

# Vaccine Preventable Disease Monitoring Report Human Papillomavirus, 2017 and 2018

Release Date: June 2019

**PREPARED BY POPULATION HEALTH BRANCH, SASKATCHEWAN MINISTRY OF HEALTH**

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**Purpose:**

The Saskatchewan Ministry of Health's Population Health Branch provides routine surveillance of notifiable diseases at the provincial and former regional health authorities (RHAs), Athabasca Health Authority (AHA), First Nations and Inuit Health Branch - Saskatchewan (FNIHB-SK) and Northern Inter-Tribal Health Authority (NITHA) levels.

This report presents the most recent data for reportable communicable diseases as collected by the Integrated Public Health Information System (iPHIS) and immunization coverage information as collected by Panorama. Limitations associated with these systems have been described elsewhere.

**Report Features:**

Background  
Epidemiological Summary  
Vaccine Coverage by AHA and former RHA

**Data Source:**

Panorama (as of April 1, 2019)

## BACKGROUND

Human papillomavirus (HPV) is a group of more than 150 related viruses, each identified by a number representing their type. The virus was named for the warts (papillomas) that some types of HPV cause. There are over 40 types that can be sexually transmitted.

HPV is one of the most common sexually transmitted infections (STIs). It is estimated that 75% of sexually active females and males will have at least one HPV infection during their lifetime. HPV is the main risk factor for cervical cancer and is related to 80-90% of anal cancers, 40% of vaginal and vulvar cancers, 40-50% of penile cancers and 25-35% of mouth and throat cancers. HPV can also cause genital warts in females and males.

HPV is spread through intimate skin to skin contact. An infected person may not have any signs or symptoms, but can still spread the virus. In most people, HPV infection will clear on its own. Infections that do not clear can lead to cancer. It can take years after being exposed to HPV for someone to show signs of infection, making it difficult to know when the exposure occurred.

From 2010 to 2014, approximately 23,700 women and 17,300 men in the United States were affected by cancers caused by HPV. According to the Canadian Cancer Society, in 2016, nearly 4,400 Canadians were diagnosed with an HPV-related cancer and about 1,200 Canadians died from an HPV-related cancer.

## IMMUNIZATION

By fall 2008, all Canadian provinces and territories had introduced HPV immunization programs for pre-adolescent and adolescent girls into their routine immunization schedules. These vaccines are not recommended for those younger than nine years old.

For the first year (2008) of its addition to the Saskatchewan Routine Childhood Immunization Schedule, the vaccine was offered to girls in both Grades 6 and 7. After that it was provided to girls in grade 6.

The quadrivalent HPV vaccine (HPV-4) was given as a three dose series with a zero, two and six month schedule. In 2015/16 Saskatchewan switched to a two-dose schedule: zero and six months.

In the fall of 2017, the Saskatchewan Ministry of Health replaced the quadrivalent HPV vaccine with the nine-valent HPV vaccine and expanded the HPV immunization program to include Grade 6 boys.

HPV vaccines are highly effective, however, like other vaccines they may not fully protect everyone who gets immunized and will not provide protection against every type of HPV. Cervical screening continues to be recommended regardless of vaccine history.

## SURVEILLANCE

*The Public Health Act, 1994* does not require health care providers to report cases of HPV to the local medical health officer (MHO). Nor is the Roy Romanow Provincial Laboratory required to report HPV to the Chief and Deputy Chief Medical Health Officers.

As HPV cases are not reportable, there is no provincial surveillance case definition for human papillomavirus.

# EPIDEMIOLOGY AND VACCINE COVERAGE SUMMARY

## Human Papillomavirus in Saskatchewan: 2018

- HPV cases are not reported in Saskatchewan; therefore, case counts and characteristics are not available.

