

SURVEILLANCE REPORT

Immunization Coverage Report for School-Based Programs in Ontario: 2019-20 and 2020-21 School Years

Purpose

This report is a condensed version of Public Health Ontario's annual [Immunization Coverage Report for School Pupils in Ontario](#)¹ with a focus on school-based programs. The objective of this report is to describe immunization coverage for Ontario's three school-based immunization programs - Hepatitis B (Hep B), human papillomavirus (HPV) and quadrivalent meningococcal conjugate (MCV4) - for the 2019-20 and 2020-21 school years, using the same coverage assessment methods that were used in previous school year reports. As this report represents a snapshot of immunization coverage estimates in Ontario at the end of each school year, the results of the report will illustrate the impact of COVID-19 pandemic on the delivery of Ontario's school-based immunization programs.

Please see the [Full report](#)¹ and [Technical Annex](#) for the 2018-19 school year for more details on coverage assessment methods and changes to in Ontario's immunization program eligibility over time. Immunization coverage for school pupils for [Immunization of School Pupils Act \(ISPA\)](#)² designated diseases will be assessed at a later date.

Background

Immunization Coverage

Immunization coverage refers to the proportion of a population that is appropriately immunized against a vaccine preventable disease (VPD) at a point in time. Achieving and maintaining high immunization coverage is essential for the effective prevention and control of VPDs.

Ontario's Publicly-Funded School-Based Immunization Programs

In Ontario, three [publicly-funded school-based immunization programs](#)³ are typically delivered by PHUs to grade 7 students, in contrast to most other childhood and adolescent vaccines that are delivered by primary care providers. Program delivery focuses on grade 7 students, however catch-up activities also occur. Schedules for the school-based program vary in dose number. The MCV4 program is a one-dose schedule, while Hepatitis B and HPV school-based programs are two-dose schedules, with rare exceptions.

Immunization coverage for school-aged children is assessed using data from the Digital Health Immunization Repository (DHIR), Ontario's provincial immunization repository. The collection and entry of immunization information in the DHIR is largely driven by the [Immunization of School Pupils Act \(ISPA\)](#)². PHUs rely on parental and/or provider reporting for immunizations administered in primary care, whereas adolescent immunizations administered in school-based immunization programs are entered directly by the PHUs into the DHIR. Parental and/or provider reporting may also include vaccines administered elsewhere (e.g., another province/country, physician office) as well as vaccines

privately purchased (e.g. before travel). Capture of these doses has the potential to increase the immunization coverage attributed to the school-based programs.

Impact of COVID-19 on School-Based Immunization Programs

The COVID-19 pandemic has posed significant challenges to the delivery of immunization services in schools. Public health measures to mitigate COVID-19 transmission, such as school closures, and public health immunization staff redeployment to the COVID-19 response reduced access to school-based immunization programs. Province-wide school closures in Ontario covered the periods of March 12, 2020 to the end of June 2020 and a significant portion of the 2020-21 school year, in addition to local closures driven by outbreak response.

While varying degrees of localized catch-up were performed throughout the school year (e.g., community clinics, school-based clinics, etc.), PHUs faced several barriers to delivering school-based immunization programs. Some PHUs partnered with primary care providers to administer doses of school-based immunizations through a vaccine special release process, however, vaccines administered in primary care were not consistently reported back to PHUs for entry in the DHIR and thus may not be reflected in this analysis. Additionally, with the extension of the COVID-19 immunization program's eligibility on May 23, 2021 to include adolescents 12 to 17 years olds, many immunization catch-up activities planned for the summer were postponed to prioritize the adolescent COVID-19 immunization program.

