

Varicella Vaccine

BIOLOGICAL PAGE

Section 7	Biological Product Information	Standard # 07.350
Created and approved by	Provincial Immunization Program	
Approval date	August 1, 2012	Published March 2, 2026

	VARILRIX	VARIVAX III
Manufacturer	GlaxoSmithKline Inc.	Merck Canada Inc.
Classification	Live; attenuated.	
Indications for Provincially Funded Vaccine	Pre-exposure: Infants 6 months of age up to and including 11 months of age who are candidates for a solid organ transplant (SOT). Refer to Immunization for Children Expecting SOT before 18 Months of Age for indications and scheduling information. - Any dose of varicella vaccine given before 12 months of age should be repeated at 12 months of age or older. Children 12 months up to and including 12 years of age: Note: - Verbal history of disease in the varicella vaccine era is not a reliable indicator of immunity. - Children with a verbal history of chickenpox disease should be offered varicella vaccine. - Children with a history of chickenpox disease occurring prior to 12 months of age should be offered varicella vaccine. - Children with a laboratory confirmed (varicella PCR/NAT swab results) history of varicella disease after the age of 12 months do not require varicella vaccine. - When both MMR vaccine and varicella vaccine are indicated for children 12 months up to and including 12 years of age, measles, mumps, rubella and varicella combined vaccine should be considered. - Individuals who received their first dose of varicella-containing vaccine and at any point subsequently developed laboratory confirmed (varicella PCR/NAT swab results) vaccine modified varicella disease do not require a second dose of varicella-containing vaccine. Individuals 13 years of age up to and including 17 years of age: See exceptions related to pregnant individuals and healthcare workers below. <i>Individuals born on or after August 1, 2012</i> - Individuals with a verbal history of chicken pox disease should be offered varicella vaccine unless they present with laboratory evidence of immunity (varicella IgG positive) or laboratory confirmation of varicella disease (varicella PCR/NAT swab results). <i>Individuals born prior to August 1, 2012 (with unknown/uncertain or no history of chickenpox disease and/or negative serology)</i> - Individuals born prior to August 1, 2012, who have a history of chickenpox disease occurring at one year of age and older will not be offered varicella vaccine at this time. - Serology to determine susceptibility is NOT required for these individuals with unknown/uncertain or no history of chickenpox disease.	

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	▪ Susceptibility of students in the school immunization program will be based on history of disease or documented varicella immunization. ○ History of disease after 12 months of age may be assessed as follows: ▪ “pox” scars ▪ recollection of disease in individual (or from parental recollection) ▪ history of laboratory confirmed (varicella PCR/NAT swab results) varicella disease ▪ history of physician diagnosed (confirmed by physician office) varicella or herpes zoster (shingles). ○ Individuals who received their first dose of varicella-containing vaccine and at any point subsequently developed laboratory confirmed (varicella PCR/NAT swab results) vaccine modified varicella disease do not require a second dose of varicella-containing vaccine. Individuals 18 years of age and older: See exceptions related to pregnant individuals and healthcare workers below. • Serology to determine susceptibility is required for individuals 18 years of age and older with unknown/uncertain or no history of chickenpox disease. • Individuals who received their first dose of varicella-containing vaccine and at any point subsequently developed laboratory confirmed (varicella PCR/NAT swab results) vaccine modified varicella disease do not require a second dose of varicella-containing vaccine. • Adults with evidence of immunity* do not require varicella vaccine. *Evidence of immunity includes any of the following: ○ Documentation of 2 valid doses of varicella-containing vaccine. ○ Laboratory evidence of immunity (varicella IgG positive). ○ Laboratory confirmation of varicella disease (varicella PCR/NAT swab results). ○ Physician diagnosed shingles disease (confirmed by physician office). ○ Self-reported history or physician diagnosed varicella disease in Canada prior to a routine immunization program: ▪ In Alberta, prior to January 2001 ▪ For start dates of other Canadian jurisdictions see the NACI Varicella Proof of Immunity - 2015 Update. Exceptions: Pregnant Individuals and Health care workers (HCWs) regardless of age: • Pregnant individuals identified through routine prenatal screening with negative serology (varicella IgG negative) should be offered up to a maximum of 2 doses of varicella-containing vaccine as they present post-partum regardless of disease history, unless presenting with 2 valid doses of varicella-containing vaccine. • HCWs and post-secondary HCW students without evidence of immunity* (see above) should be offered 2 doses of varicella vaccine as they present. ○ Those presenting with documentation of 1 dose of varicella vaccine should be offered a second dose of varicella vaccine. ○ Shingrix doses cannot be counted in a varicella vaccine series. Considerations for Immunocompromised individuals (refer to Serology Section for definition of susceptible individual): • Varicella vaccine can be used with caution for select groups of immunocompromised persons as listed below. • Although the use of VARIVAX III is off license for children with acute lymphocytic leukemia (ALL) and for individuals receiving other immunosuppressive treatment, either VARILRIX or VARIVAX III can be offered. Medical consultation with the individual’s physician(s) should be sought before immunizing immunocompromised persons.	

