

## Using Health Information Technology to Improve Delivery of HPV Vaccine

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<b>Organization:</b>	University of Rochester
<b>Mechanism:</b>	PAR: HS09-085: Mentored Clinical Scientist Research Career Development Award (K08)
<b>Grant Number:</b>	K08 HS 017951
<b>Project Period:</b>	September 2009 – September 2014
<b>AHRQ Funding Amount:</b>	\$745,995
<b>Summary Status as of:</b>	December 2010

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**Target Population:** Adults, Inner City\*, Teenagers, Women\*

**Summary:** A vaccine to prevent human papillomavirus (HPV) infection is now recommended for all females aged 11-to-26 years. The vaccine is highly effective if all three doses are received prior to exposure to HPV strains. However, approval and recommendation of a vaccine does not ensure its receipt. Barriers to completion of the three-dose HPV vaccine regimen include health care provider factors (e.g., competing health care priorities during medical visits), and parent or adolescent factors that prevent patients from returning for booster doses.

This project will determine whether the use of electronic patient reminders can shorten intervals between HPV vaccine doses and increase overall rates of completion of HPV vaccination regimen in inner-city settings as compared to practices without reminders. Two health information technology (IT) interventions are planned. The first and primary intervention will be an electronic reminder, delivered by e-mail, text message, or a social networking site, to patients for followup doses of vaccine. The second will use electronic medical record prompts for providers to reduce missed opportunities for immunization. Prompting effectiveness will be measured using a before-and-after study design.

Quantitative interviews with parents of adolescent girls, and adolescents themselves will guide the intervention design. A retrospective cross-sectional analysis of the intervention will be performed in four inner-city primary care practices. Post-intervention rates of missed opportunities for HPV vaccination, intervals between vaccine doses, overall rates of completed HPV vaccination courses, and health maintenance visits will be measured in several intervals at each practice. Data will be analyzed to assess the overall effectiveness of the prompting and patient reminder intervention in reducing missed opportunities and improving vaccination completion rates. The project will also assess rates of health maintenance visits and other vaccinations for adolescents in intervention and comparison practices. Outcomes will be measured at baseline, the electronic patient reminder will then be implemented, and summary statistics will be generated 6, 12, and 18 months after the intervention begins.

### Specific Aims:

- Measure parent and adolescent preferences for methods of communication with the adolescent's provider (**Ongoing**)
- Measure baseline rates of missed opportunities for HPV vaccination, the intervals between HPV

vaccine doses, and the proportion of patients who received one, two, or three vaccinations. **(Ongoing)**

- Develop and implement a health IT-based intervention to reduce missed opportunities, reduce intervals between doses, and increase completion of the HPV vaccination series in inner-city practices. **(Upcoming)**
- Measure post-intervention rates and analyze data. **(Upcoming)**
- Complete educational objectives. **(Ongoing)**

In addition to the specific research project aims, as part of this Mentored Clinical Scientist Research Career Development Award, Dr. Rand will complete the following education objectives: learn health informatics theory and be able to apply it to both clinical decision support for providers and self-management support for patients; become expert in implementing and sustaining quality improvement (QI) projects based in health IT and teach these skills to other health care providers; skillfully implement qualitative research methods and develop advanced skills in the application of quantitative statistical methods; improve career skills by writing sound manuscripts and competitive grants; and networking with leaders in health IT, immunization delivery, QI, and adolescent preventive health.

**2010 Activities:** Dr. Rand completed a retrospective chart review in one practice to build a dashboard and measure HPV vaccination rates. A survey to evaluate patient access to technology and preferences for reaching them was designed and piloted. Institutional review board approval for working with additional practices and the survey was submitted. Significant progress toward the completion of the Dr. Rand's educational objectives continued.

**Preliminary Impact and Findings:** The project does not have any findings to date.

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**Strategic Goal:** Develop and disseminate health IT evidence and evidence-based tools to improve health care decisionmaking through the use of integrated data and knowledge management.

**Business Goal:** Knowledge Creation

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\* *AHRQ Priority Population*