Highlights

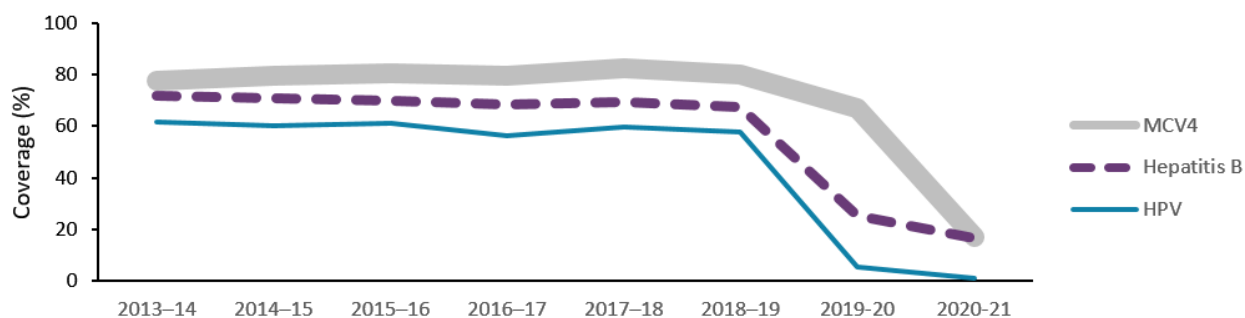
- As a result of the COVID-19 pandemic, there has been limited PHU capacity to deliver school-based immunization programs, as well as to enter and assess immunization records. Immunization coverage estimates for the 2019-20 and 2020-21 school years are substantially lower than in previous school years.
 - Many grade 7 students in the 2019-20 cohort initiated, but did not complete their school-based immunization series. Fewer grade 7 students in the 2020-21 school year initiated their school-based immunization series.
- Provincial coverage estimates reflecting completion of the immunization series (i.e. up to date) for the school-based immunization programs for 12-year-olds for the 2019-20 and 2020-21 school years, respectively, are outlined below.
 - 25.0% and 16.8% for Hepatitis B
 - 5.2% and 0.8% for HPV
 - 67.2% and 17.3% for MCV4
- The up to date (UTD) estimate for MCV4 for the 2019-20 school year is higher compared to the 2020-21 school year as this one dose program is typically delivered in the fall and the start of the 2019-20 school year was unaffected by COVID-19.
- Of the 16.8% of 12-year olds that were UTD for Hepatitis B in the 2020-21 school year, approximately 96% of those had completed their Hepatitis B vaccine series prior to their 12th birthday (and the start of the school year) and thus do not reflect vaccine administered as part of the school-based immunization program.
- Non-school based delivery for Hepatitis B may also explain why series initiation is high in some PHUs for the 2020-21 school year.

- Provincial coverage estimates for school-based immunization programs for 17-year-olds for the 2019-20 and 2020-21 school years, respectively, are outlined below.
 - 77.3% and 77.7% for Hepatitis B
 - 63.4% and 63.4% for HPV
 - 93.9% and 93.8% for MCV4
- Overall coverage estimates are higher among 17-year-olds as they would have likely completed their series as part of the grade 7 program and/or received doses as part of catch-up activities prior to the COVID-19 pandemic.
- Immunization coverage estimates represent immunization coverage assessed at the end of the school year and as such, may not reflect immunizations administered as part of catch-up activities that have occurred after the school year has ended. These doses will be captured in future assessments.

Results

Provincial Coverage Estimates for School-based Programs

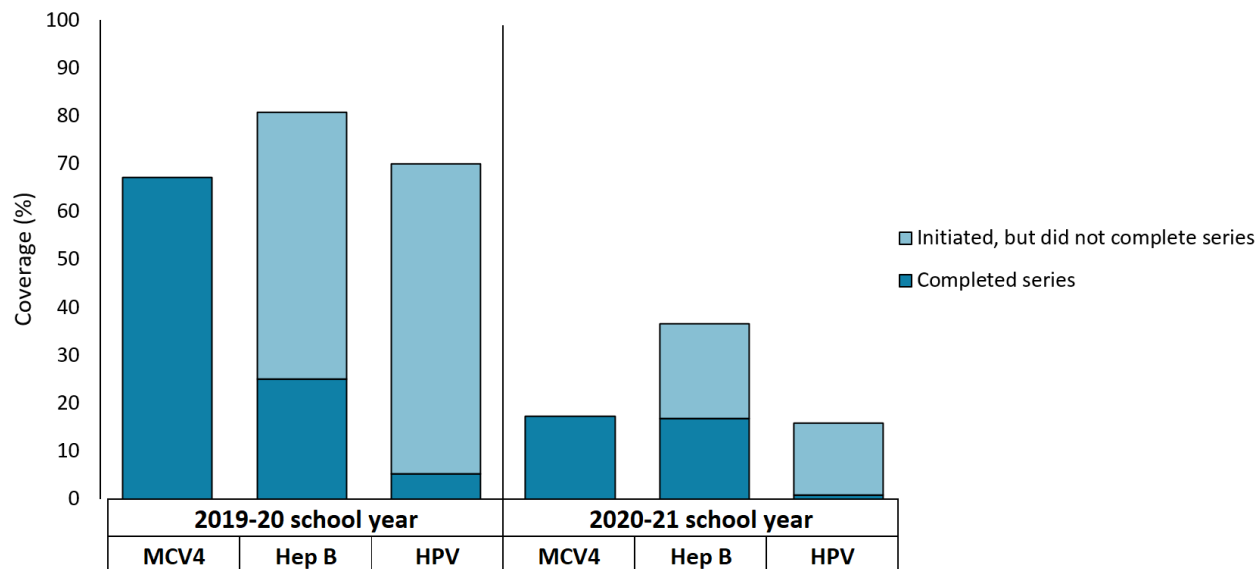
Figure 1. Immunization coverage for quadrivalent meningococcal conjugate (MCV4), human papillomavirus (HPV) and hepatitis B (Hep B) vaccines among 12-year-olds in Ontario: 2013–14 to 2020–21 school years



