Human Papillomavirus (HPV) Vaccination Report:
North Dakota

May 2018

Working Together to Reach National Goals for HPV Vaccination

In collaboration with CDC's Division of Cancer Prevention and Control, this quarter's report highlights your jurisdiction's HPV–associated cancer burden. In addition, please see your jurisdiction's human papillomavirus (HPV) vaccine distribution trend for 2017 below.

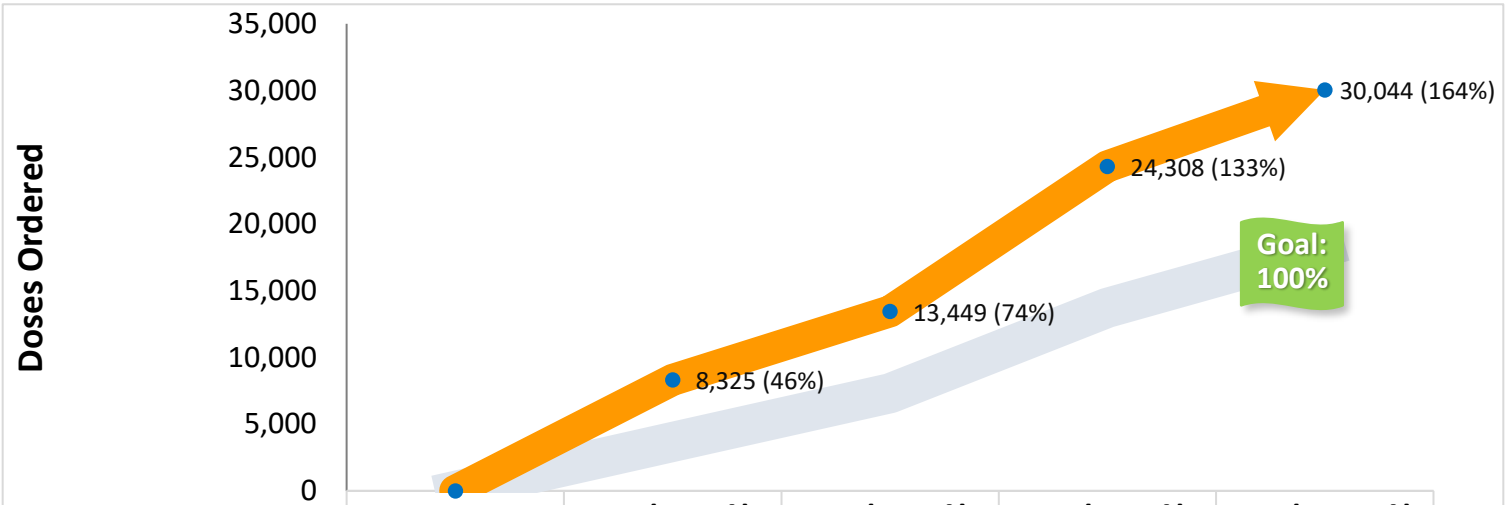
Every year in the United States, it is estimated that >30,000 people are diagnosed with a cancer caused by HPV infection. A large proportion of these cancers could be prevented with vaccination. See the second page of this report for data on HPV–associated cancers in your state or city.

Examining the percentage of HPV vaccine doses distributed while accounting for your jurisdiction's estimated 11-year-old* population provides a yardstick for measuring progress toward vaccinating this cohort. Nationally, HPV vaccine has been distributed as follows:

- 20% in the first quarter
- 20% in the second quarter
- 35% in the third quarter
- 25% in the fourth quarter

We used these percentages to measure progress toward vaccinating 11-year-olds for each quarter of 2017. Check the graph below to see how your jurisdiction did last year.

