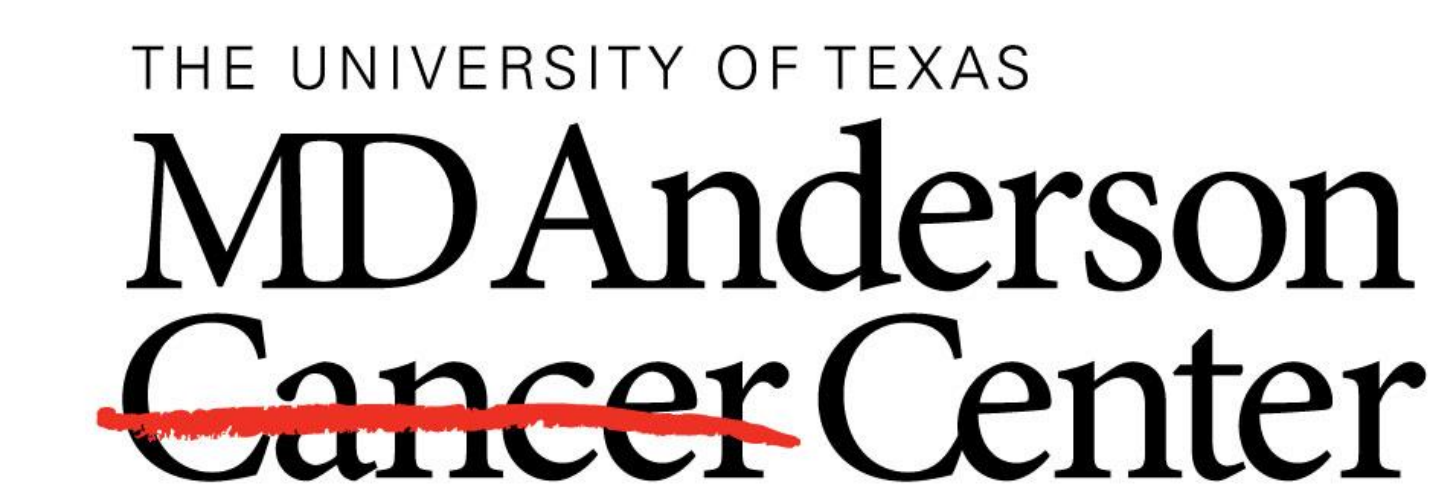


# Catching up: Building sustainable community-academic alliance to increase Human Papillomavirus vaccination uptake among college students



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## BACKGROUND

- Human Papillomavirus (HPV) is a common sexually transmitted infection among college students, a group still eligible for HPV vaccination.<sup>1</sup>
- In Puerto Rico (PR), approximately half of females (49.9%) and less than one-third of males (23.7%) aged 13 to 17 years have completed the HPV vaccine series. Although those rates are slightly higher than United States (US) overall HPV vaccination rates, both, PR and US, are below the target goal of 80% by Healthy People 2020.<sup>2-3</sup>
- The President's Cancer Panel has identified missed opportunities in the promotion for catch-up vaccination for older adolescents and young adults, a group identified for cancer prevention.<sup>4</sup>
- Community-academic alliances targeting college students can be used to improve HPV vaccination rates by catching up with those who have not initiated or completed the 3-doses series.

## OBJECTIVE

- To develop a community-academic alliance aiming to promote a sustainable infrastructure of research, outreach, training and HPV vaccination clinics for college students in PR.

## METHODS

- A multilevel approach consisting of a series of research and outreach activities; training, as well as vaccination clinics targeting college students and parents from period consisting from December 2013 up to May 2015.

### Our group

- The Puerto Rico Community Cancer Control Outreach Program (PRCCCOP) from the U54 University of Puerto Rico (UPR) and the MD Anderson Cancer Center Partnership for Excellence in Cancer Research (Grant # CA096297, CA096300).
- Since 2006, PRCCCOP has been engaging community, government, and non-governmental organizations in cancer control efforts with a focus in tobacco control, breast, cervical and colorectal cancer screening, and HPV vaccination uptake.

