

Immunization Coverage in Grade 6 Students

2016-2025



Provincial Health
Services Authority



BC Centre for Disease Control
Provincial Health Services Authority

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Contact Information

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Report is available [here](#).

Acknowledgements

We gratefully acknowledge the residents of BC whose data were integrated in the information presented here and all BC health authorities for the contribution of information for this report.

We acknowledge the Title and Rights of BC First Nations who have cared for and nurtured the lands, air and waters for all time, including the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh Úxwumixw (Squamish Nation), and səliłwətaʔ (Tsleil-Waututh Nation) on whose unceded, occupied, and ancestral territory BCCDC is located. As a provincial organization, we also recognize and acknowledge the inherent Title and Rights of BC First Nations whose territories stretch to every inch of the lands colonially known as “British Columbia”.

BC is also home to many First Nations, Métis, and Inuit people from homelands elsewhere in Canada. We recognize the distinct rights of First Nations, Inuit, and Métis people and BCCDC is beginning its work to uphold a [distinctions-based approach](#) to Indigenous data sovereignty and self-determination. All Indigenous Peoples who live in BC have rights to self-determination, health and wellness, and respectful use of their data in alignment with Indigenous data governance principles, including but not limited to [OCAP®](#).

BCCDC is working to address the consequences of settler-colonial policies, which continue to have effects on all Indigenous Peoples living in the province. Consistent with the [Coast Salish teaching of Thee eat \(truth\)](#) gifted to PHSA by Coast Salish Knowledge Keeper Siem Te Ta-in, we recognize that ongoing settler colonial harms and ideology in BC undermine the inherent rights of Indigenous Peoples who live in BC and significantly contributes to health inequities and data gaps. For further information, please see “[In Plain Sight: Addressing Indigenous-specific Racism and Discrimination in B.C. Health Care](#)”. We also recognize the direct impact of colonial policies, which led to violations of patient autonomy and consent, resulting in vaccine hesitancy and mistrust among Indigenous Peoples in Canada:

- [TB vaccine experimentation in Saskatchewan in the 1930s and 1940s](#)
- [Medical experimentation and the roots of COVID-19 vaccine hesitancy among Indigenous Peoples in Canada](#)
- [Vaccine mistrust: A legacy of colonialism](#)

While the data shown in this report represent BC residents, there is no stratification by Indigeneity and as such, the results are not reflective of the situation for First Nations, Métis and Inuit Peoples and communities. First Nations children may also be disproportionately under-represented in the immunization registry data. Please see the [Limitations](#) section of the Data Notes for further information.

Abbreviations

Health Authorities

IH	Interior Health	ISLH	Island Health
FH	Fraser Health	NH	Northern Health
VCH	Vancouver Coastal Health		

Additional abbreviations

BC	British Columbia	PIR	Provincial Immunization Registry
MoE	Ministry of Education	PARIS	Primary Access Regional Information System
HA	Health Authority	HPV	Human papillomavirus
HSDA	Health Service Delivery Area		
MyEdBC	MyEducation BC		

For an explanation of BC Health Authorities, please visit this [website](#).

Executive Summary

This report outlines immunization coverage among grade 6 students from 2016 to 2025 for six antigens: hepatitis B, varicella, measles, mumps, rubella, and human papillomavirus (HPV). In 2025, data reflects coverage for the 2024/2025 school year. The hepatitis B, measles, mumps, rubella, and varicella vaccine series are based on completion of a primary series in early childhood, and any missing doses may be re-offered in grade 6. The [HPV series](#) is routinely initiated and completed in grade 6.

Provincial immunization coverage in 2025 (2024/2025 school year) was highest for rubella (93.7%), followed by hepatitis B (89.5%), measles (89.2%), mumps (89.1%), varicella (87.5%), and HPV (series completion with at least two doses: 61.7% in females; 59.0% in males). Overall, coverage for all antigens has increased from lows in 2021, when prioritization of the COVID-19 pandemic response affected public health resources available for school-based immunization clinics. As of the 2025 report, international students have been excluded from the main grade 6 immunization coverage analysis as there is a larger proportion of missing immunization records among these students. This change to the analysis may impact the comparability of estimates in 2025 to prior years. Keeping this in mind, compared to 2024 (2023/2024 school year), coverage estimates for 2025 increased for hepatitis B, varicella, measles, mumps, and rubella (1.2-1.8% increase) but decreased for HPV (2.9% decrease in females; 3.5% decrease in males). A similar trend was seen across most health authorities, with coverage increasing from 2024 to 2025 for hepatitis B, varicella, measles, mumps, and rubella by 0.1-2.8%, except in Northern Health (NH), where hepatitis B coverage decreased 0.2%.

On July 31, 2025, the HPV immunization program transitioned from a two-dose program to a one-dose program. While most students in BC during the 2024/2025 school year were immunized under the two-dose program in place during the school year, some regions of Interior Health (IH) implemented the one-dose program early due to competing priorities and resource constraints. Compared to 2024 (2023/2024 school year) coverage estimates for two-doses of HPV (series completion) decreased for females and males across most health authorities by 0.5-17.3%, with the largest decrease in IH, mostly accounted for by the adoption of the one-dose program. Exceptions include NH, where HPV coverage increased 3.2% in females and 6.1% in males, Island Health (ISLH), where HPV coverage increased 1.3% in females, and Vancouver Coastal Health (VCH), where HPV coverage increased 1.1% in males. In comparison, one dose coverage of HPV (HPV series initiation or completion) in the 2024/2025 school year decreased from the prior year by only 0.7-1.3% in ISLH and IH males, and Fraser Health (FH) males and females, and increased by 0.3-5.5% across the remaining regions.

Reasons for non-immunization (i.e., documented refusals, exemptions, or contraindications) were assessed for each antigen. Across all agents/antigens, children who were not up-to-date for their immunizations often did not have a documented refusal, exemption, or contraindication for the agent/antigen of interest in the Provincial Immunization Registry (PIR) – i.e., were partially immunized for unknown reason or unimmunized for unknown reason. Grade 6 students who are unimmunized or partially immunized for unknown reasons can include children who have missed immunization clinics, those who deferred, or those who have not had their refusal, contraindication, or immunization doses recorded. Provincially, most Grade 6 students in the 2024/2025 school year who were not considered fully immunized for hepatitis B, measles, mumps, rubella, and varicella were unimmunized for unknown reasons (3.4-3.7%), while those who were not considered fully immunized for HPV were most commonly either partially immunized for unknown reasons (13.9% females, 14.1% males) or unimmunized for unknown reasons (12.7% females, 15.3% males).

In the 2024/2025 school year, 2.4% of grade 6 students in BC had no records in the PIR for the assessed antigens (category: Unimmunized - Unknown: No Immunization Record) (refer to reasons for non-immunization [definitions](#) for further information on inclusion criteria for this measure). Across health authorities, the proportion of grade 6 students with no records in the PIR for the included antigens ranged from 1.8% in VCH to 4.1% in NH.

Coverage rates for international students in 2025 are reported in the [appendix](#). Coverage rates were lower among international students compared to non-international students for all antigens except HPV in females, with coverage of 77.7% for rubella, 72.8% for hepatitis B, 71.3% for measles, 70.3% for mumps, and 63.9% for varicella. HPV coverage among international students in grade 6 was 61.9% in females and 56.5% in

males.

Please refer to the [data notes](#) for additional information and data limitations. Data tables used to create the figures in this report can be downloaded [here](#).

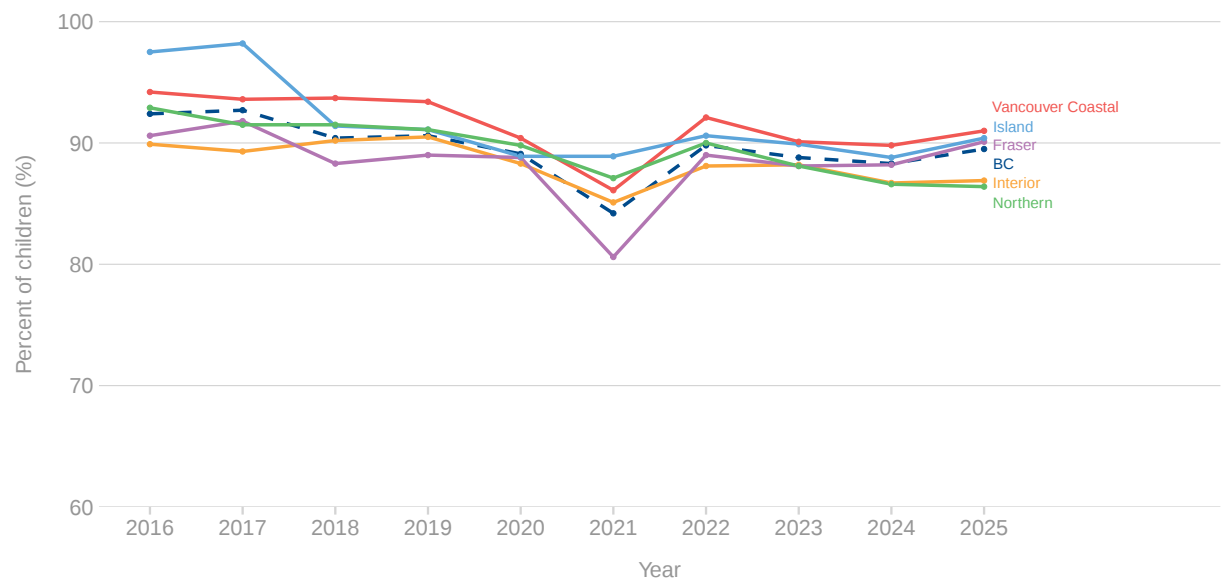
Immunization Coverage by Antigen

In the following coverage by antigen sections, the 'Unknown' subcategories of partially immunized and unimmunized includes all children who do not have a documented refusal, contraindication, or exemption for the antigen of interest and were therefore partially immunized or unimmunized for a reason not recorded.

The 'Unimmunized - Unknown' subcategory is further divided into two categories based on whether any immunization record exists. 'Immunization Record' includes children who have any record(s) (documented immunization, refusal, contraindication, and/or exemption) for other routine childhood immunizations, or who have records for the antigen/agent of interest that were not considered in the other categories (e.g. invalid doses, inactive contraindications, and/or inactive exemptions). 'No Immunization Record' includes children with no documented records for any of the assessed routine childhood immunizations. See reasons for non-immunization [definitions](#) for further information.

Hepatitis B

Immunization coverage



Note: The y-axis for this figure starts at 60% for clearer data visualization.

Figure 1. Hepatitis B coverage by year and health authority, Grade 6 students, British Columbia

