

Vaccine Preventable Disease Monitoring Report Human Papillomavirus, 2017

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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), 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 the Saskatchewan Immunization Management System (SIMS) and Panorama. Limitations associated with these systems have been described elsewhere.

Report Features:

Background
Epidemiological Summary
Vaccine Coverage by former RHA

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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 can cause mouth, nose, throat and anal cancers in males and females, cervical and vaginal cancers in females and penile cancer in males. 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

Since 2008, all provinces and territories have offered HPV immunizations for pre-adolescent and adolescent girls. The vaccine is not recommended for those younger than nine years.

The Saskatchewan Routine Childhood Immunization Schedule provides HPV vaccine to girls in Grade 6 and beginning in the fall of 2017, the Saskatchewan Ministry of Health expanded the current HPV immunization program to include Grade 6 boys. For the first year of its addition to the schedule in 2008, the vaccine was offered to girls in both Grades 6 and 7. The quadrivalent HPV vaccine 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. In September 2017, Saskatchewan replaced the quadrivalent HPV vaccine with the nine-valent HPV vaccine.

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

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

Human Papillomavirus coverage: 2017

- From 2013 to 2017, while provincial coverage rates steadily improved for 17-year-old girls, they declined or were stable for 13 and 15-year-old girls.
- In the two most recent years, there was a decline in coverage rates in all dose categories for all ages from 2016 to 2017. On average, coverage rates decreased by 2.2%, 4.1% and 0.5% for 13, 15, and 17-year-old teens respectively.
- On September 1 2017, Saskatchewan expanded HPV immunization to Grade 6 boys.
- 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 5,605 boys, ages 10 to 12 years were immunized with HPV vaccine between September 1, 2017 and June 30, 2018. Of these, 807 (14.4%) boys received only one dose and 4,798 (85.6%) boys received two doses.
- In comparison, during the same time 5,712 girls, ages 10 to 12 years, received HPV vaccine. Of these, 1,203 (21.2%) received only one dose and 4,509 (78.9%) received two doses.

Table 1: Female HPV vaccine coverage by year

Age	Doses	2017	2016	2015	2014	2013
13 years	1	75.5%	75.7%	77.0%	79.8%	80.2%
	2	69%	71.9%	74.5%	77.8%	78.5%
	3	N/A	61.4%	68.7%	72.8%	73.5%
15 years	1	81.6%	82.8%	81.8%	83.5%	81.5%
	2	77.7%	80.4%	80.2%	81.5%	79.7%
	3	71.4%	77.2%	77.4%	78.5%	76.6%
17 years	1	82.6%	83.0%	80.8%	80.0%	74.4%
	2	80.8%	81.2%	79.2%	78.5%	73.1%
	3	77.9%	78.2%	75.7%	75.4%	70.3%

N/A = not applicable

EPIDEMIOLOGY AND VACCINE COVERAGE SUMMARY

Table 2: HPV Vaccine Coverage by Former Health Region, 2017 (selected age & dose)

Former Health Region, 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
Saskatchewan	75.5	69	81.6	77.7	71.4	82.6	80.8	77.9
Peer Group A								
Regina Qu'Appelle	77.2	70.6	82.1	78.2	72.1	83.8	82	78.7
Saskatoon	76	67.4	82.9	77.7	71	83.1	81.6	78.5
Peer Group D								
Cypress	70.8	66.8	80.3	76.1	74.2	77.2	75.2	74.8
Five Hills	73.5	70.7	84.1	82.7	78	80.9	79.5	78.2
Heartland	77.8	75	74.1	73.7	70.3	84.3	84.3	83.5
Kelsey Trail	77.4	74.1	82.3	80.3	77.3	83.6	83.1	81
Sun Country	79.8	78.5	84.2	83.1	77.7	82.8	82.5	79.8
Sunrise	74.8	70.6	83.9	81.5	78.5	87.4	84.6	81.6
Peer Group F								
Athabasca Health Authority	100	100	95.7	91.3	82.6	95.7	95.7	91.3
Keewatin Yatthé	66.7	46.7	84.7	77.8	65.3	78.3	75.4	69.6
Mamawetan Churchill River	82.8	63.1	80.1	73.5	51.5	81.3	70.1	64.9
Peer Group H								
Prairie North	69.8	64.2	77.7	73	65.6	78.3	76.8	74.2
Prince Albert Parkland	70.9	64.3	77.1	72.5	65.8	80.6	78	73.7

- One year of coverage data in eight age-dose categories are provided by former RHA. A yellow highlighted cell means the former RHA's coverage rate is below the provincial coverage rate.
- HPV vaccine was added to the publicly-funded immunization program on September 1, 2008 for Grade 6 girls. During the first year, the vaccine was offered to girls in both Grades 6 and 7 and was given as a three-dose series.
- 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 in the above table.
- The 15 and 17-year-old girls in the above table 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 in the above table because the cohort does not turn 13 until 2019.
- 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.
- Athabasca Healthy Authority and the former regions of Regina Qu'Appelle, Kelsey Trail and Sun Country reported coverage rates above the provincial average for all age-dose categories.
- 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.

Vaccine Coverage Data Source: The Saskatchewan Immunization Management System (SIMS) is a client-based registry recording vaccines delivered by regional public health services. It does not include vaccines delivered out of province or by First Nations communities that declined to use SIMS. Immunization data from the former Keewatin Yatthé and Mamawetan Churchill River health regions and historical data from Athabasca Health Authority are incomplete. As a result, this report does not provide immunization coverage for the entire provincial or regional populations.

Panorama is a comprehensive, integrated public health information system. Of the five modules in the system, two have been implemented: vaccine inventory and immunization. When fully functional, it will help public health professionals work together to effectively manage vaccine inventories, immunizations, investigations, outbreaks and family health. Panorama's immunization module replaced the former Saskatchewan Immunization Management System (SIMS), on January 27, 2015. SIMS had been used province-wide since 2001. To learn more, please visit: www.ehealthsask.ca/services/panorama/Pages/default.aspx.

Most FNIHB and NITHA communities, with the exception of those in the Athabasca Health Authority (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 jurisdiction as of January 1, 2018. In other words, children with Saskatchewan health coverage and registered in Panorama under FNIHB or NITHA jurisdiction are excluded (including those from FNIHB 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. For example, the immunization coverage for 13-year-old children in 2017 is based on adolescents who were born in 2004 and their immunization doses received by their 13th birthday.