**Table 1.** Alliance activities description from December 2013 to May 2015.

Type of activity	Brief description	Target audience	Data gathered	Statistical analysis
Research <sup>1</sup>	Evaluation of the educational intervention ¡Habra de VPH! <sup>2</sup>	College students and parents <sup>3</sup>	Socio-demographical survey and 11-item pre- and post test. Students answered a follow-up survey.	Univariate analysis to describe study sample. Paired t-test and Wilcoxon sign test to determine changes in participants knowledge.
Outreach	Dissemination of HPV and HPV vaccine information in health fairs and short educational sessions of ¡Habra de VPH! <sup>4</sup>	College students and parents <sup>3</sup>	Socio-demographical survey <sup>4</sup>	Univariate analysis to describe outreach participants
Training	Capacity building	Health professionals	List of participants	_____
	Train-the-trainers and awards to participate at the 2 <sup>nd</sup> Immunization Congress <sup>5</sup>	Students peers		
Vaccination clinics	HPV vaccination clinics coordinated by a UPR-Campus	College students	Socio-demographical survey and HPV vaccine doses received	Univariate analysis to describe vaccination clinics participants

<sup>1</sup>The study protocol was approved by the Institutional Review Boards of the UPR-Medical Sciences Campus and UPR-Bayamón and by the Institutional Research Committee for Human Subjects Protection from the UPR-RP. <sup>2</sup>¡Habra de VPH! (Let's talk about HPV!) is an educational intervention developed by our group (PRCCCOP) that provided general information about HPV, HPV vaccination benefits and provide information on opportunities for vaccination according to the individual's health insurance plan and the student's age. <sup>3</sup>Freshmen parents. <sup>4</sup>Age, gender and contact information. <sup>5</sup>Congress held from May 2 to May 4, 2014 at the Condado Plaza Hotel.

### Contact information:

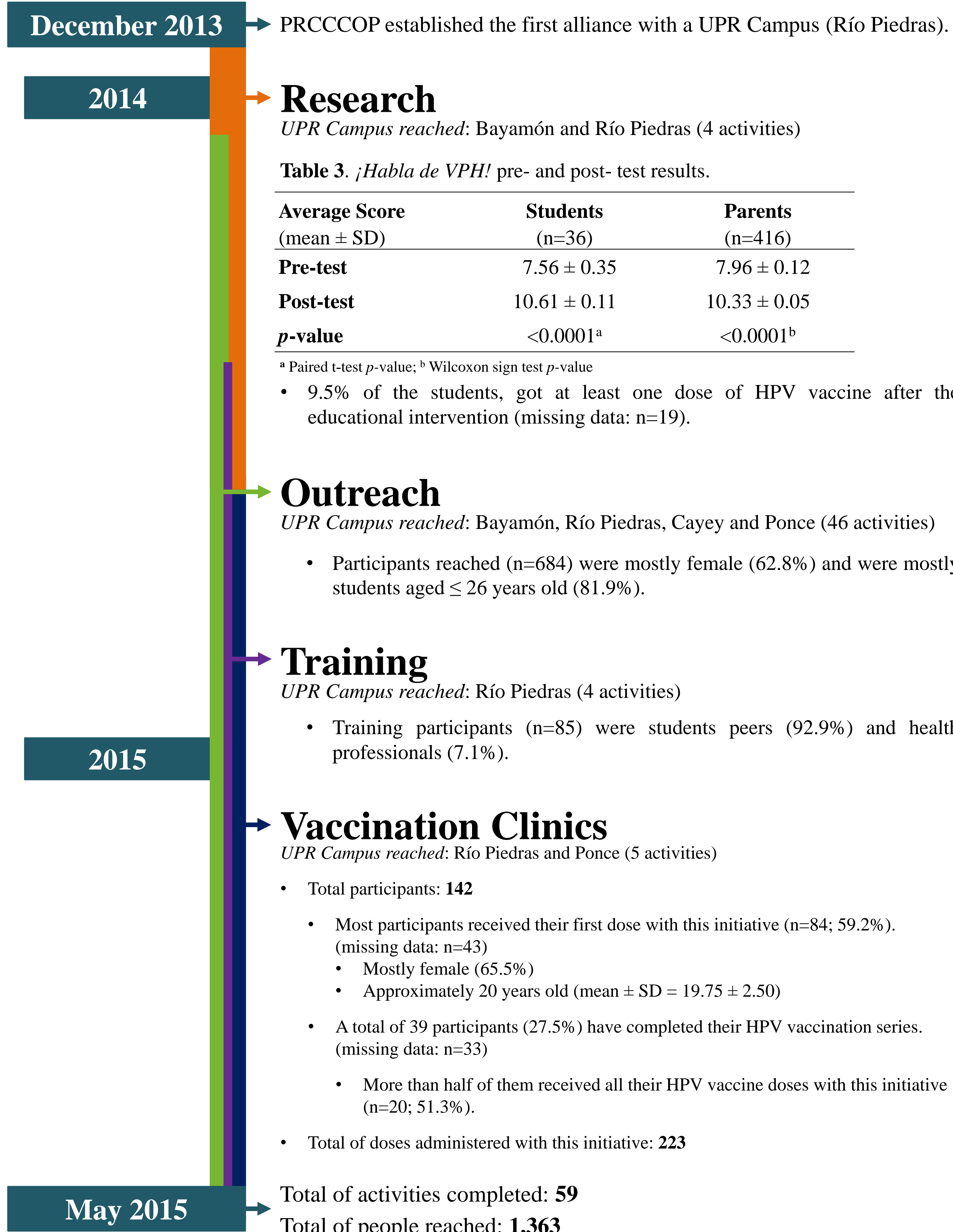
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## METHODS

