

FINAL REPORT

May 2014

Study Title:	Promoting Awareness of and Participation in HPV Vaccination through Health Communication Strategies
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My project was to work with undergraduate students, the student health center, and faculty and staff members, including Healthy Carolina, at USC to develop HPV vaccination print materials (e.g., flyers, posters, pictograms/infographics) and a social media campaign (e.g., Facebook, Twitter, Instagram) for college students based on best practices and formative research results from an independent research study conducted in fall 2013.

South Carolina (SC) is ranked among the top in the nation for sexually transmitted infections (STIs) as well as cervical cancer incidence and mortality. Reasons for high rates of STIs and cervical cancer in SC are not well known and are likely the cause of multiple, complex, and intersecting factors. There are two vaccinations licensed by the Federal Food and Drug Administration (FDA) that offer protection against some of the most common types of human papillomavirus (HPV) infection, a common and usually harmless STI linked to cervical cancer. While there is a vaccination to help protect populations against common types of HPV linked to cervical cancer (and other types of cancer), uptake of the HPV vaccine is still extremely low. In SC, only 27% of females have received or completed more than three of the three-dose HPV vaccination series, and there is not applicable data for males. College students, who have not received HPV vaccinations before turning 18 years of age and entering higher education institutions, still have the opportunity to become vaccinated. However, most students are unaware of their risk and the availability of HPV vaccinations for college-aged males and females due to the lack of availability of information which college students can relate to. College students are making their own choices not just regarding health care, and need access to proper, informative information.

A review of existing health education and health communication messages and materials for college students, especially for HPV vaccination, and best practices were reviewed. The SAM (Suitability Assessment of Materials) tool was used to review characteristics of existing materials and messages, including assessing reading grade level. The SAM tool (Doak *et al*, 1996) facilitates review of the following categories to assess the appropriateness of a material:

1. Organization
2. Literacy Demand
3. Graphics
4. Layout and Typography
5. Learning Stimulation, Motivation
6. Cultural Appropriateness

Evaluating content focused on HPV-related information for college students. HPV content was assessed based on a score of 0 (low) – 5 (high). Content was rated based on language, HPV information, and graphic content. Reading grade level was calculated using the Flesch-Kincaid Index.

Aim 1

Reviewed existing health education and health communication messages and materials for college students, especially for HPV vaccination. Review of materials included current infographics on college health and vaccinations to determine the most effect and current way to portray the information. Reviewed CDC's best practices for use of social media. Used content analysis methods such as SAM (Suitability Assessment of Materials) and other readability assessment tools to determine "best examples". Took the "best examples" of messages and materials to start development of materials for USC students. *See Table 1.*

Table 1: Summary of Evaluation of Existing Materials

ID #	Title Source	SAM Percentage Rating / Interpretation	Reading Grade Level (Flesch- Kincaid)	HPV Content Score (0=low- 5=high)
1	Genital Herpes Source: College of Charleston Student Health Services	36% Not Suitable	8.2	4
2	Human Papillomavirus (HPV) Source: University of Georgia University Health Center	50% Adequate	7.9	5
3	Human Papillomavirus Source: University of Mississippi Health Center	34% Not Suitable	8.4	3
4	Are you interested in receiving the HPV vaccine? Source: University of Pennsylvania Student Health Services	61% Adequate	7.9	4
5	Ask the Sexpert Source: NYU Health Promotion	32% Not Suitable	7.1	2
6	HPV Vaccine for Women and Men Source: Penn State University Health Services	45% Adequate	8.2	3
7	Pap Test and HPV Source: Vanderbilt Medical School	30% Not Suitable	9.4	2
8	Immunizations & Lab Services Source: City College of San Francisco Student Health Services	27% Not Suitable	10.3	3
9	HPV Vaccine Information Source: University of Maryland University Health Center	68% Adequate	6.3	4
10	Go Ask Alice! Source: Columbia University Health Promotion	34% Not Suitable	7.4	2
11	Immunizations They're Not Just for Children Source: American College Health Association #1	55% Adequate	N/A	3
12	Get Vaccinated Rosie the Riveter Source: UGA Image	55% Adequate	N/A	3
13	HPV Infographic #1 Source: National Research Center for Women and Families	52% Adequate	N/A	4
14	Don't forget your 3rd poke Source: Planned Parenthood	59% Adequate	N/A	3
15	HPV Infographic #2 Source: Seattle Cancer Alliance	75% Superior	N/A	4