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	Children with acute lymphocytic leukemia (ALL):	• Must be in remission for 12 months or longer AND • Total lymphocyte count of $1.2 \times 10^9/L$ or greater AND • Not be receiving radiation therapy AND • Maintenance chemotherapy can be withheld for at least 1 week before to 1 week after immunization. Note: 2 doses of vaccine are recommended for all children that meet the above conditions for ALL.
	Cured of ALL	• Susceptible persons who have been cured of ALL may be immunized with up to 2 doses starting at least 1 week after completing chemotherapy.
	HIV infected individuals	• Children 12 months of age and older who are varicella non-immune and with CDC clinical category N, A or B and immunologic category 1 or 2 (CD4 counts greater than or equal to 15%) may be immunized with 2 doses of univalent vaccine with a 3–6 month interval between doses. • Susceptible adolescents and adults (no previous history of varicella illness or previous varicella immunization and a negative varicella antibody test) with CD4 cell count greater or equal to $200 \times 10^6/L$ and greater or equal to 15% may be considered for varicella immunization. Note: It is essential to ascertain with the specialist that the individual conforms to the appropriate clinical and immunologic categories before making the decision to immunize with varicella vaccine.
	Planned solid organ transplant (SOT)	• Persons with planned solid organ transplant (SOT), at least 4 weeks prior to the initiation of immunosuppressant treatment and/or transplant and only following consultation with the attending transplant physician. • In addition, SOT candidates may be provided a third dose of varicella vaccine if VZ IgG is negative after the second dose, and it is requested by the transplant physician. See: ◦ Immunization for Adult SOT Candidates and Recipients ◦ Immunization for Children Expecting SOT Before 18 Months of Age ◦ Immunization for Children Expecting SOT After 18 Months of Age
	Hematopoietic stem cell transplants (HSCT)	• Child and adult recipients of hematopoietic stem cell transplants (HSCT) if there is no graft versus host disease. Consultation with the attending transplant physician is recommended. See: ◦ Immunization for Adult HSCT Transplant Recipients ◦ Immunization for Child HSCT Transplant Recipients Note: Varicella immunization is not indicated for persons awaiting HSCT.
	Isolated immune-deficiency diseases	• People with isolated immunodeficiency diseases as listed below and known intact T-cell systems may be immunized

