

Successful Use of Interventions in Combination to Improve Human Papillomavirus Vaccination Coverage Rates Among Adolescents—Chicago, 2013 to 2015

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ABSTRACT

In 2013, National Immunization Survey-Teen data indicated that >40% of female adolescents had not initiated the human papillomavirus (HPV) vaccine series and >60% had not completed the series, documenting vaccination rates much lower than those for other vaccines recommended for adolescents. The Chicago Department of Public Health (CDPH) was 1 of 22 jurisdictions nationwide to receive a Prevention and Public Health Fund award through the Centers for Disease Control and Prevention to improve HPV vaccination rates among adolescents. The CDPH implemented 5 interventions targeting the public, clinicians and their staff, and diverse immunization

and cancer prevention stakeholders. Compared with 2013 jurisdiction-specific HPV vaccination rates among all adolescents, Chicago's HPV vaccination rates were increased significantly in 2014 and 2015. This article details the methods and results of Chicago's successful interventions, the particular strengths as well as barriers encountered, and future steps necessary for sustaining improvement.

KEYWORDS: adolescents; Assessment, Feedback, Incentives, eXchange; human papillomavirus; intervention; vaccination

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AFTER STAGNATION FROM 2011 to 2012,¹ the 2013 revised national human papillomavirus (HPV) vaccination coverage estimates among female adolescents aged 13 to 17 years increased only modestly to 56.7% for ≥ 1 HPV vaccine dose and 36.8% for ≥ 3 HPV vaccine doses,² showing that >40% of female teens had not initiated the vaccine series and >60% had not completed it. Because 2011 to 2012 HPV vaccination coverage estimates indicated that many adolescents were unnecessarily vulnerable to vaccine-preventable HPV-associated cancers, the Centers for Disease Control and Prevention (CDC) solicited applications in 2013 from 64 eligible state and local immunization programs with the purpose of increasing HPV vaccination coverage among adolescents through the use of 5 specified interventions in combination. During 2013 to 2014, the Chicago Department of Public Health (CDPH) was 1 of 22 public health jurisdictions to apply for and receive federal funding through CDC and the Prevention and Public Health Fund.^{3,4} To the authors' knowledge, this article represents the first published, peer-reviewed description related to the completion and

evaluation of this combination of interventions in a public health jurisdiction.

In serving the third largest US city, CDPH supports a diverse population of >2.7 million Chicago residents; of these, 23.1% are aged younger than 18 years.⁵ In 2013, ≥ 1 HPV dose vaccination coverage among Chicago female teens aged 13 to 17 years was 57.6%,³ similar to the 2013 revised national estimate.² Before receipt of this award in late September 2013, the CDPH Immunization Program (CDPH-IP) had initiated efforts to increase HPV vaccination among Chicago youth. CDPH-IP's routine work included enrolling and supporting >600 clinics that participate in the federal Vaccines for Children Program (VFC). The VFC provides vaccines at no purchase cost to clinicians serving children who might not otherwise have access to vaccines.⁶ The CDPH-IP facilitated educational opportunities for VFC providers including multiple local and regional meetings, and successfully piloted clinician-to-clinician educational enhancement of a federal quality improvement program known as AFIX (Assessment, Feedback, Incentives, eXchange).⁷ The synergies

between preaward activities, award interventions, and postaward planning are described.

METHODS

To increase HPV vaccination rates among adolescents, the 22 awardees implemented 5 prespecified interventions.^{3,8} In addition to funding, the CDC provided awardees medical, technical, and communications support through individual teleconference calls (monthly and as needed), ≥ 18 all-awardee conference calls and, in November, 2014, an all-awardee onsite meeting at CDC. Some interventions' implementations varied according to jurisdiction, on the basis of available infrastructure, capacity, staffing, political factors, and past/ongoing programmatic experiences and activities. Because initial project periods were only 15 months, awardees also varied in extents of evaluation plans. Two awardees completed interventions in 15 months; 19 awardees, including the CDPH, received 12-month no-cost extensions and completed interventions in 27 months, and 1 awardee will complete interventions in 39 months. The timelines for implementation of interventions in Chicago are shown in Figure 1. The five interventions included: developing a jurisdiction-wide collaborative initiative with stakeholders, implementing education and skill-building strategies targeting immunization providers, using immunization information system (IIS)-based reminder/recall, conducting a comprehensive communication campaign targeting the public, and using AFIX visits to evaluate and improve immunization providers' performance in HPV vaccine series administration.