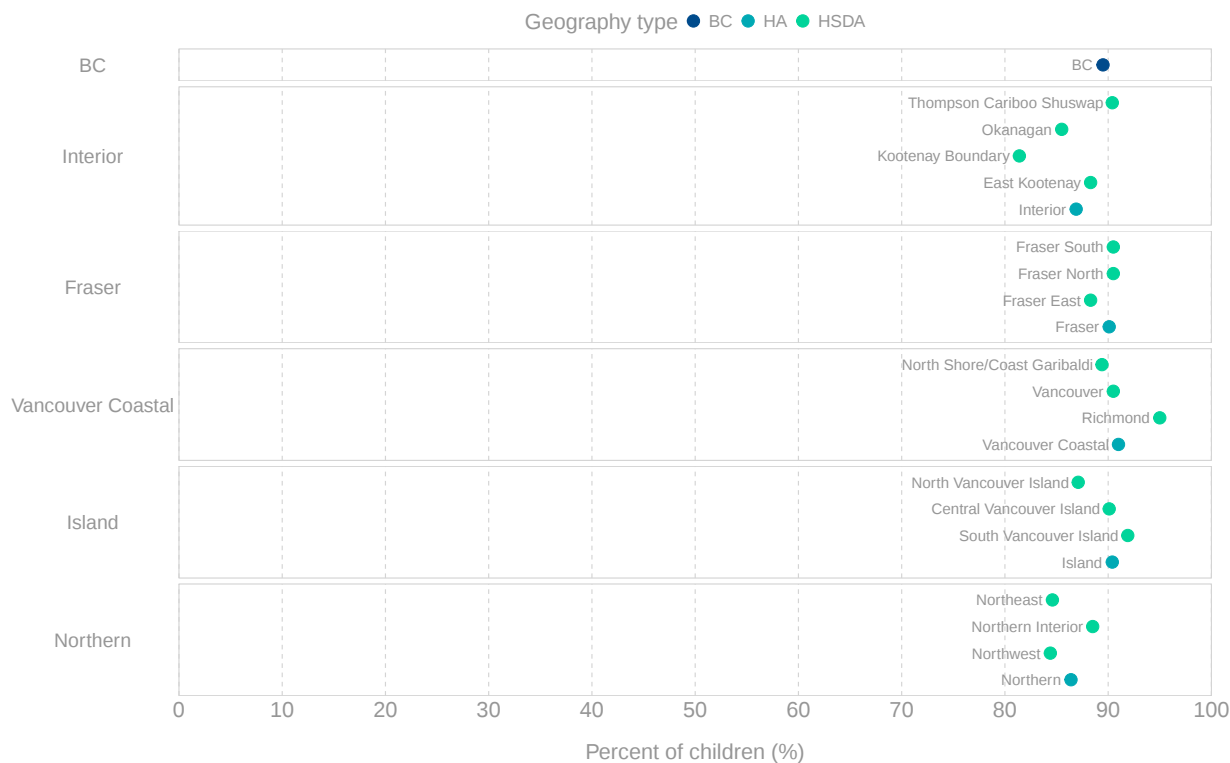
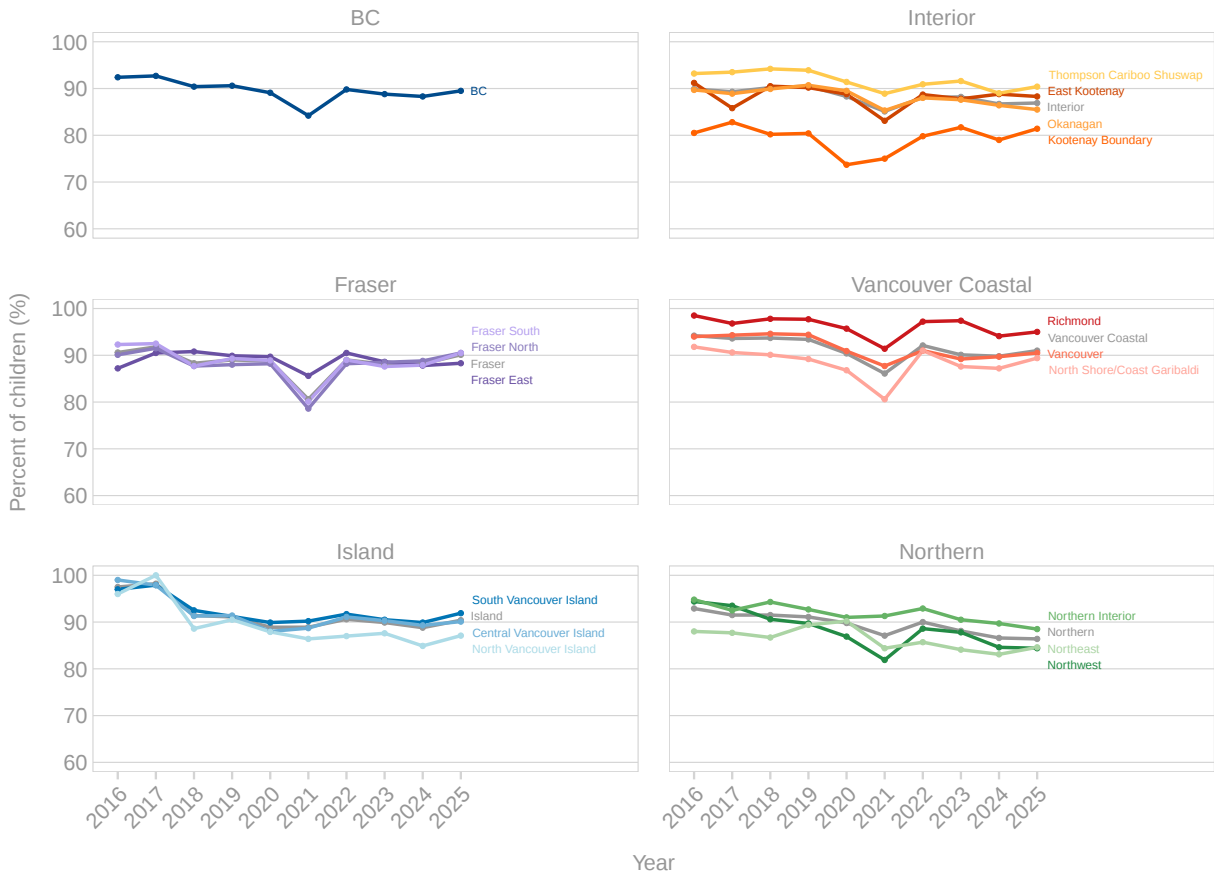


Figure 2. Hepatitis B coverage by geographic region, Grade 6 students, British Columbia, 2025



Note: The y-axis for this figure starts at 60% for clearer data visualization.

Figure 3. Hepatitis B coverage by year and geographic region, Grade 6 students, British Columbia

Reasons for non-immunization

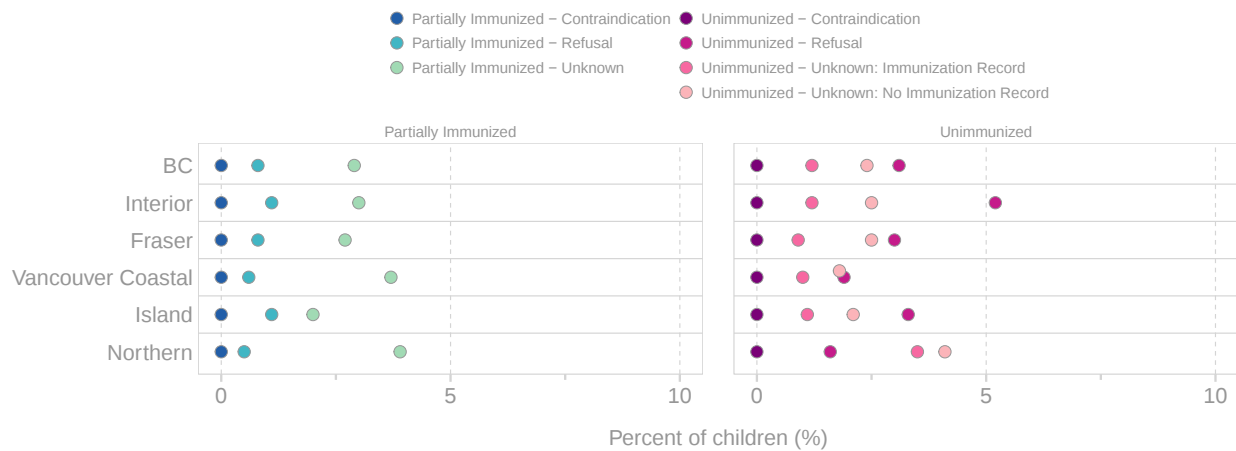


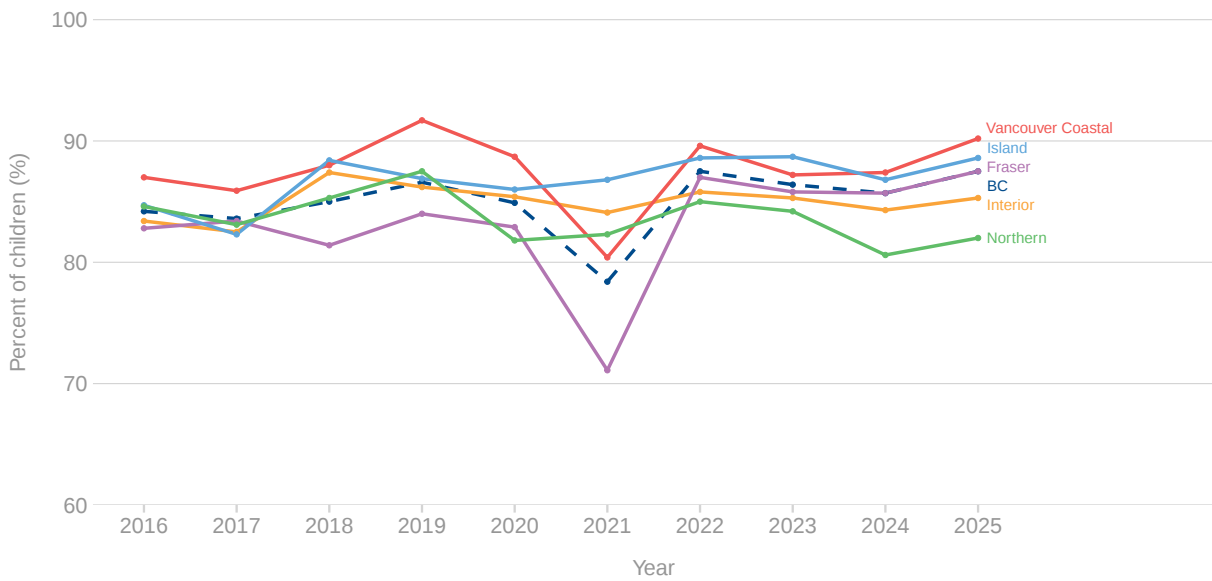
Figure 4. Reasons for non-immunization by health authority, Hepatitis B, Grade 6 students, British Columbia, 2025



Figure 5. Reasons for non-immunization by health service delivery area, Hepatitis B, Grade 6 students, British Columbia, 2025

Varicella

Immunization coverage



Note: The y-axis for this figure starts at 60% for clearer data visualization.

Figure 6. Varicella coverage by year and health authority, Grade 6 students, British Columbia

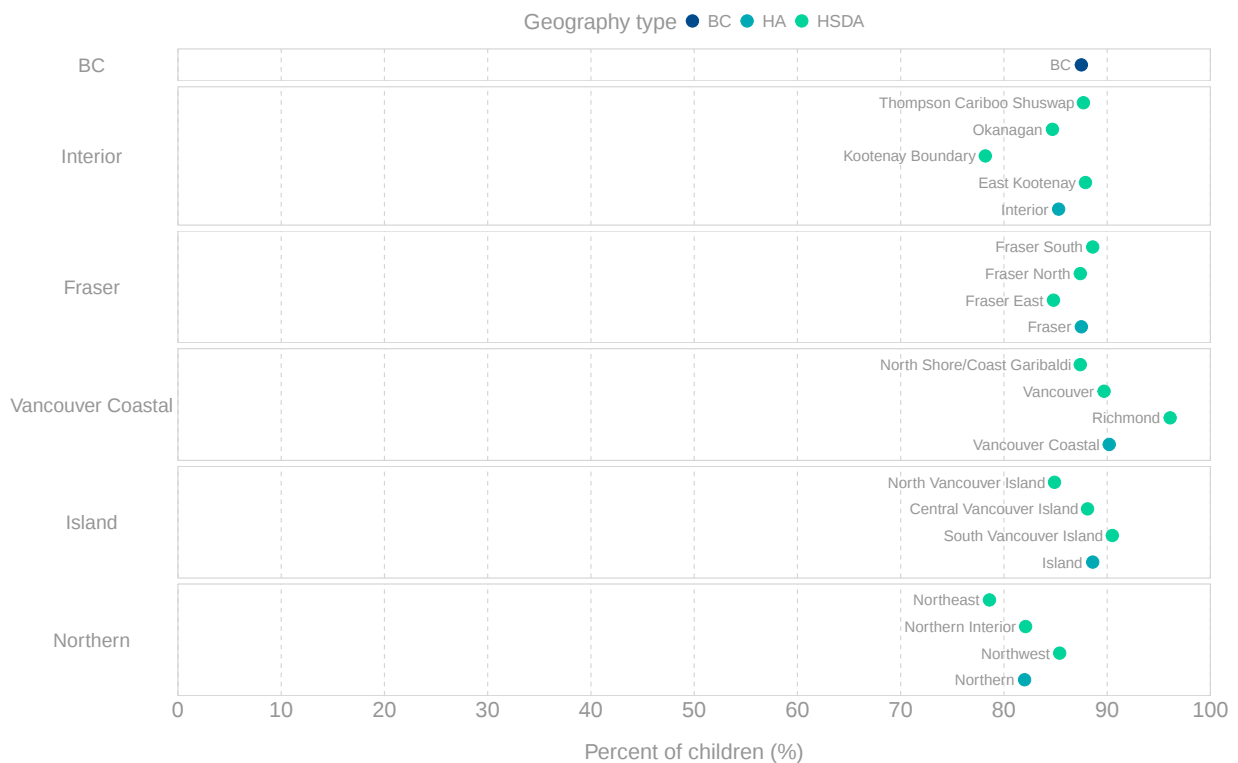
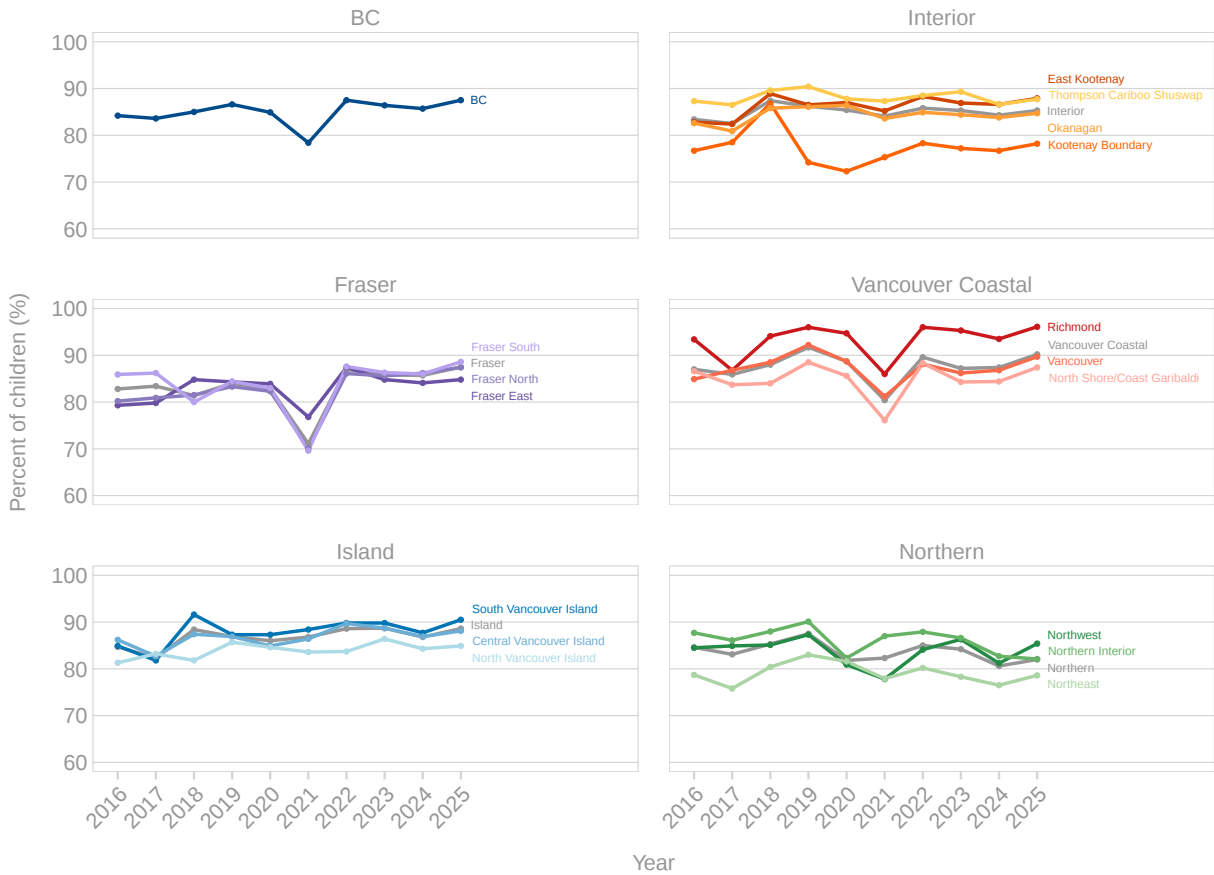


