



## INTRODUCTION

Nova Scotia’s publicly funded school-based immunization program is delivered to grade seven students and is comprised of four vaccines, administered according to the schedule in the table below (also found here: <https://novascotia.ca/dhw/cdpc/documents/Routine-Immunization-Schedules-for-Children-Youth-Adults.pdf>).

This report presents the school-based immunization coverage rates for Nova Scotia students enrolled in public schools for the **2021-22** grade seven cohort, **as of December 31, of their grade eight year.**

	# of Doses	Fall Term	Spring Term
Meningococcal Quadrivalent (Men-C-ACYW)	1	✓	
Tetanus, Diphtheria, and Acellular Pertussis (Tdap)	1		✓
Human Papillomavirus (HPV-9)	2	✓	✓
Hepatitis B	2	✓	✓

Although typically received in grade seven as part of the school program, there are circumstances where some of these vaccines may be received outside of the school program. For example, Nova Scotia publicly funds Hepatitis B vaccine in infancy for those at higher risk, students may receive a Hepatitis A and B combination vaccine prior to travel, or a Tdap booster may be received as part of wound management.

## METHODS & DATA NOTES

**Data Sources:** The data source for school based immunization coverage is Public Health's information system, Panorama. Historical coverage estimates prior to 2018 were generated from Public Health's previous information systems, ANDS/ANDI.

**Coverage Rate Calculation:** Coverage rate (%) = # immunized (numerator)/ # eligible (denominator) x 100

**Numerator:** The number of public school students in grade seven in the school year of interest, who have received the specified number of valid doses (based on the vaccine product received), prior to January 1st of the subsequent school year.

**Agent specific details:**

**Men-C-ACYW-135** - Single dose required for full coverage. Doses prior to grade 7 are included if received at 8 years of age or older.

**Tdap** - Single dose required for full coverage. Doses prior to grade 7 are included if received within the previous 5 years.

**HPV** - 2 doses required for full coverage.

**Hepatitis B** - 2 or 3 doses (agent dependent) required for full coverage. Doses of monovalent Hepatitis B vaccine or Hepatitis A and B combination vaccine are included.

**Denominator:** The total number of public school students in grade seven in the school year of interest. For Nova Scotia public schools, current school year student information (e.g. grade, school) is uploaded monthly from the Department of Education and Early Childhood Development’s Student Information System into Panorama. In late August, the current school year information is overwritten with the new school year information. Therefore, for this report the 2021-22 grade 7 students were pulled on May 9th, 2022.

**Coverage Timing:** The overall coverage rates presented in this report include students immunized in any of the categories below. In reporting cycles prior to 2018-19, only students covered within the grade seven school year were reported.

**Prior to Grade Seven:** Series completed prior to September 1 of the grade 7 school year.

**Grade Seven:** Series completed between September 1 and August 31 of the grade 7 school year.

**Grade Eight:** Series completed between September 1 and December 31 of the grade 8 school year.

**Geography:** Zone and community cluster were assigned based on the location of the student’s school.

**Private School & Home Schooled Students:** Based on how the data was pulled during the pandemic response (2020-2022), reliable numbers for private schools and home schooled students were not available and are not included.

**Maps:** The intention of the maps is to highlight areas of lower coverage, not to provide the specific coverage rate for each community cluster. Community clusters without colour on the map represent clusters where there are no schools with grade 7 students.



## DATA LIMITATIONS

To maintain consistency with previous reporting cycles, this report reflects coverage for grade seven cohorts at a specific point in time, December 31st of the grade 8 school year. However, due to pandemic related school closures during the 2019-20 and 2020-21 school years, coverage during those years was lower than in previous years. Ongoing efforts by local Public Health beyond December 31st of the grade 8 year have subsequently improved the coverage rates reported here.

Any vaccines received outside of the school program that are not in Panorama will not contribute to the coverage rates, resulting in a potential underestimation of coverage. Reasons for missing immunizations in Panorama include; Electronic Medical Record upload failures, immunizations administered in other provinces or countries, delays in data entry of immunization records provided to Public Health.

Denominator information relies on the education information that is available in Panorama. This information is automatically uploaded for students within the public health system, but for students outside of the public school system (e.g. private schools, home-school, Mi'kmaw Kina'matnewey school board) education information must be entered manually into Panorama. Incomplete education information in Panorama for the cohort presented here resulted in this report being limited to public school students only.