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		using the same age-appropriate schedule for healthy persons. ○ B cell deficiencies: Isolated humoral (immunoglobulin) deficiency diseases ○ Phagocytic and neutrophil deficiency disorders ○ Complement deficiency diseases. • See Section 2.5 of the Standard on the Immunization of Individuals with Chronic Health Conditions and/or Immunosuppression.
	Cured of malignancies other than ALL	• Susceptible persons cured of malignancies other than ALL may be immunized 3 months or more after completion of immunosuppressive therapy.
	Low-dose steroid therapy	• Susceptible children and adults on low-dose steroid therapy (less than 2 mg prednisone/kg daily or less than 20 mg/day if weight is greater than 10 kg for less than 2 weeks) or who are taking inhaled or topical steroids may be safely immunized using the age-appropriate schedule for healthy persons.
	Other immuno-suppressive treatment	• Persons receiving immunosuppressive treatment for example high-dose steroids or treatment for renal failure or autoimmune diseases causing immunosuppression, may be considered for varicella immunization if the total lymphocyte count is at least 1,200 per mm³ ($1.2 \times 10^9/L$) or there is no other evidence of lack of cellular immune competence.
	Post-exposure Immunization: • Post-exposure immunization could be considered for susceptible contacts 12 months of age and older of varicella or disseminated zoster cases. ○ When given within 5 days of first exposure, it may prevent or modify varicella disease. ○ If more than 5 days after first exposure, the vaccine could still be offered as this will provide protection for future exposures. ○ For disease investigation, contact assessment and reporting requirements, refer to Alberta public health disease management guidelines: varicella. Note: Post-exposure immunization is not recommended for infants under 12 months of age, VZIG may be offered, see Varicella Zoster Immune Globulin (Human) Biological Page.	
Serology	Susceptible individuals include those: • Without a history of disease, or • Without age-appropriate varicella immunization, or • Without serological evidence of immunity such as negative or indeterminate varicella IgG result. For further information on history of disease, refer to the Indications Section. Note: Healthy individuals that have been previously found to be seropositive do not need to be tested again.	
	Pre-Immunization Serology: • Varicella IgG serology is indicated for all susceptible individuals 18 years of age and older.	

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	- Swab results for shingles or varicella vesicles that are positive for varicella zoster (varicella PCR/NAT), or historical varicella IgM positive serology may be used to determine disease history/immunity to chickenpox. - Serology is not required for individuals who have received 1 dose of varicella vaccine and who are eligible for a second dose. Complete the series.																
	Post-Immunization Serology: - Not indicated as commercial laboratory tests are not sensitive enough to detect vaccine-induced antibodies. - No further varicella vaccine is required if varicella IgG serology is done and is positive after the first dose of varicella vaccine. - Previously immunized individuals who are inadvertently tested are likely to be immune to varicella, even if there is no detectable antibody.																
Schedule	Children 12 months up to and including 12 years of age: - Dose 1: 12 months of age - Dose 2: 18 months of age. Note: - Most young children in Alberta routinely receive MMR – Var combined vaccine at 12 months and 18 months of age. See Measles, Mumps, Rubella and Varicella Vaccine Biological Page. - The recommended spacing between the first and the second dose is 3 months. - If varicella vaccine is given as the first dose, MMR-Var combined vaccine can be administered to complete the series if MMR is also required. - The recommended interval between the 2 vaccines is 3 months. - The minimum interval between live vaccines is 4 weeks if rapid protection is required. - Children who have received a single dose of varicella-containing vaccine and develop laboratory confirmed (varicella PCR/NAT swab result) varicella disease, do not require the second dose of a varicella-containing vaccine. Individuals 13 years of age and older: - Dose 1: day 0 - Dose 2: 6 weeks after dose 1. Note: - The minimum interval between live vaccines is 4 weeks if rapid protection is required. - Individuals who received 1 dose under the age of 13 years AND whose birthdate is prior to August 1, 2005 are considered COMPLETE at this time. - After the start of the second dose varicella vaccine program August 1, 2012, children born on August 1, 2005 or later are eligible for 2 doses of varicella vaccine. Exceptions: - Individuals identified through routine prenatal screening are eligible for a maximum of 2 doses of varicella-containing vaccine. - HCWs and post-secondary HCW students are eligible for a maximum of 2 doses of varicella-containing vaccine as they present. - Shingrix doses cannot be counted in a varicella vaccine series. Spacing Considerations: <table><tr><th colspan="4">Recommended Intervals for MMR and Varicella Containing Vaccines</th></tr><tr><th rowspan="2">Previous Vaccine Administered</th><th colspan="3">Recommended Interval to Next Dose</th></tr><tr><th>MMR-Var</th><th>MMR</th><th>Varicella^{1, 2}</th></tr><tr><td>MMR-Var</td><td>3 months</td><td>3 months</td><td>3 months</td></tr></table>		Recommended Intervals for MMR and Varicella Containing Vaccines				Previous Vaccine Administered	Recommended Interval to Next Dose			MMR-Var	MMR	Varicella ^{1, 2}	MMR-Var	3 months	3 months	3 months
Recommended Intervals for MMR and Varicella Containing Vaccines																	
Previous Vaccine Administered	Recommended Interval to Next Dose																
	MMR-Var	MMR	Varicella ^{1, 2}														
MMR-Var	3 months	3 months	3 months														

