverse events are rare.[1]

Studies suggest that a small attributable risk of Guillain-Barré syndrome (GBS) exists following both influenza illness and influenza vaccination.[1] However, the risk associated with influenza illness is substantially higher: approximately 17 cases per million influenza-coded health care encounters compared with one excess case per million vaccinations.[45]

Enhanced influenza vaccines have safety profiles similar to IIV-SD with respect to serious adverse events. However, recipients of IIV-HD and IIV-Adj experience higher rates of injection-site and systemic reactions.[6]

Influenza vaccine safety is monitored continuously in Canada, with additional surveillance during vaccination campaigns to investigate adverse events following immunization.[1]

Emerging Technologies

Despite the range of available vaccines and the evidence supporting their use, research continues into new influenza vaccine technologies. Existing vaccines depend on selecting strains of a virus that changes frequently. Egg-based production also takes several months, requiring strains to be selected well before vaccination campaigns begin. Circulating strains may change during this period, and mutations acquired during egg-based production can further reduce the match between the vaccine and circulating viruses.[46]

These challenges underpin the WHO's Global Influenza Strategy 2019–2030, which identifies a need for improved vaccines that provide stronger and longer-lasting protection.[30]

Influenza vaccines in development can be grouped into four categories:

Universal influenza vaccines: Aim to protect against all influenza A and B viruses

Broadly protective influenza vaccines: Aim to protect against multiple influenza viruses, although less broadly than universal vaccines

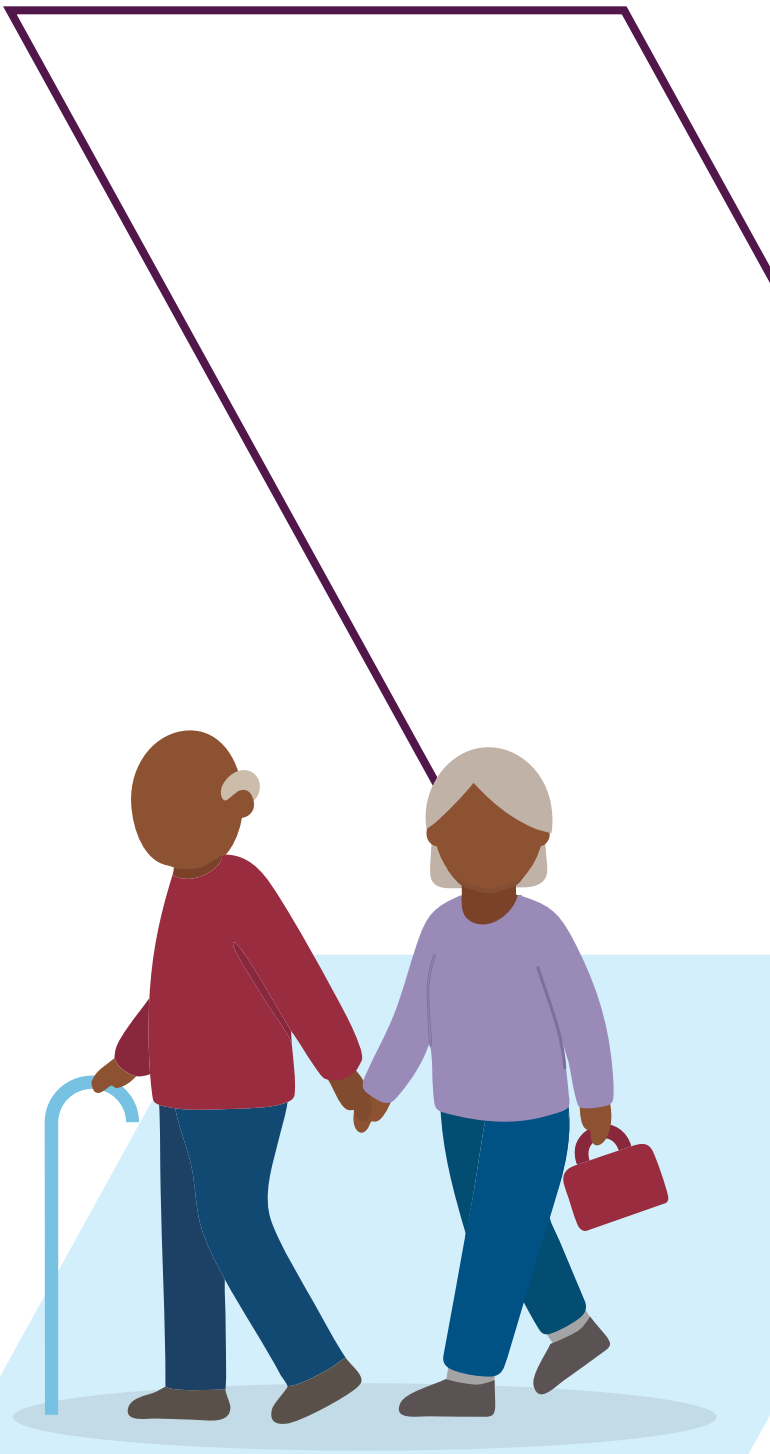
Next-generation influenza vaccines: Use approaches that differ from existing vaccines to improve immunity

Combination vaccines: Aim to protect against influenza and another respiratory infection, such as COVID-19 or respiratory syncytial virus (RSV).[30]

Approximately 250 vaccine candidates involving 200 developers are at various stages of development. Eight have progressed beyond phase 2, including four that are in phase 3 development or have been approved. Of those four, they all use mRNA technology.[47]

mRNA vaccines allow antigens to be updated quickly, avoid mutations associated with egg-based production and induce both antibody and T-cell responses.[46,48] Canada has already approved mRNA vaccines against SARS-CoV-2 (COVID-19) and RSV.[49,50]

In April 2026, the European Union authorized a combined influenza and COVID-19 mRNA vaccine for adults aged 50 and older.[51] In August 2026, the U.S. Food and Drug Administration (FDA) approved an mRNA influenza vaccine for the same age group.[52]



NACI Recommendations

National Advisory Committee on Immunization (NACI) is an external advisory body that provides immunization recommendations to the Public Health Agency of Canada (PHAC). Its recommendations consider disease burden, populations for vaccination, vaccine safety, immunogenicity, efficacy and effectiveness. They also consider the ethics, equity, feasibility, acceptability and cost-effectiveness of publicly funded vaccination programs.[1]

NACI provides recommendations at both the individual and public health program levels. The latter support provincial and territorial decisions about immunization programs. Its annual influenza recommendations account for current epidemiology, immunization practices and available vaccine products.[1]

