

OREGON PUBLIC HEALTH DIVISION • DEPARTMENT OF HUMAN SERVICES

HUMAN PAPILLOMAVIRUS VACCINE: IS IT WORKING?

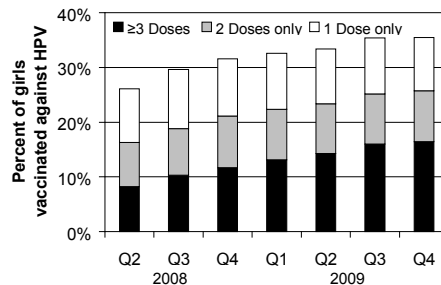
While cervical cancer incidence in Oregon women is relatively low (123 cases in 2006), among Oregon Latina women it is the 4th most common cancer.* Pap screening and consequent treatment of cervical pathology can prevent progression to cancer but at the cost of numerous physician visits, invasive cervical procedures and lots of money. This issue of the *CD Summary* introduces “HPV IMPACT,” a multi-site surveillance effort to measure the effectiveness of HPV vaccines and to monitor the epidemiology of HPV disease. As part of HPV IMPACT, the Oregon Public Health Division (OPHD) will soon be contacting clinicians who care for women in the Portland metropolitan area for information about patients with severe cervical dysplasia.

HPV VACCINES

Essentially all cervical cancer is associated with at least one of 40 “high-risk” mucosal strains of human papillomavirus (HPV), and two of these (viz., types 16 and 18) cause about 70% of cervical cancers.¹ In June 2006, the first vaccine against HPV — Gardasil® — was licensed by the U.S. Food and Drug Administration (FDA); later that month the federal Advisory Committee on Immunization Practices (ACIP) recommended the three-dose series for universal use in girls and women 11–26 years of age.² In October 2009 another vaccine — Cervarix® — was approved by FDA and recommended by ACIP for similar use.³ In randomized, controlled trials, each of these vaccines proved impressively efficacious in preventing pre-cancerous cervical lesions caused by HPV types 16 and 18.^{4,5} Since the 2006 ACIP recommendation, HPV vaccine use has been on the rise; according to our best data, about 35% of Oregon girls 11–18 years of age have had at least one dose (Figure).

* Oregon State Cancer Registry. *www.oregon.gov/DHS/ph/oscar/arpt2006/cervi06.pdf*. Accessed 30 Mar 2010.

HPV vaccine uptake for Portland-area girls aged 11–18 years by calendar quarter, 2008–2009



WHY SURVEILLANCE?

First, there’s a difference between “efficacy” and “effectiveness.” The former describes how well a vaccine works in the idealized conditions of a clinical trial, where cooperative subjects are enrolled and followed closely, vaccine is stored and administered meticulously, and few doses are missed. On the other hand, “effectiveness” indicates how well a vaccine works in real-world practice — an important question for a 3-dose vaccine that costs \$120/dose.

Second, even with licensed vaccines, cervical disease will continue to occur, albeit at lower rates. The cost of the HPV vaccines puts them out of reach for many girls and young women. Vaccine uptake may vary by demographic factors, including geography. In general, after a vaccine has had time to reduce disease incidence, it’s good to know where the remaining disease is so that it can be targeted.

Oregon is one of five sites around the country setting up HPV disease surveillance with the cooperation of histopathology laboratories. Here, we’re working with the labs that serve the most populated zip codes in the Portland metropolitan area; 11 laboratories are currently participating. The surveillance consists of case reports for women ≥18 years of age who reside within the catchment area and have biopsy-confirmed cervical intraepithelial neoplasia, grades 2 or 3 (CIN 2/3) or adenocarcinoma *in situ* (AIS) on or

after January 1, 2008. To date, 714 case reports have been confirmed.