Notes:

- Coverage estimates for previous school years are point-in-time estimates from previous annual reports and are not re-calculated.
- HPV coverage estimates for 2013–14 to 2015–16 school years represent 13-year-old female cohorts, whereas the 2016–17 school year represents 12-year-old male and females combined and the 2017–18 to 2020–21 school years represent all 12-year-old students (male, female and unknown gender combined). Students who completed either a valid two-dose or three-dose series were considered up-to-date for all assessment years.

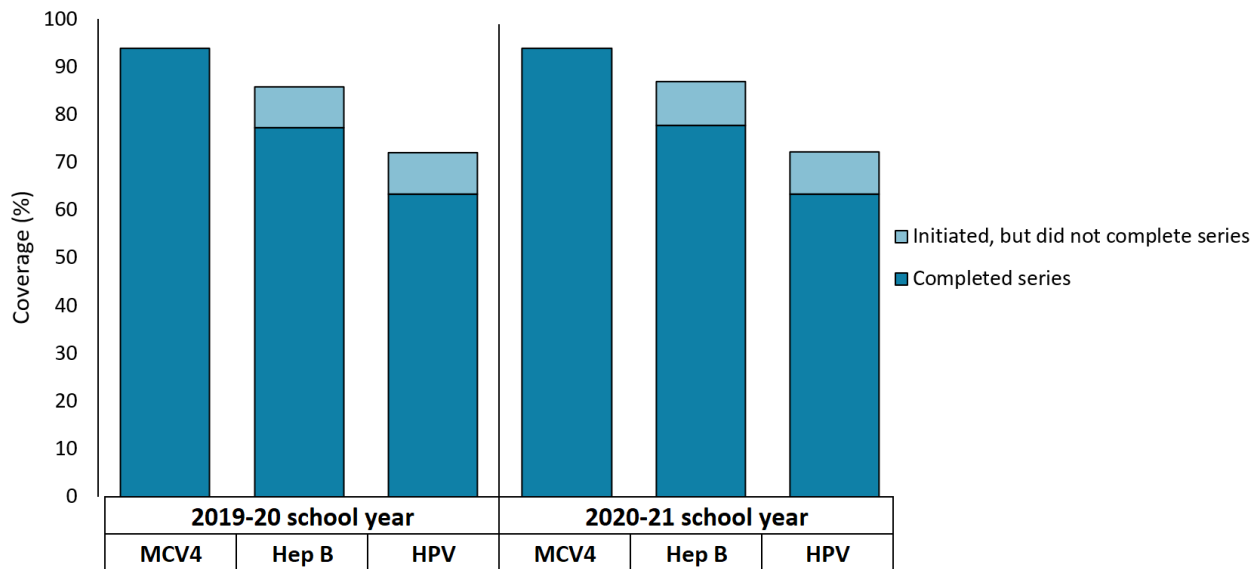
Figure 2a. Immunization coverage for school-based immunization programs among 12-year-olds in Ontario: 2019–20 and 2020–21 school years



Notes:

- Students who initiated the series received at least one valid dose of the vaccine series.
- Students who completed the series received all recommended doses for age.
- In the 2016–17 school year, the HPV program was expanded to include males, in addition to females who have been included in the program since the 2007–08 school year. Coverage is therefore assessed for both sexes for 12-year-olds.