Geography was assigned using the postal code of the school. In some areas of the province where school board boundaries and zone borders do not align, schools may have potentially been classified in a zone that is different than the zone administering the immunization program.



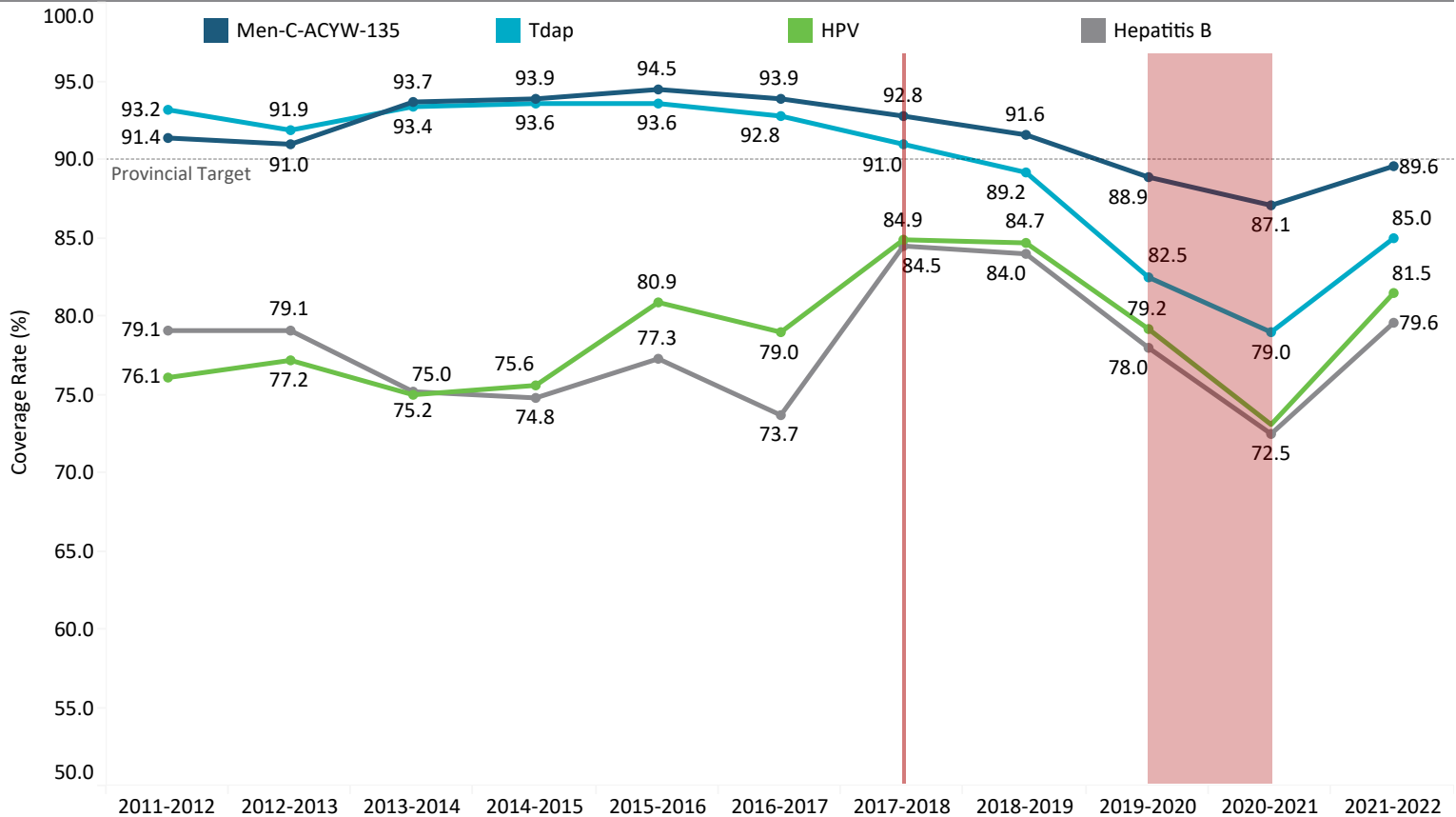
**Table 1: Full series coverage rates for school program vaccines, 2021-22, Nova Scotia**

Cohort	Men Quad Coverage	TDAP coverage	HPV coverage	HB Coverage
2021-2022	89.6%	85.0%	81.5%	79.6%

**Notes:**

- The coverage rates for all four of the school program vaccines were lower than the provincial standard of 90 % for the 2021-22 grade seven cohort.