At the individual level, NACI recommends annual influenza vaccination for everyone aged six months and older who does not have a contraindication. Contraindications include a previous anaphylactic reaction to an influenza vaccine or one of its components, including components of its container. An egg allergy is not a contraindication, as safety evidence supports vaccination in individuals with egg allergies.[1]

Vaccination is particularly important for people at increased risk of influenza-related complications or hospitalization, including adults aged 65 and older, individuals with certain chronic medical conditions and residents of chronic care facilities such as long-term care homes. It is also important for people who may transmit influenza to high-risk individuals, such as health care providers and household contacts, and for those who provide essential community services. At the public health program level, NACI recommends prioritizing these groups.[1]

For adults aged 65 and older, NACI recommends offering an enhanced influenza vaccine: IIV-HD, IIV-Adj or RIV. If an enhanced vaccine is unavailable, another age-appropriate influenza vaccine should be offered.[1]

NACI states that influenza vaccines may be administered at the same time as, or at any time before or after, other vaccines. Its review of recent evidence supports co-administration of seasonal influenza and COVID-19 vaccines.[1]

NACI does not currently specify an optimal start date for influenza vaccination campaigns, although vaccination should occur before the influenza season begins. After reviewing evidence on vaccine durability and timing, NACI concluded that there was insufficient data to establish specific timing recommendations for different populations, particularly given seasonal variability and operational considerations. The review found that vaccination in early fall provides protection for most of the season.[1]

Booster doses are not required for adults within the same influenza season, as evidence has not shown that a second dose significantly improves protection.[1]

Vaccination Policies and Initiatives in Canada

Vaccination Coverage

All provinces and territories except Quebec provide public funding for influenza vaccination for their entire populations aged 6 months and older. All provinces and territories currently fund at least one enhanced influenza vaccine for adults aged 65 and older (Table 4). Ontario, Nova Scotia and Saskatchewan fund both available enhanced formulations for this age group.

Due in part to the advocacy of the NIA and other organizations, coverage has expanded gradually over the last decade.[53–55] In the 2022–23 season, for example, only eight provinces and territories funded at least one enhanced influenza vaccine for all adults aged 65 and older.[55]

Depending on the jurisdiction, influenza vaccines are available through primary care practices, pharmacies, public health, hospitals and congregate care settings.

With the support of the NIA and other research and advocacy organizations, the authority of pharmacists to administer influenza vaccines has also expanded over the past two decades.[53–55] Alberta and British Columbia were the first jurisdictions to allow pharmacist administration of influenza vaccines during the 2009–10 season.[70] All provinces and Yukon now permit pharmacists to administer influenza vaccines.[71] The Northwest Territories and Nunavut are working towards extending this authority to pharmacists through legislative and regulatory changes.[72–74]

Table 4: Provincial and Territorial Influenza Vaccination Policies, 2026-27 Season

Province or Territory	Universal Funding	Enhanced Vaccine Coverage	Fluzone High-Dose Coverage	Fluad Coverage
Alberta[56]	Yes	Yes	Yes (adults who are specific transplant candidates/recipients, or on specific immunotherapies)	Yes (adults 65+)
British Columbia[57]	Yes	Yes	No	Yes (adults 65+)
Manitoba[58]	Yes	Yes	No	Yes (adults 65+)
New Brunswick[59]	Yes	Yes	Yes (adults 65+ with a history of severe allergy to Fluad)	Yes (adults 65+)
Newfoundland and Labrador[60,61]	Yes	Yes	No	Yes (adults 65+)
Northwest Territories[62]	Yes	Yes	Yes (adults 65+)	No
Nova Scotia[63]	Yes	Yes	Yes (adults 65+)	Yes (adults 65+)
Nunavut[64]	Yes	Yes	Yes (adults 65+)	No
Ontario[65]	Yes	Yes	Yes (adults 65+)	Yes (adults 65+)
Prince Edward Island[66]	Yes	Yes	No	Yes (adults 65+)
Quebec[67]	No	Yes	No	Yes (adults 65+)
Saskatchewan[68]	Yes	Yes	Yes (adults 65+)	Yes (adults 65+)
Yukon[69]	Yes	Yes	No	Yes (adults 65+)

Special Initiatives

Beyond funding and administration policies, jurisdictions have introduced initiatives to improve influenza vaccine uptake. Manitoba sends an annual reminder letter to people who turned 65 in the preceding year, outlining their eligibility for influenza, COVID-19 and pneumococcal vaccines before the provincial seasonal immunization program begins.[58]

British Columbia sends notifications through its Get Vaccinated system when individuals become eligible to book an influenza vaccination appointment. The system allows people to register themselves and family members, including parents and grandparents.[75]

Other initiatives support people at high risk or those who face barriers to accessing services. Alberta's Outreach Immunization Program supports vaccination in congregate care settings. It coordinates pharmacy providers, congregate care sites, Indigenous Services Canada and Primary and Preventive Health Services in these efforts.[76]

Nova Scotia's Public Health Mobile Units use specially equipped vans staffed by health care professionals to deliver public health services, including vaccination, across the province. Clinics may serve the general population or specific groups facing barriers to care, such as older adults and First Nations communities.[77] Ontario and Newfoundland and Labrador also provide immunization services for people who are homebound or frail.[78,79]



Reporting and Monitoring

Canada has well-established systems for monitoring influenza activity and vaccination, particularly compared with surveillance for other respiratory viruses and vaccines. Many of these systems also support monitoring of other infections and immunization programs.

PHAC's national respiratory virus surveillance follows the WHO's Mosaic Framework. There are three main domains: detecting and assessing respiratory viruses, monitoring their epidemiological and virological characteristics and informing public health interventions.[13]

The first two domains are supported by FluWatch+, Canada's national surveillance system for influenza, SARS-CoV-2, RSV and emerging respiratory pathogens. FluWatch+ draws on several types of data supplied by multiple partners. The Canadian Respiratory Virus Surveillance Report provides weekly summaries of key trends.[13,14] PHAC also coordinates other systems that collect information on respiratory viruses and vaccination.[13]

These activities can be summarized under four components: community surveillance, virologic surveillance, severe outcomes surveillance and vaccine and immunity monitoring (Table 5).[13]

Table 5: PHAC Influenza Surveillance and Vaccination Monitoring Systems[13–16,80]

In brackets for various data collection tools, jurisdictional representation or stakeholders involved are noted. For provinces and territories (PT), number does not mean each of those jurisdictions have full representation.