**Table 2.** Alliance partners and their roles for the period from December 2013 to May 2015.

Partners	Roles
University of PR	- Navigate through the administrative process within campus to facilitate activities. - Coordination of locations, dates and times of activities. - Identify groups that can serve as allies in the promotion of vaccination clinics.
PR Comprehensive Cancer Control Program PR Breast and Cervical Early Detection Program HPV Committee/ PR Cancer Control Coalition	- Evaluated research protocol and revised content of educational intervention. - Served as a speakers and aid in the data collection of research, training and outreach activities. - Provided educational material.
VOCES PR Vaccination Coalition	- Served as liaison to identify healthcare provider for vaccination clinics. - Developed the arts and materials (banners and flyers) to promote activities. - Served as a speakers at training activities and aid in the data collection of vaccination clinics. - Provided educational material.

## RESULTS



**Figure 1.** Timeline and results of activities.

## LESSONS LEARNED AND CHALLENGES

- Educational intervention by itself did not increase HPV vaccination among students, for which we developed a new plan to facilitate vaccination clinics in college campus.

### What worked in our vaccinations clinic efforts:

- Scheduling in advance, at least three vaccination clinics per academic-year to facilitate HPV vaccine series completion.
- Select a healthcare provider that does accept the vast majority of healthcare plans (privates) and does not charge for additional fees.
- One or two consecutive days for vaccination clinics resulted in better outcomes in comparison with the vaccination-week (first event).
- Collect participants contact information for HPV vaccination clinics reminders.

### Still a challenge:

- To recruit and retain students and to increase completion rates among those who received at least one HPV vaccine dose.
- To obtain complete data.

## CONCLUSIONS AND ACTION PLAN

- College students represent a captive community that can benefit from multiple activities, aiming to increase HPV vaccination uptake.
- Existing alliances of our group were a facilitator in the design and development of those activities.
- Another facilitator factor for these efforts was having a contact-person in campus, as part of the alliance, who helped navigate through the administrative process within the campus, resulting in less time and resources involved by other alliance members.
- This ongoing alliance has had various milestones: (1) Alliances with new partners in the efforts of HPV vaccination uptake; (2) over one-thousand people impacted either with our efforts in research, outreach or training/capacity building activities; and (3) the effectiveness of the educational intervention ¡Habra de VPH! in increasing HPV knowledge.

### Action Plan:

- Aim towards specific areas within campus, such as faculties or schools, especially those with a higher rate of freshman students.
- Engage more faculty and students-organizations that can help in the promotion of activities or facilitate short educational sessions of ¡Habra de VPH! in those specific sites.
- Promote phone or web-based applications for HPV vaccine dose schedule reminders, such as *Vacuna.me*, a web-based application designed by VOCES Puerto Rico Vaccination Coalition.
- Identify a grant mechanism to support this efforts island-wide.

## REFERENCES

- Satterwhite, C., Torrone, E., Meites, E., Dunne, E., Mahajan, R., Ocfemia, M., . . . Weinstock, H. (2013). Sexually Transmitted Infections Among US Women and Men. *Sexually Transmitted Diseases*, 40(3), 187-193. doi:10.1097/OLQ.0b013e318286bb53
- U.S. Department of Health and Human Services. Office of Disease Prevention and Health Promotion. (November 2014). Immunization and Infectious Diseases Objectives. *Healthy People 2020*. Retrieve from: <http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives>.
- Reagan-Steiner, S., Yankey, D., Jeyarajah, J., Elam-Evans, L., Singleton, J., Curtis, C., . . . Stokley, S. (2015). National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years — United States, 2014. *MMWR. Morbidity and Mortality Weekly Report MMWR Morb. Mortal. Wkly. Rep.*, 64(29), 784-792.
- A Report to the President of the United States from the President's Cancer Panel. (2014). *Accelerating HPV Vaccine Uptake: Urgency for Action to Prevent Cancer*. Bethesda, MD: National Cancer Institute.

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