The Health Care Foundation of Greater Kansas City and the REACH Healthcare Foundation partnered and funded an initiative in 2007 that provided free human papillomavirus (HPV) vaccines for girls and women (age 9-26). The vaccine was available at a variety of safety net, primary care, and public health department facilities in a six-county service area. The original goal was to immunize 6,400 women, 5,000 from an initial investment in 2007 and an additional 1,400 from investments in 2009. Goals for the evaluation of vaccine recipients:

- Measure performance at the clinic and regional levels.
- Identify model practices to enhance the vaccine delivery.
- To provide real-time feedback on issues regarding the initiative to directors and staff.

As shown in **Table 1**, a total of 16,240 vaccines were provided to 10,546 girls and young women, far exceeding the goal set forth at the beginning of the initiative. Because most girls under the age of 18 were provided the vaccine at no cost through the Vaccine for Children program, the marketing of the campaign targeted the 18-26 demographic. Over 85 percent of the vaccines were administered to young women ages 18-26.

Table 1: Overall Initiative Statistics

Data through 10/31/10	Vaccine Doses		Individuals	
TOTAL	16,240		10,546	
AGE*				
Adults (18 +)	13,889	85.5%	9,037	85.7%
Teens (13-17)	1,930	11.9%	1,232	11.7%
Tweens (9-12)	288	1.8%	188	1.8%
RACE				
White	9,471	57.7%	5,976	56.7%
Black	3,731	22.7%	2,599	24.6%
Asian/Pacific Islander	684	4.2%	450	4.3%
AI/AN/UK/O**	2,346	14.3%	1,514	14.4%
ETHNICITY				
Hispanic	4,218	25.7%	2,712	25.7%
STATE				
Kansas	6,616	40.3%	4,358	41.3%
Missouri	9,624	58.6%	6,188	58.7%
COUNTY*				
Allen County	547	8.3%	329	7.5%
Johnson County	3,413	51.6%	2,159	49.5%
Wyandotte County	2,551	38.6%	1,782	40.9%
Cass County	226	2.3%	119	1.9%
Jackson County	8,688	90.3%	5,616	90.8%
Lafayette County	365	3.8%	198	3.2%
Total	**16,240**		**10,546**	

**Denotes a variable that has missing data values.*
***American Indian, Alaska Native, Unknown and Other*

Patterns of First, Second and Third Doses

The HPV vaccine requires three shots; one at the initiation of the series, another two months after the first followed by a final dose six months after the first shot. The HPV Vaccine Initiative was designed to encourage series completion. The distribution sites were responsible for recalling participants and a variety of strategies were used. Some sites used a reminder card provided to patients at the time of their first shot, some sent a postcard to remind the participant to come back for their second or third shot, and some sites phoned, text messaged or emailed patients (the modality selected by the patient) to alert them to the need to continue receiving the vaccine. While the techniques varied, successful completion cannot be attributed to any one recall strategy compared to any other.

Table 2. Participant Doses and Dose Combination

Data through 10/31/10	All Participants	
Dose 1	4,225	40.3%
Dose 2	1,060	10.1%
Doses 1 and 2	1,743	16.6%
Dose 3	866	8.3%
Doses 1 and 3	304	2.9%
Doses 2 and 3	486	4.6%
Doses 1, 2, and 3	1,799	17.2%
Total	**10,483***	

**This does not equal 10,546 due to missing data.*

Over half (52 percent) of individuals who completed the three shot series received all three shots through the initiative while another 25 percent were able to finish the series by receiving their third and final shot using the free vaccine. **Table 2** provides data on the pattern of doses and completion rates among all participants in the HPV initiative. It is anticipated that nearly 17 percent of individuals who received their first and second doses will also seek to receive their final third dose through the program.

Providing the vaccine at no charge removed a significant barrier for low-income women, but cost is not the only issue that impacts completing the vaccine series. Changing residence, jobs, family responsibilities and unreliable transportation may also contribute to delays in receiving all three vaccine doses on schedule. Even in light of social and economic challenges, participants in the HPV initiative completed the three dose series at a rate comparable to national average.