Community Surveillance
Influenza activity levels: Weekly assessments from provincial and territorial public health partners (12/13 PTs).
Outbreaks in high-risk settings: Reports from provincial and territorial ministries of health (11/13 PTs).
Syndromic surveillance of influenza-like illness: Sentinel Primary Care ILI Surveillance through participating primary care providers and FluWatchers through volunteers across all PTs.
Virologic Surveillance
Laboratory-confirmed virus detections: Respiratory Virus Detection Surveillance System (13/13 PTs).
Strain characterization and antiviral resistance testing: National Microbiology Laboratory testing of a proportion of laboratory-confirmed influenza isolates.
Severe Outcomes Surveillance
Provincial and territorial severe outcomes surveillance: Weekly data from health ministries on hospitalizations (10/13 PTs), ICU admissions (8/13 PTs) and deaths (8/13 PTs)
Vaccine and Immunity Monitoring
Vaccination coverage: Standardized Reporting on Immunization using immunization registry data (8/13 PTs). Surveys include the Adult National Immunization Coverage Survey, Seasonal Respiratory Vaccination Coverage Survey, Survey on Vaccination during Pregnancy and Key Adult Populations Immunization Coverage Survey.
Vaccine effectiveness: Canadian Sentinel Practitioner Surveillance Network (4/13 PTs).
Vaccine safety: Canadian Adverse Events Following Immunization Surveillance System

These systems collect laboratory, severe outcome, outbreak, syndromic, vaccination coverage and vaccine effectiveness data. Contributors include hospital networks, health care providers, volunteers, laboratories and provincial and territorial health authorities.

Several limitations affect data interpretation. Data from the first three components underestimate the full burden of influenza and are not intended to represent complete case counts. Many influenza infections are not laboratory-confirmed, and participating systems do not cover the entire population.[1,14] For example, although eight provinces and territories contribute influenza-related ICU admission and death data, their reporting coverage represents only 22% of Canada's population.[14]

Much of Canada's national vaccination coverage information comes from self-reported surveys. Limitations include low response rates, recall and social desirability bias and small samples that restrict subgroup analyses, particularly in smaller provinces and territories.[81] STARVAX uses immunization registries and information systems to provide a more accurate picture of vaccination activity. However, not all jurisdictions report data to STARVAX, and the level of data may vary across participating jurisdictions.[16,80]

Progress has been made in strengthening vaccine registries across Canada. While jurisdictions such as Manitoba have had long-standing vaccine registries,[82,83] some provinces have introduced registries or strengthened reporting their requirements more recently. For example, Quebec gradually introduced its registry between 2014 and 2018,[84] while Alberta has required health practitioners to report immunizations electronically since 2021.[85] At the national level, PHAC has developed standards to support a network of interconnected vaccine registries.[86] The 2025–2030 Interim National Immunization Strategy also identifies registries, coverage and records as a priority, calling for comprehensive and interoperable vaccination data systems.[87]

Vaccination Rates in Canada

Overall Population

The most recent national influenza vaccination survey found that 34% of adults aged 18 and older reported receiving a seasonal influenza vaccine during the 2025–26 season. Among adults aged 65 and older, uptake was reported to be 64%.[2]

Estimates based on immunization registry data from eight provinces and territories suggest that uptake may be lower in older age groups. For fall 2025, reported coverage was 32.0% among adults aged 60 to 69, 51.8% among those aged 70 to 79 and 61.5% among those aged 80 and older.[16]

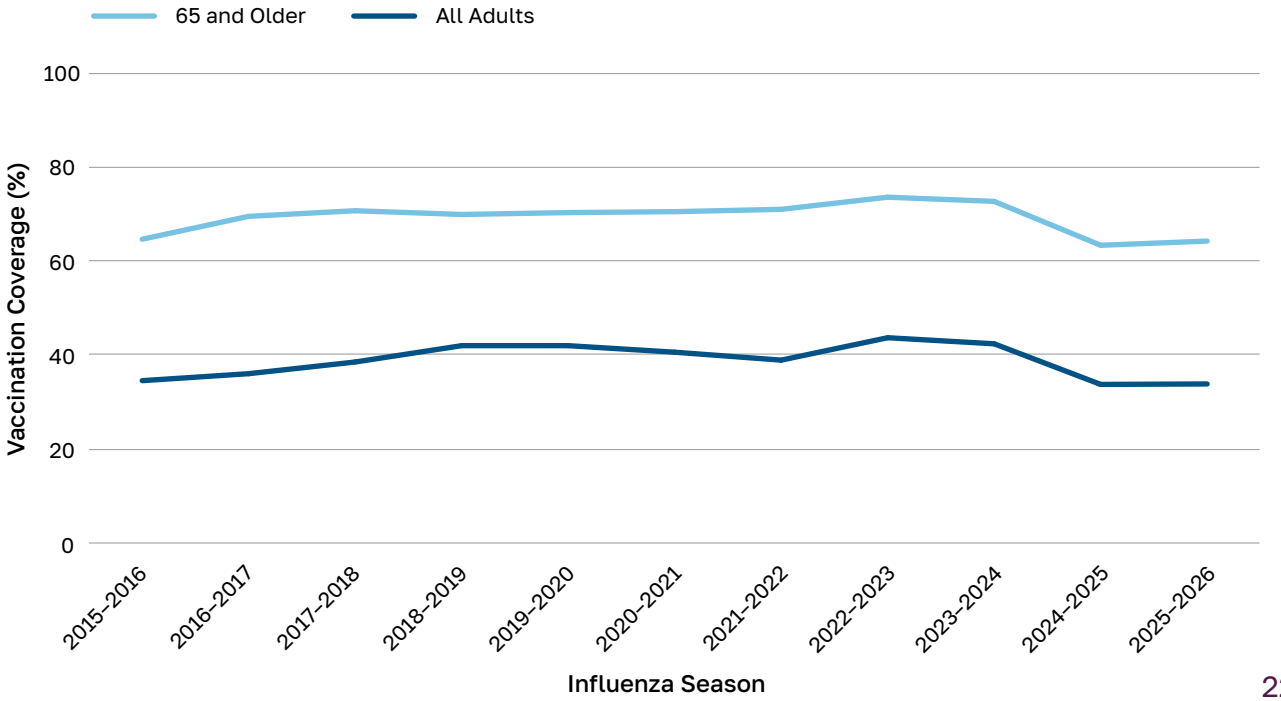
Among adults aged 65 and older, reported influenza vaccination coverage exceeded COVID-19 vaccination coverage during the 2025–26 season, at 64% and 49%, respectively.[2]