**Figure 1: Full series coverage rates for school program vaccines for the previous 10 years, Nova Scotia**



**Notes:**

- During the 2017-18 school year Nova Scotia implemented a new immunization reporting system, Panorama. With the implementation of Panorama there were changes to the methods for defining the numerator and denominator. Prior to the 2017-18 school year, the number of grade 7 students immunized was estimated using an age range (numerator) and aggregate student counts were used to estimate the total grade 7 population (denominator). This may have overestimated coverage rates prior to 2017-2018, particularly for single dose vaccines.

- From 2017-18 onwards, immunizations administered up to December 31 of the subsequent school year are included in the coverage rates to allow for the capture of students who complete the school-based immunizations in the fall of grade 8. Prior to 2017-18, only immunizations administered up to August 31 were included. This likely explains the slight increase in the coverage rates for multi dose vaccines in the 2017-18 and 2018-19 school years.

- The 2019-20 and 2020-21 cohorts experienced school closures during the spring term due to the COVID-19 pandemic, that impacted the timing of the delivery of the spring term vaccine doses (Tdap, HPV, Hepatitis B). Given the delays to the immunization program, coverage rates by December 31 of the grade 8 year are lower for these cohorts. Ongoing efforts by local Public Health beyond December 31st of the grade 8 year has subsequently improved the coverage rates reported here.



## Meningococcal Quadrivalent (Men-C-ACYW)

Table 2: Men-C-ACYW coverage rates by zone

Zone	2021-2022
Western	86.2%
Northern	88.9%
Eastern	84.4%
Central	93.0%
<b>Nova Scotia</b>	<b>89.6%</b>