Figure 7. Varicella coverage by geographic region, Grade 6 students, British Columbia, 2025



Note: The y-axis for this figure starts at 60% for clearer data visualization.

Figure 8. Varicella coverage by year and geographic region, Grade 6 students, British Columbia

Reasons for non-immunization

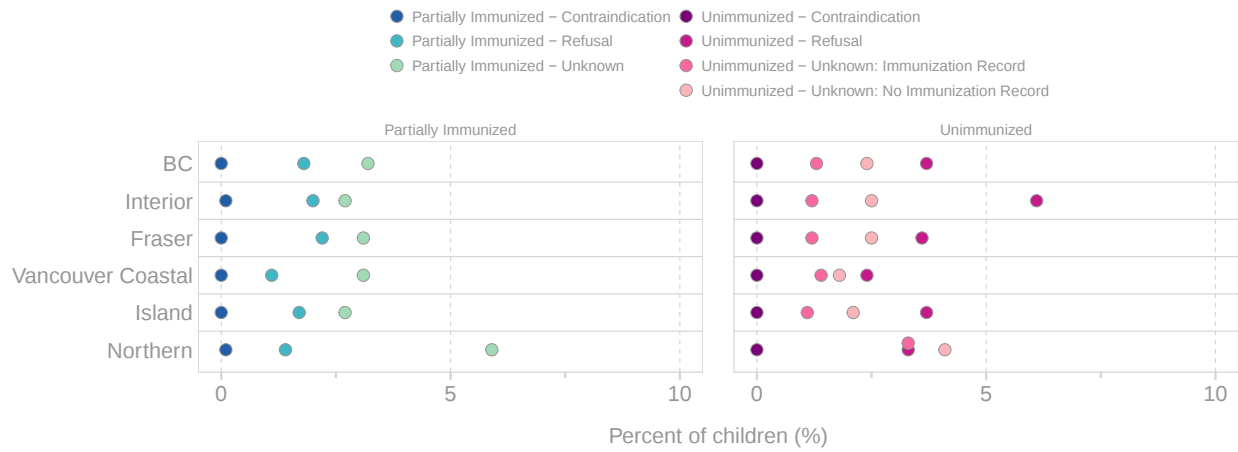


Figure 9. Reasons for non-immunization by health authority, Varicella, Grade 6 students, British Columbia, 2025

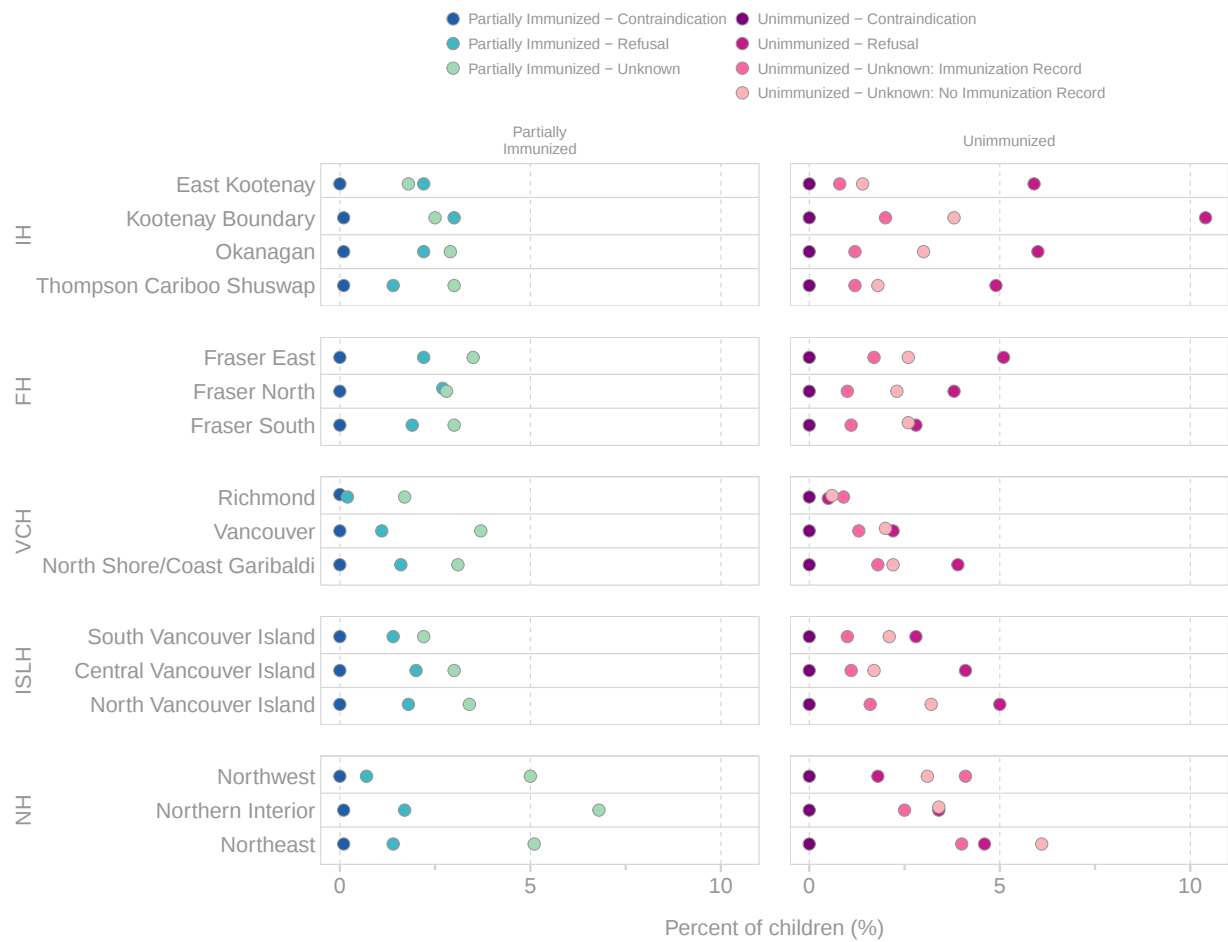
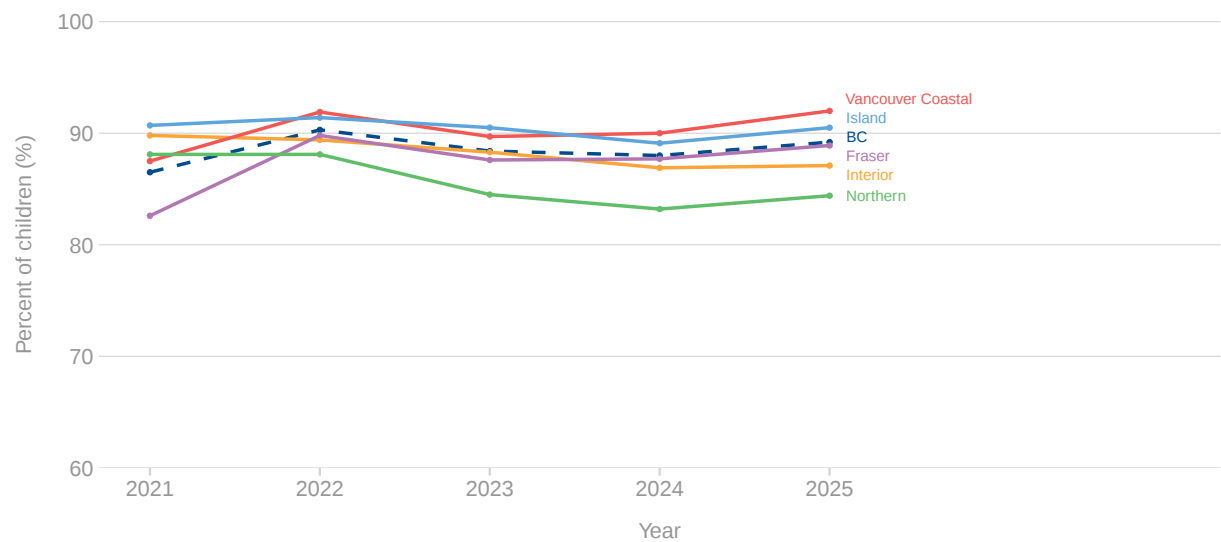


Figure 10. Reasons for non-immunization by health service delivery area, Varicella, Grade 6 students, British Columbia, 2025