Influenza vaccination coverage has consistently remained below the national goal of 80% among adults aged 65 and older.[2] This goal was established in 2001,[88] an increase from the initial national goal of 70% in 1993,[89] and has been repeatedly renewed under Canada's National Immunization Strategy, drawing on international standards and best practices.[3,90] A multistep process to renew national coverage goals for 2025–2030 is underway alongside the release of the 2025–2030 Interim National Immunization Strategy.[87,91]

Trends

Over the years examined, influenza vaccination rates reported in the annual PHAC survey have ranged from 33.5% to 43.5% among adults aged 18 and older and from 63.3% to 73.6% among adults aged 65 and older (Figure 2). PHAC noted that the reasons for the decline in influenza vaccination rates following the 2023–24 season were unclear.[7]

Figure 2: Seasonal Influenza Vaccination Coverage Among All Adults and Adults Aged 65 and Older, 2015–16 to 2025–26[2,92]



Coverage among adults aged 65 and older varies substantially by jurisdiction, ranging from 50.0% in Alberta to 76.8% in Nova Scotia (Figure 3).[2]

Provincial differences are also evident in the general adult population. Lower uptake in Quebec may reflect the provincial program's focus on recommended groups rather than the entire population.[2] One national survey identified province of residence, alongside age, as one of the strongest predictors of influenza vaccination.[93]

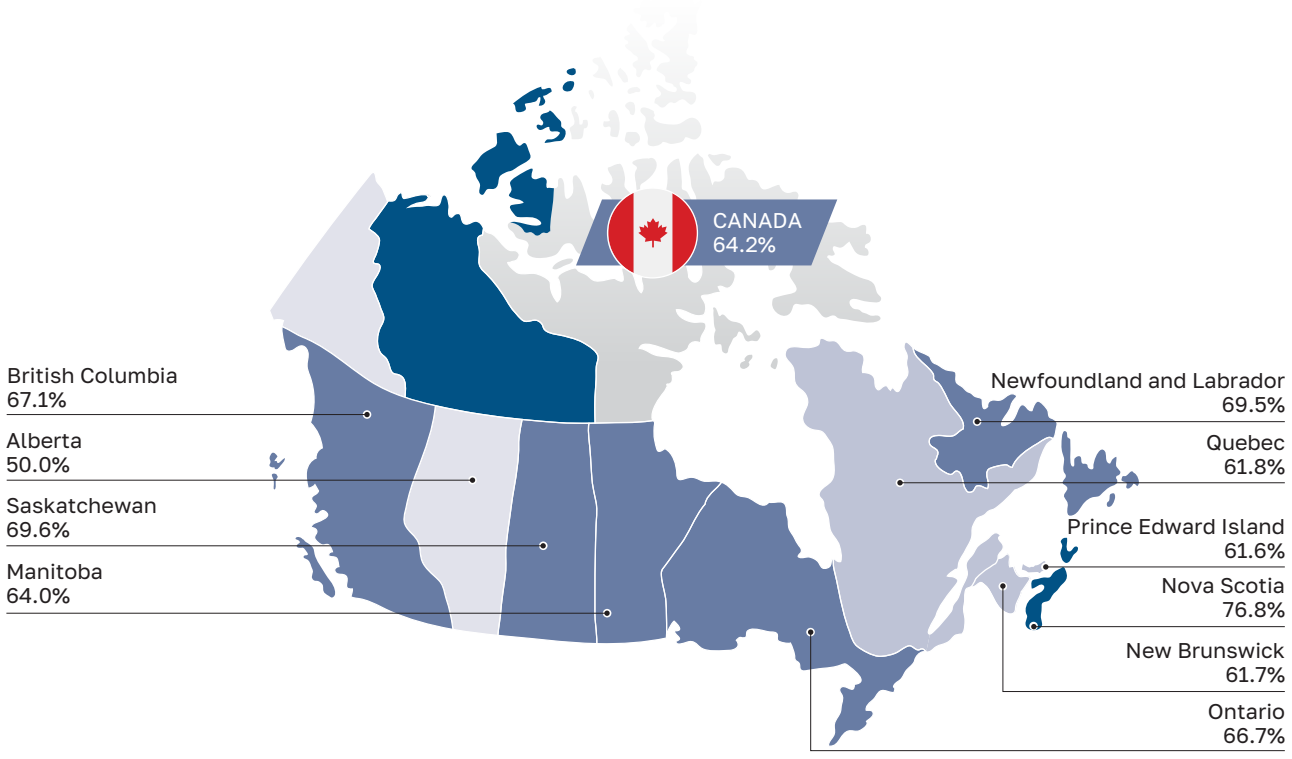
Population Differences

Among adults overall, females appear to have higher influenza vaccination coverage than males.[2,8,12,16] This difference is smaller among older adults.[8,16,81]

Coverage also increases with age. STARVAX reported uptake of 61.5% among adults aged 80 and older, almost twice the 32.0% reported among those aged 60 to 69.[16]

The Key Adult Populations Immunization Coverage (KAPIC) Survey found lower seasonal influenza vaccination coverage among recent immigrants, Indigenous people, visible minorities, people with lower levels of

Figure 3. Influenza Vaccination Coverage Among Adults Aged 65 and Older, by Province or Territory, 2025–26[2]



education or income and residents of rural or remote communities compared with the general population (Figure 4).[94] Similar patterns by residential setting, income and immigrant status were identified in the Canadian Longitudinal Study on Aging.[93,95]

