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Driving the Agenda of Pneumococcal Pneumonia Vaccination in At-risk Populations in Community and Long-term Care

IFA Technical Report

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Introduction

In Canada, the ageing population is growing rapidly with the number of persons aged 65 years and older expected to increase by 68% over the next 20 years. (1) Parallel to population ageing is the increasing prevalence of non-communicable diseases which continues to drive demand for both health and social care.

Older adults and those with chronic medical conditions are at high risk of serious complications from vaccine preventable diseases (VPDs), including pneumonia. Pneumonia ranks as the sixth leading cause of hospitalizations and eighth most common cause of death in Canada, with a high prevalence among older adults and those with chronic medical conditions. (2)

The COVID-19 pandemic has exposed the brutal nature and impact of respiratory infections on people of all ages and most particularly among those at-risk of serious complications. During the pandemic, older people were disproportionately impacted with 81% of all deaths linked to long-term care facilities (LTCFs). (3) These statistics represent not only the failures in the long-term care (LTC) system but also a lack of attention to routine vaccination for residents in these settings, and the urgent need for improved comprehensive understanding of vaccination in these settings.

In Canada, the burden of pneumonia is particularly high among older adults in LTC settings. (4) Vaccination is an effective method to protect against specific strains of pneumonia, such as pneumococcal pneumonia, which can lead to pneumococcal disease and be fatal. The National Advisory Committee on Immunization (NACI) recommends immunization against pneumococcal pneumonia for all adults 65 years and older. (5) Even with this recommendation, there is a lack of urgency in public health messages and campaigns on adult pneumonia vaccination in LTCFs, and uptake rates remain alarmingly below national targets.

Public health messages and campaigns as a key component of health promotion and prevention are essential to encourage and inform at-risk populations of adult pneumonia vaccination. While knowledge about pneumonia has increased in the last decade, very little progress has been made in the development of effective targeted public health campaigns and messages.

Considering the poor uptake of adult pneumonia vaccination nationally, action is needed to collect and analyze current information on public health messages and campaigns for pneumococcal pneumonia vaccination in community and LTC settings.

The 'Driving the Agenda of Pneumococcal Pneumonia Vaccination in At-risk Populations in Community and Long-term Care' study aimed to understand the status of existing public health policies and campaigns on pneumococcal pneumonia in community and LTC settings. The findings are anticipated to help address existing gaps and inform the development of effective vaccination policies in these settings.

Public Health Campaigns and Messages for Adult Pneumonia Vaccination in Canada

In response to the lack of uptake of adult pneumonia vaccination in community and LTC settings across Canada, an environmental scan was conducted to analyze public health messages on pneumococcal pneumonia at a national and provincial level, with the purpose of identifying gaps and themes.

The findings presented below, highlight information on the status of existing public health campaigns and messages for adult vaccination by the Government of Canada, Alberta, British Columbia, Manitoba, Government of Ontario, Newfoundland and Labrador, Quebec, Saskatchewan, Prince Edward Island, Nova Scotia and New Brunswick.

Government of Canada

The Public Health Agency of Canada (PHAC) within the Federal Ministry of Health conveys information on immunization through the Vaccine and immunization website. (7) Although there is recognition of a life course approach to immunization, there is a greater focus on pediatric populations and parents than other high-risk groups such as older adults and those with chronic conditions. (6)

The website '[Vaccination for adults](#)' provides basic information on the type of vaccines in the national immunization program and the eligible population groups whether it be adults, those over 60 years of age, or women who are pregnant. Pneumococcal disease is listed as a vaccine-preventable disease (VPD) for adults, with the recommendation of one dose at 65 years and older. (7)

Information on the causes, symptoms, risks, prevention, treatment and surveillance of invasive pneumococcal disease (IPD) is available on the [Government of Canada](#) website. (8) IPD is most common in children under the age of five years and adults over the age of 65 years. Those who smoke, have chronic disease, and other vulnerable populations are at higher risk for contracting IPD. (9)(10)

Canadian Immunization Guide

The [Canadian Immunization Guide](#) is a comprehensive resource based on recommendations and statements of expert advisory committees such as NACI. While the Guide is intended for those with an interest in immunization (health care professionals, vaccine program decision makers, and other Canadian stakeholders), it is accessible to all Canadian citizens.

Recently updated in 2022, information on pneumococcal vaccines is comprehensive, well structured, and easy to access. (11) Beginning with key information and epidemiology, it details recommendations for use, including adults at high risk of IPD, and vaccinations for specific populations such as persons with chronic diseases and those who are immunocompromised. (11)

For healthy older adults, the guidelines recommend immunization with one dose of Pneumococcal Polysaccharide 23 vaccine (Pneu-P-23) to all adults aged 65 years and older. Adults who have already received a vaccine before 65 years old may be eligible for an additional dose of Pneu-P-23 vaccine. (11) The Pneumococcal Conjugate 13 vaccine (Pneu-C-13) can be considered on an individual basis for pneumococcal vaccine-naïve adults aged 65 years and older for the prevention of community-acquired (CAP) and IPD caused by the 13 pneumococcal serotypes included in the vaccine. (11) Adults aged 65 years and older who have previously received Pneu-P-23 can receive the Pneu-C-13 vaccine if at least one year has passed since immunization with Pneu-P-23 vaccine. (11)

Guidelines for the immunization of persons with chronic diseases and those in health care institutions include specific information on those living in [long-term care institutions](#). (12) Residents in long-term institutions, including children, are recommended to receive routine immunizations including the pneumococcal vaccine based on their risk and age. (13)

Targeted public health campaigns

Not just for kids: An adult guide to vaccination published in 2018 is an easy to read, well-prepared publication that conveys a simple but clear message ‘you never outgrow your need to keep your shots up to date.’ (14) (18) Interspersed through the sections of this publication are facts illustrated as the “Shot of Truth” which is an effective way of dispelling myths and misperceptions.

In the Guide, pneumonia is noted as a possible complication to seasonal influenza, pertussis, pneumococcal infection, and a reason why older people should be vaccinated. The chart (as illustrated) contains the essential information to inform decisions.

There is no information in the Guide about older people in LTC settings.

Vaccine Schedule

Immunization is largely a provincial and territorial responsibility, with the federal government responsible for the overarching policies and immunization of on-reserve Indigenous communities.

However, these principles do not supersede the authority of provincial governments, which make decisions that best meet the needs in their jurisdictions. (15)

[Provincial and Territorial vaccination schedules](#) for healthy, previously immunized adults are currently available (last updated December 2020). (15)(19) The Pneu-P-23 is publicly funded in all provinces and territories in Canada. One dose of the Pneu-P-23 vaccine is recommended in all provinces (except Nunavut) for adults aged 65 years and older.

Nunavut (NU) is the only territory in which one dose of the Pneu-P-23 vaccine is recommended for adults aged 50 years and older. Immunization information on adults at high-risk or those living in LTCFs is not provided. (16)(17)



Disease	Possible symptoms	Possible complications	Who should get vaccinated?
Influenza (flu)	<ul style="list-style-type: none"> High fever Headache, general aches & pain Fatigue & weakness Sore throat Coughing & chest discomfort 	<ul style="list-style-type: none"> Encephalitis (inflammation of brain) Pneumonia Secondary chronic condition (e.g. asthma, congestive heart failure) Death 	<ul style="list-style-type: none"> Everyone (2 doses every year in the fall)
Pneumococcal infection	<ul style="list-style-type: none"> Fatigue/fever Stomach trouble Headache & sweating Red, hot or itchy lesions on skin Stiff neck 	<ul style="list-style-type: none"> Meningitis (inflammation of the lining of the brain and spinal cord) Sepsis/shock (collapse of the blood) Amputation of ear or nose/limb Brain damage / Coma / Death 	<ul style="list-style-type: none"> People with specific medical conditions (e.g. asthma, diabetes) (Usually 1 dose – depends on risk)
Paramyxoviral infection	<ul style="list-style-type: none"> Fever & chills Headache, muscle, aching pain Cough & throat/hoarseness Chest pain 	<ul style="list-style-type: none"> Pneumonia Pharyngitis (inflammation of the lining of the throat and nasal cavity) Sepsis/shock (collapse of the blood) Brain damage / Death 	<ul style="list-style-type: none"> Everyone age 65 years and older People with specific medical conditions (Usually 1 dose – depends on risk)

Government of Alberta

The population of seniors in Alberta continues to rise faster than other age group within the province. As of December 2021, more than 700,000 Albertans were over the age of 65 years. (20) That number is expected to double within the next 2 decades. (20) This growing population is living healthier and longer lives, have higher levels of education, are working longer and are serving their communities through volunteering, civic engagement, and charitable donations. (20) Resources to help older people age in their community is communicated predominantly electronically on the many government websites.

[MyHealthAlberta.ca](https://myhealth.alberta.ca) provides resources and content, including information and tools, that help Albertans manage their health. Within the [health information and tools section](#) a list of health topics including pneumonia and vaccination is provided. (21)

The topic [pneumonia](#) is comprehensively explained from the overview to the causes, symptoms, medications, and treatment as well as preventative actions. (22) Furthermore, videos of real-life situations such as a conversation between a daughter and her father encouraging vaccination; and one that describes self-care when confronted with a diagnosis of pneumonia and ways to reduce the likelihood of pneumonia with changes in lifestyle and being vaccinated are prominent. (23)

There is basic information on two pneumococcal vaccines: pneumococcal polysaccharide and the pneumococcal conjugate vaccines. (24)

In Alberta, the pneumococcal vaccine can be administered in a local public health office, by a family physician or by a pharmacist. (25) People experiencing homelessness, alcoholism, and drug addiction have been identified as high-risk, yet other vulnerable populations in the community, such as residents in LTCFs are not mentioned, despite the equivalent risk. (25)



The Government of Alberta's public health messages on pneumococcal pneumonia is established on various web sources as well as through digital videos.

Alberta Immunization Policy (AIP)

The [Alberta Immunization Policy \(AIP\)](#) which is accessible on the government website provides information on publicly funded immunizations including biological therapeutics and material on vaccines, indications for their use, and vaccine schedules. (26)

For the general population, the province has set an immunization goal of 80% of adults 65 years old and older to receive one dose of the pneumonia vaccine. (27) The annual target for 95% of residents in LTCFs to receive influenza vaccination is particularly of note. There is no target for pneumococcal pneumonia vaccines.

Vaccines, including pneumococcal vaccines, can be administered by most pharmacists and offered in a local pharmacy or a local public health unit. Immunization clinics can be located by either calling the 24/7 HealthLink BC (8-1-1), contacting a local public health unit or using a downloadable BC Health Service Locator application. (34)

[Pneumonia](#) is one of the major topics of infectious diseases on the [HealthLinkBC](#) site. A comprehensive, evidence-based overview and description of pneumonia is presented including causes, symptoms, diagnosis, treatment, prevention, course of disease and risk factors to the general public. (35) Vaccines are indicated for adults 65 years of age and over and those residing in closed living spaces (e.g., nursing homes) as each group has an increased risk for experiencing complications of pneumonia, which may require hospitalization.

Pneumococcal vaccines, particularly the polysaccharide vaccine for older adults (65 years and older), in addition to measles, flu and chickenpox are recommended to prevent the serious complications of pneumonia. (35) Although this webpage is targeted to the general population, information for older adults is also provided. Depending on age and the nature of chronic medical conditions among other factors, adults have access to the Pneu-P-23 or in some cases Pneu-C-13 vaccine. Information is also conveyed on reducing the chances of catching pneumonia by staying away from people who have the flu, respiratory symptoms, or chickenpox.

Approved by Health Canada, the Pneu-P-23 is provided free of charge for those eligible including adults 65 years and older, residents of any age living in residential care or assisted living facilities and adults with certain health conditions. (36)

British Columbia Immunization Policy

British Columbia was the first province to implement a province-wide influenza immunization prevention policy that requires all healthcare workers, visitors, volunteers, and students to be immunized against the influenza vaccine. (37) The policy provides annual updates on influenza immunization coverage and includes a targeted approach for residents and staff in residential care facilities and health care settings. (38)(39) The policy has proven to be effective in increasing influenza immunization rates of health care workers in LTC and acute health care settings. (37) Despite the equivalent-risk of pneumococcal pneumonia, there is no such policy in place.

In the [Immunization](#) chapter of the Communicable Disease Manual published by the BC Centre for Disease Control, best practice guidelines are outlined in certain settings such as residential care facilities. (40) All residents are eligible for pneumococcal polysaccharide (Pneu-P-23) vaccine. At the time of admission, individuals are assessed for prior pneumococcal vaccination to determine first dose and booster administration. (40)

Targeted public health messages

'Seniors' Health Webpage

"Seniors' health" is a dedicated topic and part of the 'Aging Well' section that provides information on featured topics such as advanced care planning, dementia, elder abuse, hearing loss, and flu. (41) Unlike the flu, there is a lack of information on immunization against other respiratory diseases such as pneumococcal pneumonia.

As part of the Influenza (Flu) series, a multilingual document on [Why Seniors Should Get the Inactivated Influenza \(Flu\) Vaccine](#) focuses on the safety and efficacy of these vaccines for adults over the age of 65 years. (41) Concurrent immunization of pneumococcal and influenza vaccine is recommended to protect against infections of the brain, bloodstream, lungs and ear. (42)

Although the province provides adequate public health messages on pneumococcal pneumonia for the general public, there is a lack of targeted messaging and campaigns for older adults and residents living in LTCFs.