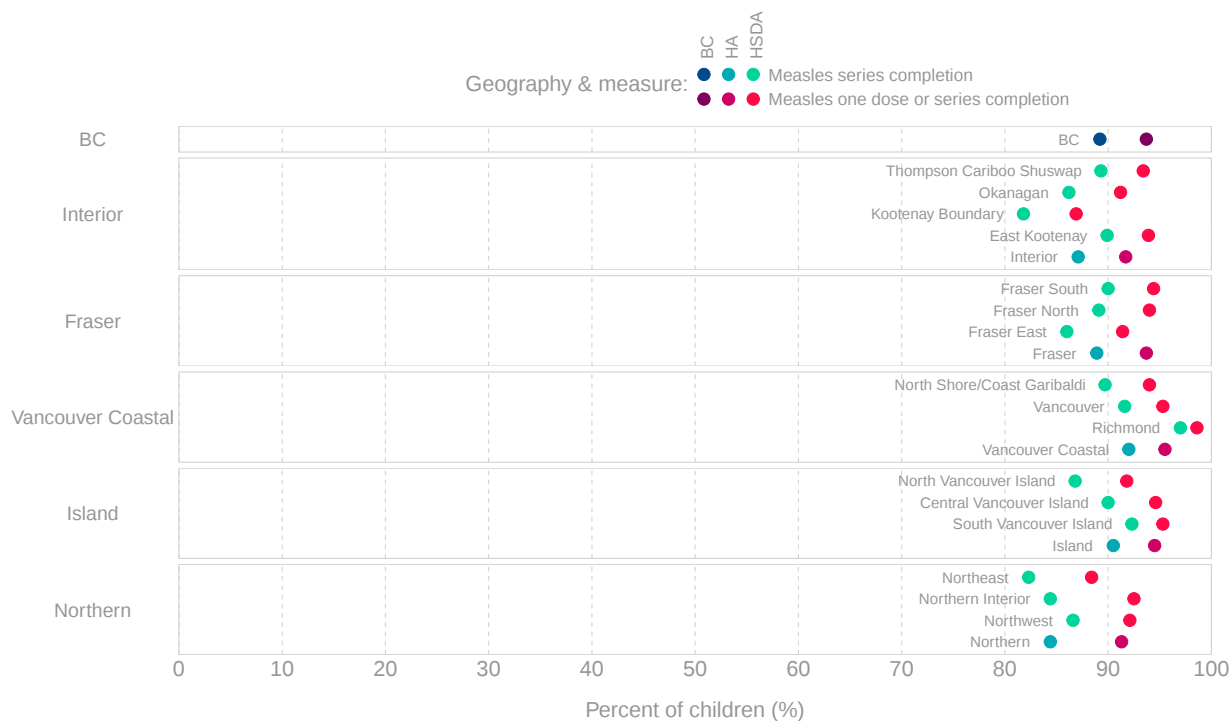
Measles

Immunization coverage



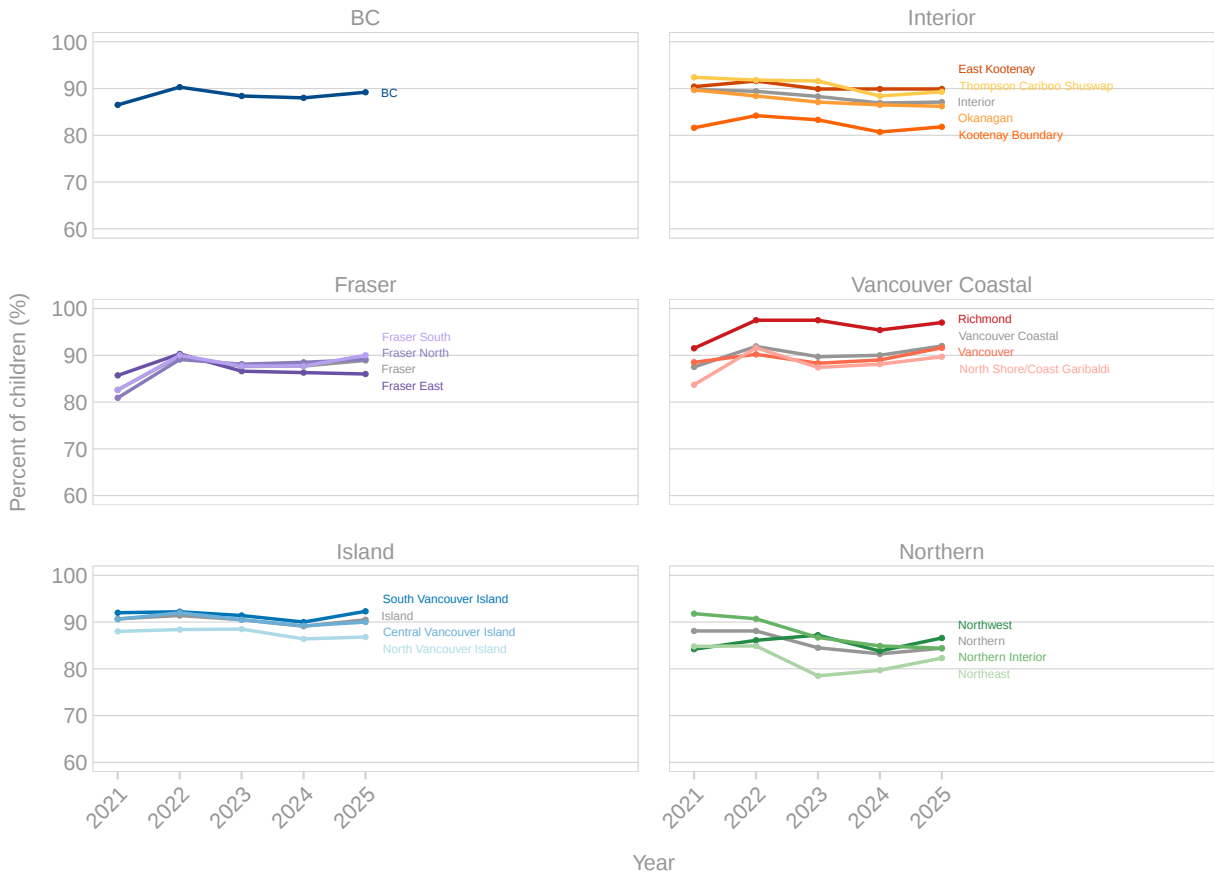
Note: The y-axis for this figure starts at 60% for clearer data visualization.

Figure 11. Measles coverage by year and health authority, Grade 6 students, British Columbia



Note: Measles series completion includes children with lab evidence of immunity/prior disease.

Figure 12. Measles one dose or series completion coverage by geographic region, Grade 6 students, British Columbia, 2025



Note: The y-axis for this figure starts at 60% for clearer data visualization.

Figure 13. Measles coverage by year and geographic region, Grade 6 students, British Columbia

Reasons for non-immunization

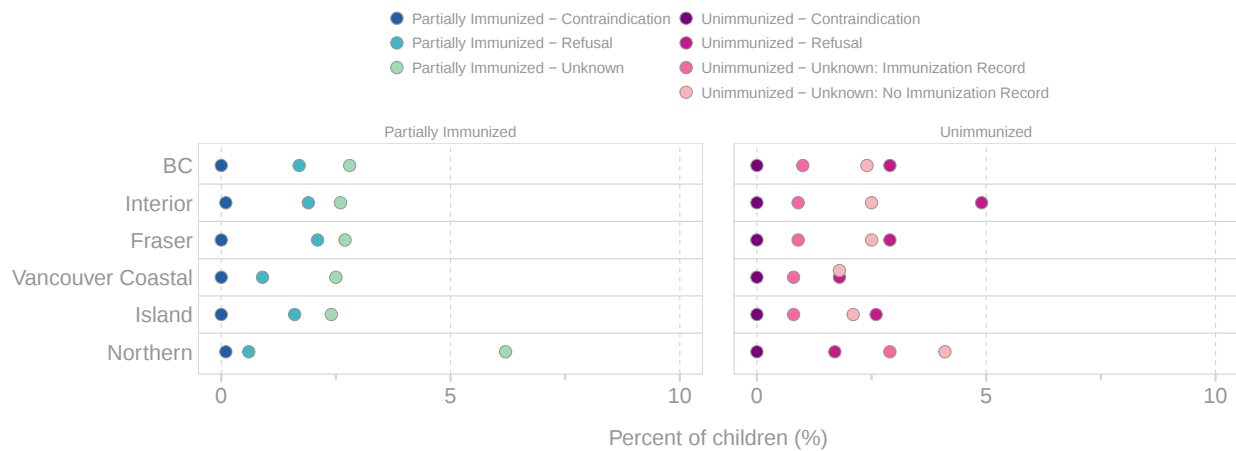


Figure 14. Reasons for non-immunization by health authority, Measles, Grade 6 students, British Columbia, 2025

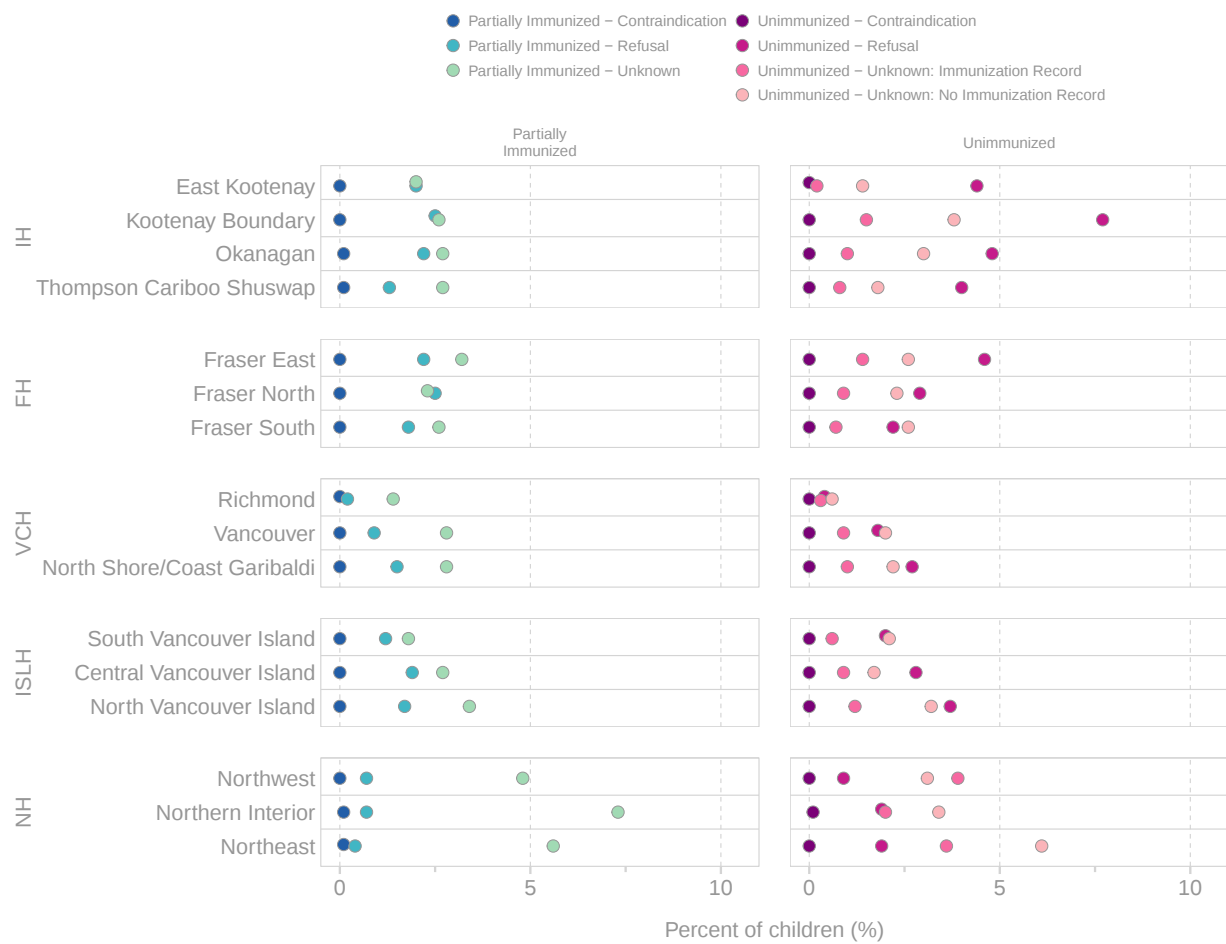
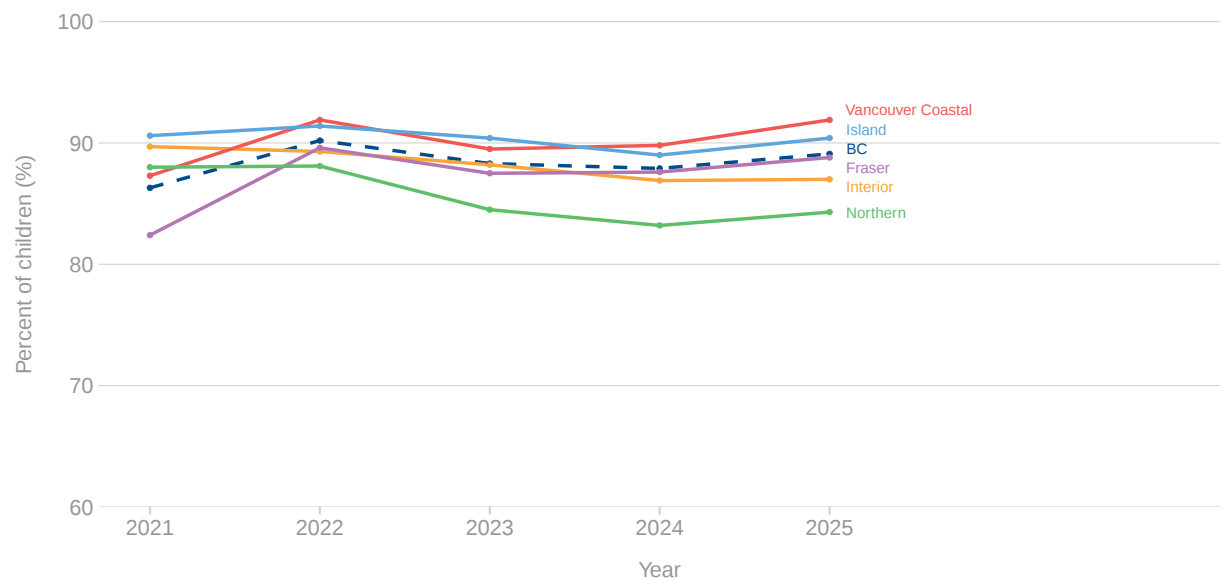


Figure 15. Reasons for non-immunization by health service delivery area, Measles, Grade 6 students, British Columbia, 2025

Mumps

Immunization coverage



Note: The y-axis for this figure starts at 60% for clearer data visualization.