## Human Papillomavirus Coverage in Saskatchewan: 2014 to 2018

- From 2014 to 2018, provincial coverage rates steadily improved for 17-year-old girls for one and two doses but declined for three doses. Provincial coverage declined for 13 and 15-year-old girls for all doses from 2014 to 2018.
- Saskatchewan expanded HPV immunization to Grade 6 boys on September 1, 2017.
- As coverage rates are based on age cohorts (i.e., 13, 15 and 17 years) not school grades and the first birth cohort of boys receiving HPV vaccine will not be 13 years old until 2019, the coverage for boys cannot be calculated.
- However, it is known that 5,672 boys, ages 10 to 12 years were immunized with HPV vaccine between September 1, 2017 and August 31, 2018 – the first full school year the vaccine was offered to boys. Of these, 739 (13%) boys received only one dose and 4,933 (87%) boys received two doses.
  - \* In comparison during the same time period 5,786 girls, ages 10 to 12 years, received HPV vaccine. Of these, 1,119 (19%) received only one dose and 4,667 (81%) received two doses.
- For the current school year (2018-2019) a total of 5,613 boys, ages 10 to 12 years, were immunized with the first dose of HPV vaccine between September 1 and December 31, 2018. The second dose is provided six months after the first dose (i.e., March 1, 2019 and later) and those data are not yet available.
  - \* In comparison a total of 5,593 girls, ages 10 to 12 years, received one dose of HPV vaccine in the same time period.

**Table 1: Female HPV vaccine coverage rates for Saskatchewan by age, dose and year, 2014-2018**

| Age      | Doses | 2018  | 2017  | 2016 <sup>a</sup> | 2015 <sup>a</sup> | 2014 <sup>b</sup> |
|----------|-------|-------|-------|-------------------|-------------------|-------------------|
| 13 years | 1     | 76.5% | 75.6% | 75.7%             | 77%               | 79.8%             |
|          | 2     | 69.1% | 69.1% | 71.9%             | 74.5%             | 77.8%             |
|          | 3     | N/A   | N/A   | 61.4%             | 68.7%             | 72.8%             |
| 15 years | 1     | 80.8% | 81.8% | 82.8%             | 81.8%             | 83.5%             |
|          | 2     | 76.7% | 77.9% | 80.4%             | 80.2%             | 81.5%             |
|          | 3     | 61.4% | 69.2% | 77.2%             | 77.4%             | 78.5%             |
| 17 years | 1     | 83.8% | 82.4% | 83%               | 80.8%             | 80%               |
|          | 2     | 81.4% | 80.6% | 81.2%             | 79.2%             | 78.5%             |
|          | 3     | 73.5% | 73.8% | 78.2%             | 75.7%             | 75.4%             |

<sup>a</sup> Vaccine Preventable Disease Monitoring Report: Human Papillomavirus, 2015 and 2016 (released March 2017)

<sup>b</sup> Vaccine Preventable Disease Monitoring Report: Human Papillomavirus, 2014 (released September 2016)

N/A = not applicable

# EPIDEMIOLOGY AND VACCINE COVERAGE SUMMARY

**Table 2: HPV vaccine coverage by Athabasca Health Authority and former health region, 2018**

| Jurisdiction<br>(with former health region<br>by Peer Group) | Immunization coverage - female only (% immunized), by age and dose |             |  |             |             |             |             |             |             |
|--|--|-------------|--|-------------|-------------|-------------|-------------|-------------|-------------|
|  | 13 years   |             |  | 15 years    |             |             | 17 years    |             |             |
|  | 1 dose   | 2 doses     |  | 1 dose      | 2 doses     | 3 doses     | 1 dose      | 2 doses     | 3 doses     |
| <b>Saskatchewan</b>  | <b>76.5</b>  | <b>69.1</b> |  | <b>80.8</b> | <b>76.7</b> | <b>61.4</b> | <b>83.8</b> | <b>81.4</b> | <b>73.5</b> |
| <b>Saskatchewan Health Authority</b>                         | <b>76.4</b>  | <b>69</b>   |  | <b>80.8</b> | <b>76.7</b> | <b>61.4</b> | <b>83.7</b> | <b>81.4</b> | <b>73.5</b> |
| <b>Peer Group A</b>  |  |             |  |             |             |             |             |             |             |
| Regina Qu'Appelle  | 78.7   | 71.5        |  | 82.4        | 79.2        | 63.7        | 85.2        | 83.3        | 74.4        |
| Saskatoon  | 75.4   | 66.4        |  | 82.4        | 76.6        | 61.5        | 83.6        | 80.9        | 71          |
| <b>Peer Group D</b>  |  |             |  |             |             |             |             |             |             |
| Cypress  | 69   | 65.3        |  | 73.1        | 69.9        | 60.2        | 77.3        | 75          | 68.6        |
| Five Hills   | 76.5   | 73          |  | 78.6        | 74.4        | 61.4        | 85          | 83.4        | 78.2        |
| Heartland  | 70.9   | 68.3        |  | 77.9        | 77.1        | 63.5        | 86.2        | 84.9        | 81.9        |
| Kelsey Trail   | 79   | 74.2        |  | 77.9        | 77          | 66.4        | 85.5        | 84.1        | 79.7        |
| Sun Country  | 79   | 76.4        |  | 81.7        | 79.5        | 68.1        | 87.8        | 87.8        | 80.7        |
| Sunrise  | 76.8   | 73.7        |  | 81.3        | 79.7        | 63.8        | 86.8        | 84.1        | 79.4        |
| <b>Peer Group F</b>  |  |             |  |             |             |             |             |             |             |
| Athabasca Health Authority                                   | 93.9   | 87.9        |  | 95.7        | 91.3        | 69.6        | 93.1        | 93.1        | 79.3        |
| Keewatin Yatthé  | 69.6   | 37.5        |  | 82.8        | 73.4        | 40.6        | 85.3        | 81.3        | 69.3        |
| Mamawetan Churchill River                                    | 79.4   | 60.8        |  | 84.1        | 77.3        | 38.6        | 80.4        | 64.1        | 56.5        |
| <b>Peer Group H</b>  |  |             |  |             |             |             |             |             |             |
| Prairie North  | 73   | 64.8        |  | 72.7        | 67.7        | 52.7        | 77.5        | 75.6        | 69.3        |
| Prince Albert Parkland                                       | 80.7   | 70.7        |  | 82.4        | 78.3        | 59.7        | 81.4        | 78.3        | 71.8        |