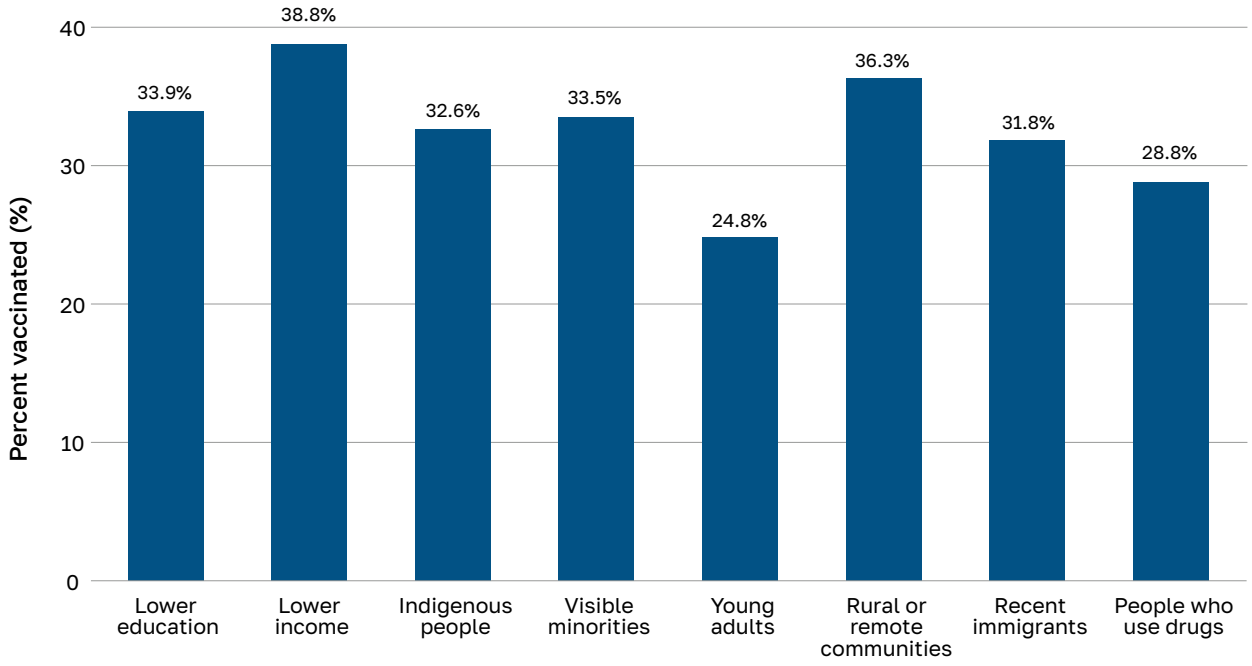
Among KAPIC survey respondents who had not received an influenza vaccine, reported intentions to receive one in the coming months were low. These included 11.8% of Indigenous respondents and 9.5% of respondents living in rural or remote communities.[96]

Vaccination Locations

Across national surveys and influenza seasons, pharmacies have become the most commonly reported vaccination location. In PHAC's 2025–26 survey, 60% of vaccinated adults reported receiving their influenza vaccine at a pharmacy, compared with 14% at a physician's office.[2]

The pharmacy proportion of self-reported influenza vaccinations was more than double the 28% reported in the 2016–17 season.[9] This growth may reflect the expansion of provincial and territorial policies allowing pharmacists to administer influenza vaccines, since 2009.[70]

Figure 4. Influenza Vaccination Coverage Among Selected Populations, 2025[94]



Vaccine Hesitancy

Although publicly funded influenza vaccination is widely available in Canada, uptake among adults aged 65 and older was only 64% this past influenza season, well below the current national goal of 80%. Barriers related to vaccine delivery, accessibility and awareness may contribute to this gap.

Vaccine hesitancy is also important to consider. The SAGE Working Group on Vaccine Hesitancy defines it as a "delay in acceptance or refusal of vaccination despite availability of vaccination services."

Five factors influence vaccination decisions:

Complacency: Low perceived risk of disease or a belief that vaccination is unnecessary

Confidence: Trust in vaccine effectiveness and safety, the health care system and policymakers

Convenience: Accessibility, including physical availability, cost and an individual's health literacy

Calculation: The extent to which an individual seeks and evaluates information before deciding whether to be vaccinated

Collective responsibility: The motivation to protect others through vaccination[97,98]

Complacency

National surveys have found that at least 90% of adults consider vaccines important for their health and understand the rationale for annual influenza vaccination.[8] Among older adults, 89% believe influenza vaccination is important for people at high risk.[11] However, unvaccinated older adults often report a low perceived risk of influenza for themselves and place less importance on vaccination.[2,7–9]

In PHAC's 2025–26 survey, the two most common reasons for not receiving an influenza vaccine were not considering oneself at risk and not getting around to becoming vaccinated.[2] These were also the most commonly reported reasons in the three preceding seasons: 2022–23, 2023–24 and 2024–25.[7–9]

Among unvaccinated respondents in the 2022–23 season, vaccine refusal increased with age. Refusal was reported by 62% of unvaccinated respondents aged 80 and older, compared with 44% across adults aged 18 and older. The most commonly cited reason was a belief that they were not at risk of influenza or severe illness.[12]

Confidence

Canadian adults generally report positive attitudes towards vaccination, including influenza vaccination. The Adult National Immunization Coverage Survey (aNICS) found that 84% of adults agreed that influenza vaccines were safe and 72% agreed that their benefits outweighed their risks.[12]

Nevertheless, safety concerns were among the three most common reasons for remaining unvaccinated during the 2025–26 season.[2] Concerns about vaccine safety and side effects have repeatedly appeared among the main reasons for declining influenza vaccination across national surveys and seasons.[7–9,99]

In a PHAC survey examining vaccine refusal during the 2022–23 season, concerns about effectiveness and safety were both among the three most common reasons.[9] This aligns with a systematic review that found a strong association between belief in vaccine efficacy and uptake among older adults, while fear of adverse events was associated with lower acceptance.[10]

Co-administration, in which multiple vaccines can be given at the same visit, can help improve uptake. Examples include receiving influenza

vaccination alongside COVID-19, pneumococcal or RSV vaccinations. Across national surveys, concerns about side effects and overloading the immune system were the two most common reasons for being less willing to receive an influenza vaccine alongside one or two other vaccines.[8,9]

Convenience

Policies have progressively improved the availability and affordability of influenza vaccination in Canada. Examples include expanded funding for enhanced influenza vaccines and the increased authorization of pharmacists to administer publicly-funded vaccines over the past two decades.

Pharmacies offer accessible locations, extended opening hours and potentially shorter waits than other vaccination settings. Approximately 95% of Canadians live within five kilometres of a community pharmacy.[100] Their growing role is becoming increasingly reflected in national surveys, which identifies pharmacies as the most common location for adult influenza vaccination.[2]

However, access barriers remain. Across PHAC surveys, 15% of adults aged 18 and older reported difficulty scheduling an influenza vaccination appointment. Common issues included limited appointment availability, a lack of convenient locations and insufficient walk-in options.[8,9]

These barriers may be particularly important for older adults. Perceived transportation difficulties have also been associated with a lower willingness to receive influenza vaccination.[10]

The Role of Health Care Providers in Promoting Vaccination

Health care providers play an important role in vaccine uptake. In a PHAC survey, 67% of Canadian adults identified their family physician as a source of vaccination information. Other health professionals were the third most commonly reported source, cited by 50% of respondents.[8]

When asked to identify their most trusted source, 48% selected their family physician. Other sources identified by respondents are shown in Table 6.[8]

Table 6: Selected Sources Identified as the Most Trusted for Vaccination Information[8]