Figure 2b. Immunization coverage for school-based immunization programs among 17-year-olds in Ontario: 2019–20 and 2020–21 school years



Notes:

- Students who initiated the series received at least one valid dose of the vaccine series.
- Students who completed the series received all recommended doses for age.
- In the 2016–17 school year, the grade 7 HPV program was expanded to include males. Males in older grades were not made eligible. Coverage is therefore assessed for females only for 17-year-olds as 17-year-old males in the 2019-20 and 2020-21 school years were not eligible.

Public Health Unit Coverage Estimates for School-based Programs

Table 1a. Immunization coverage for quadrivalent meningococcal conjugate (MCV4), human papillomavirus (HPV) and hepatitis B (Hep B) vaccines among 12-year-olds by public health unit in Ontario: 2019–20 school year

Public Health Unit	MCV4: UTD (%)	HPV: Series initiation (%)	HPV: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator*
Algoma Public Health	76.2	67.3	0.4	71.3	4.8	1,076
Brant County Health Unit	22.3	52.7	17.9	56.7	23.1	1,599
Chatham-Kent Public Health	80.0	70.8	0.7	75.7	6.4	1,142
City of Hamilton Public Health Services	79.8	68.6	1.2	65.7	14.3	6,254
Durham Region Health Department	86.4	76.5	1.2	68.8	17.2	8,581
Eastern Ontario Health Unit	82.8	68.9	1.5	71.0	10.0	2,199
Grey Bruce Health Unit	87.6	69.2	3.8	73.3	10.0	1,658
Haldimand-Norfolk Health Unit	17.2	53.0	13.7	56.9	17.9	1,080
Haliburton, Kawartha, Pine Ridge District Health Unit	77.1	67.4	1.5	70.0	5.5	1,586
Halton Region Public Health	77.5	56.2	11.9	44.5	33.0	8,783
Hastings Prince Edward Public Health	89.0	69.2	9.0	71.1	15.9	1,665
Huron Perth Public Health	89.2	23.6	48.1	29.6	54.6	1,583
Kingston, Frontenac and Lennox & Addington Public Health	89.8	72.1	8.2	69.3	18.5	1,994
Lambton Public Health	79.7	65.0	3.8	66.4	11.8	1,300

Public Health Unit	MCV4: UTD (%)	HPV: Series initiation (%)	HPV: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator*
Leeds, Grenville & Lanark District Health Unit	71.9	60.8	0.7	64.2	6.0	1,725
Middlesex-London Health Unit	78.7	56.7	12.1	54.2	24.1	5,718
Niagara Region Public Health	82.3	68.5	1.8	69.0	12.8	4,732
North Bay Parry Sound District Health Unit	85.2	62.2	12.4	63.9	18.8	1,206
Northwestern Health Unit	76.5	41.2	26.4	40.2	34.2	813
Ottawa Public Health	85.7	62.9	10.6	52.2	31.9	11,715
Peel Public Health	69.1	67.3	0.6	50.2	31.6	18,807
Peterborough Public Health	77.7	69.5	3.1	69.9	9.6	1,444
Porcupine Health Unit	89.0	41.0	35.2	44.0	41.2	856
Public Health Sudbury & Districts	79.9	69.6	6.7	70.9	14.2	2,017
Region of Waterloo Public Health and Emergency Services	74.0	69.8	1.8	62.1	19.5	6,990
Renfrew County and District Health Unit	82.6	70.2	4.4	69.5	12.8	1,099
Simcoe Muskoka District Health Unit	84.6	72.6	0.6	72.1	10.4	6,328
Southwestern Public Health	77.1	46.0	18.0	51.2	23.2	2,557
Thunder Bay District Health Unit	74.2	58.4	6.4	58.5	13.9	1,415
Timiskaming Health Unit	90.1	34.2	33.9	43.5	42.1	292
Toronto Public Health	73.0	69.3	0.6	50.3	30.5	26,668

Public Health Unit	MCV4: UTD (%)	HPV: Series initiation (%)	HPV: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator*
Wellington-Dufferin- Guelph Public Health	40.3	44.4	27.9	46.7	37.7	3,362
Windsor-Essex County Health Unit	14.5	63.5	6.6	60.3	21.5	4,953
York Region Public Health	4.7	62.8	0.4	42.8	32.7	15,271
Ontario	67.2	64.8	5.2	55.7	25.0	158,468

* It is unknown if each PHU uploaded complete school lists for the 2019-20 and 2020-21 school years, which may impact the accuracy of some denominators.