Figure 16. Mumps coverage by year and health authority, Grade 6 students, British Columbia

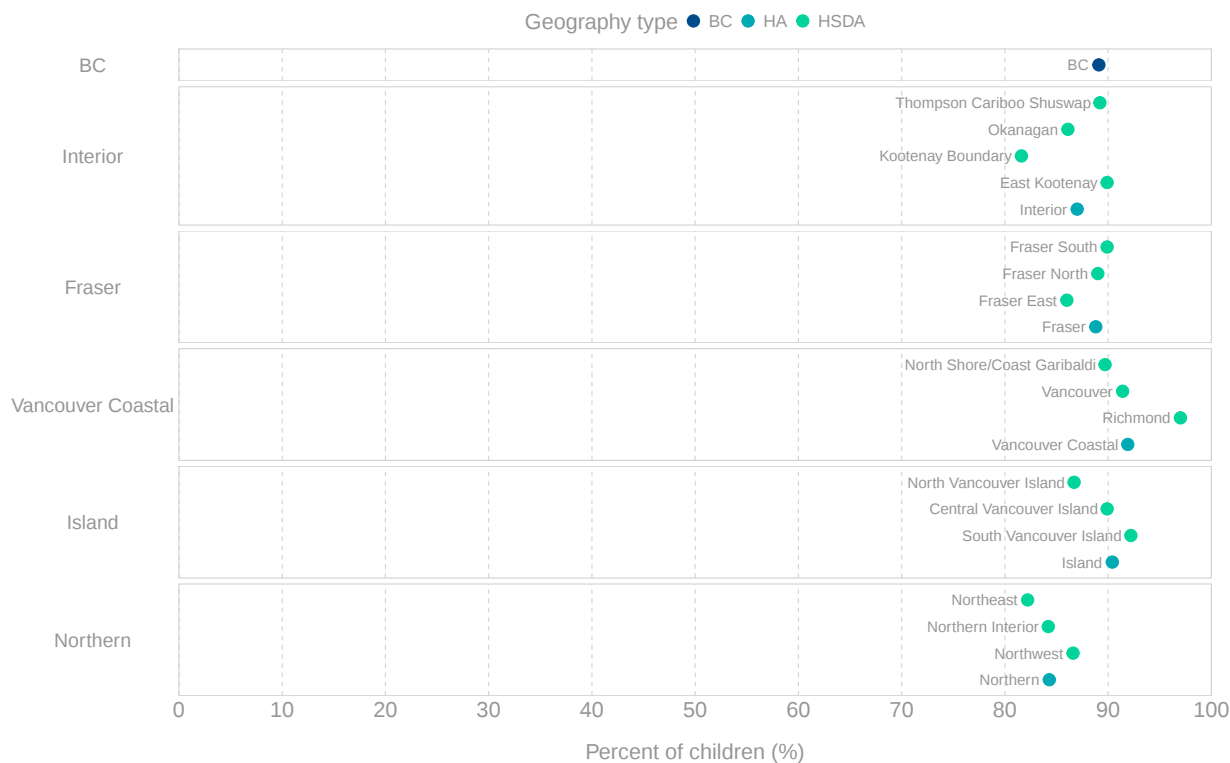
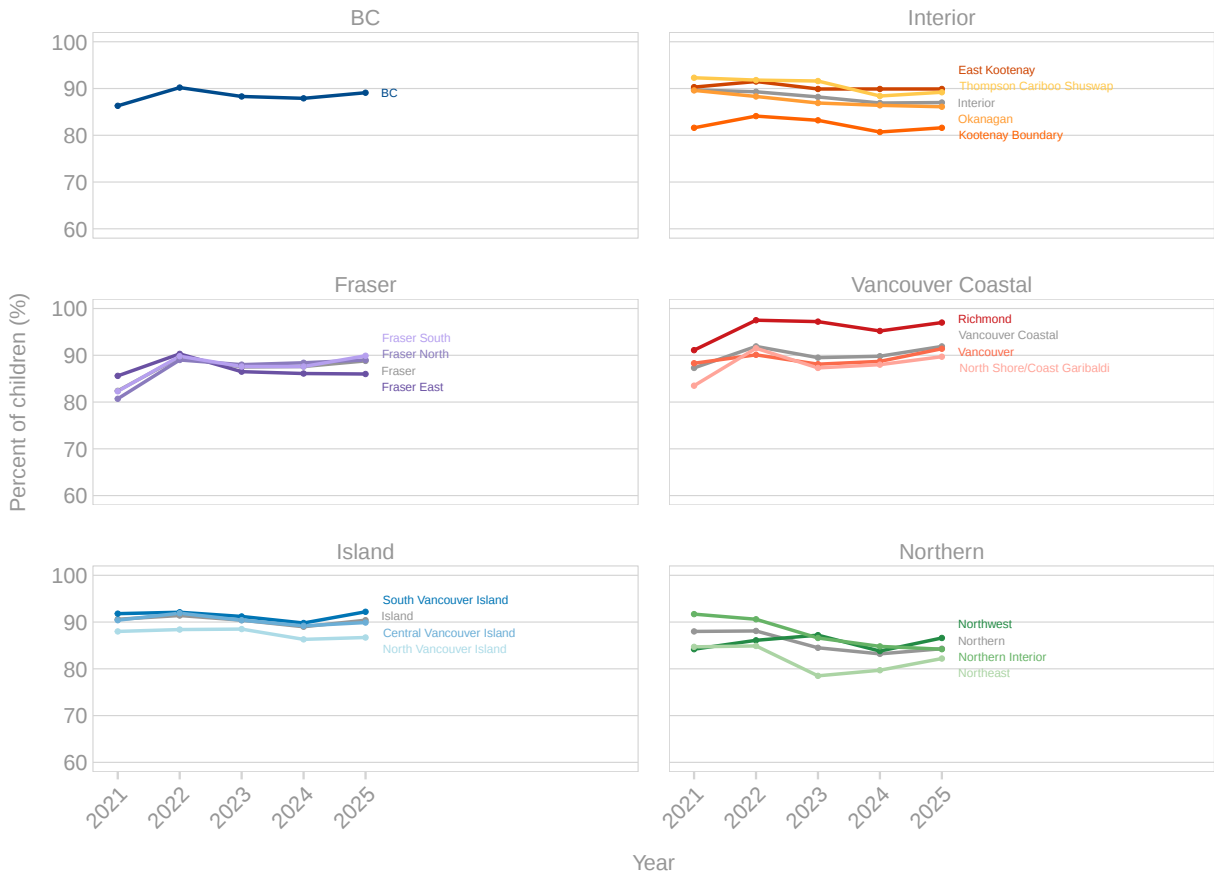


Figure 17. Mumps coverage by geographic region, Grade 6 students, British Columbia, 2025



Note: The y-axis for this figure starts at 60% for clearer data visualization.

Figure 18. Mumps coverage by year and geographic region, Grade 6 students, British Columbia

Reasons for non-immunization

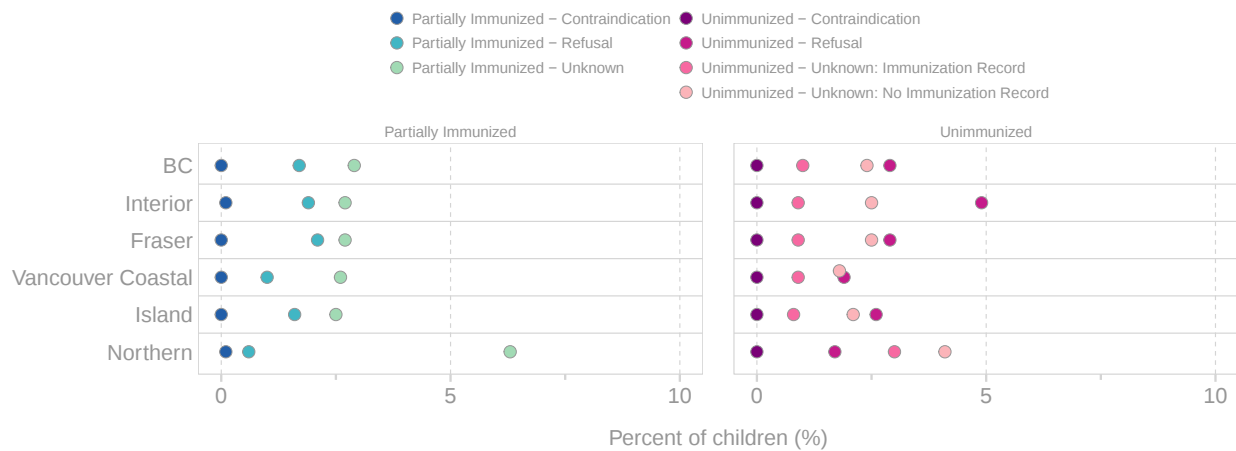


Figure 19. Reasons for non-immunization by health authority, Mumps, Grade 6 students, British Columbia, 2025

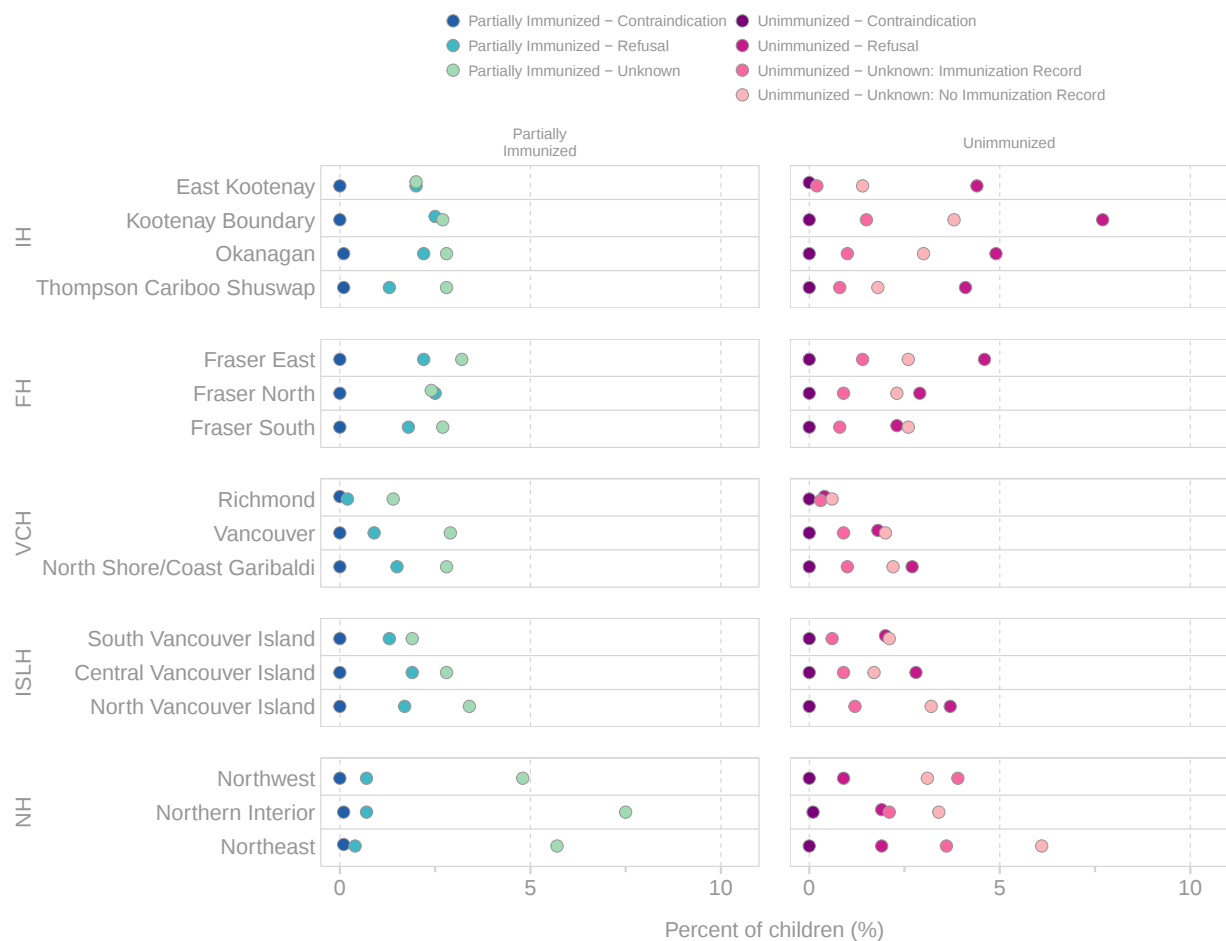
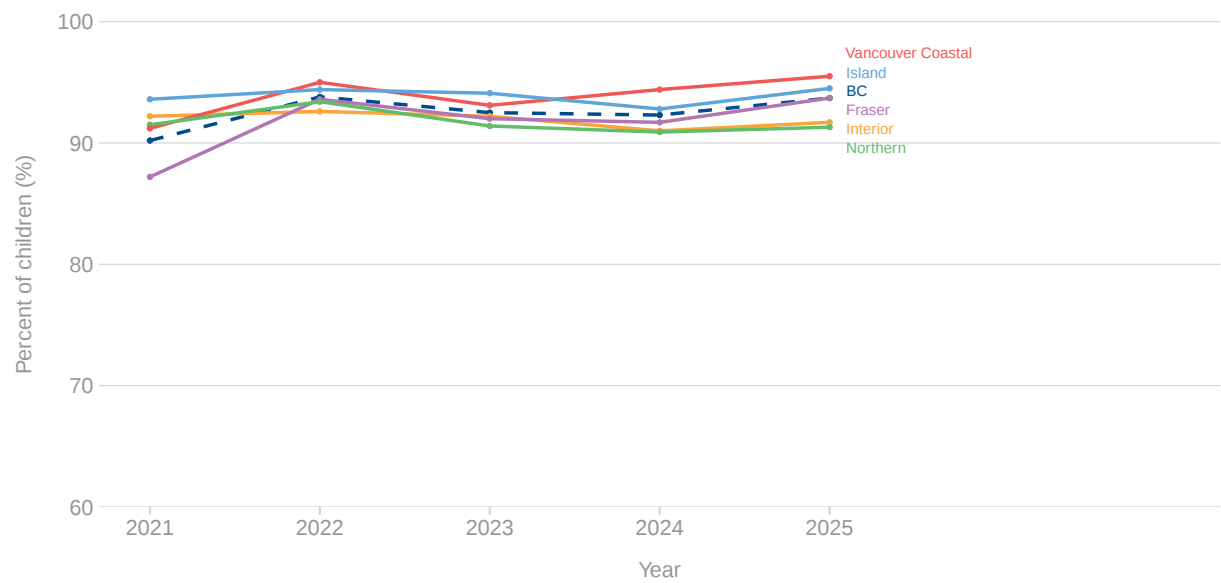


Figure 20. Reasons for non-immunization by health service delivery area, Mumps, Grade 6 students, British Columbia, 2025

Rubella

Immunization coverage



Note: The y-axis for this figure starts at 60% for clearer data visualization.