Vaccine Schedule

Immunization schedules for adults, older adults (65 years and older) and high-risk groups are provided in nine different languages. (43) The pneumococcal polysaccharide (Pneu-P-23) vaccination is recommended for both adults over the age of 65 years and individuals in the high-risk programs who may also be eligible for the pneumococcal conjugate vaccine (Pneu-C-13).

The characterization of high-risk adults is vague and includes those with chronic illnesses and weakened immune systems yet excludes those living in vulnerable environments such as residents living in LTCFs.

Vaccine	Adult	65 Years and Over	High Risk Populations
Cholera (Shankar) Vaccine (1 dose)	✓		
Rotarix 2 vaccine (2 Dose)			✓
Rotarix 2 vaccine (2 Dose)	✓		✓
Quadravalent Polysaccharide (PPV) Vaccine (1 Dose)	✓		✓
Inactivated Influenza (Flu) Vaccine (FCV2)		✓	✓
Menomax, Pneum, Rabbits (PMM) Vaccine (1 Dose)	✓		
Pneumococcal C Conjugate (Pneu-C) Vaccine (FCV2)	✓		
Pneumococcal Conjugate Vaccine (Pneu-C-13)			✓
Pneumococcal Conjugate (Pneu-C-13) Vaccine (Pneu-C-13)			✓
Pneumococcal Polysaccharide Vaccine (Pneu-P-23)		✓	✓
Salmon and Typhoid (TYP) Vaccine (1 Dose)	✓		
Salmon, Typhoid, Paratyph (TYP) Vaccine (1 Dose)	✓		

The Government of Manitoba, and more specifically [Manitoba Health](#) is the main source of information on all health matters for Manitobans. (47)(48) [Routine immunization schedules](#) reflect a life course approach starting with recommendations for infants and pre-school children and leading up to those for adults. A lifetime dose of Pneu-P-23 is recommended for adults 65 years.

Pneumonia is briefly mentioned as part of other health topics such as influenza and measles. (49) In the Seasonal Flu section in the Health and Seniors Care department, seasonal flu and pneumonia fact sheets can be downloaded. (50) Public health messages are focused on co-administering influenza and pneumococcal vaccines. (51)

While the poster illustrated is developed to emphasize being vaccinated against the flu, the pneumococcal pneumonia vaccine is also encouraged for adults 65 years and older and those with chronic conditions. “One pneumococcal vaccine may give you a lifetime of protection.” (52)



Government of Manitoba

As of December 2021, adults 65 years and older represent 16.5% of the population (approximately 228,000 individuals) and according to population estimates is expected to increase up to 17.2 – 21.8%. (45)(46)

Information on eligibility for publicly-funded pneumococcal vaccination can be found online or by contacting the healthcare provider. (51) (53) Individuals aged 2 years to younger than 65 years who have at least one of the listed high-risk criteria, which includes residents of LTCFs, are eligible to receive 1 dose of pneumococcal vaccine, 8 weeks after any previous dose of Pneu-C-13 vaccine.

All healthy adults 65 years and older are eligible for one dose of Pneu-P-23 regardless of risk factors of previous pneumococcal vaccination (at least 5 years for previous Pneu-P-23 vaccine and 8 weeks after any previous dose of Pneu-C-13 vaccine). (53)

Pneumococcal vaccination is administered at the local public health office, nursing station, doctor's office, pharmacy, ACCESS Centre, or the nearest immunization clinic, and adults are encouraged to call in advance to check for flu and/or Pneu-P-23 vaccine availability. (51) No information was found on whether health care institutions like LTCFs are able to administer publicly funded vaccines.

The [Pneu-P-23 fact sheet](#) is intended to answer the common questions of “what, why, and who” should be vaccinated against pneumococcal pneumonia. (56) Pneumonia along with more serious and fatal infections such as meningitis and septicemia are briefly mentioned in the etiology of pneumococcal infection. (51)(56)

Manitoba Immunization Policy

[The Immunization Program Manual](#) (IPM) is provided by the Public Health Act in which Manitoba Health has the role and responsibility to establish overall strategic direction through policies, standards, and guidelines for immunization programs in the province. (57)

The [Residential Care Facility Guidelines](#) published by the Government of Manitoba represents province-wide standards in the administration of the public health protection licensing requirements for residential care facilities, which include LTCFs. (58) The guidelines serve as a reference standard for public health inspectors, licensing personnel, licensees, and care providers to protect the health and safety of those in care. (59) Within the specific communicable disease management guidelines, Manitobans over the age of 65 years are recommended to receive pneumococcal pneumonia vaccine concurrently with the flu shot. (59) Unlike seasonal influenza, which is a subsection within this guideline, the pneumococcal vaccination guideline is a brief statement written within the seasonal influenza subsection.

Targeted Public Health Messages

Within the [Seniors and Healthy Ageing](#) section of the government website, no information is available on respiratory infections (e.g., pneumococcal pneumonia) and immunization. (60)

Targeted public health messages on pneumococcal pneumonia as a separate entity is not available on the Government of Manitoba websites and is briefly mentioned in influenza and pneumococcal vaccination webpages. Even within these web pages, the public health messages do not primarily target the consequences of pneumococcal pneumonia in high-risk groups, such as residents in LTCFs and older people.

Vaccine Schedule for Adults

The immunization schedule for adults lists four publicly funded vaccines for adults (Tdap, Td, Pneu-P-23, and influenza). (61) A lifetime dose of Pneu-P-23 vaccine is recommended for adults 65 years of age. (61) The information in the table is lacking details and does not inform on the vaccine schedules for adults at high risk, including residents of LTCFs and those living with chronic conditions.

“[Recommended Immunization Schedules for Individuals NOT Previously Immunized](#)” (updated in February 2020) states adults in high-risk groups such as residents of LTCFs receive 1 dose of Pneu-P-23, and a booster dose after 5 years may be required. (62)

Recommended Immunization Schedule for Adults

NOTE: (Click on links to open Fact Sheets)

Vaccine	Age of Person	
	All adults	65 years
Tetanus, Diphtheria, Pertussis (Td)*	*	
Tetanus, Diphtheria (T)	Long 10 years	
Pneumococcal Polysaccharide (Pneu-P-23)		Lifetime dose
Influenza (I/I)	All Canadians 6 months of age and older are eligible for influenza vaccine each year. Click here for current information on the seasonal influenza vaccine.	

* = A single vaccine dose given.

* = Tdap vaccine is available for adults who are due for a tetanus booster and have not previously received a pertussis-containing vaccine in adulthood and pregnant women in every pregnancy optimally between 27 and 32 weeks gestation.

Government of Ontario

Ontario is the most populated and rapidly ageing province in Canada. In 2018, 16.9% of the population was aged 65 years and older and is expected to reach 26.1% by 2043. (61)(62)

[Ontario.ca](#) acts as an information hub for people of all ages to find information and resources on their health. [The vaccines and immunization](#) web page provides a broad overview of the importance of being vaccinated against “preventable diseases like measles, tetanus, whooping cough and chicken pox.” This opening phrase has a focus on babies and children without a mention of influenza and pneumococcal pneumonia and serious life-altering preventable diseases for all ages, including older people.

[Ontario’s routine immunization](#) schedule outlines in detail the vaccines that are provided free of charge if eligibility criteria is met. The drop-down menu has ten sections ordered chronologically with the theme for adult being building a healthy foundation.

For each infectious disease (influenza, tetanus and diphtheria, pneumococcal pneumonia and shingles) there is a description and eligibility criteria, and readers are also directed to a health care provider, the [local Public Health Unit](#) or the website [ontario.ca/vaccines](#) for further information.

- [Pregnancy](#)
- [2 & 4 months](#)
- [6 months](#)
- [12 months](#)
- [15 months](#)
- [18 months](#)
- [4-6 years old](#)
- [Grade 7](#)
- [14-16 years](#)
- [Adults](#)

An interesting note about the information on pneumococcal infections is that the link from the <https://www.ontario.ca/page/vaccines-adults> site is to the Ministry of Health, Ministry for Long-Term Care. The information presented describes the importance of the pneumococcal vaccination, the availability of the vaccine, the differences between the type of the vaccine (conjugate versus polysaccharide), and the etiology of pneumonia. Although the information is well presented, it was last updated in 2015. (65)

In 2022, the Ministry produced the [publicly funded immunization schedule](#) intended primarily for health care providers who administer immunizations based on the routine immunization schedule, catch-up schedules, high risk programs and schedules, eligibility criteria for all publicly funded vaccines, and minimum and recommended intervals between doses for vaccine series.

Pneu-P-23	2 to 64 years	1	<ul style="list-style-type: none"> • Asplenia (functional or anatomic), splenic dysfunction • Cardiac disease (chronic) • Cerebral spinal fluid leak (chronic) • Cochlear implant recipients (pre/post implant) • Congenital (primary) immunodeficiencies involving any part of the immune system, including B-lymphocyte (humoral) immunity, T-lymphocyte (cell mediated immunity, complement system (properdin, or factor D deficiencies), or phagocytic functions • Diabetes mellitus • HIV • Immunocompromising therapy including use of long-term systemic corticosteroid, chemotherapy, radiation therapy, post-organ transplant therapy, certain anti-rheumatic drugs and other immunosuppressive therapy • Liver disease chronic, including hepatitis B and C, and hepatic cirrhosis due to any cause • Malignant neoplasms, including leukemia and lymphoma • Renal disease (chronic), including nephrotic syndrome • Respiratory disease (chronic), excluding asthma, except those treated with high-dose corticosteroid therapy • Sickle-cell disease and other sickle cell haemoglobinopathies • Solid organ or stem cell transplant (candidate or recipient) • Neurologic conditions (chronic) that may impair clearance of oral secretions • HSCT (candidate or recipient) • Residents of nursing homes, homes for the aged and chronic care facilities or wards
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This is an excellent reference that also includes timing information on how to complete the Pneu-C-13 series, as well as the Tdap-IPV series depending on an individual's current age and previous doses.

In Ontario, the Pneu-P-23 vaccine can be administered in a local public health unit by a physician or pharmacist and is publicly funded for those eligible for the vaccine. (62)(65)(66) This group includes adults 65 years of age or older, a person over 2 years of age with a high-risk medical condition (i.e., chronic heart, kidney, or lung disease) and immunocompromised, and residents of long-term and chronic-care facilities. (65)

Long-Term Care Homes Act

The Ontario Regulation 79/10, s. 229 (111), under the Long-Term Care Homes Act, 2007 (which became effective in 2010) states that the management of licensed LTC homes are responsible for offering residents vaccines against pneumococcus, tetanus, diphtheria, and influenza in accordance with the publicly funding vaccination schedule. (67)

In 2018 the Ministry of Health and Long-Term Care published the Control of Respiratory Infection Outbreaks in Long-Term Care Homes. The purpose of the publication was to assist long-term care homes (LTCHs) and public health units with prevention, detection and management of respiratory infection outbreaks which arise from the transmission of common viral pathogens.

It was noted that infection prevention and control (IPAC) influenza and pneumococcal immunization of LTCH residents, along with appropriate IPAC practices, reduces the impact of these VPDs.

LTCHs must have immunization programs in place which should include a policy for influenza and pneumococcal disease. The management are responsible for offering residents immunization and includes promoting and implementing accessible influenza vaccination clinics; ensuring immunization policies are updated and clearly communicated to all staff; keeping updated records of staff influenza immunizations; advising recruitment agencies of the immunization/exclusion policies; and developing a staffing contingency plan based on immunization rates in the facility.

The Canadian Immunization Guide indicates one dose of polysaccharide pneumococcal vaccine for adults 65 years of age and older, and for those less than 65 years of age in LTCHs or who have conditions putting them at increased risk of pneumococcal disease. Individuals with unknown immunization histories for pneumococcal vaccine should receive the vaccine.

Appendix 5 - Sample Consent Form – Pneumococcal Vaccination

To be used in conjunction with fact sheets on pneumococcal vaccines.

Consent for Pneumococcal Vaccination

I _____ (Resident or Substitute decision-maker, if the Resident is incapable with respect to treatment) have been informed of the treatment, benefits, contraindications and side effects to the administration of a dose of pneumococcal vaccine and understand the procedure. I give consent to the administration of a dose of the pneumococcal vaccine to _____ (Resident) by a registered nurse or attending physician. I understand that the vaccine will not be given if the resident has a contraindication to receipt of the vaccine at the scheduled time of administration of the vaccine.

Signature of resident/substitute decision-maker giving consent

Date

There is considerable overlap in the indications for the influenza and pneumococcal vaccines. Consequently, the LTCHs annual influenza immunization program presents an opportunity to immunize those residents who are eligible for the pneumococcal vaccine according to schedule provided in the Canadian Immunization Guide.

Targeted Messages

Aging with Confidence: Ontario's Action Plan for Seniors

Ontario in collaboration with the federal government produced the [Aging with Confidence: Ontario's Action Plan for Seniors](#) which aims to support older adults in maintaining a healthy, active, and independent lifestyle. (68) As part of this plan, a user and age-friendly platform will be created to provide information on government services including immunization programs.

A Guide to Programs and Services for Seniors in Ontario, which is available in 16 different languages is a source of information about the province's free routine immunization program. (67)

Vaccine Schedule

The Ontario Ministry of Health released a detailed vaccination schedule for publicly funded vaccines including the pneumococcal vaccine. (70) This document outlines the pneumococcal vaccination for children less than 5 years of age, hematopoietic stem cell transplant recipients who are aged 50 years and older, high-risk older adults in between doses of the pneumococcal vaccine, and reimmunization intervals for high-risk individuals two years of age or older, in detail.