Source	Percentage of Respondents
Your own family physician	48.2%
Health Canada, Public Health Agency of Canada	19.5%
Other health professional (e.g. nurse, pharmacist)	9.9%
World Health Organization (WHO)	5.7%
Health scientists and researchers	5.3%
Provincial/territorial/regional Health Authority	4.3%
Other people's experiences or knowledge	2.7%
Your family, friends or colleagues	2.1%
Alternative health practitioner (chiropractor, naturopath, osteopath, homeopath, etc.)	1.4%
Info-Santé or Telehealth telephone lines, 811	1.0%

Among adults aged 65 and older, contact with a family physician in the preceding year has been strongly associated with lower odds of missed influenza vaccination.[95] Uptake is also consistently higher among adults who receive a health care provider's recommendation,[8,9] reaching approximately 88% among older adults in one survey (Table 7).[8]

Table 7. Influenza Vaccination Uptake by Health Care Provider (HCP) Recommendation and Age Group[8]

Age Group	HCP recommended the flu vaccine during the last visit	HCP did not recommend the flu vaccine during the last visit
All adults ≥18	70.0%	36.6%
18-64 without CMC	56.0%	24.6%
18-64 with CMC	61.8%	39.2%
65 and older	87.5%	62.9%

Despite these associations, only slightly more than half of older adults in Canada report receiving a recommendation for influenza vaccination from a health care provider.[8,9] During the 2022–23 season, only 51% had discussed influenza vaccination with a health care provider, while 64% had reportedly never discussed enhanced influenza vaccines.[11]

There are also missed opportunities for co-administration. Among adults who did not receive influenza and COVID-19 vaccines together, the most commonly cited reason was that co-administration was not offered or that they could not book both vaccinations at the same visit.[8]

Addressing these gaps is important because older adults who receive information from health care professionals tend to hold more positive beliefs about vaccination and are more likely to accept it.[10]

Studies have identified physician reminders as an effective way to improve influenza vaccination uptake among older adults. Support from facilitators working with health care providers has also been associated with increased uptake.[101]

Reminders

A systematic review of interventions to improve influenza vaccination among adults aged 60 and older found several reminder approaches to be effective. These included letters and postcards, which could be personalised to an individual's health status.[101] Another systematic review identified multiple studies in which advice or reminder letters from health care providers improved uptake among older adults.[10]

Research has also found digital reminders effective in increasing influenza and COVID-19 vaccination uptake.[102,103] Studies in Denmark, for example, have evaluated electronic letters informed by behavioural research and delivered to adults aged 65 and older before the influenza vaccination period.[102,104] Uptake was higher among people who received these letters than among those receiving usual care, with particularly large improvements among those who had not been vaccinated in the previous season.[104] One of the studies found higher uptake among recipients of letters highlighting the cardiovascular benefits of vaccination and among those receiving repeated letters. Benefits were observed across high-risk patient groups and geographic regions.[102]

International Practices



Canada has relatively high influenza vaccination coverage compared with other Organisation for Economic Co-operation and Development (OECD) countries. However, several countries consistently achieve higher rates among older adults, sometimes exceeding 80%.[105]

Across 2021–2024, the United Kingdom, Denmark and South Korea consistently reported some of the highest influenza vaccination rates among adults aged 65 and older amongst OECD countries. During this period, influenza vaccination rates ranged from 74.9% to 82.3% in the United Kingdom, 75.0% to 78.0% in Denmark and 80.1% to 84.8% in South Korea.[105]

The high vaccination rates in these jurisdictions reflect a combination of approaches rather than a single program or initiative. A study comparing countries identified more than 40 factors associated with successful influenza vaccination programs across five broad areas: health authority accountability and program strength, access to vaccination, health care professional involvement, disease awareness and confidence in influenza vaccines. Coordinated strategies, shared accountability, data collection and communication helped these components work together. The three country examples below highlight how various initiatives are implemented to improve influenza vaccination coverage.[106]

United Kingdom

The United Kingdom's influenza vaccination program was first established in the 1960s, specifically for high-risk populations, with coverage extending to all adults aged 65 and older in 2000.[107] Subsequent policies have included financial incentives to general practitioners (GPs) for achieving higher uptake in high-risk groups, such as those with chronic obstructive pulmonary disease or diabetes, and pharmacist administration.[106] A national multi-media winter vaccination communications campaign also promotes uptake on an annual basis. Similar to Canadian jurisdictions, enhanced vaccines are currently offered to all older adults.[108]

Since the older adult program began, vaccination data have been collected regularly from providers to support appropriate financial compensation.[106] Weekly and monthly automated data extraction provides timely information. These data support the monitoring of population vaccine uptake and can be aggregated across geographic areas, helping program managers identify where additional support is needed.[109] Uptake of the influenza vaccine by frontline health care workers, including in long-term care homes, is also recorded and provides further evidence of protection for the most vulnerable older people.[110] England has maintained high uptake for many years. From the 2004–05 to 2024–25 seasons, coverage among adults aged 65 and older has remained consistently above 70%.[111]

The United Kingdom's Joint Committee on Vaccination and Immunisation (JCVI) has recommended a later start for certain adult groups, including older adults, due to protection waning over time for adults.[112] Since the 2024–25 season, vaccination for most adults has therefore begun in early October. Despite the shorter vaccination period, uptake among adults aged 65 and older has remained just below 75% in both seasons examined.[108]

Denmark

Denmark provides influenza vaccination to adults aged 65 and older, with enhanced vaccines only offered to those aged 69 and older.[113] Policies to improve uptake have included pharmacist administration, which was followed by a subsequent increase in vaccination rates.[114]

All administered vaccines must be reported to national health registries by law, supporting the completeness of vaccination records.[102] Since the 2020–21 season, Denmark has also operated a nationwide reminder system that contacts all adults aged 65 and older digitally or by mail.[115]

Denmark's historically lower coverage increased substantially during the pandemic, rising from approximately 52% in 2019 to 78% in 2022. Possible contributors include promotion of the co-administration of influenza and COVID-19 vaccines, increased awareness of the importance of influenza vaccination during the pandemic and reminders that improved awareness of vaccination campaigns.[102,116]

South Korea

South Korea's national influenza vaccination program initially funded vaccination for low-income adults aged 65 and older through public health centres.[117,118] In 2005, eligibility expanded to all adults in this age group.[117]

Other policies have included domestic vaccine production, beginning in 2009, and the addition of private health care organisations to the publicly funded program in 2015.[119] This expanded the number of vaccination providers beyond public health centres and improved access.