Table 1b. Immunization coverage for quadrivalent meningococcal conjugate (MCV4), human papillomavirus (HPV) and Hepatitis B (Hep B) vaccines among 12-year-olds by public health unit in Ontario: 2020–21 school year

Public Health Unit	MCV4: UTD (%)	HPV: Series initiation (%)	HPV: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator*
Algoma Public Health	16.3	15.4	0.0	8.3	6.3	1,095
Brant County Health Unit	51.4	47.1	0.4	5.4	7.6	1,637
Chatham-Kent Public Health	9.0	7.0	1.5	7.3	4.8	1,164
City of Hamilton Public Health Services	19.1	17.4	0.5	13.3	21.9	6,267
Durham Region Health Department	29.7	27.0	1.0	49.4	7.1	8,477
Eastern Ontario Health Unit	2.7	2.4	0.7	36.0	5.9	2,253
Grey Bruce Health Unit	7.2	4.1	0.9	9.5	5.9	1,742
Haldimand-Norfolk Health Unit	2.9	2.4	0.3	7.3	8.7	1,189
Haliburton, Kawartha, Pine Ridge District Health Unit	13.4	12.9	0.1	29.5	10.5	1,625
Halton Region Public Health	25.0	24.3	0.7	20.1	11.5	8,644
Hastings Prince Edward Public Health	6.4	5.5	0.2	7.3	6.6	1,716
Huron Perth Public Health	57.4	49.0	0.2	35.7	14.3	1,602
Kingston, Frontenac and Lennox & Addington Public Health	44.1	37.1	4.3	55.1	17.4	2,070
Lambton Public Health	13.2	11.5	0.5	56.9	18.9	1,292
Leeds, Grenville & Lanark District Health Unit	38.7	35.4	0.2	15.6	28.9	1,721

Public Health Unit	MCV4: UTD (%)	HPV: Series initiation (%)	HPV: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator*
Middlesex-London Health Unit	69.4	60.0	3.0	25.4	13.8	5,798
Niagara Region Public Health	8.5	6.9	0.8	23.6	21.0	4,873
North Bay Parry Sound District Health Unit	35.2	21.6	10.3	19.9	19.9	1,266
Northwestern Health Unit	2.5	1.9	0.4	9.7	7.7	756
Ottawa Public Health	20.4	17.0	1.3	33.7	9.4	12210
Peel Public Health	1.4	1.0	0.1	13.8	5.6	18,793
Peterborough Public Health	41.2	33.8	4.3	13.9	3.6	1,379
Porcupine Health Unit	77.3	63.3	1.9	18.1	3.2	845
Public Health Sudbury & Districts	16.8	19.9	0.7	5.6	3.4	2,088
Region of Waterloo Public Health and Emergency Services	3.3	2.8	0.4	23.7	7.5	6,792
Renfrew County and District Health Unit	7.4	6.6	0.7	11.1	9.4	1,069
Simcoe Muskoka District Health Unit	0.8	0.6	0.2	29.7	10.0	6,451
Southwestern Public Health	70.8	55.4	1.7	66.6	7.0	2,480
Thunder Bay District Health Unit	35.0	28.6	4.2	12.2	22.7	1,439
Timiskaming Health Unit	78.9	55.0	9.1	8.9	13.8	318
Toronto Public Health	1.9	1.3	0.1	28.4	13.4	25,546
Wellington-Dufferin-Guelph Public Health	30.6	29.3	0.8	22.7	12.3	3,570

Public Health Unit	MCV4: UTD (%)	HPV: Series initiation (%)	HPV: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator*
Windsor-Essex County Health Unit	19.0	18.7	0.5	53.1	4.4	4,989
York Region Public Health	16.4	15.1	0.6	60.2	7.6	14,803
Ontario	17.3	15.1	0.8	19.8	16.8	157,959

* It is unknown if each PHU uploaded complete school lists for the 2019-20 and 2020-21 school years, which may impact the accuracy of some denominators.