The same level of detail was not included for the pneumococcal polysaccharide vaccination schedule adults aged 65 years and older or for residents in LTCFs who are also at high-risk for acquiring pneumonia. (70)

Government of Newfoundland and Labrador

In 2016, Newfoundland and Labrador reported 19.1% of its population being aged 65 years and older (71), which is projected to increase to 31% by 2036. (72) Together, these provinces are predicted to have the highest proportion of seniors than any other province in Canada by 2036. (72)

The province mainly uses digital platforms to convey information to older adults. [The Government of Newfoundland and Labrador, Health and Community Services](#) webpage organizes relevant legal, financial and health related information for different age groups including for older adults. The [Public Health](#) Division of the Health and Community Services communicates information on the prevention and control of communicable diseases. In the subsection on immunization, a fact sheet on [protection from pneumococcal disease](#) includes disease etiology and transmission, why and who should be vaccinated, and the common side effects. (76)

Newfoundland and Labrador Immunization Manual (Immunization Authority Policy)

In March 2022, the government published an Immunization Manual that states that the authority for the Immunization Program comes from the Department of Health and Community Services in accordance with provincial legislation.

Though the [Immunization Manual](#) does not have a section specific to residents or patients of LTCFs, policies and criteria regarding residents are outlined within other sections. For example, Section 1.1, subsection 1 states that patients and residents in acute and LTC settings will be immunized by registered nurses or licensed practical nurses based on physician order. (77)

The Reference Chart (Table 1.2-1) lists the VPDs covered by routine immunization programs in Newfoundland and Labrador, as of September 1, 2015. The protective action against pneumococcal disease is Pneumo P-23 for those aged 65 years and older.

An earlier version of the Immunization Manual (February 2019) provides policy on the use of the pneumococcal polysaccharide vaccine. The Department of Health and Community Services provides this vaccine for persons at risk for invasive pneumococcal disease or complications of pneumococcal infection, which includes all persons who are residents of LTC or residential facilities.

Targeted Public Health Messages

Self-Directed Learning Module on Immunizations

The Government of Newfoundland and Labrador released a [self-directed learning module](#) on immunization education for health practitioners. (78) This module supports health practitioners in educating and consulting with patients on vaccines, including Tdap, hepatitis B and pneumococcal vaccination. Some of the topics covered are information to both children and adults on how vaccines work, vaccine compositions, and legal and ethical standards. (78) Although this module is not directed at older adults and residents of LTCF it supports older adults in navigating the vaccination process through access to the best information.

Vaccine Schedule

[Vaccinfo.ca](#) is an information source on the publicly funded routine vaccinations, 1 dose of the polysaccharide pneumococcal vaccine is recommended for those 65 years and older. (79)

Government of Quebec

In 2021, the proportion of adults aged 65 years or older was about 20% of the total population, a figure which is expected to increase to 27% by 2056. (81)(82) Of this sub population 9.6% live in LTCF, making this the largest cohort of adults aged 65 years and older living in LTCFs. (82)(87)

The [Government of Quebec](#) conveys information electronically about vaccines and vaccination within the "advice and prevention subsection" of the Health division. (83) Specific to pneumococcal there is a comprehensive description that includes etiology, incidence and prevalence, treatment, complications, sources of transmission, methods of protection, and preventative actions. Information on vaccines is summarized with attention to populations at-risk for pneumococcal infections, and other extenuating circumstances that might qualify them for the vaccine. (87)

Quebec Immunization Program

The Quebec Immunization program (2020) includes recommendations against pneumococcal infections for infants and school-based vaccination programs. (93) The Program funds one dose of the pneumococcal polysaccharide vaccine for adults aged 65 years or older as well as those with no or a malfunctioning spleen, have a cochlear implant, or have certain chronic conditions (i.e. diabetes, cancer, hear/respiratory/ kidney disease, aged 50 years and older who require regular medical check-ups due to asthma, weakened/immunocompromised). (93) Although at-risk groups include adults 65 years old and over, there is no mention of residents in LTCF being considered at-risk. (93)

The Reference Chart (Table 1.2-1) lists the VPDs covered by routine immunization programs in Newfoundland and Labrador, as of September 1, 2015. The protective action against pneumococcal disease is Pneumo P-23 for those aged 65 years and older.

An earlier version of the Immunization Manual (February 2019) provides policy on the use of the pneumococcal polysaccharide vaccine. The Department of Health and Community Services provides this vaccine for persons at risk for invasive pneumococcal disease or complications of pneumococcal infection, which includes all persons who are residents of LTC or residential facilities.

Targeted Public Health Messages

Self-Directed Learning Module on Immunizations

The Government of Newfoundland and Labrador released a self-directed learning module on immunization education for health practitioners. (78) This module supports health practitioners in educating and consulting with patients on vaccines, including Tdap, hepatitis B and pneumococcal vaccination. Some of the topics covered are information to both children and adults on how vaccines work, vaccine compositions, and legal and ethical standards. (78) Although this module is not directed at older adults and residents of LTCF it supports older adults in navigating the vaccination process through access to the best information.

Vaccine Schedule

Vaccinfo.ca is an information source on the publicly funded routine vaccinations, 1 dose of the polysaccharide pneumococcal vaccine is recommended for those 65 years and older. (79)

Government of Quebec

In 2021, the proportion of adults aged 65 years or older was about 20% of the total population, a figure which is expected to increase to 27% by 2056. (81)(82) Of this sub population 9.6% live in LTCF, making this the largest cohort of adults aged 65 years and older living in LTCFs. (82)(87)

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The Pneumococcal Vaccination Program

The Pneumococcal Vaccination Program was developed to reduce the annual number of pneumococcal infections and targets residents of Quebec. (90) The program is one dose of the polysaccharide vaccine to those aged 65 years or over and for children 3 doses of the conjugate vaccination. (84) Doses and vaccine type for high-risk individuals between the ages of 2 and 64 years are dependent on their health condition and age. (89)

The Public Health Act

Chapter 2-2.2. of the Public Health Act which is accessible on the government website outlines the regulations to ensure the well-being of Quebec residents. (91) This Act is also in adherence to Chapter S-4.2 of The Act Respecting Health Services and Social Services which outlines the compliance and operating standards LTCF's required to meet, including ensuring accessible and covered health and social services for the general population and those in LTCFs. (91)

Targeted Public Health Messaging



Consistent branding and images across The Government of Quebec Pneumococcal web pages appeals to and represents older adults, with the tagline "Vaccination is the best protection against pneumococcal". (86)

Vaccine Schedule

The Quebec Immunization Program funds the pneumococcal vaccine for those that qualify as high risk. Although the information in this program does mention adults 65 years and older and those with chronic conditions as high risk, they do not include residents of LTCFs. (87)

Government of Saskatchewan

When compared to other provinces Saskatchewan's demographic profile is unique, in that it has a smaller proportion of adults aged 65 years and older and a larger proportion under the age of 14 years. (92) Nevertheless, a significant proportion of the population is aged 65 years and older. (93) In 2018, approximately 15.4% of the population were 65 years and older, and by 2043 this proportion is expected to rise to between 16.5% to 20.9%. (93)

Prior to 2017, Saskatchewan had 12 regional health authorities that provided information on health-related services for each region. In 2017, these regional health authorities merged with The Saskatchewan health authority to become a centralized hub for health-related information. (94)

A variety of topics pertaining to pneumonia are mentioned across multiple pages of Saskatchewan health authority website including vaccine effectiveness, vaccine types, safety, and side effects, as well as informative videos on vaccines and vaccination schedules. (95) (96) However, the information in the video is presented in a confusing way as it is based on the Ontario vaccination schedule and not the Saskatchewan schedule. (95)(96)(97)

In Saskatchewan, the pneumococcal polysaccharide vaccine is recommended at one dose for all adults 65 years and older and for those between 2 and 64 years old who have a chronic disease, are immunocompromised or live in an environment that places them at greater risk for pneumonia or meningitis. (92)

Design Guidelines and Standards for Long-Term Care Facilities in Saskatchewan

Developed in 2009 by the Capital Assets Units and The Ministry of Health, the Design Guidelines and Standards for Long-Term Care Facilities in Saskatchewan were released to ensure health services are designed to be person-centered. (98) These guidelines are used as a reference when designing LTCFs, however there is no mention of routine immunizations. (98)

Targeted Public Health Messages



While Saskatchewanhealthauthority.ca provides a variety of health, immunization and pneumococcal related information, there are no targeted public health messages on pneumococcal pneumonia. (94) The website interface is also difficult to navigate and requires a high level of technical competency to find pneumococcal-specific information. (97)

Vaccine Schedule

The routine adult immunization schedule recommends a lifetime dose of the pneumococcal polysaccharide vaccine for adults 65 years or older who have not received a dose and residents of "extended or immediate care facilities including group homes". (92) These schedules are available in printable formats and alternatively, in French. (99)

Government of Prince Edward Island

Prince Edward Island (PEI) has the third highest proportion of adults aged 65 years and older in Canada, at 15.6% of the current population. (100) As the number of adults between 50 and 64 years old continue to age, this population is expected to rise significantly. (100) The PEI Government is the main source of information for health and government related services for older adults and is mainly communicated electronically across its website. (101)

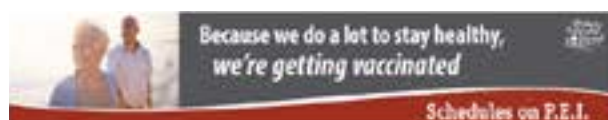
The Adult Immunization page provides resources and a comprehensive breakdown on the adult vaccination schedule by age and for those who qualify as high-risk based on their medical condition. (101) The pneumococcal polysaccharide vaccine is available for adults, 65 years and older and for adults at higher risk for pneumonia based on the presence of a chronic illness, being immunocompromised or other risk factors such as chronic smoking and drinking. High-risk adults may also qualify for the pneumococcal conjugate vaccine after receiving a referral from a healthcare provider. (101)

Though adult immunization including the pneumococcal vaccine is discussed in detail with information targeting older adults, there is a lack of information regarding residents of LTCFs. (101)



In this province, the pneumococcal vaccine can be administered by a healthcare provider, pharmacist or public health nursing office. Adults under the age of 64 years who qualify for the vaccine are required to have a referral to receive the vaccine. (100)

The government emphasizes the importance of adult immunization, using infographics and posters with key messages such as 'Immunizations are not just for children', 'Because we do a lot to stay healthy, we're getting vaccinated' and 'Adults Need Immunization Too!'. (101)(102) The posters focus particularly on which vaccines are publicly funded for adults 18 to 64 years old, adults 65 years and over, and high-risk groups and where to receive them. (103)



Laws and Regulations

The 'Community Care Facilities and Nursing Homes Act', 'Public Health Act', and 'Immunization Regulations' were published by the Legislative Counsel Office and intended to outline the role and responsibility of public health officials, the immunization registry, the minister, and board members of a LTCFs. (102) (104)

There is no information on the specific laws and regulations in place to ensure accessible health services for older adults and residents of LTCFs, including immunizations against vaccine preventable diseases such as pneumonia. (102) (104)

Targeted Public Health Messages

On the Adult Immunizations page pneumococcal vaccine is mentioned as part of the routine immunization schedule available for adults 65 years and older, and for adults who might be considered high-risk. (105) The public health messages on this webpage do not primarily target pneumonia in older adults or residents in LTCFs but rather promote vaccine uptake for all publicly funded vaccines for anyone 18 years and older and is considered high-risk. (105)

Vaccine Schedule

The immunization schedule for older adults for publicly funded vaccines includes pneumococcal polysaccharide for adults 65 years and older, and both, pneumococcal conjugate, and pneumococcal polysaccharide for high-risk groups (not including residents of LTCFs). (105) These vaccines can be acquired by contacting a local public health nursing office or health care provider. (105)

The PEI Adult Immunization Screening tool (available in English and in French) developed by The Government of Prince Edward Island and CANImmunize can be used to find recommended vaccines based on personal information. (105)

Government of Nova Scotia

The province of Nova Scotia has the largest proportion of adults aged 65 years and older among all provinces. Between 2019 to 2020, almost 21% of the total population was 65 years and older, which is expected to grow in the next decade. (106)

On the website, Novascotia.ca/seniors, there are several links pertaining to the health and wellbeing of older people, though it has not been updated since the early 2000's. Information includes an Elder Abuse Strategy, a report on healthy active living for older people, an action plan for an ageing population called SHIFT, as well as services for older people. (107)

Information on the eligibility and vaccination process for publicly funded pneumococcal vaccination is not readily available through Novascotia.ca. The website provides a document on the routine immunization schedules of publicly funded vaccines for children, youth, and adults. (108) There is a brief mention of the pneumococcal polysaccharide vaccine for adults who are 65 years and older although it fails to mention high-risk groups that may qualify for the vaccine, where to obtain it and who can administer it. (108)

On the Health Authority website, [Nshealth.ca](https://www.nshealth.ca) there is information (dated 2015) on both the polysaccharide and conjugate vaccine. All persons 65 years or older and residents of LTCFs are recommended to receive the pneumococcal polysaccharide vaccine but not the pneumococcal conjugate vaccine. (109) (110)