South Korea uses vaccination registry data updated by public health centres and contracted private facilities.[120,121] Vaccination is delivered in phases, beginning with children, followed by pregnant individuals and older adults, to reduce crowding at clinics and support patient safety.[121]

Coverage increased substantially following the expansion of national funding. Among adults aged 65 and older, uptake rose from approximately 40–60% in the 2004–05 season to 80% in 2014.[119]

Despite high uptake, South Korea has not provided publicly funded enhanced influenza vaccines for older adults; discussions are underway about extending coverage to adults aged 75 and older.[122]

Influenza Vaccination Among Health Care Providers

The Importance of Vaccination for this Population

Health care providers are an important group for influenza vaccination because their work can increase both their risk of infection and their likelihood of transmitting influenza to their patients at high risk of severe illness.

Systematic reviews have reported mixed findings on whether vaccinating health care providers reduces influenza-like illness, influenza or related hospitalizations among patients. However, reviews found that vaccination of health care providers was associated with lower all-cause mortality among patients.[123,124]

Three systematic reviews also found that vaccination of health care providers was associated with reduced absenteeism among health care providers, either overall or specifically due to influenza-like illness. Vaccinated health care providers also lost significantly fewer workdays. These findings highlight the potential role of vaccination in maintaining staffing levels and continuity of health care services.[125–127]

NACI Recommendation and Coverage Target

As discussed earlier, NACI identifies health care and other care providers who may transmit influenza to individuals at high risk as a group for whom annual influenza vaccination is particularly important. NACI also recommends prioritizing this group within public health vaccination programs and considers influenza vaccination an important component of the standard of care for health care and other care providers.[1]

NACI recommends that health care providers receive an age-appropriate IIV or RIV. LAIV is not recommended for this group, with comparative studies in healthy adults finding IIV to be similarly or more effective than LAIV. If LAIV is used, recipients should avoid close contact with people with severe immunocompromising conditions for at least two weeks after vaccination because of the theoretical risk of transmitting the vaccine virus and causing infection.[1]

In 2001, a national coverage recommendation of 80% seasonal influenza vaccination coverage among health care workers was established.[88] This has been repeatedly renewed under Canada's National Immunization Strategy.[3,90,128]

Vaccination Rates

The 2023 adult National Immunization Coverage Survey (aNICS) reported influenza vaccination coverage of 56.5% among health care workers during the 2022–2023 season, compared with 44.4% among the general adult population.[12] Although coverage was higher among health care workers, it remained considerably below the national coverage target of 80%.

Provincial data also show variation by care setting. During Ontario's 2025–2026 respiratory virus surveillance season, median influenza vaccination coverage among health care workers was 33.5% in hospitals and 66.4% in long-term care homes. This difference between care settings has been apparent across several seasons in Ontario.[129] In British Columbia, 40% of health care workers in hospitals reported receiving the influenza vaccine in 2023–2024,[130] while coverage in Nova Scotia among health care workers in hospitals ranged from 20.5% to 43.8% between 2017 and 2026.[131]

Vaccination coverage also varies considerably by occupation. An analysis of the 2007–2014 Canadian Community Health Survey found that 72% of family physicians and general practitioners reported receiving the seasonal influenza vaccine, compared with 4% of chiropractors, practitioners of natural healing and midwives.[132]

Other Factors that Influence Health Care Provider Vaccination Rates

As in the general population, systematic reviews have found higher influenza vaccination uptake among older health care workers and those with chronic health conditions.[133,134]

In the 2023 aNICS, approximately 20% of health care workers reported being hesitant or reluctant to receive the influenza vaccine during the 2022–2023 season, similar to the general adult population. Among respondents who had not received the vaccine, 48.4% of health care workers reported refusing it, compared with 43.7% of unvaccinated adults in the general population.[12] These findings suggest that factors beyond demographics and occupation contribute to vaccination decisions.

Across reviews, key motivators for influenza vaccination among health care workers included the desire to protect themselves and their loved ones.[135,136] Barriers included low perceived risk of influenza and concerns about vaccine safety and effectiveness.[134–136]

Initiatives to Increase Vaccine Uptake

Research has examined a range of interventions to improve influenza vaccination uptake among health care providers. Among individual interventions, mandatory vaccination has been identified as one of the most effective approaches.[137–139] Systematic reviews have also found that combining multiple interventions can be more effective than using a single intervention.[135,137,140] These findings support combining initiatives that address education, awareness and accessibility to improve influenza vaccination coverage among health care workers.

Evidence-Informed Recommendations

Through examination of the latest evidence and the current state of vaccination rates and policies in Canada and beyond, there is clearly more work to be done to improve influenza prevention in Canada. The following eight recommendations provide evidence-informed policy and practice approaches that can be used by PHAC, and provincial/territorial health authorities and organizations, to better support influenza prevention and vaccination across Canada.

1 Improve Influenza Prevention

Annual vaccination is central to influenza prevention, as it remains the most effective way to prevent influenza and its complications.[1] Public health authorities and health care providers should continue to promote influenza vaccination in alignment with NACI recommendations, with particular attention to older adults and other populations at increased risk.

Vaccination should be complemented by other protective measures, including covering coughs and sneezes, regular handwashing, limiting contact with others when ill, improving indoor ventilation and disinfecting frequently touched surfaces. Wearing a well-fitting mask is also recommended for individuals who have symptoms and need to interact with others, receive health care services or enter a public setting. Antiviral medications are recommended for individuals with influenza symptoms who belong to high-risk groups or are severely ill.[17]



2 Improve Surveillance of Influenza and Its Impact on Health Care Systems Across Canada

As outlined in the PHAC influenza surveillance summary (Table 5), Canada monitors influenza through several programs covering community activity, virologic surveillance and severe outcomes.[13]

It is important to note that coverage varies across these programs. The Respiratory Virus Detection Surveillance System includes all 13 provinces and territories, while weekly reporting on ICU admissions and deaths includes only eight. Participation by a jurisdiction does not necessarily mean that reporting covers its entire population. Furthermore, laboratory-confirmed cases do not capture all infections.[14] Consequently, the currently available surveillance data underestimates the full burden of influenza in Canada.

PHAC should work with provincial and territorial health ministries to improve the completeness and consistency of reporting. Priorities should include broader population coverage and more comprehensive monitoring, particularly of severe outcomes.

More comprehensive surveillance would improve estimates of health care use, support health system planning and help identify populations at increased risk to inform prevention efforts.