Year-to-date total of HPV vaccine doses ordered† in North Dakota, compared with doses needed to fully vaccinate 11-year-olds* in North Dakota, 2017



	Year Start	Q1 (20%‡)	Q2 (40%‡)	Q3 (75%‡)	Q4 (100%‡)
2017 Estimated	0	3,659	7,318	13,721	18,294
2017 Actual	0	8,325	13,449	24,308	30,044

Based on an estimated 9,147‡ 11-year-olds in North Dakota, your jurisdiction ordered **164%** of the estimated total annual doses of HPV vaccine needed to vaccinate all 11-year-olds. If all the ordered doses were used for 11-year-olds, North Dakota ordered a sufficient amount of vaccine for this age group in 2017 including extra doses for catch-up vaccination of older adolescents and young adults.

*The 11-year-old population estimate was obtained from the U.S. Census:
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2015_PEPSYASEX&prodType=table.
†These data represent an estimate of all HPV vaccine doses distributed in North Dakota. The 9-valent HPV vaccine is currently the only HPV vaccine available in the United States.
‡Estimated percentages of vaccine orders are based on the 11-year-old population estimate and national HPV vaccine ordering patterns over the last several years.

Have questions? Contact us at hpvquarterlyreport@cdc.gov.

HPV VACCINE IS CANCER PREVENTION

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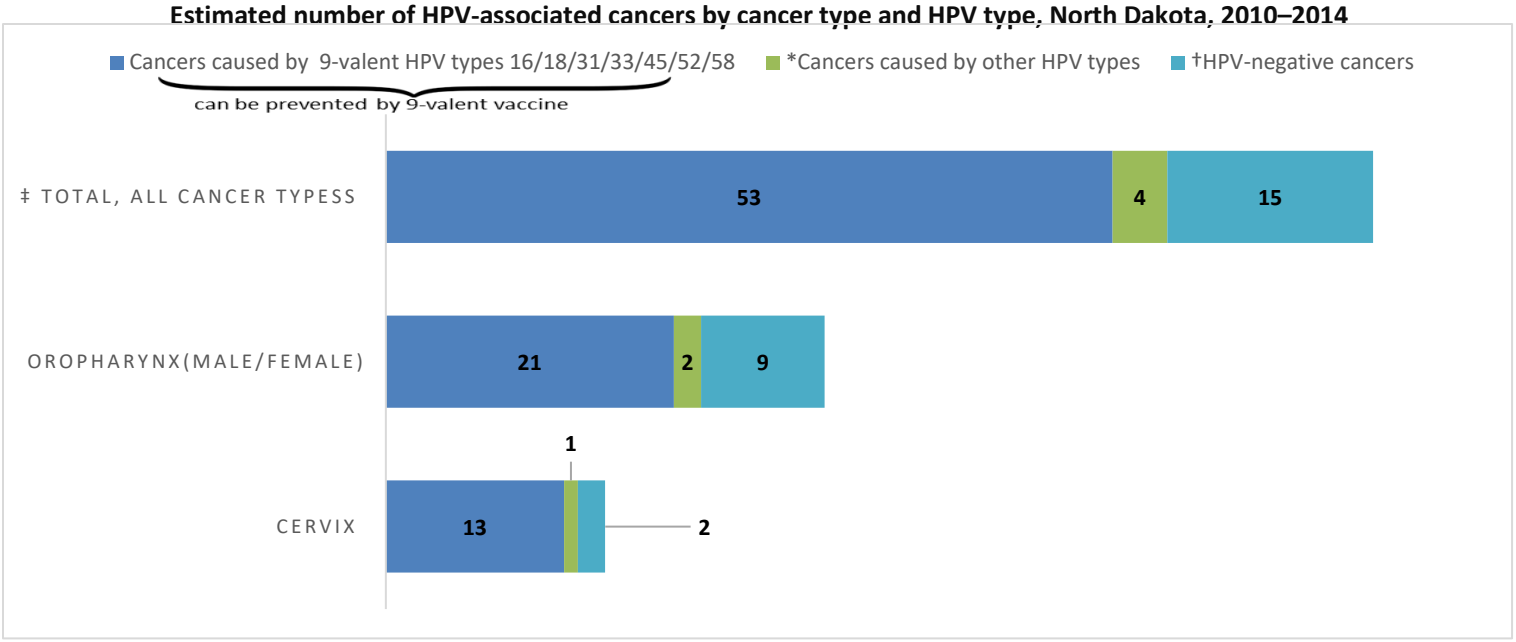
Estimated number of HPV-associated cancers by cancer type and HPV type, North Dakota, 2010–2014