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	MMR	3 months	4 weeks	3 months
	Varicella^{1,2}	3 months	3 months	6 weeks or 3 months ³
	- For all HSCT recipients and SOT candidates there must be a minimum of 3 months separating 2 doses of varicella vaccine. See: Immunization for Adult HSCT Transplant Recipients Immunization for Child HSCT Transplant Recipients Immunization for Adult SOT Candidates and Recipients Immunization for Children Expecting SOT Before 18 Months of Age Immunization for Children Expecting SOT After 18 Months of Age - Individuals infected with HIV, who meet the clinical and immunologic categories under Indications above, should receive 2 doses of varicella vaccine with an interval of at least 3 months between doses. MMR vaccine, if needed, may be administered at the same time. - An interval of 3 months between doses of varicella-containing vaccines is recommended for individuals under 13 years of age and 6 weeks for individuals over 13 years of age unless they have one of the following conditions: HIV, asplenia/hyposplenia and chronic renal disease. Individuals with these conditions require a minimum spacing of 3 months between doses. - Univalent varicella vaccine can be administered simultaneously with other live vaccines or separated by an interval of at least 4 weeks. See above for recommended intervals between all measles, mumps, rubella and varicella vaccines. - If live vaccine was administered at less than the routine intervals outlined above, the dose can be considered valid, and vaccine would not need to be repeated if there is a minimum interval of at least 4 weeks.			
Dose	0.5 mL Note: - Withdraw the entire contents of the diluent and inject into the vial containing the powder. - Once reconstituted, withdraw the entire contents of the vial and inject the entire volume.			
Route	SC			
Contraindications/ Precautions	Contraindications: - Known severe hypersensitivity to any component of the vaccine, including gelatin (in Varivax) - Individuals with a history of anaphylactic/anaphylactoid reaction to neomycin - A history of contact dermatitis to neomycin is not a contraindication - Individuals with blood dyscrasias, leukemia, lymphomas of any type or other malignant neoplasms affecting the bone marrow or lymphatic systems except as outlined in Indications above - Individuals receiving immunosuppressive therapy except as outlined in Indications above. - Individuals with primary and acquired immunodeficiency states including HIV infection except as outlined in Indications above - Family history of congenital or hereditary immunodeficiency unless the immune competence of the potential vaccine recipient is demonstrated - Active, untreated tuberculosis - Anaphylactic or other allergic reactions to a previous dose of a vaccine containing similar components - Pregnancy - Individuals with a suspicious medical history for immunodeficiency disorders until they have been investigated, and T-cell dysfunction is ruled out - Individuals with T-cell or combined T-and B-cell immunodeficiencies - Individuals with advanced HIV - Individuals with solid tumours undergoing immunosuppressive therapy - Individuals undergoing radiotherapy			

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	- Individuals with chronic inflammatory diseases (for example, inflammatory bowel disease, collagen-vascular disease, nephritic syndrome) taking long-term immunosuppressive therapy or whose immunosuppressive therapy was stopped less than 6-12 weeks previously - Recent treatment with the following categories of immunosuppressive therapies: - anti-B cell therapies (monoclonal antibodies targeting CD19, CD20 and CD22) - high-dose systemic corticosteroids - alkylating agents - antimetabolites - tumor necrosis factor (TNF) inhibitors - other biologic agents that are significantly immunosuppressive. - Consult zone MOH/MOH designate as required - Solid Organ Transplant (SOT) recipients - Refer to SOT Transplant Guidelines for Exceptions: Immunization for Children Expecting SOT Before 18 Months of Age Immunization for Children Expecting SOT After 18 Months of Age - Immune globulins and blood products within the previous 3 to 11 months - See Section 7: Guidelines for Interval Between Immune Globulin and other Blood Products and Live Vaccines in the Standard for Recommended Immunization Schedules. - Delay varicella immunization for susceptible post-partum individuals for 3 months after receipt of Rh immune globulin (RhIG). Precautions: - Avoid use of salicylates for 6 weeks after immunization if possible due to association of varicella and Reye syndrome. However, children and adolescents on long-term salicylate therapy should be considered for immunization with close subsequent monitoring. - Medical consultation is recommended before proceeding with immunization in children on salicylate therapy. - Children with ALL in remission should have maintenance chemotherapy withheld 1 week before and 1 week following immunization. - Medical consultation is recommended before proceeding with immunization. - Individuals taking long-term antiviral therapy should discontinue these drugs (for example acyclovir, valacyclovir or famciclovir), at least 24 hours before administration of varicella vaccine and up to 14 days after immunization. - Medical consultation is recommended before proceeding with immunization. - If the vaccine recipient develops a varicella-like rash, the rash should be covered when possible; when not possible, direct contact with susceptible high-risk individuals should be avoided for the duration of the rash.	
Possible Reactions	Common: - Pain, redness, swelling, pruritus, hematoma, induration, stiffness, and numbness at injection site - Fever, chills - Rash, hives/urticaria, varicella-like rash usually 5 to 26 days following immunization - Cough, rhinitis, and pharyngitis - Irritability, fatigue, headache, malaise, somnolence - Diarrhea, nausea, vomiting - Arthralgia, myalgia, abdominal pain - Lymphadenopathy. Rare: - Anaphylaxis - Conjunctivitis	