3 Improve Reporting and Monitoring of Influenza Vaccination Rates

National estimates of influenza vaccination coverage rely mainly on self-reported surveys.[15] These surveys have limitations, including low response rates, recall bias and small samples that restrict comparisons across population groups and jurisdictions.[2] STARVAX draws on immunization registries and information systems to monitor vaccination coverage, but currently includes only eight provinces and territories, with the level of data varying across jurisdictions.[16,80]

Federal, provincial and territorial governments should strengthen immunization information systems and expand the use of registry data to monitor vaccination coverage. The United Kingdom's routine collection of vaccination data from general practices demonstrates how these records can support monitoring across geographic areas and help identify where additional support is needed.[109]

Improved monitoring should enable comparisons by age, population group, jurisdiction and care setting. This would help identify coverage gaps and assess the impact of initiatives to improve influenza vaccination uptake. Self-reported surveys should play a complementary role by examining perceptions, attitudes and behaviours that vaccination records do not capture.

4 Continue Working Towards Developing More Effective Influenza Vaccines

Enhanced influenza vaccines provide additional protection for older adults compared with standard-dose vaccines. Evidence indicates greater protection against influenza-related hospitalization and suggests potential reductions in vascular events. However, there is insufficient evidence to establish a preference for one enhanced formulation over the others.[6]

Additionally, influenza vaccine effectiveness declines over time, particularly among older adults.[1] Effectiveness also depends on the vaccine formulation, the recipient's age and health and how closely the vaccine matches circulating viruses.[1,29] These factors contribute to substantial variation in effectiveness between seasons (Figure 1).[37] Many current vaccines use egg-based production, which takes several months and can introduce mutations that reduce the match between vaccine strains and circulating viruses.[46]

Research into developing improved influenza vaccines should continue, including comparative studies of enhanced formulations and evaluation of emerging technologies. In particular, mRNA vaccines can be updated quickly, avoid mutations associated with egg-based production and induce both antibody and T-cell responses.[46,48] With mRNA influenza vaccines, including a combination vaccine, now authorized internationally, continued research and evaluation will be important to inform Canadian vaccine recommendations and program decisions.[51,52]

5 Provide Clinical Education and Support for Primary Care Providers and Pharmacists to Deliver Vaccinations

National surveys consistently highlight the influence of health care providers on vaccination decisions.[8–10] Family physicians and other health professionals are among the most trusted sources of vaccination information, and their recommendations are associated with higher influenza vaccine uptake.[8,9] However, many older adults have not discussed influenza vaccination, or particularly enhanced vaccines, with their health care providers or received a recommendation to be vaccinated.[8,9,11]

Health care providers should routinely recommend and offer annual influenza vaccination during appropriate patient encounters, particularly for older adults and individuals with chronic conditions.

Clinical education should equip providers to discuss influenza and vaccination clearly and confidently. This includes addressing low perceived risk of influenza and concerns about vaccine effectiveness, safety and side effects.[2,7–9]

These conversations are particularly important for older adults. Among unvaccinated survey respondents aged 80 and older during the 2022–23 season, almost two-thirds reported refusing influenza vaccination. Low perceived risk was the most commonly cited reason for refusal, along with concerns about effectiveness and safety among unvaccinated adults.[9]

Initiatives should also provide practical support for vaccination delivery to reduce missed opportunities. Research has associated support from facilitators and reminders directed to physicians with increased vaccine uptake.[101] Incorporating these approaches alongside clinical education could help providers translate recommendations into vaccinations.

6 Recommend the Influenza Vaccine for All Health Care Providers

In alignment with NACI recommendations, annual influenza vaccination should be strongly recommended for all health care providers and other care providers who may transmit influenza to high-risk individuals. NACI identifies influenza vaccination as an important component of the standard of care.[1]

Vaccination can protect providers and reduce absenteeism, while potentially benefiting their patients.[123–127] These benefits can support continuity of care especially during the respiratory virus season. Nevertheless, national influenza vaccination coverage among health care workers was 56.5% during the 2022–23 season,[12] below the long-established goal of 80%.[3]

Health care organizations and authorities should strengthen vaccination programs that combine multiple approaches, such as education, awareness and convenient access. Evidence supports the use of combined interventions to improve uptake among health care providers.[135,137,140] Programs should also address barriers experienced by providers, including low perceived risk of influenza and concerns about vaccine safety and effectiveness.[134–136]

7 Recommend the Co-Administration of the Influenza Vaccine in Conjunction With Other Recommended Vaccines to Improve Uptake and Compliance

NACI notes that influenza vaccines may be administered at the same time as, or at any time before or after, other vaccines.[23] Vaccination appointments should therefore provide an opportunity to review other recommended vaccinations and offer co-administration when appropriate. For older adults, these may include vaccines against COVID-19, RSV, pneumococcal disease, shingles, tetanus and diphtheria, depending on age, health and vaccination history.

Opportunities to improve uptake through co-administration continue to be missed. Among adults who did not receive influenza and COVID-19 vaccines together, the most commonly cited reason was that co-administration was not offered or that both vaccinations could not be booked at the same visit.[8] Vaccination providers should make it easier to book and receive recommended vaccines together.

Providers should also address concerns about side effects and overloading the immune system, which have been common reasons for reluctance to receive other vaccines alongside influenza vaccination.[8,9]

8 Enhance Vaccine Access and Provision Across Canada's Provinces and Territories

Public funding and access to influenza vaccination have expanded considerably across Canada, particularly for older adults. All provinces and territories now fund at least one enhanced influenza vaccine for adults aged 65 and older. All provinces and Yukon permit pharmacists to administer influenza vaccines,[71] while the Northwest Territories and Nunavut are working towards extending this authority.[72–74]

Provinces have also introduced programs that provide vaccination reminders, such as British Columbia's Get Vaccinated system and Manitoba's annual reminder letter, and improve access for specific populations, such as Alberta's Outreach Immunization Program and Nova Scotia's Public Health Mobile Units.[58,75–77] These initiatives provide a foundation for addressing remaining gaps in access and uptake.

Access barriers also remain. Across national surveys, 15% of adult respondents reported difficulty scheduling an influenza vaccination appointment. Common challenges included a lack of convenient locations, insufficient walk-in options and limited appointment availability.[8,9] These barriers may be particularly important for older adults. Governments and health authorities should ensure that funding and service delivery support convenient and equitable access to vaccines recommended by NACI.

Outreach programs operating in some provinces could be adapted and expanded across other jurisdictions to support people who face barriers to existing services, including older adults who are homebound and residents of rural or remote communities.

Reminder programs should also be strengthened, drawing on Canadian initiatives and evidence from countries such as Denmark.[58,115] These programs can encourage vaccination and provide clear information about eligibility and where to receive a vaccine.

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