Table 2a. Immunization coverage for quadrivalent meningococcal conjugate (MCV4), human papillomavirus (HPV) and hepatitis B (Hep B) vaccines among 17-year-olds by public health unit in Ontario: 2019–20 school year

Public Health Unit	MCV4: UTD (%)	HPV*: Series initiation (%)	HPV*: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator: Males and females **	Denominator: Females**
Algoma Public Health	95.0	6.8	69.2	7.6	83.4	932	454
Brant County Health Unit	94.5	7.1	68.6	5.3	83.9	1,516	765
Chatham-Kent Public Health	94.8	6.1	60.7	5.6	81.0	1,142	573
City of Hamilton Public Health Services	89.9	9.2	54.6	5.9	72.0	6,805	3,303
Durham Region Health Department	96.4	6.3	73.1	5.8	84.7	8,003	3,926
Eastern Ontario Health Unit	94.5	4.8	68.2	7.2	79.6	2,093	991
Grey Bruce Health Unit	92.1	1.6	71.9	3.7	82.9	1,383	680
Haldimand-Norfolk Health Unit	92.7	7.4	58.3	7.5	73.9	1,174	571
Haliburton, Kawartha, Pine Ridge District Health Unit	93.8	7.9	59.6	10.5	69.1	1,722	795
Halton Region Public Health	95.3	10.8	53.5	9.1	74.5	8,067	3,921
Hastings Prince Edward Public Health	95.9	7.9	57.5	8.7	74.6	1,641	819

Public Health Unit	MCV4: UTD (%)	HPV*: Series initiation (%)	HPV*: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator: Males and females **	Denominator: Females**
Huron Perth Public Health	89.7	3.2	58.7	3.6	77.0	1,627	814
Kingston, Frontenac and Lennox & Addington Public Health	97.6	6.9	70.5	5.6	86.8	1,994	951
Lambton Public Health	96.9	11.8	40.2	11.8	64.7	1,211	595
Leeds, Grenville & Lanark District Health Unit	90.5	7.2	58.2	9.5	71.7	1,643	789
Middlesex-London Health Unit	93.4	10.2	53.1	9.8	72.5	5,396	2,636
Niagara Region Public Health	96.1	8.1	62.0	9.0	80.8	5,029	2,398
North Bay Parry Sound District Health Unit	97.1	7.4	64.1	8.2	79.2	1,255	621
Northwestern Health Unit	94.2	10.4	63.2	8.8	79.4	829	405
Ottawa Public Health	96.3	9.3	66.1	8.1	80.1	11,647	5,794
Peel Public Health	94.8	9.7	67.4	8.6	78.6	18,498	8,847
Peterborough Public Health	96.2	5.4	65.3	8.9	78.2	1,352	651
Porcupine Health Unit	97.5	4.0	65.9	7.5	81.0	765	399

Public Health Unit	MCV4: UTD (%)	HPV*: Series initiation (%)	HPV*: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator: Males and females **	Denominator: Females**
Public Health Sudbury & Districts	96.4	9.7	60.2	8.3	81.7	1,897	915
Region of Waterloo Public Health and Emergency Services	94.7	7.1	60.9	7.8	79.3	6,364	3,128
Renfrew County and District Health Unit	96.9	7.5	63.3	10.7	77.1	1,036	491
Simcoe Muskoka District Health Unit	94.5	6.5	69.5	7.3	80.9	5,972	2,934
Southwestern Public Health	91.7	5.4	55.6	7.4	74.5	2,047	1,001
Thunder Bay District Health Unit	94.6	11.1	57.0	9.9	77.3	1,425	711
Timiskaming Health Unit	96.3	5.4	67.8	12.8	77.1	297	149
Toronto Public Health	94.2	9.4	68.0	8.6	76.7	26,477	13,181
Wellington-Dufferin-Guelph Public Health	95.1	5.2	66.2	8.7	77.7	3,234	1,619
Windsor-Essex County Health Unit	89.6	6.9	60.4	7.9	75.0	4,962	2,384
York Region Public Health	89.4	11.8	59.0	12.3	72.7	16,076	7,740

Public Health Unit	MCV4: UTD (%)	HPV*: Series initiation (%)	HPV*: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator: Males and females **	Denominator: Females**
Ontario	93.9	8.7	63.4	8.5	77.3	155,511	75,951

* The HPV denominator for 17-year-olds includes females only, as prior to the 2016-17 school year the HPV program included females only.