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	• Febrile seizures • Pneumonitis. Unexpected or unusual side effects can occur. Refer to the product monograph for more detailed information. Post-immunization varicella-like rash: • Transmission from a post-immunization rash to susceptible individuals is rare • Individually evaluate health care workers who develop a post-immunization rash ○ If the post-immunization rash is confined to the injection site and can be covered, generally the individual can continue to work ○ If the post-immunization rash is not confined to the injection site, exclude the individual from work in high-risk patient care areas until the lesions are crusted. For example, areas where there are premature infants and patients who are immunocompromised.	
Pregnancy	Do not use during pregnancy. • Live vaccines are contraindicated in persons who are pregnant. • Avoid pregnancy for at least 1 month following immunization.	
Lactation	May use for people who are breast/chest feeding. • Can be administered to eligible individuals who are breast/chest feeding. It is not known whether varicella vaccine virus is secreted in human milk. • Breast/chest feeding should not be discontinued if post-immunization rash develops. • Cover rash if possible.	
Composition	Each dose of 0.5 mL reconstituted vaccine contains: • Not less than 10^{3.3} PFU (plaque-forming units) of Oka-strain varicella-zoster virus • Amino acids • Lactose • Mannitol • Sorbitol • Sterile water for injection (diluent) • Residues of neomycin sulphate.	Each 0.5 mL dose of reconstituted vaccine contains: • A minimum of 1,350 PFU (plaque forming units) of Oka/Merck varicella virus • hydrolyzed gelatin • monosodium L-glutamate • potassium chloride • potassium phosphate monobasic • sodium chloride • sodium phosphate dibasic • sucrose • urea • water for injection (diluent).
Blood/Blood Products	Does not contain blood/blood products.	Does not contain blood/blood products however the varicella virus is grown in MRC-5 human diploid cell culture.
Bovine/Porcine Products	Bovine Products: • Animal materials from bovine (fetal bovine serum, galactose) origin are not used in the formulation of VARILRIX. They are used as raw materials during the routine manufacturing process. Porcine Products: • Animal materials from porcine (trypsin) origin is not used in the formulation of VARILRIX. They are used as raw materials during the routine manufacturing process.	Bovine Products: • Contains trace quantities of fetal bovine serum from MRC-5 culture media. Porcine Products: • Contains porcine products.
Latex	Does not contain latex.	