Start-Up, Maintenance and Completion Phases of the Program

Whenever a new public health initiative begins, it is expected that there will be delays in the “ramping up” to provide services. Substantial efforts were invested in

Table 3. Total Vaccine Doses Provided By Phase

Data through 10/31/10	Doses Provided	3rd Doses Provided
Phase 1 (09/07 - 12/08)	9,434	1,533
Phase 2 (01/09 - 12/09)	4,296	1,192
Phase 3 (01/10 - 10/10)	2,404	617
Total	**16,134***	**3,342**

**106 observations were missing date administered*

building awareness and attracting participants through strategic communications and outreach. The first phase of the HPV initiative was characterized by very rapid uptake and a month-by-month increase in involvement of the target population. **Table 3** shows progress during 3 different phases from 2007 to 2010. During Phase 2, many of those interested and ready to participate were already engaged, and the program progressed at a fairly steady pace. Phase 3 shows continued activity but at a slower pace as individuals completed their series. It is important to note that while the total number of vaccine doses provided decreased, the percent of participants returning for their third dose in the series steadily increased. This observation reinforces the point made in **Table 2** that many participants stayed active and sought to complete their vaccinations using the program.

Summary and Key Learnings

The FDA approved June, 2006, and awareness about a vaccine that could protect women from cervical cancer was growing. The national marketing campaign of the drug company that developed the vaccine was receiving wide-scale recognition (the "One Less" campaign), and this served to increase knowledge and created a positive environment for the foundations' free vaccine initiative. As a result of this initiative, over 3,455 girls and women have been fully immunized from HPV and another 7,000+ have at least begun their immunization series.

Throughout the course of the three year community-based effort, a number of factors can be identified that made a difference in meeting program goals. Some of the most important are outlined below:

It takes a committed staff of health care and public health professionals to be successful. The evaluation team learned that when all of the staff members (clinical and non-clinical) at the distribution sites were positive and focused on encouraging eligible participants to get the vaccine, vaccination rates at those clinics soared. The providers' attitude made a major difference, regardless of whether they served a small or large target patient population.

The media is both a powerful way to increase public awareness and a major barrier to HPV vaccination. Many clients sought the HPV vaccine because they had heard a news story, read an article or watched a television commercial about "the shot that can prevent cervical cancer." Teenagers and young women especially reported that they were interested in the vaccine because of media exposure. On the other hand, when patients were seen at the distribution sites' clinics for health care services and were made aware of the free vaccine program, many of them cited hearing negative stories in the media about side effects and the dangers in general from immunization programs as the reason they declined to participate.

Meeting the health care needs of hard-to-reach populations in the bi-state area remains a difficult goal. Health care providers lamented throughout the project about how much time they had to devote to following up with patients to ensure that they received their second and third doses. The target population was mobile, often changing addresses over the course of the six months, making it harder to remind patients to return to complete the required vaccination series. Furthermore, language barriers, low health literacy concerning everything from cervical health to how infection spreads, concerns about needles and shots, and a general distrust of the medical system all represent routine challenges to serving this population.

Challenging issues call for innovation and flexibility. A key attribute of this community-based program was its willingness to identify issues that appeared to be challenges and find innovative solutions. For example, when distribution sites reported their desire to have a more comprehensive outreach the program responded by producing radio, bus and other print advertisements to increase awareness of the free vaccine. The second example solved a need at the local level to better focus on particular groups specifically minority and hard to reach populations. The program decided to engage AmeriCorps workers to assist. These are examples of the program flexibility and innovation that contributed to overall success.

As the HPV Vaccine Initiative comes to a close, the two foundations have worked alongside the area health departments to continue to vaccinate uninsured and underserved women through replenishment of the vaccine. Coupled with an additional initiative from the Missouri Foundation for Health, the commitment made by the foundations to vaccinate young women represents the most comprehensive HPV vaccine program in the country. The public/private partnership has served as a model that other states have and will continue to replicate.