Human Papillomavirus (HPV) Vaccination Report:

HPV VACCINE IS CANCER PREVENTION | Working Together to Reach National Goals for HPV Vaccination

May 2019

In collaboration with CDC's Division of Cancer Prevention and Control, this report highlights your jurisdiction's human papillomavirus (HPV)–associated cancer burden. In addition, please see below for your jurisdiction's HPV vaccine distribution trend for 2018.

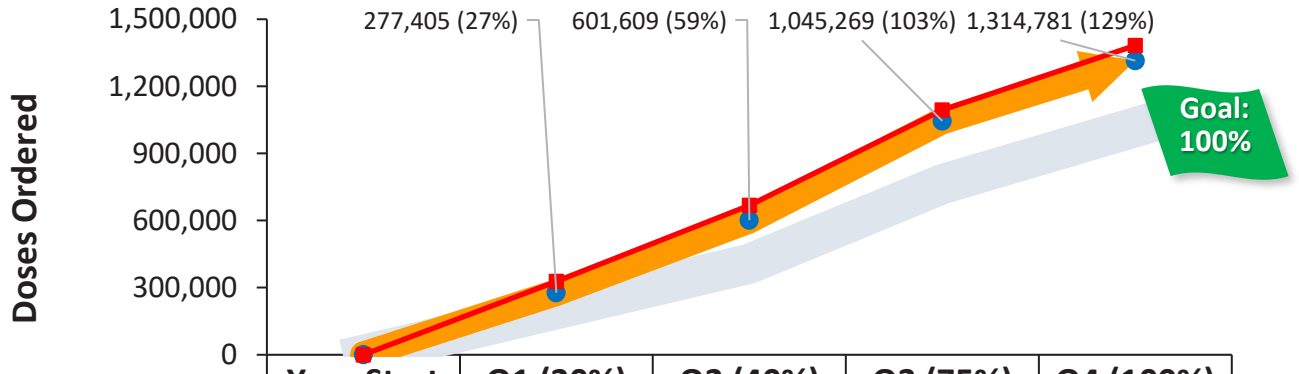
Approximately 42,700 HPV-associated cancers occurred in the United States each year during 2011–2015, including >11,000 cervical cancers, the most common HPV-associated cancer among women, and >18,000 oropharyngeal cancers, which are the most common among men.[1] However, it is estimated that 90% of cervical cancers and approximately 70% of oropharyngeal cancers could be prevented with HPV vaccine. 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 2018. Review the graph below to see how your jurisdiction did last year.

Year-to-date total of HPV vaccine doses ordered† in California, compared with the estimated number of doses needed to fully vaccinate 11-year-olds* in California in 2018



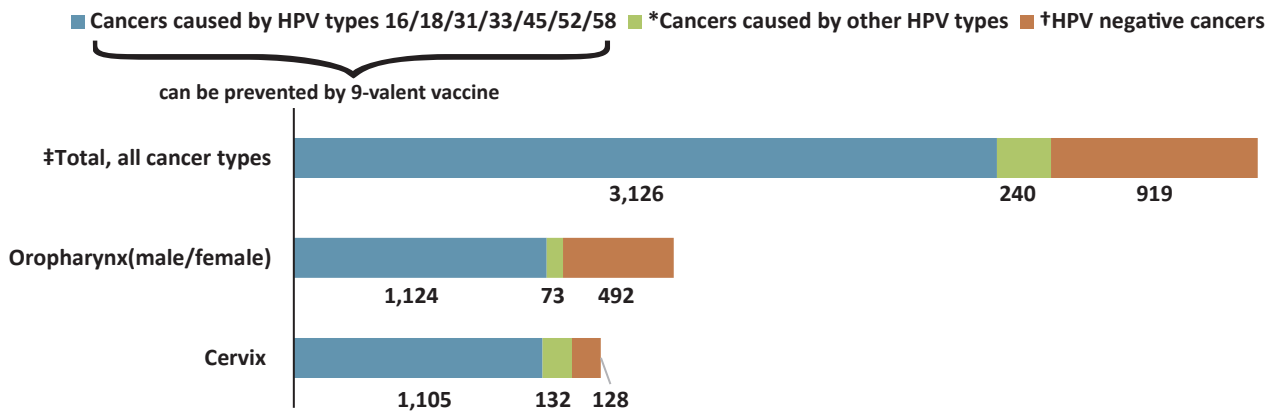
	Year Start	Q1 (20%)	Q2 (40%)	Q3 (75%)	Q4 (100%)
2018 Estimated‡	0	203,460	406,919	762,974	1,017,298
2018 Actual	0	277,405	601,609	1,045,269	1,314,781
2017 Actual	0	328,017	667,865	1,093,627	1,382,601

Based on an estimated total of 508,649‡ 11-year-olds in California, your jurisdiction ordered **129%** 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, California ordered a sufficient amount of vaccine for this agre group in 2018.

*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 California. 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.

Estimated annual number of HPV-associated cancers by cancer type and HPV type, California, 2011–2015



Source: Data are from population-based cancer registries participating in the CDC National Program of Cancer Registries and/or NCI's Surveillance, Epidemiology, and End Results program that met data quality criteria for 2011–2015, covering 100% 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 California, an estimated total of 4,285 HPV-associated cancers were reported each year during 2011–2015. Of these, around 79% (3,366/4,285) were attributable to HPV and, of these, around 93% (3,126/3,366) could have been prevented with the 9-valent HPV vaccine, including 1,124 oropharyngeal and 1,105 cervical cancers. Of note, the majority of these oropharyngeal cancers occurred among males.**
- Nationally, an estimated total of 42,700 HPV-associated cancers occurred in the United States each year during 2011–2015. Of these, around 79% (33,700/42,700) were attributable to HPV and, of these, around 93% (31,200/33,700) could have been prevented by the 9-valent HPV vaccine, including 27,100 caused by HPV types 16 and 18 and 4,100 caused by HPV types 31/33/45/52/58 (*data not shown in chart above)*.[1]

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.[2] Based on a CDC study[3] 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. Centers for Disease Control and Prevention. Cancers associated with human papillomavirus, United States—2011–2015 USCS data brief, no. 4. Atlanta, GA: Centers for Disease Control and Prevention. 2018. https://www.cdc.gov/cancer/hpv/pdf/USCS-DataBrief-No4-August2018-508.pdf
2. 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
3. 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

- **HPV and Cancer.** https://www.cdc.gov/cancer/hpv/
- **Human Papillomavirus (HPV).** https://www.cdc.gov/hpv/index.html

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