Figure 2: Timing of Men-C-ACYW coverage

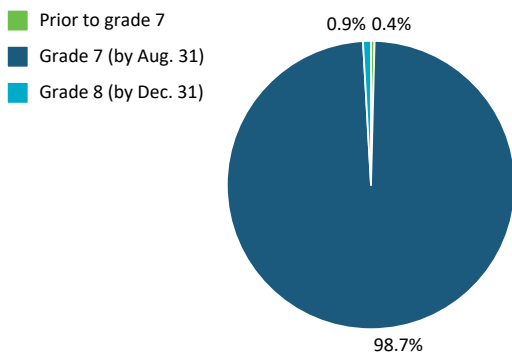


Figure 3: Men-C-ACYW coverage by sex

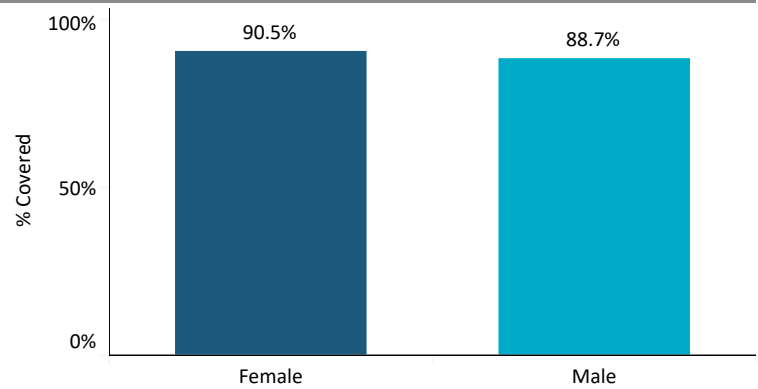
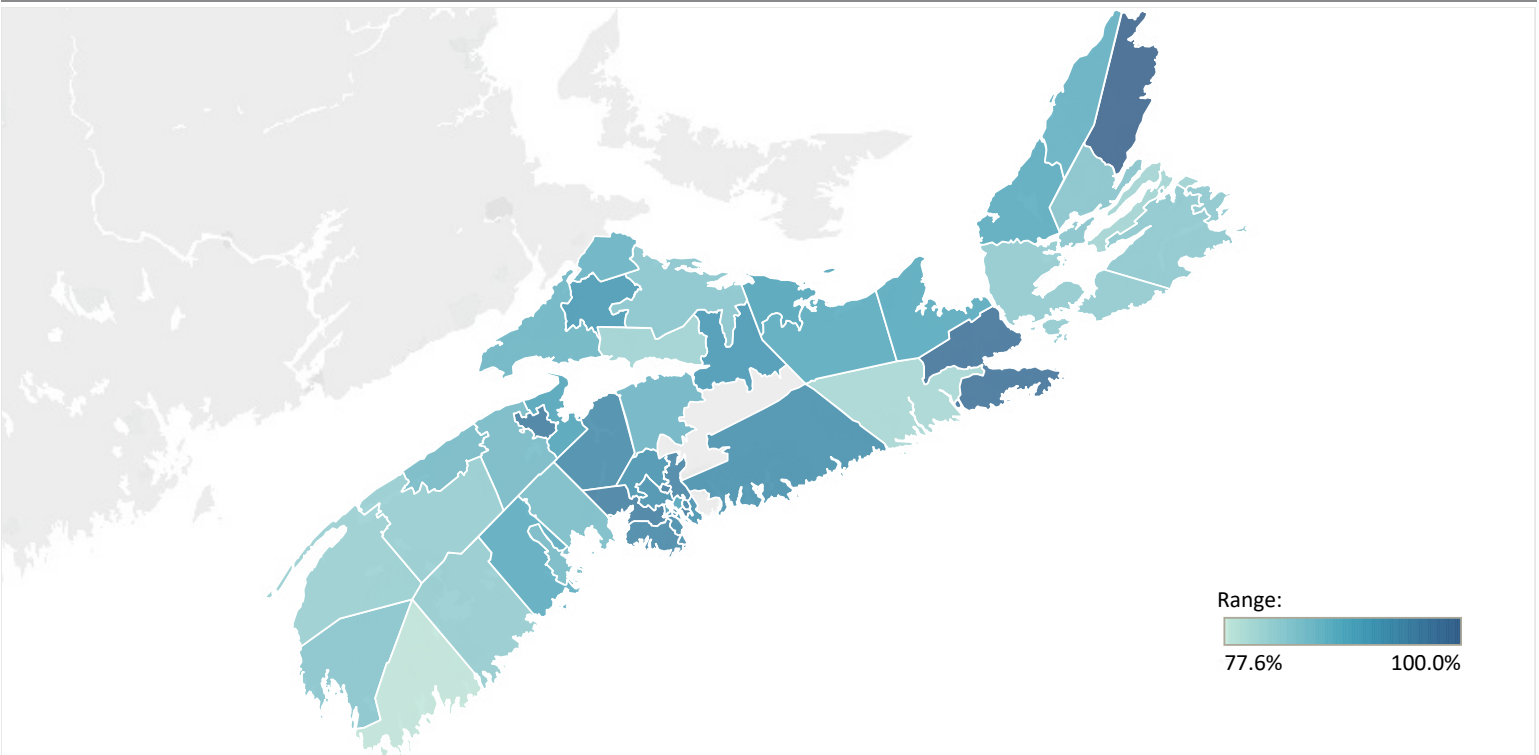


Figure 4: Men-C-ACYW coverage rates by community cluster, 2021-22



**Notes:**

- The intention of the map is to highlight areas of lower coverage, not to provide the specific coverage rate for each community cluster.
- Community clusters without colour on the map represent clusters where there are no schools with grade 7 students.



## Tetanus, Diphtheria, Acellular Pertussis (Tdap)

Table 3: Tdap coverage rates by zone

Zone	2021-2022
Western	82.7%
Northern	84.5%
Eastern	76.3%
Central	88.9%
<b>Nova Scotia</b>	<b>85.0%</b>