Figure 21. Rubella coverage by year and health authority, Grade 6 students, British Columbia

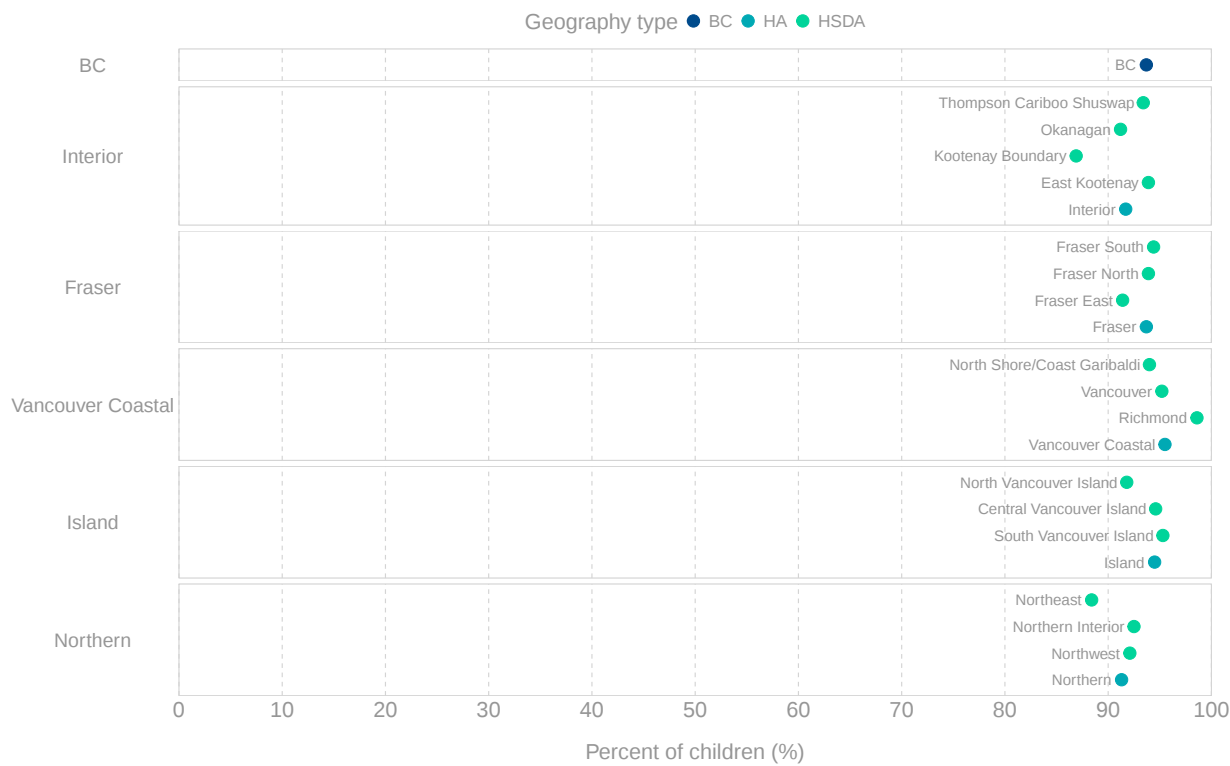
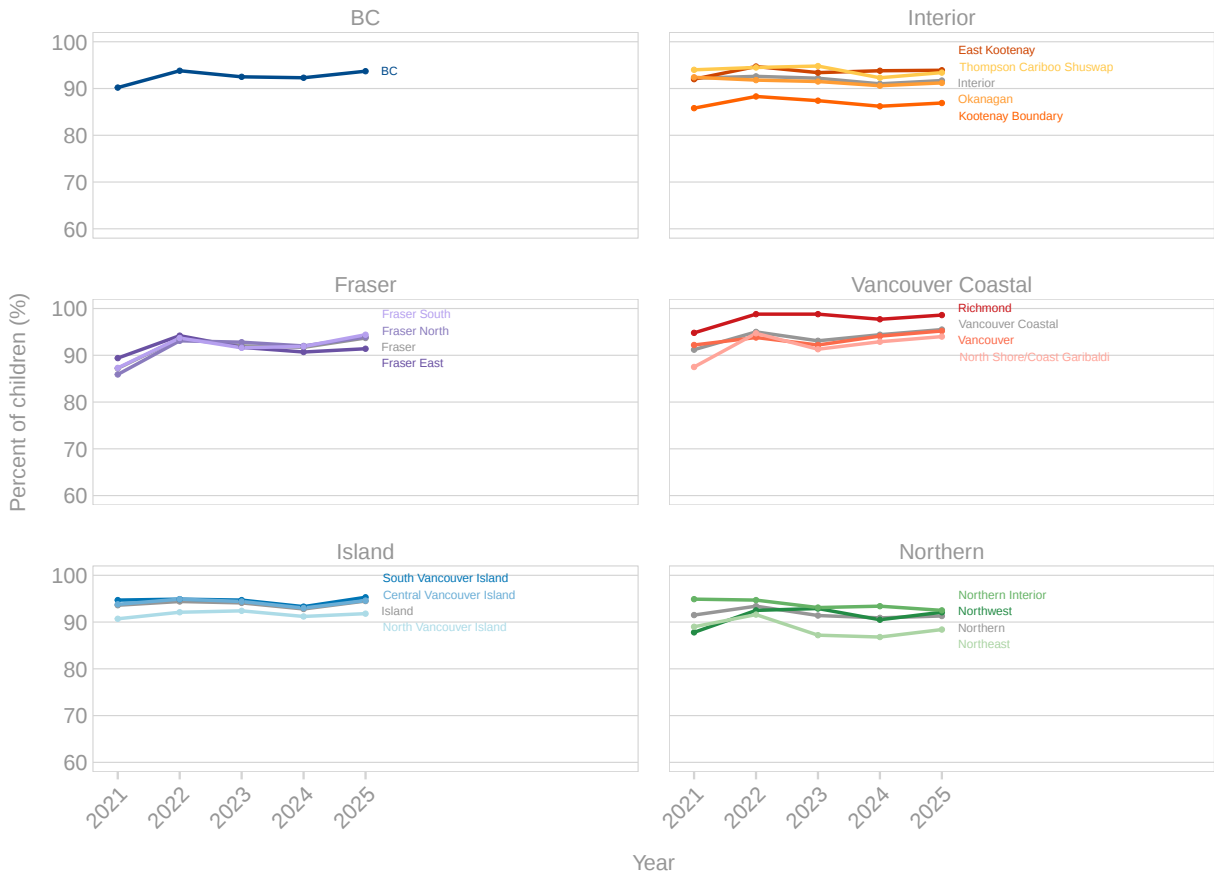


Figure 22. Rubella coverage by geographic region, Grade 6 students, British Columbia, 2025



Note: The y-axis for this figure starts at 60% for clearer data visualization.

Figure 23. Rubella coverage by year and geographic region, Grade 6 students, British Columbia

Reasons for non-immunization

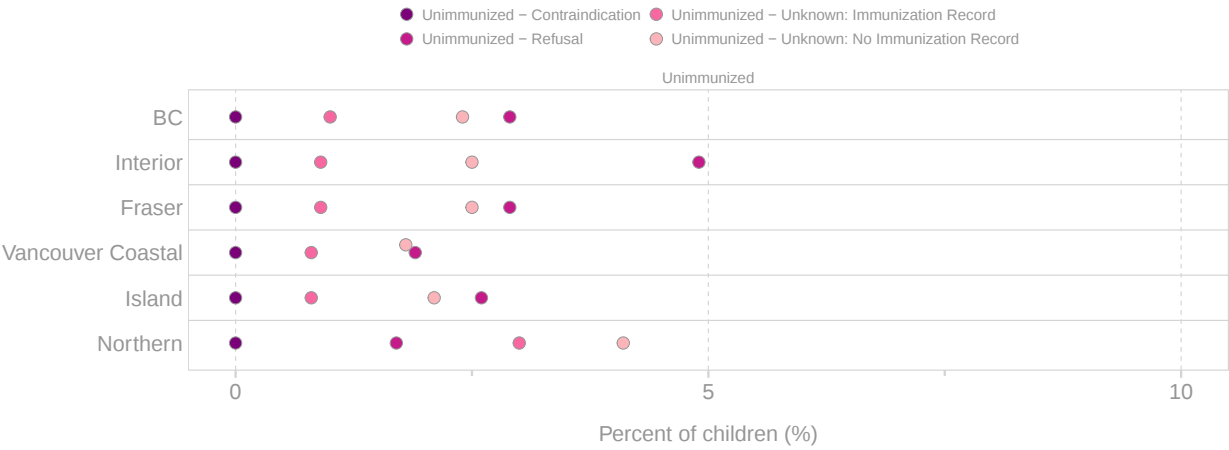


Figure 24. Reasons for non-immunization by health authority, Rubella, Grade 6 students, British Columbia, 2025

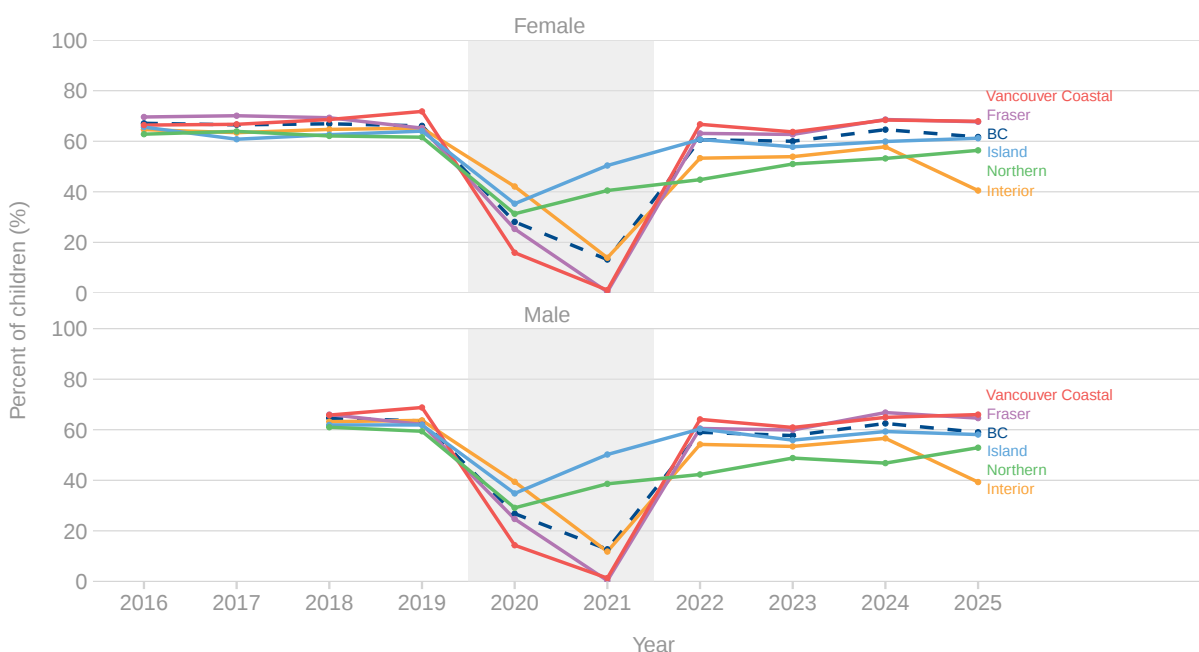


Figure 25. Reasons for non-immunization by health service delivery area, Rubella, Grade 6 students, British Columbia, 2025

Human Papillomavirus (HPV)

On July 31, 2025, the HPV immunization program transitioned from a two-dose program to a one-dose program. While most students in BC during the 2024/2025 school year were immunized under the two-dose program in place during the school year, some regions of IH implemented the one-dose program early due to competing priorities and resource constraints. This resulted in a marked decrease in IH's up-to-date HPV coverage estimate for 2025 when assessed using the two-dose coverage rule, as seen in figures 26 and 28. In figure 27, coverage estimates for both two doses (HPV series completion) and at least one dose (HPV series initiation or completion) are shown.

Immunization coverage



Note: The grey shaded area highlights the impact of the COVID-19 pandemic on school-based HPV immunization programming. In 2025, two-dose HPV coverage decreased in IH due to the early implementation of the one-dose program. Assessment of HPV coverage in grade 6 males began in 2018. The data presented in this figure do not include individuals where gender is reported as undifferentiated or unknown. See 'Other data notes', pg 34.

Figure 26. HPV coverage by year, health authority and sex, Grade 6 students, British Columbia



Note: In 2025, two-dose HPV coverage decreased in IH due to the early implementation of the one-dose program. The data presented in this figure do not include individuals where gender is reported as undifferentiated or unknown. See 'Other data notes', pg 34.