For these efforts to succeed, OPHD needs the help of Oregon’s clinicians and healthcare facilities. The collaborating pathology labs flag the cases and report them; but they often lack key data like HPV vaccination and cervical screening histories. Our HPV IMPACT staff are contacting providers for additional information on patients with biopsy-confirmed lesions reported to OPHD.

To supplement case reports, we ask participating laboratories for residual cervical histology specimens; these will be forwarded anonymously to CDC, where the pathology will be reviewed and HPV strains characterized. With analysis of the case reports, vaccine history data and HPV subtypes, it will be possible to monitor trends in HPV-associated cervical disease in Oregon, along with vaccine effectiveness and strain-specific epidemiology — years before changes in cervical cancer incidence could be appreciated.

Be advised that the regulations of the federal Health Insurance Portability and Accountability Act permit disclosure of this information to OPHD: “A covered entity may disclose protected health information for the public health activities and purposes described in this paragraph to...a public health authority that is authorized by law to collect or receive such information for...the conduct of public health surveillance, public health investigations, and public health interventions” (45 CFR 46 §164.512). Moreover, Oregon law (Oregon Revised Statute 432.060) protects the confidentiality of information reported to OPHD in epidemiologic morbidity studies like HPV IMPACT.

Contact Dr. Jim Gaudino at 971-673-0288 or e-mail him at james.a.gaudino@state.or.us with questions.

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Agranulocytosis and Cocaine Use

From March 2008 through November 2009, 21 cases of cocaine-associated agranulocytosis were investigated by the New Mexico and Seattle King County Departments of Health. In a previous cluster in November 2008, public health officials in Canada reported detecting levamisole (an antihelminthic drug used mainly in veterinary medicine and a known cause of agranulocytosis) from clinical specimens and drug paraphernalia of cocaine users with agranulocytosis; levamisole was detected in clinical specimens in four of the five U.S. patients tested. According to the Drug Enforcement Administration (DEA), as of July 2009, 69% of seized cocaine lots coming into the United States contained levamisole; why it was added

is unknown. Consider exposure to cocaine in the differential diagnosis of agranulocytosis, and report suspected cases to your local health department.

CDC has begun national surveillance for agranulocytosis associated with cocaine use in order to characterize the problem, identify risk factors, and describe the clinical presentation. The Substance Abuse and Mental Health Services Administration is serving as a centralized source for information. Additional information is available from Nicholas Reuter (nicholas.reuter@samhsa.hhs.gov).

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Haitian Hazards

Malaria is seldom on the radar screen of clinicians and public health staff in Oregon, but we may need to increase our “index of suspicion” in this area, particularly in the setting of febrile illness among those who have recently been in Haiti.

The devastating magnitude 7.0 earthquake on January 12 has forced many in Haiti, including U.S. responders, to live outdoors or in temporary shelters. This exposes them to bites from mosquito vectors of malaria, which is endemic in Haiti. Between January 12 and February 25, 11 cases of falciparum malaria were confirmed in the U.S. among persons who had recently been in Haiti; seven of these were emergency responders, and one was a U.S.-based traveler.¹ Of the six cases for whom information was available about adherence to recommended

chemoprophylaxis, none (0) reported following the recommended regimen.

In light of this:

1. Consider the diagnosis of malaria in patients with fever after returning from Haiti, and order blood smears for *Plasmodium*.
2. Advise wanderlustig patients of CDC's current recommendation that non-essential travel to Haiti be avoided altogether. (You might show them this article.)
3. For patients who must travel to Haiti, review the importance of malaria prophylaxis; for specifics, consult the CDC Traveler's Health Web site (www.cdc.gov/travel/default.aspx).

REFERENCE

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Mumps Passing Over?

Since June 2009, 1,521 cases of mumps have been reported from New York and New Jersey, predominantly among Hasidic Jews. The outbreak has been concentrated among school children, predominantly boys, who attend separate schools from the girls.¹ Because children attend these schools from around the U.S. and may return home during Passover (March 30–April 6), be on the lookout for mumps in this population.

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