Figure 5: Timing of Tdap coverage

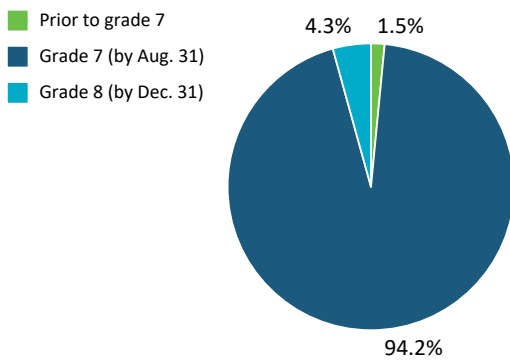


Figure 6: Tdap coverage by sex

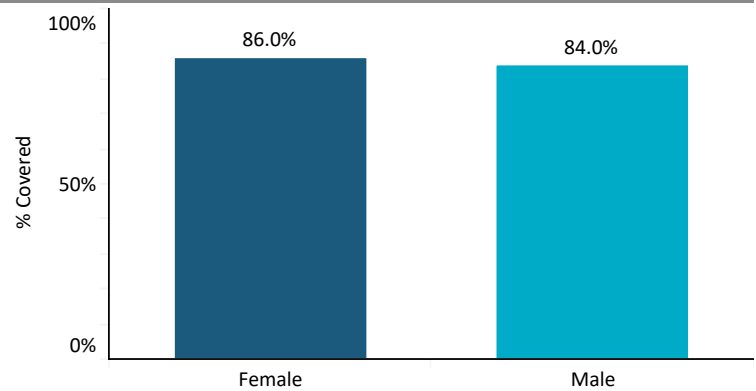
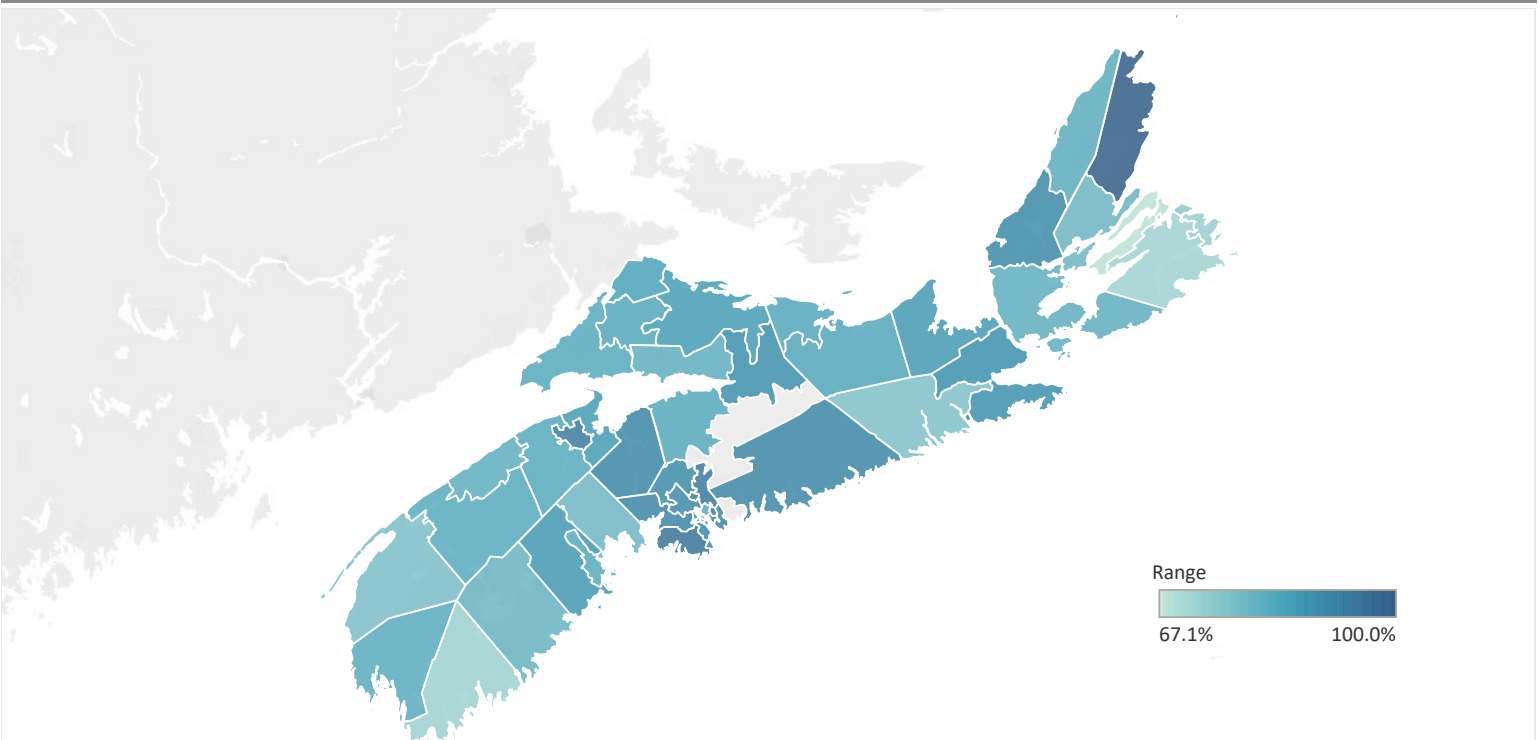