Figure 27. HPV initiation or series completion coverage by geographic region and sex, Grade 6 students, British Columbia, 2025

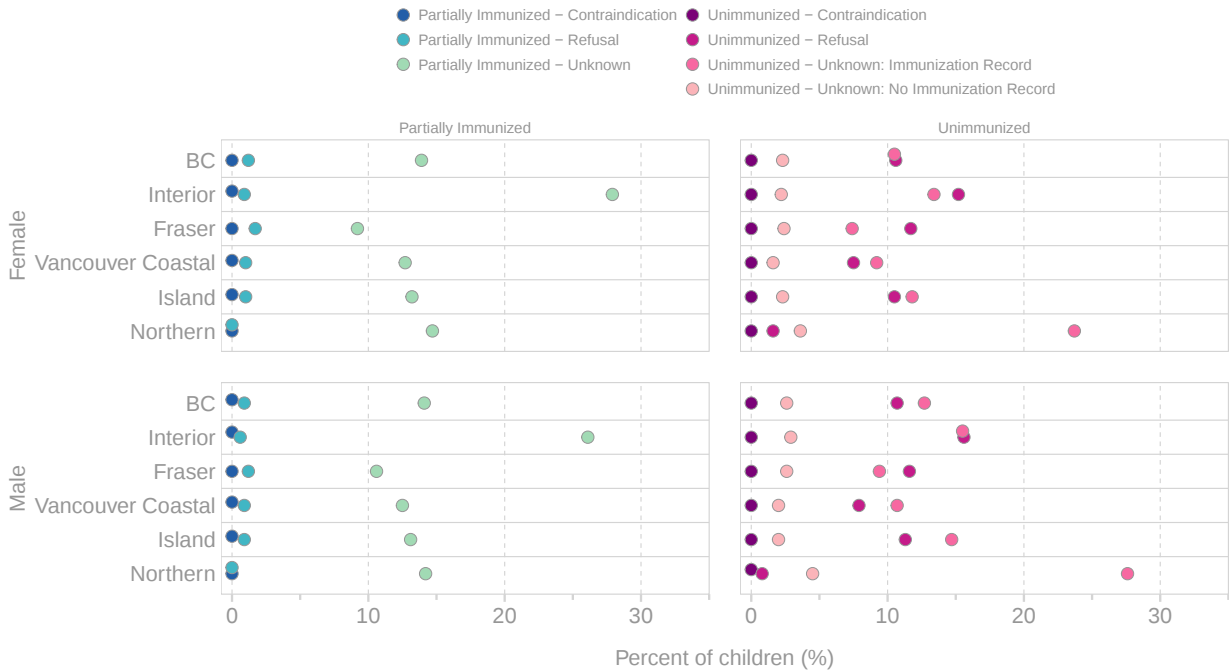


Note: The grey shaded area highlights the impact of the COVID-19 pandemic on school-based HPV immunization programming. In 2025, two-dose HPV coverage decreased in IH due to the early implementation of the one-dose program. Assessment of HPV coverage in grade 6 males began in 2018. The data presented in this figure do not include individuals where gender is reported as undifferentiated or unknown. See 'Other data notes', pg 34.

Figure 28. HPV coverage by year, geographic region and sex, Grade 6 students, British Columbia

Reasons for non-immunization

In figures 29 and 30, the high proportion of partial immunization for unknown reasons in IH is in part due to the early implementation of the one-dose HPV program.



Note: In 2025, the high proportion of partial immunization for unknown reasons in IH is in part due to early implementation of the one-dose program. The data presented in this figure do not include individuals where gender is reported as undifferentiated or unknown. See 'Other data notes', pg 34.

Figure 29. Reasons for non-immunization by health authority and sex, HPV, Grade 6 students, British Columbia, 2025



Note: In 2025, the high proportion of partial immunization for unknown reasons in IH is in part due to early implementation of the one-dose program. The data presented in this figure do not include individuals where gender is reported as undifferentiated or unknown. See 'Other data notes', pg 34.

Figure 30. Reasons for non-immunization by health service delivery area and sex, HPV, Grade 6 students, British Columbia, 2025

Data Notes

Data Sources

In 2025, coverage estimates for all health authorities are based on records extracted from the Provincial Immunization Registry (PIR) (including records transmitted from regional clinical systems) on July 31, 2025.

All immunization doses are recorded in PIR if administered by public health, reported by a parent/guardian to public health (e.g., for children arriving from outside of BC), or if reported by a primary care provider to public health. Additionally, doses administered by pharmacists and entered in PharmaNet are also recorded in PIR. Starting in 2024, coverage estimates are based on immunizations recorded as administered by July 31st of the report year; in report years prior to this, coverage reflected doses recorded as administered up to June 30th of the report year.

Data sources used for each of the health authorities have changed over time as follows:

Health Authority	Year									
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
IH	Health Authority Summary Reports *		Pan-Grade*							
FH	Health Authority Summary Reports		Pan-Grade							
VCH	Health Authority Summary Reports								Pan-Grade	
ISLH	Pan-Year/MoE		Pan-Grade							
NH	Health Authority Summary Reports				Pan-Grade					

*In 2017, the Rutland Branch in the Okanagan HSDA used Pan-Grade, while the rest of IH used Health Authority Summary Reports.

Numerators and denominators are defined as follows:

Data source	Numerator	Denominator
Pan-Grade	Number of children from the denominator who were up-to-date for age for the specified agent(s) by June 30th of the indicated year, based on PIR immunization records.	Number of students with active records in PIR that indicated they were in grade 6 as of June 30th of the school year of interest. For HPV coverage stratified by gender, only the number of female or male students enrolled in grade 6 as of June 30th was used.
Health Authority Summary Reports	Number of children from the denominator who were up-to-date for age for the specified agent(s) by June 30th of the indicated year, usually based on HA records of immunizations given.	Number of students in grade 6 during the school year of interest, usually based on class lists provided by schools. For HPV coverage stratified by gender, only the number of female or male students enrolled in grade 6 as of June 30th was used.
Pan-Year/MoE	Number of children in the birth cohort for which the majority of children attended grade 6 during the school year of interest with active records in PIR who were up-to-date for age for the specified agent(s).	Number of children in the birth cohort of interest attending grade 6 within the health authority, based on estimates derived from BC MoE enrollment statistics

School and grade information is attached to students' records in the PIR in two ways:

- For schools using either the MyEducation BC (MyEdBC) or the Comprehensive Integrated Management System (CIMS) information systems and who have signed a letter of agreement, information is uploaded from a Ministry of Education (MoE) extract into PIR using a tool called STIX (Student Information Exchange). An analysis conducted in September 2023 found that for the 2022/2023 school year, this process included 95% of students in schools registered with the BC MoE. Health authority staff reconcile the school information against the PIR record when discrepancies occur. Efforts to onboard additional schools to MyEdBC continue.
- For schools using other information systems, health authority staff may manually enter or upload school and grade information. The process of adding enrollment details may not be completed for all health authorities and grades. Most health authorities prioritize immunization coverage assessment milestone grades (kindergarten, grade 6 and grade 9) and a small number of schools may not make their class lists available.

The use of different data sources for numerators and denominators can impact coverage rates and comparability of data across years:

- ISLH (2014-2017): Due to the use of different data sources for numerator and denominator, ISLH results, and the corresponding provincial data for 2014 to 2017, are not directly comparable to previous or later years. Related to implementation of the Panorama public health information system in July 2013, ISLH was unable to reconcile all records of students enrolled in schools. Therefore, coverage was calculated using numerator data from Panorama on active records for those born in 2002 (for 2014), 2003 (for 2015), 2004 (for 2016) and 2005 (for 2017) without the ability to confirm school/grade 6 enrolment; denominators were aggregate data from the BC MoE's data on enrolment in grade 6 to attempt to account for those who have moved out of ISLH. As different data sources were used for the numerators and denominators, immunization coverage rates approaching 100% in ISLH from 2014-2017 are likely over-estimates. This artifact was rectified when the same data source was used for numerators and denominators.
- IH (2017): Due to the difference in methods used to calculate coverage in the Rutland branch in the Okanagan HSDA in 2017, the Okanagan and IH results and corresponding provincial data for 2017 are not directly comparable to previous years.
- All health authorities: Due to changes in data sources used to calculate coverage in IH, ISLH, and FH from 2018, NH from 2020, and VCH from 2024, the corresponding provincial data are not directly comparable to previous years.

Cohort

The grade 6 cohort is defined as students whose records indicated they attended school within the region's service area based on MoE enrolment data as recorded in the online MyEdBC system and on student records obtained from schools not participating in MyEdBC. When using PIR data, students were included in the numerator and denominator if they had a value of 'Grade 6', 'Home Schooled', or 'Elementary ungraded' in the Grade variable, and met the required birth date range. For the 2025 report year, students in 'Grade 6' were included when born between January 1, 2012 and December 31, 2014, while students 'Home Schooled' or in 'Elementary ungraded' were included when born between January 1, 2013 and December 31, 2013.

Coverage reported for any given year reflects children enrolled in grade 6 as of June 30th of that year (e.g., 2025 results are for children enrolled in grade 6 as of June 30, 2025).

Calculations

All analyses were conducted using business rules which calculated ages and time intervals at receipt of immunization. Each dose was counted as a valid dose only if given at or after the earliest eligible age and/or at a time interval greater than or equal to the shortest acceptable interval. Beginning in 2024, coverage reported for any given year reflects doses recorded as administered up to July 31st of that year (e.g., 2025 coverage is for doses administered by July 31, 2025). Prior to 2024, reported coverage reflected doses recorded as administered up to June 30th of that report year.

For HPV, data are shown in the report figures for series completion and series initiation or completion; these categories are not mutually exclusive. In the supplementary data file, data are provided as mutually exclusive categories for series completion and series initiation but not completion. Where stratified by gender, the HPV coverage denominator includes the number of female or male students enrolled in grade 6.

Coverage results by HA and HSDA are reported based on the location of the child's school.

Limitations

All calculations are based on vaccine doses recorded in the PIR or regional clinical systems and school enrollment records maintained by regional health authorities using electronic enrollment records from the MoE, or records received directly from schools. To be considered up-to-date for age, documentation of every dose in the immunization registry (PIR) or a clinical system (PARIS) is required.

Immunization coverage rates presented here are impacted by:

- Children attending independent schools that are not captured within STIX or MyEdBC, including:
 - Independent schools not registered with the MoE
 - Independent schools using MyEdBC without a signed Letter of Agreement
 - Independent schools not using MyEdBC (in some cases, partial enrolment data may still exist in PIR if provided by health authorities)
 - First Nations schools that are federally funded, not within provincial education jurisdiction, and outside the scope of STIX or MyEdBC data collection processes
- Exclusions related to school-based data are driven by enrolment data limitations rather than immunization status. As such, individuals may be excluded from reporting even where immunization records exist in PIR.
- Children whose immunization records are incomplete in the PIR, including:
 - Those immunized in communities or clinical settings where records are not consistently submitted to PIR (e.g., private clinics or providers outside Regional Health Authority Public Health)
 - Children who have recently moved to or out of British Columbia
 - Children immunized outside of BC whose records have not been submitted or reconciled

Definitions

Up-to-date for age

Measure	Definition
Hepatitis B	3 doses if series was started before grade 6; 2 doses if series was started in grade 6.
Varicella	2 doses of varicella vaccine (first immunization occurred on or after first birthday), or recorded exemption for varicella due to previous disease or protective antibody levels. The evidence required to be recorded as having a previous history of varicella disease or shingles has changed over time. See data notes for Varicella.
Measles	2 doses of measles-containing vaccine or recorded exemption due to laboratory evidence of immunity/previous disease.
Mumps	2 doses of mumps-containing vaccine.
Rubella	At least 1 dose of rubella-containing vaccine or recorded exemption due to laboratory evidence of immunity/previous disease.
HPV (up-to-date/series completion)	2 doses of HPV vaccine in grade 6 (with at least 5 months between doses).
HPV (series initiation, but not completion)	At least 1 dose of HPV vaccine, but did not complete a 2-dose series.

Reasons for non-immunization

Measure	Definition
Exemption: Lab Evidence of Immunity	<i>For varicella, measles and rubella only.</i> For the agent/antigen of interest, does not meet the criteria for up-to-date and has an active exemption due to lab evidence of immunity/disease recorded prior to June 30th.
Exemption: Previous Disease (varicella)	<i>For varicella only</i> Does not meet any of the previous definitions and has an active exemption due to previous disease for varicella recorded prior to June 30th.
Partially Immunized with Contraindication	<i>For agents/antigens requiring more than one dose.</i> For the agent/antigen of interest, does not meet any of the previous definitions and has received at least one valid dose and has an active contraindication recorded prior to June 30th.
Partially Immunized with Refusal	<i>For agents/antigens requiring more than one dose.</i> For the agent/antigen of interest, does not meet any of the previous definitions and has received at least one valid dose and has an active or inactive refusal recorded prior to vaccine administration cutoff date.
Partially Immunized - Unknown	<i>For agents/antigens requiring more than one dose.</i> For the agent/antigen of interest, does not meet any of the previous definitions and has received at least one valid dose. Note: These children may have invalid doses, inactive exemptions, or inactive contraindications for the agent/antigen of interest. They may also have valid/invalid doses or active or inactive refusals, exemptions, or contraindications that do not apply to the agent/antigen of interest, or no recorded refusals, exemptions, or contraindications for any agent/antigen.
Unimmunized with Contraindication	For the agent/antigen of interest, does not meet any of the previous definitions and has no recorded valid dose(s) and has an active contraindication recorded prior to June 30th.
Unimmunized with Refusal	For the agent/antigen of interest, does not meet any of the previous definitions and has no recorded valid dose(s) and has an active or inactive refusal recorded prior to vaccine administration cutoff date.