**Table 3: HPV vaccine coverage by Athabasca Health Authority and former health region, 2017**

| Jurisdiction<br>(with former health region<br>by Peer Group) | Immunization coverage - female only (% immunized), by age and dose |             |  |             |             |             |             |             |             |
|--|--|-------------|--|-------------|-------------|-------------|-------------|-------------|-------------|
|  | 13 years   |             |  | 15 years    |             |             | 17 years    |             |             |
|  | 1 dose   | 2 doses     |  | 1 dose      | 2 doses     | 3 doses     | 1 dose      | 2 doses     | 3 doses     |
| <b>Saskatchewan</b>  | <b>75.6</b>  | <b>69.1</b> |  | <b>81.8</b> | <b>77.9</b> | <b>69.2</b> | <b>82.4</b> | <b>80.6</b> | <b>73.8</b> |
| <b>Saskatchewan Health Authority</b>                         | <b>75.6</b>  | <b>69</b>   |  | <b>81.8</b> | <b>77.8</b> | <b>69.2</b> | <b>82.4</b> | <b>80.6</b> | <b>73.8</b> |
| <b>Peer Group A</b>  |  |             |  |             |             |             |             |             |             |
| Regina Qu'Appelle  | 76.7   | 70.3        |  | 81.9        | 77.9        | 69.4        | 82.9        | 81          | 73.6        |
| Saskatoon  | 75.9   | 67.3        |  | 82.3        | 77.1        | 68.5        | 82.2        | 80.8        | 73.5        |
| <b>Peer Group D</b>  |  |             |  |             |             |             |             |             |             |
| Cypress  | 70.9   | 67.2        |  | 79.7        | 75.9        | 71.4        | 76.8        | 74.8        | 71.6        |
| Five Hills   | 72.4   | 69.9        |  | 84          | 82.7        | 75.9        | 80.3        | 78.9        | 76.6        |
| Heartland  | 77.7   | 74.9        |  | 74.5        | 74.1        | 69.6        | 84.6        | 84.6        | 83.1        |
| Kelsey Trail   | 80.1   | 75.5        |  | 82.7        | 80.7        | 75.2        | 85          | 84.5        | 79.8        |
| Sun Country  | 79.3   | 77.9        |  | 84          | 82.6        | 74.2        | 83.4        | 83.1        | 75.3        |
| Sunrise  | 74.4   | 69.9        |  | 84.1        | 81.7        | 76.8        | 86.3        | 83.6        | 79.1        |
| <b>Peer Group F</b>  |  |             |  |             |             |             |             |             |             |
| Athabasca Health Authority                                   | 100  | 100         |  | 95.2        | 90.5        | 81          | 95.7        | 95.7        | 73.9        |
| Keewatin Yatthé  | 69.1   | 48.5        |  | 84.3        | 75.7        | 60          | 78.8        | 75.8        | 59.1        |
| Mamawetan Churchill River                                    | 84   | 62.3        |  | 85.1        | 79.3        | 50.4        | 87.3        | 75.4        | 57.6        |
| <b>Peer Group H</b>  |  |             |  |             |             |             |             |             |             |
| Prairie North  | 69.2   | 63.4        |  | 78.5        | 73.9        | 64.1        | 78.4        | 77          | 70.5        |
| Prince Albert Parkland                                       | 74.6   | 68.9        |  | 81.2        | 76.7        | 65.5        | 83.2        | 80.5        | 73          |