Figure 7: Tdap coverage rates by community cluster, 2021-22



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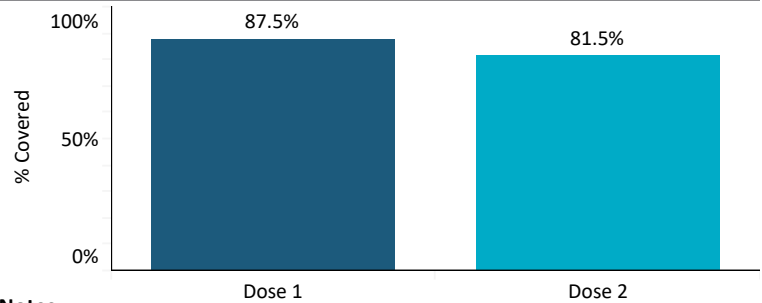


## Human Papillomavirus (HPV)

Table 4: HPV full series coverage rates by zone

Zone	2021-2022
Western	78.9%
Northern	80.7%
Eastern	74.9%
Central	85.0%
<b>Nova Scotia</b>	<b>81.5%</b>

Figure 8: HPV coverage by first and second dose



**Notes:**

Dose 1 = % of students who received the first dose

Dose 2 = % of students who received the second dose

Figure 9: Timing of HPV full series coverage

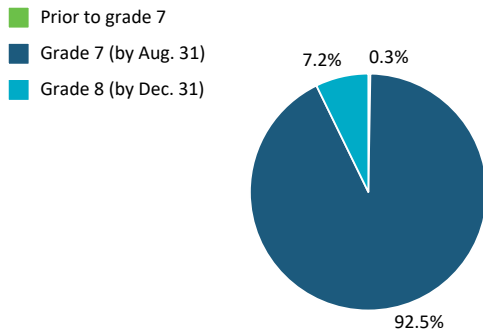


Figure 10: HPV full series coverage by sex