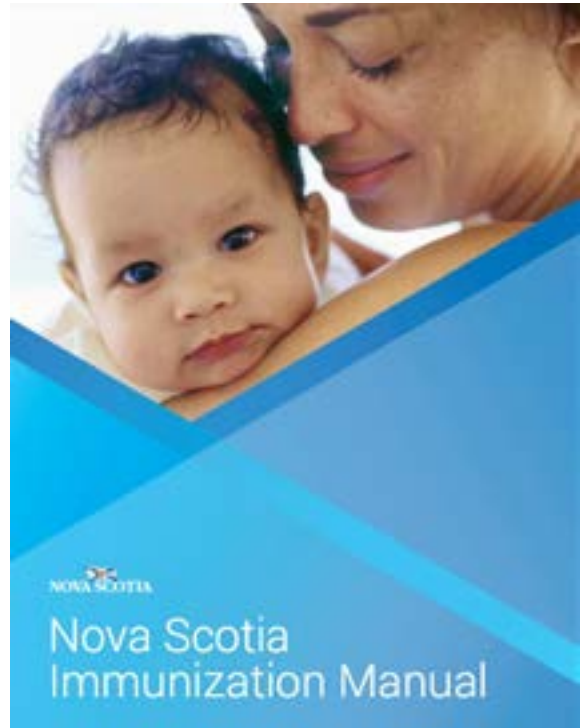
The information pamphlet Patient & Family Guide on Pneumovax 23 and Kidney Disease (2018) states that Pneumovax 23 is recommended for everyone over the age of 65 years and for people that live in LTCFs. (111)

811.novascotia.ca is a web service providing Nova Scotians on non-emergency health information and services available in over 120 languages including Arabic, Farsi, and Cantonese. (112) The Adult Immunizations page on 811.novascotia.ca, which was last updated in June 2021 only recommends the conjugate pneumococcal vaccine for children and adults aged 65 and older and not the polysaccharide vaccine. (112)

In 2019, a revised version of the 'Publicly Funded Vaccine Eligibility for Individuals at High Risk of Acquiring Vaccine Preventable Diseases' was published by the Office of the Chief Medical Officer of Health. (113) In the appendices of this document, those with chronic conditions, immunocompromised and residents of LTCFs qualify for the pneumococcal polysaccharide vaccine. (113)

Nova Scotia Immunization Manual

The Nova Scotia Immunization Manual published in 2019, summarizes the provinces' Immunization Program. (114) Pneumococcal pneumonia is discussed in relation to the history of the vaccination program, and the years age cohorts were eligible for the pneumococcal vaccines. (114)



Laws and Regulations

Though there is mention of policies and standards in LTCFs of general immunization practices in the Long-Term Care Facility Program Requirements on the Policies and Standards tab of Continuing Care on the Department of Health and Wellness webpage, there is limited information available on the laws and regulations specific to pneumococcal pneumonia immunizations for older adults and residents of LTCFs from Nova Scotia's government. (115)

The Long-Term Care Facility Program Requirements outlines under section 8.2 Risk Management, subsection 2, that programs that minimize risk to residents of LTCFs are developed, implemented and evaluated and include an immunization program that provides the safe administration of vaccines to interested residents and staff. (116) Additionally, under section 8.4 Infection Prevention and Control, subsection 11 immunizations or vaccinations for residents and staff are facilitated, recorded, and provided as directed to the Department of Seniors and Long-Term Care. (116)

There is a Guide to Influenza-Like Illness and Outbreak Control document provided under the heading, Infection Prevention and Control, on Nova Scotia's Department of Health and Wellness webpage under the Policies and Standards tab of Continuing Care. (117) In this guide, last updated September 24, 2021, there are guidelines specific to pneumococcal immunization. Under section 3. Planning, Education, and Communication, it is recommended that facilities consider obtaining consent for influenza, tetanus/pertussis and pneumococcal immunization on admission to the facility when planning for influenza season. (117) Under section 4. Annual Immunization of Residents and Staff, it is suggested that at the time of annual immunizations it would be useful to ensure pneumococcal immunizations are up to date, if indicated. (117)

Targeted Public Health Messages

Targeted public health messages on pneumococcal pneumonia are not available on the Government of Nova Scotia or 811.novascotia.ca websites. Pneumococcal pneumonia is briefly mentioned in the Routine Immunization Schedule document on novascotia.ca and adult immunization webpage on 811.novascotia.ca. Adults 65 years and older and those with chronic conditions are urged to be immunized. (108)

Vaccine Schedule

The routine immunization schedules of publicly funded vaccines indicates that the pneumococcal polysaccharide vaccine is funded for adults who are 65 years and older.

The 'Publicly Funded Vaccine Eligibility for Individuals at High Risk of Acquiring Vaccine Preventable Diseases' also states that residents of LTCFs qualify for the pneumococcal polysaccharide vaccine. Canadians are also referred to the Canadian Immunization Guide and a specialist or specialized care team member to learn of the schedule and dosing recommendations.

Government of New Brunswick

New Brunswick has a rapidly ageing population which is best illustrated in the proportion of seniors in the total population across the next two decades. In 2017, 19.5% of the total population were people over the age of 65 years and this is projected to increase to 31.3% by 2038. (118) (119)

The Seniors' and Healthy Aging Secretariat is established within the Ministry of Social Development. It serves as a focal point on seniors and ageing; fosters collaborative relationships with internal and external stakeholders; and works to increase awareness and information sharing across the sector. It is significant that the governance of the Secretariat reflects existing collaborations between partners to coordinate plans across organizations and ensure advancement towards a common objective.

Senior leaders from the Department of Social Development, Department of Health, both Regional Health Authorities and Extra-Mural/Ambulance New Brunswick In care are collectively important in delivering accurate information and key messages to seniors in the province.

The Government website serves as a platform for numerous resources ranging from health promotion and prevention activities ([Stay active at home](#)) to legal information ([powers of attorney](#)) and to skill building ([internet and technology access](#)). Of note is the comprehensive array of information and resources related to residential services and LTC. In this section there is a page [on vaccination rates in long term care facilities](#) which reports staff uptake rates, however information on uptake rates of residents is not evident.

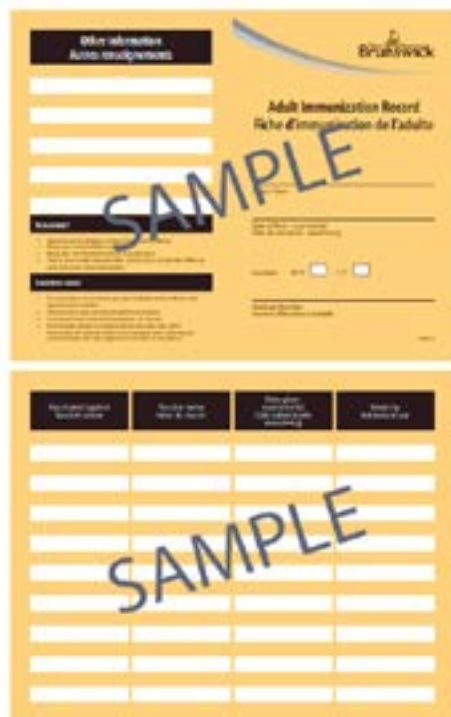
In addition to the seniors-related information on the governmental website, the Seniors Guide to Services and Programs (2016) published by the Department of Social Development is organized by Governmental Departments. Within the Department of Health, the section prevention and control of communicable diseases is described in the context of the recommended vaccines and eligibility.

The [New Brunswick Routine Immunization Schedule](#) is set by the Chief Medical Officer of Health and provided by public health and other health-care providers.

Adults 65 years and older are eligible to receive an annual influenza vaccine, a pneumococcal vaccine (pneumococcal polysaccharide) once in their lifetime, and a tetanus/diphtheria (Td) vaccine every 10 years.

Age	Vaccine
Adulthood (18 years of age and older)	Influenza Td should be given every 10 years. Tdap should replace one of the Td doses. The Tdap vaccine should be offered to women during each pregnancy.
65 years	Pneumococcal polysaccharide
65 years and older	High-Dose Influenza (Fluzone)
Adults born after 1970 should contact their health-care provider or Public Health office for information about HPV immunizations.	
Influenza quadrivalent vaccine is recommended for all residents of New Brunswick six months of age and older. Fluzone® High-Dose vaccine is a targeted program for all those 65 years and over. These vaccines are provided free of charge.	

Immunization Program Guide



The province's [Immunization Program Guide](#) can be found on the New Brunswick Public Health site (through the Office of the Chief Medical Officer of Health). (120)

The Guide provides direction to health care practitioners on publicly funded vaccines necessary in the provision of safe, effective and competent immunization practice. The Guide is intended to be used in conjunction with the [Canadian Immunization Guide](#) and additional information can be sourced from the [National Advisory Committee on Immunization](#).

Individuals with qualifying high-risk conditions include those with immunosuppressing and chronic conditions such as chronic renal disease, cancer, diabetes, chronic liver disease. Adults 65 years and older and residents of LTCFs are also listed as high-risk for pneumonia and eligible for pneumococcal pneumonia vaccine. (120)

In the Guide Policy 2.11 - Populations Requiring Special Considerations, there is reference to groups identified by NACI but this list does not include Canadian seniors (older people) despite the scientific evidence that immunosenescence results in weakened immunity. (120)(121)(122)

Nursing Home Services

Nursing Homes in New Brunswick are established in accordance with several Acts including Nursing Homes Act, the New Brunswick Regulation 85-187 under the Nursing Homes Act (O.C. 85 – 967), the New Brunswick Regulation 2001-59 under the Nursing Homes Act (O.C. 2001-375) and the New Brunswick Regulation 2009-75 under the Nursing Homes Act (O.C. 2009- 303).

The [Standards Manual](#), developed by the Department of Social Development (2022) is a comprehensive resource that is relevant to nursing homes. Contents that are addressed include: administration, resident services, human resources, and the environment. In the section titled: infection control resources – guidelines (D-I-2 G) there is a list of resources to assist the nursing home in developing infection control policies and procedures. (123)

For example, [Guidance: Infection Prevention and Control Measures for Healthcare Workers in Acute Care and Long-term Care Settings](#), based on scientific evidence, describes the most effective way to prevent and control seasonal influenza is through immunization of both healthcare workers and patients. In addition, the [Guidelines for the Prevention and Management of Seasonal Influenza in Licensed Nursing Homes in New Brunswick](#) (revised in December 2019) are used in conjunction with the NACI statement on influenza vaccine, PHAC infection control practices, policy documents of the Department of Social Development and other applicable documents. (123)

The Guidelines also recommend that nursing homes have an immunization policy for influenza and pneumococcal disease, as well as for other vaccine-preventable diseases. The policies should address residents, staff and all other persons carrying on activities within the home. The opportunity for immunization to both residents and health care workers should be for the duration of the influenza season.

Publicly funded influenza vaccines are available for New Brunswick residents that meet the eligibility criteria. Not only do the Guidelines outline general recommendations, answer questions such as why, who and when to immunize, the immunization record is also explained and ways to promote immunization outlined.

Appendix J of the Standards Manual Recommended Data Elements for Nursing Home Influenza Investigation Line Lists captures useful data points to manage outbreaks. (123)

Targeted Public Health Messages

Targeted messages to older adults that promote the uptake and promotion of the pneumococcal vaccine in older adults or residents of LTCFs is not readily available on the government website, and not evident for residents of LTCFs.

New Brunswick Citizens Federation

The New Brunswick Citizens Federation (NBSCF) is a non-for-profit organization devoted to the advancement of issues related to the well-being of older people aged 50 years and over in New Brunswick. The Federation accomplishes its mission by helping to influence and shape policy, programs, and standards. Among the current and recent issues being addressed is the promotion of quality and equitable nursing home care but the focus appears to be on cost rather than quality of life and care.

The resources are built around issues and organizations. While there is not a direct link to vaccines and vaccination information through the Federation, information can be located in the New Brunswick Lung Association.

Appendix J: Recommended Data Elements for Nursing Home Influenza Investigation Line Lists

A strong line listing of influenza cases is very helpful in both identifying an outbreak and then monitoring and managing that outbreak. An excel spreadsheet containing the data elements listed below is located in the Member's Area of the New Brunswick Association of Nursing Homes (NBANH) website with this guidance document. The home page for NBANH is <http://www.nbci.ca/2019/01/01/>

The bracketed information contains the suggested responses for the specific data element.

Name Initials (first, last)	Other symptoms specify
Case Number	Date specimen collected (dd-mm-yyyy)
Reason person at Nursing Home	NP Test for influenza (yes, no)
Gender (Male or Female)	Lab Results (influenza negative, influenza A, influenza B, other positive)
Date of Birth (dd-mm-yyyy)	Other tests requested specify
Age	Other positive lab result, specify
Room number	Received seasonal influenza vaccine? (yes, no, unknown)
Date onset of first I/L symptoms (dd-mm-yyyy)	Date of received seasonal influenza vaccine (dd-mm-yyyy)
Fever (yes or no)	Received Pneumococcal vaccine? (yes, no, unknown)
Cough (yes or no)	Received Antibiotics? (yes, no, unknown) –
Sore throat (yes or no)	If yes, indicate antibiotic type, specify
Chills (yes or no)	Date I/L symptoms resolved (dd-mm-yyyy)
Myalgia (yes or no)	Outcome (recovered, deceased, unknown)
Anorexia (yes or no)	Hospitalized (Yes, No, Unknown)
Prostration (yes or no)	Comments
SOB (yes or no)	

Seniors Resource Center

The Seniors' Resource Center is a non-profit organization that assists seniors and their family and friends, by providing information about programs and services and promoting policies affecting older people.

The Center reports to have a large variety of pamphlets and brochures on topics such including government programs for older adults, newsletters and magazines for older people, brochures on health concerns such as MS, diabetes, heart and stroke, arthritis, several types of day trips and tours for older people, and Canada's Food Guide. The programs, activities and resources are plentiful but do not focus on the importance of immunization.

New Brunswick Association of Nursing Homes Inc.