AFIX visits on the basis of federal guidelines entail "assessment" through quantitative and qualitative evaluation of immunization data to determine the immunization coverage rate for a defined age cohort of patients at the clinician or practice level.⁹ The aims of AFIX "feedback" include review of vaccination coverage rates, discussion of current service delivery practices, and identification of quality improvement strategies for implementation.^{8,9} AFIX "incentives" recognize improvement, and "exchange" of information with providers facilitates longitudinally monitoring progress.⁹ Notably, the CDPH

enhanced the AFIX process through individualized clinician-to-clinician feedback and education for all AFIX visits conducted as part of this award.

INTERVENTION 1: DEVELOPING A JURISDICTION-WIDE COLLABORATIVE INITIATIVE WITH STAKEHOLDERS (OCTOBER 2013 TO DECEMBER 2014)

To coordinate and convene a jurisdiction-wide HPV Advisory Committee, the CDPH used an existing contract to fund EverThrive Illinois, a robust immunization coalition. EverThrive invited participation of diverse stakeholders including a cancer coalition, 4 cancer medical centers, a health insurance company, a retail pharmacy chain, multiple community groups serving racial and ethnic minorities, the Illinois Caucus for Adolescent Health, professional organizations (eg, Illinois Chapter of the American Academy of Pediatrics [ICAAP], Illinois Academy of Family Physicians), and the American Cancer Society. The HPV Advisory Committee was charged with 3 tasks: 1) reviewing national, state, and local HPV vaccination coverage levels, 2) providing input on educational materials/messaging, and 3) committing to disseminating final products to target audiences (eg, community, clinicians).

INTERVENTION 2: IMPLEMENTING EDUCATION AND SKILL-BUILDING STRATEGIES TARGETING PROVIDERS (JANUARY 2014 TO SEPTEMBER 2015)

The CDPH and ICAAP collaboratively developed a comprehensive HPV education curriculum tailored for primary care providers, with input from the HPV Advisory Committee and local content experts. Content included HPV epidemiology, HPV-attributable diseases, vaccination coverage rates, vaccine safety and efficacy, and strategies to improve vaccination within practice settings. Materials were delivered via multiple formats including in-person training, dinner seminars, grand rounds lectures, and webinars. In-person formats were hosted in Chicago venues; webinars were available statewide. Continuing education credits were available for physicians, nurses, nurse practitioners, and medical assistants. After every program, the ICAAP conducted evaluations to measure participant knowledge, attitudes, and practices regarding HPV vaccination, and collected feedback. Evaluation results from

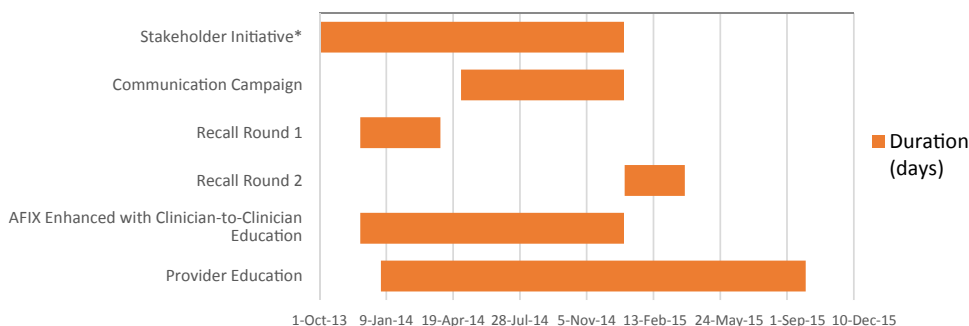


Figure 1. Timelines for implementation of 5 interventions in combination—Chicago, 2013 to 2015. *The HPV Stakeholder Group continues to meet quarterly, but formal grant-related activities ended in December 2014. AFIX indicates Assessment, Feedback, Incentives, eXchange, a federal quality improvement program.⁹

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