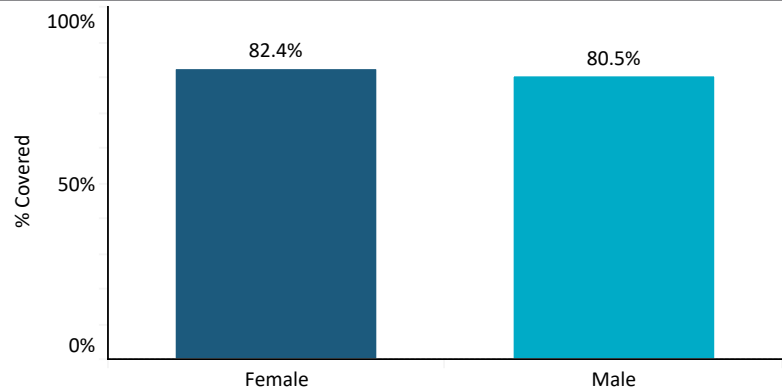
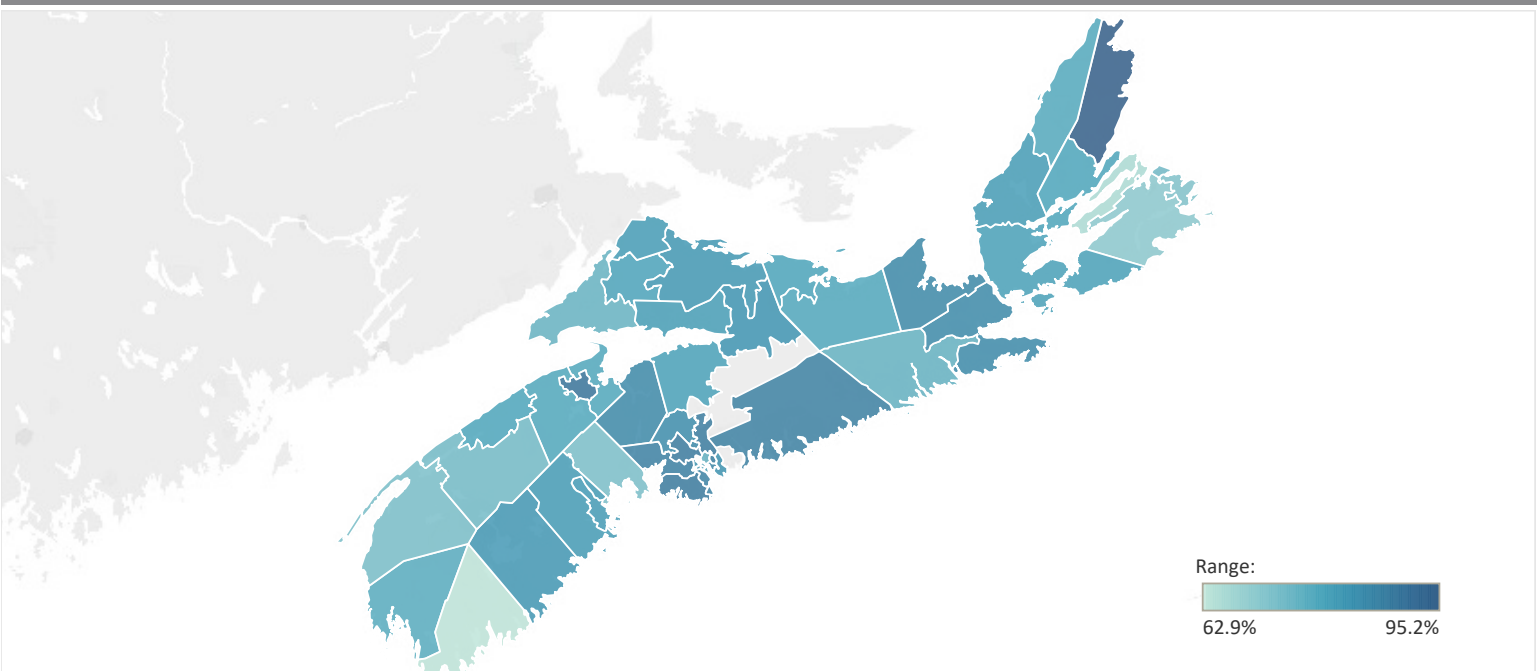


Figure 11: HPV full series coverage rates by community cluster, 2021-22



**Notes:**

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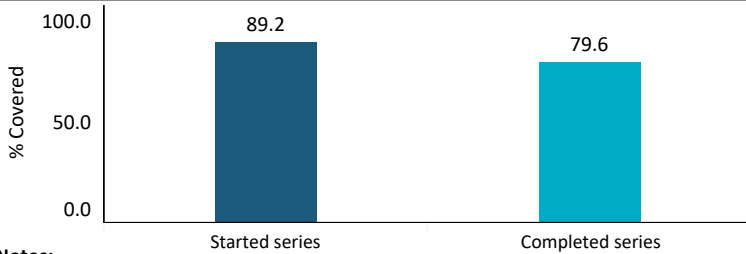


## Hepatitis B (HB)

Table 5: HB full series coverage rates by zone

Zone	2021-2022
Western	76.7%
Northern	79.5%
Eastern	73.4%
Central	82.9%
Nova Scotia	79.6%

Figure 12: HB coverage by start and completion of series



**Notes:**  
 Started series  $\geq 1$  dose prior to Dec. 31 of grade 8 (includes those who completed the series)  
 Completed series = 2 or 3 doses (agent dependent) prior to Dec. 31 of grade 8