Unimmunized - Unknown	For the agent/antigen of interest, does not meet any of the previous definitions and has no recorded valid dose(s) at any time up to/including the data extract date.
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Note: These children may have invalid doses or inactive contraindications or exemptions for the agent/antigen of interest. They may also have valid/invalid doses or active/inactive refusals, exemptions, or contraindications that do not apply to the agent/antigen of interest, or no recorded doses, refusals, exemptions, or contraindications for any agent/antigen.

2024 report onwards:

Unimmunized – Unknown: Immunization Record	Meets the 'Unimmunized - Unknown' definition and has recorded invalid doses or inactive contraindications or exemptions for the agent/antigen of interest or has recorded valid/invalid doses or has active or inactive refusals, contraindications or exemptions that do not apply to the agent/antigen of interest at any time up to/including the data extract date. The antigens considered include diphtheria, tetanus, pertussis, polio, hepatitis B, meningococcal C, measles, mumps, rubella, varicella, and human papillomavirus.
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Unimmunized – Unknown: No Immunization Record	Meets the 'Unimmunized - Unknown' definition and has no recorded valid or invalid doses or active or inactive refusals, exemptions, or contraindications for any of diphtheria, tetanus, pertussis, polio, hepatitis B, meningococcal C, measles, mumps, rubella, varicella, and human papillomavirus.
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Minimum Intervals and Ages Between Doses

Antigen/Agent	Minimum Age or Minimum Time Interval Between Eligible Doses		
	Dose 1 ^A	Dose 2	Dose 3
Hepatitis B			
Series started at any age:			
received 3 rd dose before June 2007	0 days	28 days	28 days
received 3 rd dose between June 2007 and May 2014	0 days	28 days	56 days ^B
received 3 rd dose in June 2014 or later	0 days	28 days	56 days ^{B,C}
Series started on or after 10 years and 8 months of age	10 years + 8 months	16 weeks ^D	
Varicella ^E	12 months	28 days	
Measles	12 months	28 days	
Mumps	12 months	28 days	
Rubella ^F	12 months		
HPV			
2 dose schedule (for dose 1 given age 9 to 14)	9 years	150 days	

A. Dose 1 refers to the earliest age a child can receive the initial dose.

B. Dose 3 must be given at least 16 weeks (112 days) after dose 1.

C. Dose 3 must be given on or after 24 weeks of age.

D. Dose 2 must be given at least 24 weeks after dose 1 if either dose 1 or dose 2 is Engerix®-B.

E. To be counted as valid, varicella vaccine must be administered on or after 12 months of age.

F. Schedule for measles/mumps should be followed when rubella provided in combination vaccine with measles/mumps.

Other Data Notes

New changes to the 2024 grade 6 immunization coverage report:

- Starting in 2025, analyses for grade 6 students were stratified by international student status and reported separately in the [appendix](#).

Historical changes to the grade 6 immunization coverage report:

- Starting in 2024, coverage estimates for measles, mumps and rubella are included in the grade 6 immunization coverage report with data starting from 2021 (2020/2021 school year).
- Starting in 2024, coverage estimates are based on immunization doses recorded as administered by July 31st of the report year. In prior years, coverage estimates reflected doses recorded as administered up to June 30th of the report year.
- In 2015, three schools with grade 6 students in the Kootenay Boundary health service delivery area (HSDA) did not provide public health with class lists. As the children attending these schools could not be identified, they could not be included in the immunization coverage analysis. Based on information posted on the BC MoE's website, these schools accounted for approximately 3% of grade 6 students in Kootenay Boundary.

Immunization program and coverage assessment rule changes:

COVID-19 pandemic impacts:

- In the 2021/2022 school year, school-based clinics were offered in all HAs with some providing catch-ups for grade 7 students to receive the grade 6 milestone vaccines. Additional catch-up was offered during subsequent years, as required. Where coverage did not return to pre-pandemic levels it may reflect ongoing operational impacts of the COVID-19 response (e.g., increases in absenteeism among schoolchildren due to illness, lack of staffing resources in remote and rural areas, or competing priorities in public health departments) or changes in data sources between pre- and post-pandemic periods.
- In the 2020/2021 school year, ongoing prioritization of the COVID-19 pandemic response affected some public health resources available for school-based immunization programs. This was most significant in FH, which did not complete any school-based clinics in the 2020/2021 school year.
- In March 2020, the COVID-19 pandemic was declared and initially resulted in a province-wide shut down that impacted the provision of public health services including routine immunization services. As a result, some coverage rates were lower in 2020 and 2021 than previous years, particularly for the doses scheduled to be received in the last few months of the 2019/2020 school year or the first few months of the 2020/2021 school year.

Measles, mumps, and rubella:

- In 2025, in addition to the routine immunization clinics held across HAs, FH increased the number of school age clinic appointments available over the summer to accommodate for more MMR immunizations.

Varicella:

- The evidence required to be recorded as having a previous history of varicella disease or shingles has changed over time:
 - Beginning in December 2013, a varicella susceptible person was defined as having no history of varicella disease or shingles after 1 year of age and no history of age-appropriate varicella vaccination.
 - A self-reported history of disease was adequate for those born before 2004, while a health care provider diagnosed history was required for those born in 2004 or later. Most children born in 2004 were in grade 6 during the 2015/2016 school year.
 - Since June 2018, a varicella susceptible person is defined as one without a history of lab-confirmed varicella or shingles after 1 year of age and without a history of age-appropriate varicella vaccination.

As such, the current definition requires lab evidence of prior disease on or after 1 year of age for proof of immunity.

- The date of varicella disease onset is not systematically entered into PIR, therefore, for the purposes of this assessment, any child with a varicella exemption is considered protected, regardless of their age at the time of illness.
- Prior to 2013, only one dose of varicella vaccine (on or after the first birthday) was required in order to be considered up-to-date for varicella vaccine. This change in definition reflects a change in immunization policy that was implemented during the 2012/2013 school year, when a second dose of varicella vaccine was offered to susceptible students in grade 6.

Human papillomavirus (HPV):

The adolescent HPV immunization program has had several iterations in BC:

- The first cohort to receive HPV vaccination in grade 6 were females in the 2008/2009 school year, with a three-dose series (with at least 4 weeks between doses 1 and 2 and at least 12 weeks between doses 2 and 3).
- Starting in the 2010/2011 school year, the HPV immunization schedule in grade 6 changed to a two-dose schedule requiring at least 6 months between doses.
- Starting in the 2014/2015 school year, the minimum acceptable interval between doses changed to 5 months (150 days) apart, with the first dose given before 15 years of age.
- Starting in the 2017/2018 school year, the HPV immunization program was extended to include males in grade 6.
- See the [History of Immunization in BC](#) for further information on the HPV immunization program.

PIR notes:

- As of December 2024, the flow of supplementary information on the reasons for non-immunization (i.e., exemptions, refusals, and contraindications) for children in Fraser Health (FH) is supported by the interface between the FH clinical system and PIR.
 - Before 2025, incomplete supplementary information on reasons for non-immunization likely resulted in the overestimation of the proportion of partially immunized and unimmunized grade 6 students with unknown reasons for non-immunization and the underestimation of the number of children partially immunized or unimmunized due to refusals or contraindications, as well as the number of children with protection against varicella, measles, and rubella due to previous infection and/or lab evidence of immunity. Caution should be used in comparing 2025 estimates for the reasons for non-immunization and documented refusals in FH to prior years.
- In spring 2020, PIR was updated to include all clients from the Ministry of Health (MoH) Client Roster. The population is maintained via regular feeds from MoH's Registration and Premium Information Determination (RAPID) system for new clients eligible for Medical Services Plan (MSP) coverage and Enterprise Master Patient Index (EMPI) for births and deaths. This should provide more complete information on the entire BC population in PIR.
 - Client records with no or inadequate immunizations recorded may reflect children who have moved out of the province or died. When public health is not aware of these events, they cannot update the Panorama records to reflect the status of these children. Records reported by provinces with reciprocal agreements with MSP for individuals who have moved out of BC and established health insurance in other Canadian jurisdictions are inactivated through the RAPID system process outlined above.
- The gender variable in the PIR contains the following values: Male, Female, Undifferentiated, and Unknown. For the purpose of this report, only stratified coverage for males and females are reported in the HPV figures as the proportion of those in the Undifferentiated and Unknown categories comprise

<0.01% of the total population. Those in the Undifferentiated and Unknown categories are included in the figures and supplementary data tables that report coverage values for the total population.

- International students who attend school in BC are classified into two categories in the PIR based on their length of stay: 1) short stay (<6 months) and 2) long-stay (≥6 months). Health authorities attempt to collect immunization records for all long stay students in the province, however the length of stay is unknown for the majority of international students in the registry. Thus, immunization records may be incomplete for international students and coverage is likely underestimated for this population. Because of this, coverage for international students is reported on separately in the [appendix](#).

Appendix

International Student Immunization Coverage

Table A1. Percent of grade 6 international students up-to-date for hepatitis B, varicella, measles, mumps, and rubella, 2025.

Geography	Population	Hepatitis B		Varicella		Measles		Mumps		Rubella	
		Count	%	Count	%	Count	%	Count	%	Count	%
BC	3,468	2,524	72.8	2,216	63.9	2,471	71.3	2,437	70.3	2,694	77.7
Interior	311	212	68.2	174	55.9	216	69.5	213	68.5	231	74.3
East Kootenay	12	7	58.3	7	58.3	10	83.3	10	83.3	10	83.3
Kootenay Boundary	37	28	75.7	23	62.2	29	78.4	28	75.7	31	83.8
Okanagan	156	97	62.2	70	44.9	97	62.2	96	61.5	110	70.5
Thompson Cariboo Shuswap	106	80	75.5	74	69.8	80	75.5	79	74.5	80	75.5
Fraser	1,849	1,266	68.5	1,122	60.7	1,237	66.9	1,220	66.0	1,361	73.6
Fraser East	153	64	41.8	55	35.9	67	43.8	64	41.8	73	47.7
Fraser North	645	481	74.6	415	64.3	464	71.9	459	71.2	498	77.2
Fraser South	1,051	721	68.6	652	62.0	706	67.2	697	66.3	790	75.2
Vancouver Coastal	901	755	83.8	678	75.2	740	82.1	733	81.4	791	87.8
Richmond	217	211	97.2	204	94.0	208	95.9	207	95.4	213	98.2
Vancouver	448	367	81.9	329	73.4	360	80.4	353	78.8	392	87.5
North Shore/Coast Garibaldi	236	177	75.0	145	61.4	172	72.9	173	73.3	186	78.8
Island	353	260	73.7	217	61.5	248	70.3	243	68.8	278	78.8
South Vancouver Island	270	206	76.3	176	65.2	196	72.6	192	71.1	219	81.1
Central Vancouver Island	60	41	68.3	31	51.7	38	63.3	37	61.7	43	71.7
North Vancouver Island	23	13	56.5	10	43.5	14	60.9	14	60.9	16	69.6
Northern	54	31	57.4	25	46.3	30	55.6	28	51.9	33	61.1
Northwest	11	6	54.5	5	45.5	6	54.5	6	54.5	6	54.5
Northern Interior	27	17	63.0	14	51.9	15	55.6	14	51.9	18	66.7
Northeast	16	8	50.0	6	37.5	9	56.2	8	50.0	9	56.2

Table A2. Percent of grade 6 international students who have completed or initiated a HPV series, by sex, 2025.

Geography	Female					Male				
	Population	HPV series completion		HPV series initiation but not completion		Population	HPV series completion		HPV series initiation but not completion	
		Count	%	Count	%		Count	%	Count	%
BC	1,608	996	61.9	216	13.4	1,859	1,050	56.5	307	16.5
Interior	137	65	47.4	36	26.3	174	58	33.3	53	30.5
East Kootenay	7	4	57.1	2	28.6	5	3	60.0	1	20.0
Kootenay Boundary	17	11	64.7	2	11.8	20	8	40.0	2	10.0
Okanagan	62	17	27.4	23	37.1	94	12	12.8	44	46.8
Thompson Cariboo Shuswap	51	33	64.7	9	17.6	55	35	63.6	6	10.9
Fraser	859	530	61.7	98	11.4	990	580	58.6	133	13.4
Fraser East	74	31	41.9	7	9.5	79	37	46.8	15	19.0
Fraser North	331	230	69.5	31	9.4	314	189	60.2	30	9.6
Fraser South	454	269	59.3	60	13.2	597	354	59.3	88	14.7
Vancouver Coastal	433	292	67.4	57	13.2	467	288	61.7	78	16.7
Richmond	114	82	71.9	19	16.7	103	70	68.0	23	22.3
Vancouver	213	142	66.7	26	12.2	235	144	61.3	39	16.6
North Shore/Coast Garibaldi	106	68	64.2	12	11.3	129	74	57.4	16	12.4
Island	149	94	63.1	19	12.8	204	109	53.4	39	19.1
South Vancouver Island	117	76	65.0	17	14.5	153	87	56.9	20	13.1
Central Vancouver Island	22	14	63.6	1	4.5	38	18	47.4	12	31.6
North Vancouver Island	10	4	40.0	1	10.0	13	4	30.8	7	53.8
Northern	30	15	50.0	6	20.0	24	15	62.5	4	16.7
Northwest	4	1	25.0	1	25.0	7	4	57.1	1	14.3
Northern Interior	17	9	52.9	2	11.8	10	7	70.0	2	20.0
Northeast	9	5	55.6	3	33.3	7	4	57.1	1	14.3