The New Brunswick Association of Nursing Homes Inc. (NBANH) is an employer association that advocates on behalf of 71 licensed nursing homes in NB. The nursing home sector represents over 4,800 residents and 7,000 employees across the province. The publicly available information suggests that the Association's focus is on the development of Long-Term Care Legislation (2017) but a member-only site may have information on immunization policies in LTC. (122)

Collaborative for Healthy Aging and Care

The Collaborative for Healthy Aging and Care is an informal coalition of organizations, community groups and citizens that have an interest in healthy aging and care. It promotes collaborative, community-driven efforts that respond to opportunities and challenges related to ageing in New Brunswick.

Since its inception in 2011, the Collaborative has focused its efforts on creating a provincial space for stakeholders to engage in a shared conversation on ageing, to better understand how it is experienced in New Brunswick communities, and to co-create a future that is inclusive of all ages.

While there is no evidence of engagement in the field of adult immunization the nature of the partnership, offers opportunities for education for at-risk populations in New Brunswick.

Policy Gap Analysis Findings

Overview of pneumococcal vaccination in Canada

Across provinces in Canada, there are varied guides and manuals, targeted public health communications, policies, regulations, and acts that are available, to better understand the current policy landscape of pneumococcal vaccination of older adults in community and long-term care settings.

The Canadian Immunization Guide, based on NACI recommendations, provides a broad overview of vaccination for Canadians. As a document with a national connection to the Public Health Agency of Canada (PHAC), it is important to note that along with the Federal government, their mandate is to provide overarching policies only. The Federal government provides specific guidance of immunization for on-reserve Indigenous communities, yet these overarching policies do not supersede that of provincial governments. This guide recommends pneumococcal immunization for all adults aged 65 years and older as well as residents of LTCFs.

Within Alberta, there is the Alberta Immunization Policy (AIP), which has set immunization goals for its different populations. LTCFs under the AIP are responsible for establishing immunization programs and having comprehensive reviews upon resident admission.

Additionally, Alberta Health Services, the province's health authority has posted a vaccination video on their website, which includes information on pneumococcal vaccination within the context of an intergenerational exchange. Alberta's vaccination schedule recommends immunization for adults over the age of 65 years but does not include details on types of pneumococcal vaccinations available for the different subgroups of this age cohort.

As part of the British Columbia Immunization Policy, the British Columbia Centre of Disease Control has an immunization chapter within its Communication Disease Manual that outlines best practice guidelines in settings such as residential care facilities, pneumococcal vaccine eligibility for residents. According to its vaccination schedule, adults over the age of 65 years are recommended the pneumococcal pneumonia vaccine, in addition to high-risk groups, though these groups are not specified and therefore the inclusion of long-term care residents in these groups is unknown.

Provided by the Public Health Act, the Manitoba Immunization Manual as part of the Manitoba Immunization Policy provides residential care facility guidelines. These guidelines include the recommendations for those aged 65 years and older to receive pneumococcal vaccination concurrently with the flu shot.

In Ontario, the Ontario Long-Term Care Homes Act calls for the management of licensed LTC Homes to be responsible for offering pneumococcal vaccination to residents. The Aging with Confidence: Ontario's Action Plan for Seniors includes a user and age-friendly platform to feature immunization programs. Eligibility for the pneumococcal vaccination is adults 65 years of age or older, a person over 2 years of age with a high-risk medical condition (i.e., chronic heart, kidney, or lung disease) and immunocompromised, and residents of LTCFs and chronic-care facilities.

Newfoundland and Labrador's Immunization Manual, under their Immunization Authority Policy outlines immunization of LTC residents, including the pneumococcal vaccine.

The province also provides online self-directed learning modules on immunization, which provides education on pneumococcal vaccination designed for children and adults. According to this manual, immunization against pneumococcal disease is recommended for those aged 65 years and older. Within a previous version of the Immunization Manual (February 2019), there is a policy on the use of the pneumococcal polysaccharide vaccine for persons at risk for invasive pneumococcal disease or complications of pneumococcal infection, which includes all persons who are residents of LTC or residential facilities, though it is unclear in the current version, if this is still an active policy.

The Quebec Immunization Program includes information for pneumococcal vaccination for adults aged 65 years and older, those with underlying chronic conditions, adults aged 50 years and older that are immunocompromised, and at-risk groups, which includes those aged 65 years and older but does not mention those living in LTC settings. Quebec has also developed a Pneumococcal Vaccination Program to reduce the annual number of pneumococcal infections and targets residents of Quebec. This program provides recommendations for those over the age of 65 years and high-risk individuals, but there is not a definition of 'high-risk' and whether or not that includes residents of LTC settings.

The "Design Guidelines and Standards for Long-Term Care Facilities in Saskatchewan" focuses on ensuring health services are person-centered and can be used as reference for LTCF design. Regrettably, there is no mention of routine immunization. The Saskatchewan health authority is a centralized hub for health-related information and includes a variety of topics pertaining to pneumonia including vaccine effectiveness, vaccine types, safety, and side effects, as well as informative videos on vaccines and vaccination schedules, though the information in the video is based on the Ontario vaccination schedule and not the Saskatchewan schedule, which provides a set of inconsistencies.

In Saskatchewan, there are pneumococcal vaccine recommendations for adults 65 years and older and for those between 2 and 64 years of age who have a chronic disease, are immunocompromised or live in an environment that places them at greater risk for pneumonia.

As per the Government of Nova Scotia, adults 65 years and older and those with chronic conditions are urged to be immunized against pneumococcal pneumonia. Within Nova Scotia's laws and regulations, under their Continuing care – Policies and Standards in the Department of Health and Wellness webpage, there are also guidelines for pneumococcal vaccination as well as recommendations for LTCFs to consider obtaining consent for immunization, including pneumococcal vaccination on admission to the facility.

New Brunswick's Immunization Program Guide lists high-risk individuals and includes adults aged 65 years and older in LTCFs and states their eligibilities. There are also not-for-profit organizations such as the New Brunswick Citizens Federation and Seniors Resource Center which offer guidance on health and well-being, though nothing directly associated with vaccinations has been made.

Pneumococcal Vaccination Information and Recommendations for specific populations

Pneumococcal vaccine information and dosage recommendations for adults 65 years and older was available in some form in all provinces, whether it was in vaccine schedules, guides and manuals, or in acts, laws, and policies, yet it was inconsistent and at times not up to date.

Certain provinces mentioned pneumococcal vaccination recommendations for high-risk groups, but more often than not, there was no clear definition of this population group especially in regard to older adults in LTC settings.

When considering the recommendations, guidelines, and information for pneumococcal pneumonia vaccination of older adults in LTC settings, they are essentially non-existent. Some provinces had very brief or vague statements on information or recommendations for routine immunization of residents in LTCFs but mention of pneumococcal vaccination was rare.

Accessibility

The degree to which online information and resources about pneumococcal vaccination was age-friendly and accessible varied significantly. Some provinces offer resources in several languages, while others only provide information in the official National languages. The use of audio and visual public health messages or modules that provide a more interactive educational experience to help provide information in a more memorable manner were rare but present.

The level of attention to pneumococcal vaccination detail varies among provinces and there are often exclusions of important information, such as individuals who are considered high-risk by the province or the inclusion of vaccine recommendations specifically for older adults in community care and LTC settings. Across Canada, there are also differences in terminology used to convey information and recommendations as well as the omission of information on all pneumococcal vaccines that are available for use for the respective populations of this study.

Adult Pneumonia Vaccination in Community and Long-term Care Settings Survey Limitations

Purpose

Building on the environmental scan, the Adult Pneumonia Vaccination in Community and Long-term Care Settings Survey aimed to gain further insight on the awareness and effectiveness of public health messages and campaigns on pneumococcal pneumonia by hearing directly from organizations that represent residents of community and LTC settings. The findings of the survey are intended to help inform the development of effective policies to improve the uptake rates of adult pneumonia vaccination in community and LTC settings.

Methodology

Utilizing knowledge gained about existing gaps in pneumococcal pneumonia campaigns and messages as a basis of the survey, questions related to the awareness and effectiveness of public health campaigns on adult pneumonia vaccination (Appendix A). The survey comprised 18 questions which were largely multiple choice and took about 15 minutes to complete.

This survey was administered through the Alchemer software program and disseminated virtually using diverse channels including social media, newsletter (VoltAge), and email list comprising of contacts from patient organizations, ageing organizations, health care organizations, and community care and LTC setting providers across Canada.

The survey was conducted for 8 weeks and gathered a total of 52 responses, with a 58% completion rate. The responses to the survey were analyzed based on reports generated through Alchemer and key themes were developed to make recommendations related to observable gaps in public health messages and campaigns related to adult pneumonia vaccination in community and LTC settings.

The survey was only offered in English and not population based but rather a purposeful sample of patient organizations, healthcare organizations, ageing organizations, and community and LTC providers. Additionally, a small number of survey responses were received. For this reason, the findings are not generalizable but more indicative of broad themes.

Survey Findings

Demographics

The survey respondents consisted of ageing organizations (23%), health care organizations (15%), patient organizations (5%), community care and LTC setting providers (5%), and those who responded as other (52% - including those identifying as, community member, consultant for older adults, First Nations band, health care professional advocacy body, health professions regulator, national advocacy organization, palliative care advocacy organization, pharmaceutical organization, public health advocacy, researchers, retired group, seniors advocate group, caregiver, health care association, knowledge sharing organization and retired from LTC).

All provinces and territories were represented in the survey responses: Ontario (30%), British Columbia (15%), Alberta (12%), New Brunswick (7%), Manitoba and Quebec (both 6% each), Saskatchewan, Prince Edward Island, and Newfoundland and Labrador (all at 8% each), Nunavut, Yukon, and Northwest Territories (all at 5% each).

Awareness of public health messages on adult vaccination

Most respondents (77%) said that they had recently seen, read, or heard information about vaccination (with exception to the COVID-19 vaccine) for adults aged 65 years or older. This information was accessed through a variety of channels including: television and/or radio (52%), healthcare professionals (doctors, nurses, pharmacists, etc. – 48%), websites (blogs, videos, articles, etc. – 44%), printed media (newspaper, magazines, brochures, etc. – 39%), public health units (26%), social media (Facebook, Twitter, YouTube, etc. – 26%), government agencies (22%), educational institutes (universities, colleges, etc. – 13%), staff in community and LTC settings (13%), and other (friends, colleagues and family members – 4%).

Awareness of public health messages on adult pneumococcal pneumonia vaccination

When asked to what extent respondents agreed with the statement, “The pneumonia vaccine contributes significantly to healthy ageing”, a majority indicated that this was very important.

However, a vast majority of respondents (86%) had not recently seen, read, or heard any information about pneumococcal pneumonia vaccination for adults aged 65 years or older. Fourteen per cent had gained information through printed media (newspaper, magazines, brochures, etc.).

Awareness of public health messages on adult pneumococcal pneumonia vaccination in community and long-term settings

100% of the respondents indicated that they had not seen, read or heard any information about adult pneumonia vaccination specifically in community and LTC settings.

Barriers to public health messages on adult pneumococcal pneumonia vaccination in community and long-term settings

Respondents (100%) were not aware of any provincial or territorial public health campaigns for adult pneumonia vaccination in community and LTC settings.

When asked to identify barriers to existing campaigns, 83% indicated inadequate dissemination of campaigns and messages, followed by ineffective communication (67%), difficulty accessing campaigns and messages (50%), lack of trust in public health and governments (33%), and other (vaccine hesitancy/lack of education or information provided - 33%).

In regard to communication at a national level, 80% of those surveyed were not aware of any national public health campaigns regarding adult pneumonia vaccination in community and LTC settings. Of those indicated a certain level of awareness (20%) one or two people said there was adequate public health messages about adult pneumonia vaccination for community and LTC settings.

In terms of barriers to existing national public health campaigns and messages, respondents identified the following barriers: inadequate dissemination of campaigns and messages (60%), ineffective communication via campaigns and messages (20%), difficulty accessing campaigns and messages (4%), and other (lack of targeted campaigns, difficulty finding information, lack of updated systems, lack of communication outside of a doctor’s office, and provision of information through provincial and territorial sources rather than national sources - 16%).

Awareness of adult pneumonia vaccine recommendations and funding

Forty-three percent of respondents were not aware of the pneumonia vaccine recommendations for residents of community and LTC settings outlined in the Canadian Immunization Guide.

When asked if publicly funded pneumonia vaccines were available for residents of community and LTC settings in respective provinces or territories, 37% did not know.

Perceptions of influential information sources

When participants were asked about the most influential sources of information for adult pneumonia campaigns and messages, 53% reported public health units as the preferred information source, followed by television and/or radio (50%), government agencies (47%), printed media (newspaper, magazines, brochures, etc. – 47%) staff in community and LTC settings (37%), websites (blogs, videos, articles, etc. – 30%) social media (Facebook, Twitter, YouTube, etc. – 30%), healthcare professionals (doctors, nurses, pharmacists, etc. – 20%) and educational institutions (universities, colleges, etc. – 20%).

Discussion

Vaccination policy within long-term care across Canada is universally inconsistent however is more often than not absent when it comes to pneumococcal vaccination of older adults in community care and LTC settings. Often, even the recommendations for a more general population are brief and quite vague in terms of the information itself and how it is communicated. There are also instances where information on vaccination recommendations is only present in laws, acts, and policies, which although are available to the public, are not written to be accessible for public consumption, and therefore limits the guidance that can be disseminated.

Issues in accessibility continue to be observed with certain provinces delivering information and recommendations in limited languages and methods of communication.

While acknowledging that provinces handle the decision-making in vaccination policies catered to their respective jurisdiction, it is important to note that there is great variance between provinces in terms of the types of output and the way communications are handled between them.