** It is unknown if each PHU uploaded complete school lists for the 2019-20 and 2020-21 school years, which may impact the accuracy of some denominators.

Table 2b. Immunization coverage for quadrivalent meningococcal conjugate (MCV4), human papillomavirus (HPV) and hepatitis B (Hep B) vaccines among 17-year-olds by public health unit in Ontario: 2020–21 school year

Public Health Unit	MCV4: UTD (%)	HPV*: Series initiation (%)	HPV*: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator: Males and females**	Denominator: Females**
Algoma Public Health	95.4	6.8	66.3	2.5	88.6	960	486
Brant County Health Unit	93.0	5.6	74.2	8.3	78.1	1,634	801
Chatham-Kent Public Health	93.9	4.5	63.3	8.8	76.9	1,195	572
City of Hamilton Public Health Services	96.1	12.0	57.0	6.5	83.4	6,516	3,178
Durham Region Health Department	95.5	6.1	74.5	4.1	84.3	8,169	4,056
Eastern Ontario Health Unit	94.0	6.2	65.8	5.3	74.4	2,188	1,058
Grey Bruce Health Unit	95.3	2.7	72.3	4.3	78.7	1,378	660
Haldimand-Norfolk Health Unit	86.7	7.6	56.2	7.3	79.1	1,143	550
Haliburton, Kawartha, Pine Ridge District Health Unit	95.0	11.4	60.6	9.0	78.9	1,972	973
Halton Region Public Health	94.8	12.0	49.6	6.8	75.9	8,476	4130
Hastings Prince Edward Public Health	96.4	7.7	59.8	9.9	79.3	1,527	741

Public Health Unit	MCV4: UTD (%)	HPV*: Series initiation (%)	HPV*: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator: Males and females**	Denominator: Females**
Huron Perth Public Health	93.2	3.7	61.1	6.7	84.8	1,527	760
Kingston, Frontenac and Lennox & Addington Public Health	97.0	8.4	72.3	12.3	69.7	1,956	961
Lambton Public Health	96.6	7.9	44.3	8.4	75.6	1,190	607
Leeds, Grenville & Lanark District Health Unit	88.7	8.1	62.5	14.9	69.9	1,748	866
Middlesex-London Health Unit	93.2	12.5	54.0	9.4	76.9	5,365	2,613
Niagara Region Public Health	95.5	9.1	64.6	15.0	68.9	5,020	2,439
North Bay Parry Sound District Health Unit	95.8	7.8	62.8	10.1	79.7	1,174	586
Northwestern Health Unit	97.4	9.7	68.1	10.1	72.5	769	373
Ottawa Public Health	95.8	9.8	66.7	7.1	78.3	11,538	5,587
Peel Public Health	94.8	10.3	60.0	12.8	59.7	18,480	8,897
Peterborough Public Health	93.7	8.9	60.9	9.0	71.7	1,280	593
Porcupine Health Unit	97.8	4.6	68.9	9.4	82.1	825	395

Public Health Unit	MCV4: UTD (%)	HPV*: Series initiation (%)	HPV*: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator: Males and females**	Denominator: Females**
Public Health Sudbury & Districts	96.7	7.4	65.3	7.4	72.4	1,963	960
Region of Waterloo Public Health and Emergency Services	94.4	7.4	63.7	9.5	79.6	6,550	3,121
Renfrew County and District Health Unit	95.7	7.2	68.6	8.7	80.6	1,035	497
Simcoe Muskoka District Health Unit	87.8	7.6	67.4	12.1	75.1	6,260	3,065
Southwestern Public Health	91.3	6.7	55.2	8.8	80.4	2,201	1,047
Thunder Bay District Health Unit	95.7	9.3	61.5	9.3	79.8	1,416	667
Timiskaming Health Unit	95.1	4.6	71.8	7.9	79.2	287	131
Toronto Public Health	96.5	8.8	72.1	5.9	85.7	25059	12,426
Wellington-Dufferin-Guelph Public Health	95.6	5.4	67.3	7.0	74.6	3,278	1,619
Windsor-Essex County Health Unit	81.8	6.8	58.5	4.1	80.7	5,083	2,469
York Region Public Health	89.1	10.1	56.4	7.0	72.0	15,225	7,421

Public Health Unit	MCV4: UTD (%)	HPV*: Series initiation (%)	HPV*: UTD (%)	Hep B: Series initiation (%)	Hep B: UTD (%)	Denominator: Males and females**	Denominator: Females**
Ontario	93.8	8.9	63.4	9.2	77.7	154,387	75,305

*The HPV denominator for 17-year-olds includes females only, as prior to the 2016-17 school year the HPV program included females only.