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Interchangeability	Vaccines may be used interchangeably. Use the manufacturer recommended dose and schedule.	
Administration with Other Products	- May be given at the same time as other live vaccines. - If the live vaccines are not given at the same time, space the vaccines by at least 4 weeks. - See Schedule Section for recommended intervals between all measles, mumps, rubella and varicella vaccines. - Use a separate needle and syringe for each vaccine. - May be given at the same time as other inactivated vaccines. - Use a separate needle and syringe for each vaccine. - The same limb may be used, if necessary, but different sites on the limb. - SHINGRIX can be given a minimum of 8 weeks after live varicella vaccine. - Do not give immune globulins (IG) and antibody-containing blood products at the same time as live vaccines. Separate from live vaccines by the specified time frames. This depends on the dosage and the biological. - Give varicella vaccine at least 14 days prior to administration of an IG preparation, or blood product, or delay until the antibodies in the IG preparation or blood product have degraded. See Section 7: Guidelines for Intervals Between Immune Globulin and other Blood Products and Live Vaccines in the Standard for Recommended Immunization Schedule. - Repeat the vaccine dose after the recommended interval if the interval between administration of vaccine and subsequent administration of an IG preparation or blood product is less than 14 days. See Section 7: Guidelines for Intervals Between Immune Globulin and other Blood Products and Live Vaccines in the Standard for Recommended Immunization Schedules. - Give tuberculin skin tests either before or at the same time as varicella vaccine. If not, delay the tuberculin skin test for 4 weeks following varicella vaccine.	
Additional Preparation Instructions	None. Follow the Standard for the Administration of Immunizations .	
Appearance	- Slightly cream to yellowish or pinkish coloured powder. - Once reconstituted, the liquid may vary from clear peach to pink coloured solution.	Reconstituted vaccine is clear, colourless to pale yellow liquid.
Storage	- Store at +2°C to +8°C - Protect from light - Do not freeze - Do not use beyond the labeled expiry date - Store diluent at room temperature - Use reconstituted vaccine as soon as possible as vaccine is unstable and begins to deteriorate as soon as reconstituted.	
Vaccine Code	VZ	
Antigen Code	VZ	
Licensed for	All individuals 12 months of age and older as per the indications section.	All individuals 12 months of age and older as per the indications section.
Off-License Use	- Children starting at 6 months of age to less than 12 months of age expecting solid organ transplant. - Third dose for solid organ transplant candidates if VZ IgG is negative after the	- Children starting at 6 months of age to less than 12 months of age expecting solid organ transplant. - Susceptible adults with HIV meeting clinical criteria.

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	second dose (only at the request of the transplant physician).	• Children with acute lymphocytic leukemia (ALL). • Individuals receiving other immunosuppressive treatment. • Third dose for solid organ transplant candidates if VZ IgG is negative after the second dose (only at the request of the transplant physician).
Notes	• 2001 March: Varicella vaccine was made available to non-immune special groups (household contacts of immunocompromised individuals, health care workers known to be susceptible, and women identified through routine pre-natal care). • 2001 April: A catch-up program was offered in the grade 5 school immunization program. • 2001 July 1: Varicella vaccine was introduced into the 12 month routine childhood immunization visit for all individuals born on or after January 1, 2000. • 2002 Spring: A catch-up program was offered during the preschool immunization visit. • 2003 April: All other susceptible individuals in Alberta became eligible to receive the varicella vaccine. • 2012 August 1: All children born on or after August 1, 2005 became eligible to receive 2 doses of varicella vaccine. With 2 doses of MMR vaccine and 2 doses of varicella vaccine recommended in the routine schedule as of August 1, 2012, MMR-Var became the vaccine of choice at the 12 month and 4 to 6 year immunization appointments. • 2018 September 1: Children born August 1, 2012 or later with a verbal history of chickenpox disease became eligible to receive varicella vaccine as they present in child health clinic. Additionally, women identified through prenatal screening and HCWs became eligible to receive varicella vaccine regardless of disease history to a maximum of 2 doses. • 2021 January 1: Varicella second dose offered at 18 months instead of 4 years of age. • 2022 April 25: Included Ukrainian evacuees 13 years of age and older under exception for serology requirement to determine susceptibility. • 2023 August 28: Removal of Varilrix as product no longer available in Alberta. Included expert advice allowing off-license use of VARIVAX III in children with acute lymphocytic leukemia (ALL) and persons receiving other immunosuppressive treatment. • 2023 October 12: Removal of Contraindications to Varilrix as product no longer available in Alberta. • 2024 January 29: Third dose provincially funded for SOT candidates if VZ IgG negative at request of transplant physician. • 2024 April 8: Varilrix product available in Alberta. • 2024 September 6: Updated to clarify the 2-dose eligibility across the different age groups. • 2025 August 1: Updated to combine age cohorts as policies dependent on date of birth only apply to those who are 13 years of age and older.	
Related Resources	• Varicella Vaccine Information Sheet	
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