Figure 13: HB full series coverage by Sex

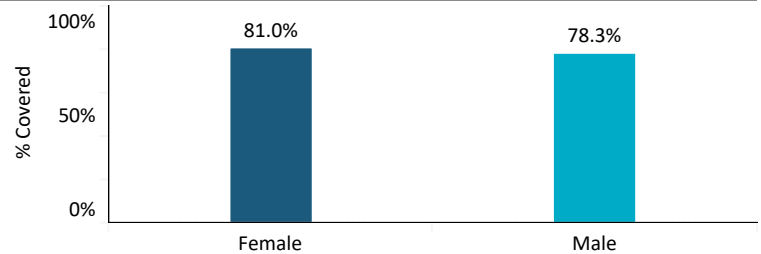


Figure 14: Timing of HB full series coverage

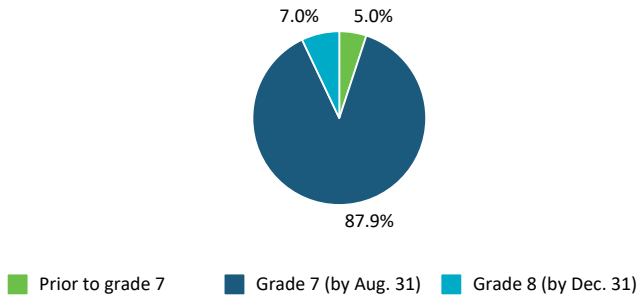
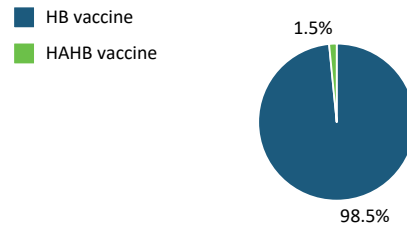
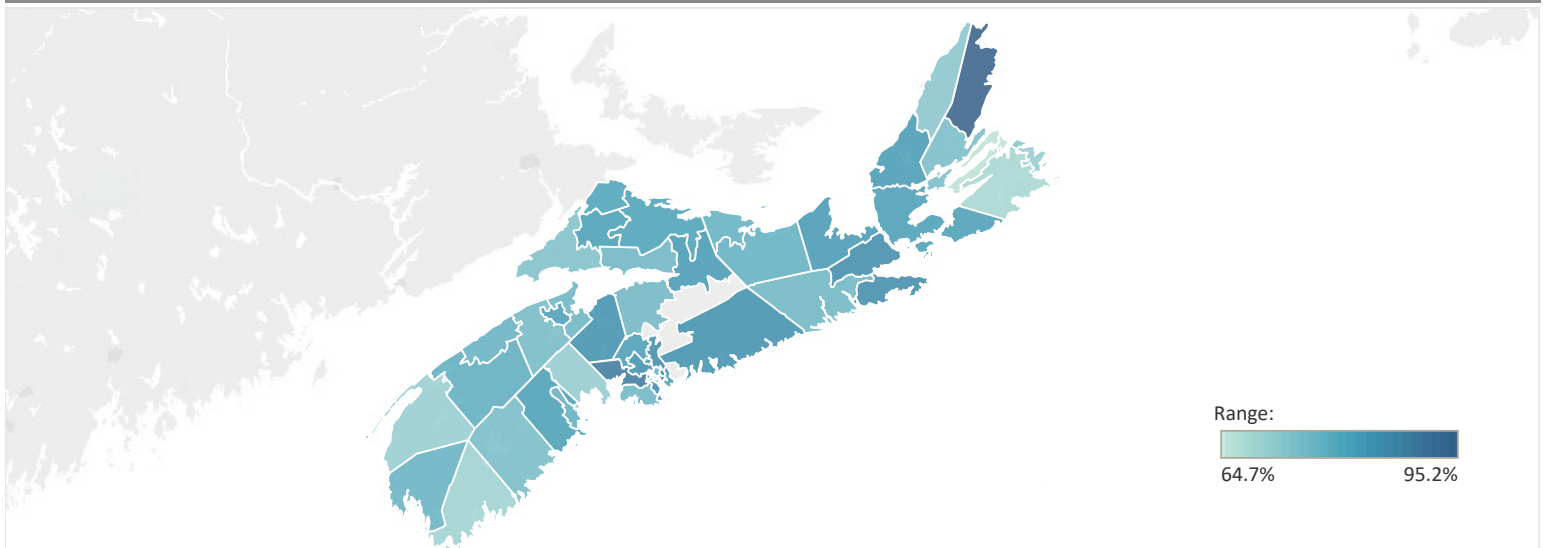


Figure 15: Proportion covered with HB and HAHB vaccines



**Notes:**  
 Figure includes only students who are fully covered for Hepatitis B, and presents the proportions covered with monovalent HB or combined HAHB vaccine.

Figure 16: HB full series coverage rates by community cluster, 2021-22



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