Survey findings supported and further reinforced a significant gap in the awareness of vaccination policies and recommendations for pneumococcal pneumonia. In fact, all respondents indicated that they had not seen, heard, or read information regarding adult pneumonia vaccination in community and LTC settings. This may suggest that residents in LTCFs are in fact viewed by decision makers and society as a special population group for pneumonia vaccination yet public health campaigns and messages are either not existent or not effective. Research shows a disproportionate amount of information related to influenza compared with pneumonia, despite the significant risk each of these poses to the health and well-being of older adults. To improve awareness of adult pneumonia vaccination through public health messages, campaigns need to expand focus to include targeted communication on adult pneumonia vaccination.

An overwhelming lack of awareness of national or provincial/territorial public health campaigns for pneumonia vaccination in LTC settings was further reinforced by the call from respondents for tailored, targeted messages which includes information on its benefits. The information needs to be updated on a regular basis to ensure it reflects the most recent evidence and information on pneumonia vaccination.

Inadequate dissemination of campaigns as well as ineffective communication and difficulty accessing information were identified as the primary barriers to existing public health campaigns, highlighting the need to ensure that multiple tools and channels are utilized to disseminate campaigns and messages. This should include a wide range of channels including online communication such as web content and social media, as well as offline content by radio, television, and print.

Offline content is the preferred source of information using multiple channels for communication. To ensure accessibility of the information, public health messages should be disseminated in multiple languages, accounting for the needs of diverse, multicultural populations in community and LTC settings. Public health units remain the most influential source of information, highlighting the need for communication strategies to include public health units as a primary source of information adult pneumonia vaccination messages.

Recommendations

Vaccination policies in community care and LTC settings need to be established and implemented in a multisectoral manner that acknowledges all the intersecting disciplines that contribute to and are involved in the health of vulnerable populations. The following recommendations are evidence-based and call on a more comprehensive set of policies that prevents older people in these settings from becoming susceptible to vaccine-preventable diseases like pneumococcal pneumonia.

1. Government of Canada (Public Health Agency of Canada) to:

a. consider residents in LTCFs as a special population group of older adults and include a recommendation in the overarching federal immunization strategy based on advice and direction from the National Advisory Committee on Immunization (NACI)

b. lead a dialogue with provinces and territories on pneumococcal pneumonia vaccine recommendations for residents in LTCFs

As the Government has spoken to the vulnerabilities of older people, there is now the need for their leadership in recommending pneumococcal pneumonia vaccination for residents in LTCFs within the overarching federal immunization strategy (and Canadian Immunization Guide) as part of the health and wellbeing of older Canadians in the National Seniors' Strategy.

While the jurisdictional responsibilities for health (and immunization) are respected, leadership from the federal government on this matter would also help inform the unique decisions made by provinces based on the demographics and population needs.

2. Community and long-term care providers to:

c. improve awareness of the value of pneumococcal pneumonia vaccination as part of the health and wellbeing of residents in LTCFs

d. review and where appropriate, revise policies that reflect the position of the associations of LTC providers on routine immunization including pneumococcal pneumonia

e. help influence and shape policy (local, provincial and territorial, and federal) on routine immunization including against pneumococcal pneumonia as a mechanism to protect the right to health of residents of LTCFs.

Conclusion

Pneumonia is a leading cause of morbidity and mortality among at-risk populations in Canada, with a high burden among those in community and LTC settings. However, the uptake rates of adult pneumonia vaccination remain suboptimal nationally.

An absence and lack of awareness of pneumonia vaccination recommendations and existing public health communication for community and LTC settings is a key barrier to improving uptake rates. Existing public health messages and campaigns on adult pneumonia vaccination are currently ineffective and underprioritized, contributing to an unnecessary health and economic burden, which disproportionately impacts older adults.

The implementation of multisectoral policy recommendations can be guided through changes in public health communications such as expanding campaigns and messages on adult immunization to be targeted towards pneumonia vaccination in LTC settings, developing clear communications strategies tailored for adult pneumonia vaccination in these settings, and engaging relevant stakeholders that represent and advocate for such at-risk populations.

NACI has recently made recommendations on new pneumococcal pneumonia vaccinations within Canada and as such, the urgency on this call to action for policy change is front and center and more than ever requires immediate attention. To improve the uptake rates of adult pneumonia vaccination as well as protect the health and well-being of at-risk populations especially those in community and LTC settings, governments must increase investment in pneumonia vaccination as a key health promotion and prevention strategy. At both the national and provincial and territorial levels, existing gaps in public health communication need to be addressed and governments must commit to the development of targeted, effective and evidence-informed immunization campaigns on pneumonia vaccination in LTC settings, which translate to increased vaccination uptake.

Acknowledgements

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Appendix

Appendix A: Survey

Survey on Gaining Insight of Public Health Messages and Campaigns for Adult Pneumonia Vaccination in Community and Long-term Care Settings in Canada: **Adult Pneumonia Vaccination in Community and Long-term Care Settings Survey**

Driving the Agenda of Pneumonia Vaccination in At-risk Populations in Community and Long-term Care is a study that aims to inform vaccination policy in an effort to highlight a significant gap in the protection of the rights of older people.

The International Federation on Ageing (IFA), a not-for-profit organization with its headquarters in Canada, with general consultative status at the United Nations and a non-state actor at the World Health Organization, has worked towards improving vaccination coverage rates for at-risk populations including older people and those with chronic conditions for more than a decade.

With like-minded organizations we are seeking your views through a 15 min survey about public health messages and campaigns on pneumonia to help inform better policies for older people and those with chronic medical conditions in the community and long-term care.

The survey is voluntary, all responses are anonymous, and you are free to withdraw from the survey at any time.

If you have any questions regarding this survey or initiative, please contact Ms Mitali Mistry, Project Lead at mmistry@ifa.ngo.

Thank you for your participation in the survey.

1. Which of the following best describes you?

Patient organization

Ageing organization

Health care organization

Community Care Settings and/or Long-term Care settings Provider

Other (specify): _____

Definition provided in survey: **Community Care Settings (for older people):** This industry comprises establishments primarily engaged in providing residential and personal care services for older persons and those who are unable to fully care for themselves or who do not desire to live independently. The care typically includes room, board, supervision and assistance in daily living by providing services such as housekeeping. In some instances, these establishments provide skilled nursing care for residents in separate on-site settings (62).

Long-Term Care Settings: In general, long-term care settings provide living accommodation for people who require on-site delivery of 24 hour, 7 days a week supervised care, including professional health services, personal care and services such as meals, laundry and housekeeping (63).

2. In which province and/or territory is your organization based? Please select all that apply:

- | | |
|---------------------------|----------------------|
| Alberta | Nunavut |
| British Columbia | Ontario |
| Manitoba | Prince Edward Island |
| New Brunswick | Quebec |
| Newfoundland and Labrador | Saskatchewan |
| Northwest Territories | Yukon |
| Nova Scotia | |

3. To what extent do you agree with the following statement:

The pneumonia vaccine contributes significantly to healthy ageing.

Not important Slightly important Neutral Somewhat important Very important

Definition provided in survey for healthy ageing: The World Health Organization (WHO) defines healthy ageing as the process of developing and maintaining functional ability that enables wellbeing in older age (64)

4. With exception to the COVID-19 vaccine, have you recently seen, read, or heard any information about vaccinations for adults aged 65 years or older?

Yes No I prefer not to answer

5. Where did you see, read, or hear this information? Please select all that apply.

- Healthcare professionals (Doctors, nurses, pharmacists, etc.)
- Government agencies
- Public health units
- Printed media (Newspaper, magazines, brochures, etc.)
- Television and/or radio
- Websites (Blogs, videos, articles, etc.)
- Educational institutions (Universities, Colleges, etc.)
- Social media (Facebook, Twitter, YouTube etc.)
- Staff in community and long-term care settings (Discussions, meetings, presentations, etc.)
- Other (Please specify): _____

6. Have you recently seen, read, or heard any information about pneumonia vaccination for adults aged 65 years or older?

Yes No I prefer not to answer

7. Where did you see, read, or hear this information? Please select all that apply.

Healthcare professionals (Doctors, nurses, pharmacists, etc.)

Government agencies

Public health units

Printed media (Newspaper, magazines, brochures, etc.)

Television and/or radio

Websites (Blogs, videos, articles, etc.)

Educational institutions (Universities, Colleges, etc.)

Social media (Facebook, Twitter, YouTube etc.)

Staff in community and long-term care settings (Discussions, meetings, presentations, etc.)

Other (Please specify): _____

8. Have you recently seen, read or heard any information about adult pneumonia vaccination specifically in community and long-term care settings?

Yes No I prefer not to answer

9. Where did you see, read, or hear this information? Please select all that apply.

Healthcare professionals (Doctors, nurses, pharmacists, etc.)

Government agencies

Public health units

Printed media (Newspaper, magazines, brochures, etc.)

Television and/or radio

Websites (Blogs, videos, articles, etc.)

Educational institutions (Universities, Colleges, etc.)

Social media (Facebook, Twitter, YouTube etc.)

Staff in community and long-term care settings (Discussions, meetings, presentations, etc.)

Other (Please specify): _____

10. Are you aware of any provincial or territorial public health campaigns regarding adult pneumonia vaccination in community and long-term care settings?

Yes No

11. Do provincial or territorial public health campaigns provide sufficient information about adult pneumonia vaccination in community and long-term care settings?

Yes No

12. Can you identify any barriers to existing provincial or territorial public health campaigns and messages for adult pneumonia vaccination in community and long-term care settings?

Inadequate dissemination of campaigns and messages

Difficulty accessing campaigns and messages

Ineffective communication via campaigns and messages

Lack of trust in public health and governments

Other (Please specify): _____

13. Are you aware of any national public health campaigns regarding adult pneumonia vaccination in community and long-term care settings?

Yes No I Don't know

14. Do national public health campaigns provide sufficient information about adult pneumonia vaccination in community and long-term care settings.

Yes No I Don't know

15. Can you identify any barriers to existing national public health campaigns and messages?

Inadequate dissemination of campaigns and messages

Difficulty accessing campaigns and messages

Ineffective communication via campaigns and messages

Lack of trust in public health and governments

Other (Please specify): _____

16. Are you aware that the Canadian Immunization Guide outlines pneumonia vaccine recommendations and statements for residents of community and long-term care settings that are made by the National Advisory Committee on Immunization (NACI)?

Yes No

Definition provided in survey: National Advisory Committee on Immunization: NACI makes recommendations for the use of vaccines currently or newly approved for use in humans in Canada, including the identification of groups at risk for vaccine-preventable diseases for whom vaccination should be targeted. NACI knowledge syntheses, analyses and recommendations on vaccine use in Canada are published in literature reviews, statements and updates (65).

17. Are there publicly funded pneumonia vaccines available for residents of community and long-term care settings in your province or territory?

Yes No I Don't know

18. When it comes to pneumonia campaigns and messages, what is the most influential source of information to you? Please select all that apply:

Healthcare professionals (Doctors, nurses, pharmacists, etc.)

Government agencies

Public health units

Printed media (Newspaper, magazines, brochures, etc.)

Television and/or radio

Websites (Blogs, videos, articles, etc.)

Educational institutions (Universities, Colleges, etc.)

Social media (Facebook, Twitter, YouTube etc.)

Staff in community and long-term care settings (Discussions, meetings, presentations, etc.)

Other (Please specify): _____

Thank you for your participation in this survey.

All responses have been submitted.

For more information on this initiative please contact:

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Survey References

1. Community care settings for the elderly - 6233 - Summary - Canadian Industry Statistics - Innovation, Science and Economic Development Canada [Internet]. [cited 2022 Oct 23]. Available from: <https://www.ic.gc.ca/app/scr/app/cis/summary-sommaire/6233>
2. Long-term settings-based care - Canada.ca [Internet]. [cited 2022 Oct 23]. Available from: <https://www.canada.ca/en/health-canada/services/home-continuing-care/long-term-settings-based-care.html>
3. Healthy ageing and functional ability [Internet]. [cited 2022 Sep 19]. Available from: <https://www.who.int/philippines/news/q-a-detail/healthy-ageing-and-functional-ability>
4. National Advisory Committee on Immunization (NACI): Statements and publications - Canada.ca [Internet]. [cited 2022 Nov 16]. Available from: <https://www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci.html>

References

1. Infographic: Canada's seniors population outlook: Uncharted territory | CIHI [Internet]. [cited 2023 Feb 16]. Available from: <https://www.cihi.ca/en/infographic-canadas-seniors-population-outlook-uncharted-territory>
2. Inpatient Hospitalization, Surgery and Newborn Statistics, 2018-2019. 2022. Available from: <https://secure.cihi.ca/estore/productFamily.htm?pf=PFC4562&lang=en&media=0>
3. Akhtar-Danesh N, Baumann A, Crea-Arsenio M, Antonipillai V. COVID-19 excess mortality among long-term care residents in Ontario, Canada. PLoS One [Internet]. 2022 Jan 1 [cited 2023 Feb 16];17(1):e0262807. Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0262807>
4. Sinha S, Dunning J, Wong I, Nicin M, Nauth S. As One of Canada's Top Killers, Why Isn't Pneumonia Taken More Seriously? 2019.
5. Pneumococcal vaccine: Canadian Immunization Guide - Canada.ca [Internet]. [cited 2023 Feb 16]. Available from: <https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-4-active-vaccines/page-16-pneumococcal-vaccine.html>
6. Government of Canada. Vaccines and immunization [Internet]. 2021 [cited 2022 Mar 2]. Available from: <https://www.canada.ca/en/public-health/services/immunization-vaccines.html>
7. Government of Canada. Invasive Pneumococcal Disease [Internet]. 2014 [cited 2022 Mar 2]. Available from: <https://www.canada.ca/en/public-health/services/immunization/vaccine-preventable-diseases/invasive-pneumococcal-disease.html>
8. Government of Canada. Vaccination for adults [Internet]. 2021 [cited 2022 Mar 2]. Available from: <https://www.canada.ca/en/public-health/services/vaccination-adults.html>
9. Torres A, Peetermans WE, Viegi G, Blasi F. Risk factors for community-acquired pneumonia in adults in Europe: a literature review. Thorax. 2013 Nov 1;68(11):1057-65.