- Two years of coverage data in eight age-dose categories are provided by Athabasca Health Authority (AHA) and former regional health authority (RHA). A yellow highlighted cell means the coverage rate is below the provincial coverage rate.
- On September 1, 2015, Saskatchewan switched to a two-dose series. Girls immunized in 2015/2016 would have received a maximum of two doses. The first birth cohort offered the two-dose series that year was born in 2004 and turned 13 in 2017. Therefore, only one-dose and two-dose rates are reported for 13-year-old girls.
- The 15 and 17-year-old girls would most likely have been offered the three-dose series. If they had delayed their HPV immunization until 2015-2016, they may have received the two-dose series.
- On September 1, 2017, Saskatchewan expanded HPV immunizations to boys. The first birth cohort of boys to be offered the vaccine was born in 2006 and is not shown because the cohort does not turn 13 until 2019.
- In 2018, AHA and seven former RHAs reported coverage rates on par or above the provincial average for one dose at 13 and 17 years and all dose categories at 15 years.
- In 2018, AHA and three former RHAs reported coverage rates at or above the provincial average for all age-dose categories and one former RHA reported coverage rate at or above the provincial coverage for all but one age-dose categories.
- The former Sun Country RHA and AHA reported coverage rates above the provincial average for all age-dose categories for 2017 and 2018. The former Kelsey Trail RHA reported coverage rates above the provincial average for all age-dose categories in 2017 and all but one age-dose categories in 2018. On the other hand, the former Sunrise and Regina Qu'Appelle RHAs reported coverage rates above the provincial average for all age-dose categories in 2018 and all but one age-dose categories in 2017.
- The former Cypress and Prairie North RHAs reported immunization coverage below the provincial coverage for all age-dose categories in 2018.
- Coverage rates for former health regions in Peer Groups F and H should be interpreted with caution (see Data Notes).

## SURVEILLANCE CASE DEFINITION

Human papillomavirus cases are not reported in Saskatchewan; therefore, a surveillance case definition is not available.

## DATA NOTES

There are 10 peer groups used by Statistic Canada, each identified by a letter (A to J). A peer group consists of former health regions with similar socio-economic characteristics which facilitates comparisons within a peer group. The twelve former health regions and one health authority in Saskatchewan fall into four groups identified by letters A, D, F and H. Peer groups used in this report are based on Statistics Canada's 2011 peer groupings and should not be compared to the current Statistics Canada peer groupings (2014).

Vaccine Coverage Data Source: Panorama is a comprehensive, integrated public health information system. Of the five modules in the system, four have been implemented: vaccine inventory, immunization, investigation management and outbreak management. When fully functional, it will help public health professionals work together to effectively manage vaccine inventories, immunizations, investigations, outbreaks and family health. To learn more, please visit: [www.ehealthsask.ca/services/panorama/Pages/default.aspx](http://www.ehealthsask.ca/services/panorama/Pages/default.aspx).

Most FNIHB-SK and NITHA communities, with the exception of those in AHA, are not currently using Panorama. Therefore, immunization data for most First Nations children are missing or are incomplete. This report includes only those children with Saskatchewan health coverage and registered in Panorama under a former health region or AHA as of April 1, 2019. In other words, children with Saskatchewan health coverage and registered in Panorama under FNIHB-SK or NITHA jurisdiction are excluded (including those from FNIHB-SK and NITHA communities in AHA). This means this report does not include coverage statistics for the entire provincial or regional population.

HPV vaccine is administered as a two-dose series of nine-valent (HPV-9) and can be administered at the same time as other age-appropriate vaccines such as adolescent and adult formulations of tetanus-diphtheria-acellular-pertussis (Tdap), hepatitis B and meningococcal conjugate vaccines. Immunization coverage is based on those who turned 13, 15 & 17 years by December 31 of 2017 and 2018. For example, the immunization coverage for 13-year-old children in 2018 is based on adolescents who were born in 2005 and their immunization doses received by their 13th birthday.