Source: Data are from population-based cancer registries participating in the CDC National Program of Cancer Registries and/or the NCI Surveillance, Epidemiology, and End Results Program, meeting criteria for high data quality for all years 2010 to 2014, (all registries except Nevada, covering about 99% of the U.S. population).

* "Cancers caused by other HPV types" are cancers caused by HPV types not included in the 9-valent HPV vaccine.

†"HPV-negative cancers" are those that occur at anatomic sites in which HPV-associated cancers are often found, but HPV DNA was not detected.

‡"Total, all cancer types" includes HPV-associated cervical carcinomas as well as squamous cell carcinomas at other anatomic sites, including the vagina, vulva, penis, anus (including rectal squamous cell carcinomas), and oropharynx. However, due to small numbers, data points for the following sites are not displayed in the graph above: vagina, vulva, penis, anus, and rectum.

- **In North Dakota, an estimated total of 72 HPV-associated cancers were reported each year during 2010–2014. Of these, based on the national average, around 57 (79%) were HPV-attributable and around 53 (93%) could have been prevented with the 9-valent HPV vaccine, including 21 oropharyngeal and 13 cervical cancers. Of note, the majority (86%) of oropharyngeal cancers occurred among males.**
- Nationally, an estimated total of 41,000 HPV-associated cancers were reported in the United States each year during 2010–2014. Of these, around 79% (32,500/41,000) of cancers were attributable to HPV and of these, around 92% (30,000/32,500) could have been prevented by the 9-valent HPV vaccine, including 11,500 oropharyngeal and 9,400 cervical cancers *(data not shown in chart above)*.

HPV-associated cancers are defined as invasive cancers at anatomic sites with cell types in which HPV DNA is frequently found. These anatomic sites include the cervix, vagina, vulva, penis, anus, rectum, and oropharynx (back of the throat, including the base of the tongue and tonsils). These cell types include carcinomas of the cervix and squamous cell carcinomas of the vagina, vulva, penis, anus (including rectal squamous cell carcinomas), and oropharynx.

HPV-attributable cancers refers to the proportion of HPV-associated cancers probably caused by HPV. These cancers are estimated by multiplying the number of HPV-associated cancers by the percentage attributable to HPV.[1] Based on a CDC study[2] that used population-based data and determined HPV types in cancer tissue, about 90% of cervical cancers and 70% of oropharyngeal cancers are attributable to HPV.

References

[1]Viens LJ, Henley SJ, Watson M, et al. Human Papillomavirus–Associated Cancers—United States, 2008–2012. MMWR Morb Mortal Wkly Rep 2016;65:661-666. DOI: http://dx.doi.org/10.15585/mmwr.mm6526a1

[2]Saraiya M, Unger ER, Thompson TD, et al. US assessment of HPV types in cancers: implications for current and 9-valent HPV vaccines. *Journal of the National Cancer Institute* 2015;107(6):djv086.

Resources

-Centers for Disease Control and Prevention. Cancers associated with human papillomavirus by state, 2010–2014. USCS data brief, no. 2. Atlanta, GA: Centers for Disease Control and Prevention. 2017. https://www.cdc.gov/cancer/hpv/statistics/index.htm

-Centers for Disease Control and Prevention. Cancers associated with human papillomavirus, United States—2010–2014. USCS data brief, no. 1. Atlanta, GA: Centers for Disease Control and Prevention. https://www.cdc.gov/cancer/hpv/statistics/index.htm

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