10. Government of Canada. Reported cases from 1924 to 2019 in Canada - Notifiable diseases on-line [Internet]. 2021 [cited 2022 Mar 2]. Available from: <https://dsol-smed.phac-aspc.gc.ca/notifiable/charts?c=pl>
11. Public Health Agency of Canada. Customize your own chart - Notifiable diseases on-line [Internet]. 2021 [cited 2022 Mar 2]. Available from: <https://dsol-smed.phac-aspc.gc.ca/notifiable/charts?c=cc>
12. Government of Canada. Invasive Pneumococcal Disease [Internet]. 2021 [cited 2022 Mar 2]. Available from: <https://www.canada.ca/en/public-health/services/immunization/vaccine-preventable-diseases/invasive-pneumococcal-disease/health-professionals.html>
13. Lemay JA, Ricketson LJ, Zwicker L, Kellner JD. Homelessness in Adults With Invasive Pneumococcal Disease in Calgary, Canada. *Open Forum Infectious Diseases*. 2019 Aug 16;6(10).
14. Ekka JP, Uorti N, Utler ACB, Onica M, Arley MF, Arrison EHH, et al. Cigarette Smoking and Invasive Pneumococcal Disease. <http://dx.doi.org/101056/NEJM200003093421002>. 2000 Mar 9;13(2):68-9.
15. Government of Canada. Pneumococcal vaccine: Canadian Immunization Guide [Internet]. 2022 [cited 2022 Mar 2]. Available from: <https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-4-active-vaccines/page-16-pneumococcal-vaccine.html>
16. Government of Canada. Canadian Immunization Guide: Part 3 - Vaccination of Specific Populations - Canada.ca [Internet]. 2016 [cited 2022 Mar 2]. Available from: <https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-3-vaccination-specific-populations.html>
17. Government of Canada. Immunization of patients in health care institutions: Canadian Immunization Guide [Internet]. Canada Immunization Guide. 2021 [cited 2022 Mar 2]. Available from: <https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-3-vaccination-specific-populations/page-6-immunization-patients-health-care-institutions.html>
18. Public Health Agency of Canada. Not Just for Kids: An Adult Guide to Vaccination. 2018 Aug [cited 2022 June 15] . Available from: <https://www.canada.ca/content/dam/hc-sc/healthy-canadians/migration/publications/healthy-living-vie-saine/pamphlet-adult-guide-vaccination-adultes-brochure/alt/pub-eng.pdf>
19. Public Health Agency of Canada. Provincial and Territorial Routine Vaccination Programs for Healthy, Previously Immunized Adults - Canada.ca [Internet]. 2020 [cited 2022 Mar 2]. Available from: <https://www.canada.ca/en/public-health/services/provincial-territorial-immunization-information/routine-vaccination-healthy-previously-immunized-adult.html>
20. Government of Alberta. Resources to help seniors age in their community [Internet]. [cited 2022 Mar 2]. Available from: <https://www.alberta.ca/seniors-resources.aspx>
21. Government of Alberta. Find Health Information by Disease & Conditions [Internet]. [cited 2022 Mar 2]. Available from: <https://myhealth.alberta.ca/health/Pages/searchHealthInfoByDC.aspx?ht=p&>

22. Healthwise Staff. Pneumonia [Internet]. 2020 [cited 2022 Mar 2]. Available from: <https://myhealth.alberta.ca/health/Pages/conditions.aspx?hwid=hw63868>
23. HealthWise Staff. Healthy Aging: Pneumococcal Vaccine. 2020. Available from: <https://myhealth.alberta.ca/health/pages/conditions.aspx?hwid=hw63868>
24. Alberta Health Services. Pneumococcal Polysaccharide Vaccine FAQs [Internet]. 2021 [cited 2022 Mar 2]. Available from: <https://myhealth.alberta.ca/Alberta/Pages/pneumococcal-polysaccharide-immunization-faqs.aspx>
25. Alberta Health Services. Pneumococcal Polysaccharide (PNEUMO-P) Vaccine [Internet]. 2021 [cited 2022 Mar 2]. Available from: <https://myhealth.alberta.ca/Alberta/Pages/immunization-pneumococcal-polysaccharide.aspx>
26. Government of Alberta. Alberta Immunization Policy [Internet]. [cited 2022 Mar 2]. Available from: <https://www.alberta.ca/alberta-immunization-policy.aspx>
27. Government of Alberta. Immunization Goals and Objectives; 2020 [cited 2022 Mar 2]. Available from: <https://open.alberta.ca/dataset/58d31634-61d9-469d-b95f-f714719b923e/resource/db28c8b3-3e41-4aa1-b58e-7b571171ae55/download/aip-immunization-goals.pdf>
28. Government of Alberta. Alberta Immunization Policy - Roles and responsibilities of immunization providers; 2021 [cited 2022 Mar 2]. Available from: <https://open.alberta.ca/dataset/58d31634-61d9-469d-b95f-f714719b923e/resource/b86d92b2-a775-46ce-86a1-6744455a7c34/download/aip-responsibilities-vaccine-providers.pdf>
29. Micoli F, Bagnoli F, Rappuoli R, Serruto D. The role of vaccines in combatting antimicrobial resistance. *Nature Reviews Microbiology* 2021 19:5. 2021 Feb 4;19(5):287–302.
30. Government of Alberta. Adults: Immunization Schedule . 2021 Jan 1 [cited 2022 Mar 2]. Available from: <https://www.albertahealthservices.ca/assets/info/hp/cdc/if-hp-cdc-ipsm-adult-imm.pdf>
31. Statistics Canada. Table: 17-10-0005-01 Population estimates on July 1st, by age and sex [Internet]. Population estimates on July 1st, by age and sex. 2021 [cited 2022 Mar 1]. Available from: <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000501&pickMembers%5B0%5D=1.11&pickMembers%5B1%5D=2.1&cubeTimeFrame.startYear=2017&cubeTimeFrame.endYear=2021 &referencePeriods=20170101%2C20210101>
32. Statistics Canada. Population Projections for Canada (2018 to 2068), Provinces and Territories (2018 to 2043). 2019 Sep.
33. Government of British Columbia. SeniorsBC Website - Province of British Columbia [Internet]. [cited 2022 Mar 1]. Available from: <https://www2.gov.bc.ca/gov/content/family-social-supports/seniors/about-seniorsbc/seniors-action-plan/what-we-ve-done/seniorsbc-website?keyword=seniors>
34. British Columbia Ministry of Health. BC Seniors' Guide - 12th Edition. Available from: <https://www2.gov.bc.ca/assets/gov/people/seniors/about-seniorsbc/guide/bc-seniors-guide-english.pdf>
35. Healthwise Staff. Pneumonia | HealthLink BC [Internet]. Pneumonia. 2017 [cited 2022 Mar 1]. Available from: <https://www.healthlinkbc.ca/illnesses-conditions/infectious-diseases/pneumonia>

36. Government of British Columbia. Pneumococcal Polysaccharide Vaccine | HealthLink BC [Internet]. 2017 [cited 2022 Mar 1]. Available from: <https://www.healthlinkbc.ca/healthlinkbc-files/pneumococcal-polysaccharide-vaccine>
37. Provincial Health Services Authority. Immunization Program [Internet]. [cited 2022 Mar 1]. Available from: <http://www.bccdc.ca/our-services/programs/immunization-program>
38. Provincial Health Services Authority. Immunization Coverage Reports [Internet]. [cited 2022 Mar 1]. Available from: <http://www.bccdc.ca/health-professionals/data-reports/immunizations>
39. BC Centre for Disease Control. Influenza Vaccine Coverage Residents of Long Term Care Facilities (LTCF) British Columbia, 2021/22. 2022 Feb.
40. Provincial Health Services Authority. Communicable Disease Control Manual Chapter 2: Immunization Introduction. 2021 Oct;
41. Government of British Columbia. Seniors' Health | HealthLink BC [Internet]. [cited 2022 Mar 2]. Available from: <https://www.healthlinkbc.ca/more/aging-well/seniors-health>
42. Government of British Columbia. Why Seniors Should Get the Inactivated Influenza (Flu) Vaccine | HealthLink BC [Internet]. 2021 [cited 2022 Mar 1]. Available from: <https://www.healthlinkbc.ca/healthlinkbc-files/why-seniors-should-get-inactivated-influenza-flu-vaccine>
43. Government of British Columbia. B.C. Immunization Schedules [Internet]. 2021 [cited 2022 Mar 1]. Available from: <https://www.healthlinkbc.ca/bc-immunization-schedules#adult>.
44. Statistics Canada. Population estimates on July 1st, by age and sex - Manitoba [Internet]. 2021 [cited 2022 Mar 14]. Available from: <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000501&pickMembers%5B0%5D=1.8&pickMembers%5B1%5D=2.1&cubeTimeFrame.startYear=2017&cubeTimeFrame.endYear=2021&referencePeriods=20170101%2C20210101>
45. Government of Manitoba. Age-Friendly Manitoba Initiative | Seniors and Healthy Aging | Province of Manitoba [Internet]. [cited 2022 Mar 14]. Available from: <https://www.gov.mb.ca/seniors/afmb/index.html>
46. Government of Manitoba. Departments [Internet]. [cited 2022 Mar 14]. Available from: <https://www.gov.mb.ca/government/departments.html>
47. Government of Manitoba. Manitoba Health [Internet]. [cited 2022 Mar 14]. Available from: <https://www.gov.mb.ca/health/>
48. Government of Manitoba. Search pneumonia | Province of Manitoba [Internet]. [cited 2022 Mar 14]. Available from: <https://manitoba.ca/search/health/?opq=pneumonia&filter-documents=on&filter-webpages=on&rows=100&start=0&sort=relevance&location=>
49. Government of Manitoba. Seasonal Flu and Pneumo Factsheets | Health and Seniors Care | Province of Manitoba [Internet]. [cited 2022 Mar 14]. Available from: <https://www.gov.mb.ca/health/flu/factsheets.html>
50. Government of Manitoba. Seasonal Flu | Health and Seniors Care | Province of Manitoba [Internet]. [cited 2022 Mar 14]. Available from: <https://www.gov.mb.ca/health/flu/>
51. Government of Manitoba. Get Vaccinated - Don't spread the flu. Print [Internet]

52. Government of Manitoba. Vaccine Eligibility | Health | Province of Manitoba [Internet]. 2021 [cited 2022 Mar 14]. Available from: <https://www.gov.mb.ca/health/publichealth/cdc/vaccineeligibility.html>
53. Government of Manitoba. Manitoba's Pneumococcal Immunization Program Frequently Asked Questions & Answers for Health Care Providers. 2019 Dec.
54. Government of Manitoba. Manitoba Monthly Surveillance Report. 2017 Jun;
55. Government of Manitoba. Pneumococcal Polysaccharide (Pneu-P-23) Vaccine. 2019 Aug;
56. Government of Manitoba. Introduction: Immunization Program Manual for Immunization Providers in Manitoba. 2013 Aug [cited 2022 Mar 14]; Available from: www.gov.mb.ca/health/publichealth/cdc/vaccineeli
57. Government of Manitoba. Residential Care Facility Guidelines [Internet]. 2015 [cited 2022 Mar 14]. Available from: <https://www.gov.mb.ca/health/publichealth/environmentalhealth/protection/docs/rcfg.pdf>
58. Government of Manitoba. Seniors and Healthy Aging | Province of Manitoba [Internet]. [cited 2022 Mar 14]. Available from: <https://www.gov.mb.ca/seniors/index.html>
59. Government of Manitoba. Routine Immunization Schedules [Internet]. [cited 2022 Mar 14]. Available from: <https://www.gov.mb.ca/health/publichealth/cdc/div/schedules.html>
60. Government of Manitoba. Immunization Schedules for Individuals NOT Previously Immunized [Internet]. 2020 [cited 2022 Mar 14]. Available from: <https://www.gov.mb.ca/health/publichealth/cdc/div/not.html>
61. Ontario.ca. Ontario population projections; 2021 June [cited 2022 June 15]. Available from: <https://www.ontario.ca/page/ontario-population-projections>
62. Pharmacy Connection. PHARMACISTS NOW AUTHORIZED TO ADMINISTER ADDITIONAL VACCINES. . 2017.
63. OLTCA. The role of long-term care. Available from: <https://www.oltca.com/oltca/OLTCA/LongTermCare/OLTCA/Public/LongTermCare/FactsFigures.aspx#:~:text=The%20role%20of%20long%2Dterm,a%20safe%2C%20caring%20home%20environment.>
64. Ontario.ca. Vaccines and Immunization; 2022 Mar [cited 2022 June 15]. Available from: <https://www.ontario.ca/page/vaccines>
65. Government of Ontario M of H and LTC. Pneumococcal vaccine (polysaccharide - for age 2 years and over). Available from: <https://www.health.gov.on.ca/en/public/publications/immune/pnem.aspx>
66. City of Toronto. Pneumococcal vaccines information for Health Professionals. City of Toronto. 2020.
67. Ministry of Health and Long-Term Care. Ontario Regulation 79/10 made under the Long-Term Care Homes Act, 2007. Available from: <https://www.ontariocanada.com/registry/view.do?postingId=3209>