** It is unknown if each PHU uploaded complete school lists for the 2019-20 and 2020-21 school years, which may impact the accuracy of some denominators.

Technical Notes

Data Sources

- Data for this report were obtained from the Digital Health Immunization Repository (DHIR) – Ontario’s the provincial immunization repository. Data extraction dates were:
 - For the 2019-20 school year: June 30, 2020 for demographic information, education records, and school information; September 1, 2020 for immunizations and special considerations/exemptions records.
 - For the 2020-21 school year: June 30, 2021 for all data.

Methods

- Please see the [Technical Annex](#) from the 2018-19 school year report for a detailed description of the DHIR and methods used for the assessment of student immunization, including details on cohort creation and up-to-date coverage assessment by age and antigen, as well as a description of the limitations. The methodologies have not changed from previous years, with the exception of the updates described below made to hepatitis B up-to-date coverage assessment.
- For the 2019-20 school year:
 - Students were included in the analysis if they had an education record that met the following criteria:
 - Effective From: On or after September 1, 2019 or missing, AND
 - Effective To: On or before August 31, 2020
 - Immunizations with administration dates on or before August 31, 2020 were included in the coverage estimates
- For the 2020-21 school year:
 - Students were included in the analysis if they had an education record that met the following criteria:
 - Effective From: On or after September 1, 2020 or missing, AND
 - Effective To: On or before August 31, 2021
 - Immunizations with administration dates on or before June 30, 2021 were included in the coverage estimates
- Coverage was assessed at both 12 and 17 years of age, allowing coverage assessment for school programs with extended eligibility.
- The following updates were made to hepatitis B up-to-date coverage assessment, which is available on page 27 of the Technical Annex from the 2018-19 school year report:
 - New vaccines were added to the relevant vaccines: HAHB-pediatric, HAHB-unspecified, HB-pediatric, Hib-HB

- If multiple vaccines were administered on the same day, the following hierarchy was used to keep only one record: DTaP-HB-IPV-Hib > DTaP-HB-IPV or DPT-HB-Hib > DPT-HB or DTwP-HB > Hib-HB > HAHB-pediatric > HAHB > HAHB-unspecified > HB-dialysis > HB-pediatric > HB > HB-unspecified
- Immunization medical exemption records to assess evidence of immunity for hepatitis B were reviewed and updated to reflect changes that have been made to the DHIR data.
- For the valid dose definitions, the new vaccines have been incorporated such as:
 - HAHB-pediatric and HAHB-unspecified were treated the same as HAHB
 - HB-pediatric was treated the same as HB
 - Hib-HB was treated the same as DTwP-HB
- Twinrix® and Twinrix® Junior have different schedules as per the product monographs. Although changes have been made in the DHIR to now recognize Twinrix® and Twinrix® Junior at the agent level (HAHB vs. HAHB-pediatric), this change has not yet been reflected in our coverage assessment methods. The impact on coverage is expected to be small as the number of records with the HAHB-pediatric agent was small. Work is underway to incorporate the new agent in the methodology used for Hepatitis B coverage assessment.

References

1. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Immunization coverage report for school-based programs in Ontario: 2018-19 school year. Toronto, ON: Queen's Printer for Ontario; 2020. Available from: https://www.publichealthontario.ca/-/media/documents/i/2020/immunization-coverage-2018-19.pdf?la=en&sc_lang=en&hash=3DA1B035CC80AFC2341F7AE6BD87041F
2. *Immunization of School Pupils Act*, RSO 1990, c. I.1. Available from: <https://www.ontario.ca/laws/statute/90i01>
3. Ontario. Ministry of Health. Publicly funded immunization schedules for Ontario. Toronto, ON: Queen's Printer for Ontario; 2021. Available from: https://www.health.gov.on.ca/en/pro/programs/immunization/docs/Publicly_Funded_ImmunizationSchedule.pdf

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