

VACCINES: Pneumococcal, Influenza, & Shingles

Immunization Guidelines and Saskatchewan Health Coverage Considerations

Vaccines prevent morbidity and mortality to various degrees. Many vaccines are publicly funded, especially if potentially life-saving. When guideline recommendations & public coverage differ, clinicians/patients must weigh the evidence for benefit versus the out-of-pocket patient cost. **Note:** vaccine costs listed in this document do not include markup, dispensing fees, or administration fees, which can vary depending on who is administering the vaccine.

1. Who may benefit from a PNEUMOCOCCAL vaccine in Saskatchewan?

Available vaccines include the **PNEUMOVAX** 23-valent vaccine (\$24) and the **PREVNAR** 13-valent vaccine (\$103).

Covered in Sask: ¹	Evidence for benefit	Clinical Controversies
<ul style="list-style-type: none"> 1 dose of PNEUMOVAX for anyone ≥65 years old. 1 dose of PNEUMOVAX for anyone with specific medical conditions (e.g. diabetes, COPD, others*). 2 doses of PNEUMOVAX spaced 5+ years apart for anyone with specific high risk medical conditions (e.g. HIV, transplants, others*). 	<ul style="list-style-type: none"> A single pneumococcal vaccination appears to reduce the risk of community-acquired pneumonia by 30% (NNT = 55) and the risk of a COPD exacerbation by 40% (NNT = 8).^{2,19,20} Benefits are consistent regardless of which vaccine formulation is used.²⁻⁴ No trials have yet assessed the efficacy of PREVNAR and PNEUMOVAX combined versus one vaccine alone. 	<ul style="list-style-type: none"> Immunization guidelines^{NACI} suggest that if PNEUMOVAX was given before the age of 65, a booster dose should be given 5 years later to all patients regardless of risk factors.¹⁸ This recommendation is based on the tendency for older adults to have a weakened immune system. Immunization guidelines suggest that the theoretical greater potency of PREVNAR over PNEUMOVAX may justify dual vaccination in certain individuals (but no guidance given as to which individuals).⁵

*Visit <http://publications.gov.sk.ca/documents/13/108111-Pneu-P-23%20April%202017.pdf> for a full list of individuals covered for **PNEUMOVAX** in SK.

Bottom line: Pneumococcal vaccination effectively reduces the risk of invasive pneumococcal disease. It's uncertain if one vaccine provides extra benefit over another.

2. Who may benefit from an INFLUENZA vaccine in Saskatchewan?

Available vaccines include trivalent (3-strain, \$9 covered in Sask), quadrivalent (4-strain, \$12 covered in Sask), a trivalent high-dose formulation (4 times more antigen than the usual trivalent vaccine, \$64), and others.

Covered in Sask: ¹	Evidence for benefit	Clinical Controversies
<ul style="list-style-type: none"> Annual quadrivalent vaccination to anyone ≥6 months old. High-dose trivalent vaccination (FLUZONE HIGH-DOSE) to anyone in long-term care ≥65 years old. 	<ul style="list-style-type: none"> In general, influenza vaccination is 10-60% effective depending on yearly match.^{6,7} In adults ≥65 years old, influenza vaccination reduces the risk of influenza from 6% to 2.4% (NNT = 28).⁸ Compared to standard dosing, high-dose influenza vaccination prevents more influenza cases in adults ≥65 years old, but the absolute benefit is small (NNT = 200).⁹ For adults in long-term care ≥65 years old, high-dose influenza vaccination prevents hospitalizations (NNT = 81).¹⁰ 	<p>Immunization guidelines^{NACI} suggest that the statistically significant benefit for the high dose influenza vaccination (NNT = 200) warrants administration to <u>all</u> adults ≥65 years old.¹¹</p>

Bottom line: Influenza vaccination effectively reduces influenza risk, regardless of formulation. Using the high-dose influenza vaccine for adults in long-term care ≥ 65 years old can additionally reduce hospitalizations.

3. Who may benefit from a SHINGLES vaccine in Saskatchewan?

Two shingles vaccines are available: a 2-dose recombinant vaccine (**SHINGRIX**, \$134 per dose) and a live vaccine (**ZOSTAVAX**, \$203). Shingles vaccination is guideline recommended, with high-quality evidence to support, but is **not currently covered publicly in Saskatchewan**. Some drug plans offer private coverage. **NIHB coverage** Jan/2023 for age ≥65 yrs **SHINGRIX**.

SHINGRIX or ZOSTAVAX?	What if the patient already received ZOSTAVAX?	What if the patient previously had shingles?
<p>SHINGRIX is vaccine of choice. The baseline risk of shingles in adults ≥65 years old is approximately 1% per year.¹⁷ SHINGRIX will reduce this risk by 91%;¹² ZOSTAVAX only by 50%.¹³ Typically the SHINGRIX vaccination series is offered starting when patients turn 50.</p>	<p>Immunization guidelines suggest vaccinating again, this time using SHINGRIX. American guidelines suggest waiting 2 months before re-vaccination;¹⁴ Canadian guidelines suggest waiting 1 year (since ZOSTAVAX is most effective in the first year).¹⁵</p>	<p>Since shingles may occur again, immunization guidelines suggest vaccinating with SHINGRIX one year after the shingles episode.¹⁵ This recommendation is based on expert opinion.</p>

See also: RxFiles Q&A's on Shingrix & Zostavax, available online at www.rxfiles.ca, for further comparison of **ZOSTAVAX** and **SHINGRIX**.

Bottom line: Shingles vaccines are efficacious, and indicated in older adults, but not covered publicly for all.

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