68. Ontario.ca. 1. Archived - aging with confidence: Ontario's action plan for seniors; 2017 Nov [cited 2022 June 15]. Available from: <https://www.ontario.ca/page/aging-confidence-ontario-action-plan-seniors>
69. Ministry for Seniors and Accessibility. Guide to Programs and Services for Seniors in Ontario. 2022 [cited 2022 June 15]. Available from: <https://files.ontario.ca/msaa-guide-to-programs-services-for-seniors-web-en-2022-03-24.pdf>
70. Government of Health Ontario. Publicly Funded Immunization Schedule for Ontario. 2021 Jan [cited 2022 Jun 15]. Available from: https://www.health.gov.on.ca/en/pro/programs/immunization/docs/Publicly_Funded_ImmunizationSchedule.pdf
71. Provincial Advisory Council on Aging and Seniors. Provincial Advisory Council on Aging and Seniors Annual Report 2017-18 [Internet]. 2018 [cited 2022 May 11]. Available from: <https://www.gov.nl.ca/cssd/files/publications-pdf-annual-reports-pacasannualreport2017-18.pdf>
72. Hurd J, Pike A, Knight J, Tarrant G, Aubrey-Bassler K, Asghari S, et al. Health and health service use of very elderly Newfoundlanders. Canadian family physician Medecin de famille canadien. 2018;64(10):e453-61.
73. Government of Newfoundland and Labrador. Health and Community Services [Internet]. [cited 2022 May 11]. Available from: <https://www.gov.nl.ca/cssd/files/publications-pdf-annual-reports-pacasannualreport2017-18.pdf>
74. Government of Newfoundland and Labrador. Immunization [Internet]. [cited 2022 May 11]. Available from: <https://www.gov.nl.ca/hcs/publichealth/cdc/immunizations/>
75. Government of Newfoundland and Labrador. PROTECTION FROM PNEUMOCOCCAL DISEASE (ADULT) [Internet]. 2018 Aug [cited 2022 May 11]. Available from: <https://www.gov.nl.ca/hcs/files/publichealth-cdc-pneumococcal-vaccine-adult-fact-sheet2018.pdf>
76. Government of Newfoundland and Labrador. Immunization Manual [Internet]. 2019 [cited 2022 August 17]. Available from: <https://www.gov.nl.ca/hcs/files/Section-1-General-Consideration-for-Immunization.pdf>
77. Government of Newfoundland and Labrador. Immunization Programs for High Risk Groups [Internet]. 2019 Feb [cited 2022 May 11]. Available from: <https://www.gov.nl.ca/hcs/files/publichealth-cdc-pneumococcal-vaccine-adult-fact-sheet2018.pdf>
78. Government of Newfoundland and Labrador. Self-Directed Learning Module on Immunizations [Internet]. 2019 [cited 2022 May 11]. Available from: <https://www.gov.nl.ca/hcs/files/publichealth-cdc-pdf-self-directed-learning-module-immunizations.pdf>
79. Sanofi Pasteur. PUBLICLY FUNDED IMMUNIZATION SCHEDULES FOR NEWFOUNDLAND AND LABRADOR [Internet]. 2019 [cited 2022 May 11]. Available from: <https://www.vaccinfo.ca/routine-vaccines/newfoundland-and-labrador>
80. Statistics Canada. Population estimates, quarterly [Internet]. 2022 [cited 2022 May 10]. Available from: <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000901>
81. Institut de la statistique Quebec. Towards a population of 10 million people in Quebec by 2066 [Internet]. 2021 [cited 2022 May 10]. Available from: <https://statistique.quebec.ca/en/communiquer/towards-a-population-of-10-million-people-in-quebec-by-2066>

82. St. Onge P, Shaw ML. 6,700 Lives Could Have Been Saved in Quebec's Long-Term Care Homes. MEI; 2021 Apr [cited 2022 June 15].
83. Gouvernement du Quebec. Gouvernement du Quebec [Internet]. [cited 2022 May 10]. Available from: <https://www.quebec.ca/en/>
84. Gouvernement du Quebec. Health [Internet]. 2021 [cited 2022 May 10]. Available from: <https://www.quebec.ca/en/health>
85. Gouvernement du Quebec. Pneumococcal Infections [Internet]. 2015 [cited 2022 May 10]. Available from: <https://www.quebec.ca/en/health/health-issues/a-z/pneumococcal-infections>
86. Gouvernement du Quebec. Pneumococcal vaccination program [Internet]. 2020 [cited 2022 May 10]. Available from: <https://www.quebec.ca/en/health/advice-and-prevention/vaccination/pneumococcal-vaccination-program>
87. Gouvernement du Quebec. Pneumococcal Polysaccharide Vaccine [Internet]. 2020 [cited 2022 May 10]. Available from: <https://www.quebec.ca/en/health/advice-and-prevention/vaccination/pneumococcal-polysaccharide-vaccine>
88. Gouvernement du Quebec. Pneumococcal Conjugate Vaccine [Internet]. 2020 [cited 2022 May 10]. Available from: <https://www.quebec.ca/en/health/advice-and-prevention/vaccination/pneumococcal-conjugate-vaccine>
89. Gouvernement du Quebec. S-4.2, r. 5.01 - Regulation respecting the conditions for obtaining a certificate of compliance and the operating standards for a private seniors' residence [Internet]. 2018 [cited 2022 May 10]. Available from: <https://www.legisquebec.gouv.qc.ca/en/document/cr/S-4.2,%20r.%205.01%20/>
90. Gouvernement du Quebec. S-2.2-Public Health Act. 2022 Feb [cited 2022 June 15]. Available from: <https://www.legisquebec.gouv.qc.ca/en/document/cs/s-2.2>
91. Gouvernement du Quebec. Quebec Immunization Program [Internet]. 2020 [cited 2022 May 10]. Available from: <https://www.quebec.ca/en/health/advice-and-prevention/vaccination/quebec-immunization-program>
92. Alec Salloum. Sask. staying young but Canada's population is the oldest its ever been [Internet]. 2022 [cited 2022 May 11]. Available from: <https://leaderpost.com/news/politics/sask-staying-young-but-canadas-population-is-the-oldest-its-ever-been>
93. Statistics Canada. Saskatchewan [Internet]. 2019 [cited 2022 May 11]. Available from: <https://www150.statcan.gc.ca/n1/pub/91-520-x/2019001/sect03-sk-eng.htm>
94. Saskatchewan Health Authority. Your Health [Internet]. [cited 2022 May 11]. Available from: <https://www.saskhealthauthority.ca/your-health>
95. Saskatchewan Health Authority. Healthline Online [Internet]. [cited 2022 May 11]. Available from: <https://www.saskhealthauthority.ca/your-health/conditions-diseases-services/healthline-online>
96. Healthwise Staff. Pneumococcal Vaccines [Internet]. 2021 [cited 2022 May 11]. Available from: <https://www.saskhealthauthority.ca/your-health/conditions-diseases-services/healthline-online/tv8594>

97. Saskatchewan Health Authority. Vaccine Information [Internet]. 2019 [cited 2022 May 11]. Available from: https://www.saskatoonhealthregion.ca/locations_services/Services/Immunization/Pages/Vaccine-Information.aspx
98. Ministry of Health. Design Guidelines and Standards for Long Term Care Facilities in Saskatchewan [Internet]. 2009 [cited 2022 May 11]. Available from: <http://wabenbow.com/wp-content/uploads/2011/06/Sask-Guidlelines-and-Standards-for-Long-Term-Care-2009.pdf>
99. Saskatchewan. Immunization Services [Internet]. [cited 2022 May 11]. Available from: <https://www.saskatchewan.ca/residents/health/accessing-health-care-services/immunization-services>
100. Seniors' Secretariat of Prince Edwards Island. A Portrait of Island Seniors. 2014 Dec [cite 2022 June 15]. Available from: <http://www.gov.pe.ca/photos/original/SSPortrait14.pdf>
101. Government of Prince Edward Island. Adult Immunizations. 2017 Sept [cited 2022 Jun 15]. Available from: <https://www.princeedwardisland.ca/en/information/health-and-wellness/adult-immunizations>
102. Prince Edward Island. Community Care Facilities and Nursing Homes Act Regulations. 2005 Nov [cited 2022 June 15]. Available from: <https://www.princeedwardisland.ca/sites/default/files/legislation/C%2613G-Community%20Care%20Facilities%20and%20Nursing%20Homes%20Act%20Regulations.pdf>
103. Prince Edward Island. Immunization Regulations. 2018 June [cited 2022 June 15]. Available from: https://www.princeedwardisland.ca/sites/default/files/legislation/p30-1-3-public_health_act_immunization_regulations.pdf
104. Prince Edward Island. Public Health Act. 2022 May [cited 2022 June 15]. Available from: https://www.princeedwardisland.ca/sites/default/files/legislation/p-30-1-public_health_act.pdf
105. Prince Edward Island. Adults Need Immunization Too! 2019 Oct [cited 2022 June 15]. Available from: https://www.princeedwardisland.ca/sites/default/files/publications/adult_immunization_poster_201910.pdf
106. Whalen, A., & Eisen, B. Blog: Atlantic Canada's population is getting older faster. Fraser Institute. 2020, Dec [cited 2022 June 15]. Available <https://www.fraserinstitute.org/blogs/atlantic-canadas-population-is-getting-older-faster#:~:text=Even%20before%20COVID%2C%20all%20four,ratios%20would%20grow%20over%20time>
107. Nova Scotia Department of Seniors and Long-term Care. [cited 2022 August 17]. Available from: <https://novascotia.ca/seniors/>
108. Nova Scotia Department of Health and Wellness. Vaccine Eligibility for High Risk Conditions. 2019 Feb [cited 2022 June 15]. Available from: <https://novascotia.ca/dhw/cdpc/documents/Vaccine-Eligibility-for-High-Risk-Conditions.pdf>
109. Nova Scotia Health Authority. Important Information about Pneumococcal Disease and Pneumococcal Conjugate Vaccine. 2015 [Cited 2022 August 17] <https://www.nshealth.ca/sites/nshealth.ca/files/patientinformation/13172.pdf>

110. Nova Scotia Health Authority. Important Information about Pneumonia Disease and Pneumococcal Polysaccharide Vaccine. 2015 [Cited 2022 August 17] <https://www.nshealth.ca/sites/nshealth.ca/files/patientinformation/13064.pdf>
111. Nova Scotia Health Authority. Patient & Family guide Pneumovax 23 (Pneumococcal Vaccine Polyvalent) and Kidney Disease 2018 [Cited 2022 August 17] <https://www.nshealth.ca/sites/nshealth.ca/files/patientinformation/1890.pdf>
112. Adult Immunizations. 2021 June [cited 2022 June 15]. Available from: https://811.novascotia.ca/health_topics/adult-immunizations/
113. Nova Scotia. Immunization Schedules for Children, Youth & Adults; 2019 Oct [cited 2022 June 15]. Available from: <https://novascotia.ca/dhw/CDPC/documents/Routine-Immunization-Schedules-for-Children-Youth-Adults.pdf>
114. Nova Scotia. Nova Scotia Immunization Manual. 2019 Nov [cited 2022 June 15]. Available from: <https://novascotia.ca/dhw/CDPC/documents/Immunization-Manual.pdf>
115. Nova Scotia Department of Health and Wellness. Continuing Care Policies and Standards. 2021 [Cited 2022 August 17]. Available from: <https://novascotia.ca/dhw/ccs/policies-standards.asp>
116. Nova Scotia Department of Health and Wellness. Continuing Care Policies and Standards – Long Term Care Facility Program Requirements. 2022 May [Cited 2022 August 17]. Available from: <https://novascotia.ca/dhw/ccs/policies/Long-Term-Care-Facility-Program-Requirements.pdf>
117. Nova Scotia Department of Health and Wellness. Continuing Care Policies and Standards – Guide to Influenza-Like Illness and Outbreak Control. 2021 [Cited 2022 August 17]. Available from: https://novascotia.ca/dhw/cdpc/documents/Guide_to_Influenza-Like_Illness_and_Outbreak_Control.pdf
118. Province of New Brunswick. We are all in this together: An Aging Strategy for New Brunswick. 2017 Jan [cited 2022 June 15]. Available from: <https://www2.gnb.ca/content/dam/gnb/Departments/sd-ds/pdf/Seniors/AnAgingStrategyForNB.pdf>
119. Province of New Brunswick. Seniors and Healthy Aging Secretariat. Available from: https://www2.gnb.ca/content/gnb/en/departments/social_development/seniors/content/secretariat.html
120. Office of Chief Medical Officer of Health (Public Health). Immunization Program Guide. Available from: https://www2.gnb.ca/content/gnb/en/departments/ocmoh/for_healthprofessionals/cdc/NBImmunizationGuide.html
121. The Office of Chief Medical Officer (Public Health). Standard 3.3 Eligibility Criteria for Publicly Funded Vaccines/Biologics. 2019 Sept [cited 2022 June 15]. Available from: <https://www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/en/CDC/HealthProfessionals/NBIPG-standard3-3-e.pdf>
122. Province of New Brunswick. Routine Immunization Schedule. 2021 [cited 2022 June 15]. Available from: <https://www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/en/CDC/Immunization/RoutineImmunizationSchedule.pdf>
123. Department of Social Development. New Brunswick Standards Manual Nursing Home Services. 2022 May [cited 2022 June 15]. Available from: <https://www2.gnb.ca/content/dam/gnb/Departments/sd-ds/pdf/Standards/NursingHomesStandardsManual.pdf>

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