*Suitability Assessment of Materials (SAM) percentage ratings: 70-100 Superior; 40-69 Adequate; 0-39 Not Suitable
For selected materials, reading grade level was unable to be calculated.*

Aim 2

HPV vaccination messages will be developed based on research findings in Phase 1 along with the help of Dr. Brandt, Healthy Carolina, Campus Wellness, peer leaders, and the Sexual Health Council. Use of InDesign by Adobe to create messages using all appropriate university brand information found in the marketing toolbox (<http://sc.edu/toolbox/>). The messages will be in formats suitable for college students, such as print materials (e.g., flyers posters, and pictograms/infographics) and social media (e.g., Facebook, Twitter, Instagram). See Figure 1 and Figure 2.

Figure 1: Sample Material

As a Gamecock
your protection
should know
#NoLimits

Get vaccinated against
HPV to protect your
future today.

Log onto your myHealth@sc.edu account to make
your appointment today!
<http://www.usc.edu/healthcenter/>



 UNIVERSITY OF
SOUTH CAROLINA

Figure 2: Sample Material

Get Vaccinated!



Don't forget your third poke.

The HPV vaccine is a three shot series. You need all three shots to be protected.

Call the Health Center
to schedule your
appointment today!

 UNIVERSITY OF
SOUTH CAROLINA

Aim 3/Recommendations for Next Steps

Plans were to work with Healthy Carolina, Campus Wellness, peer leaders, and the Sexual Health Council to distribute messages appropriately on campus to ensure distribution to students at USC. Distribution centers include the Student Health Center on campus and Healthy Carolina and Campus Wellness offices. The hopes are that the materials reviewed in Aim 1 and developed in Aim 2 will be given to campus partners for continuation of this project.

Dissemination

Results were presented as part of the Cancer Prevention and Control Program Colloquium Series on April 18, 2014 (*see Photo 1*); Discovery Day on April 25, 2014 (*see Figure 3*); and at the Annual Meeting of the South Carolina Public Health Association on May 21, 2014. In addition, results will be provided to partners on the USC campus.

This project, along with the other research I have completed under Dr. Brandt's guidance, has inspired me to continue my education and continue with research in this field. Cancer research has always been my passion, however other research such as HPV/HPV vaccination research is also crucial for the protection of upcoming generations.

During the process of conducting this research, I not only learned much about HPV and HPV vaccination, I also learned much about health education materials on college campuses. Many of the topics I studied in my biology classes were reflected in the scientific research I had to conduct to really understand HPV and how it affects the human body. Other courses I have taken in health promotion, education and behavior helped to show me how to communicate health materials and messages to those in communities.

Figure 3: Rosemary Corriero poster at Discovery Day, April 25, 2014 (PDF of poster attached to report)
Identifying Opportunities for Increasing HPV Vaccination at the

University of South Carolina

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INTRODUCTION

- South Carolina has high rates of sexually transmitted infections (STI), including genital human papillomavirus (HPV), a very common and usually harmless (STI) that causes cervical cancer as well as genital warts and other types of cancer.
- Two vaccines are available to protect against specific types of HPV. The most common of these vaccines (GARDASIL) protects against four types of HPV (6, 11, 16, 18). HPV-6 and HPV-11 cause 90% of genital warts cases in the United States. HPV-16 and HPV-18 are found in >70% of cervical cancer.
- HPV vaccination is part of the adolescent vaccination platform recommended by the CDC. Males and females aged 11-12 are the primary target. However, HPV vaccination is greatly underutilized.
- Among females and males, HPV vaccination in South Carolina remains significantly lower than the national average presenting a tremendous opportunity to focus on "catch up" doses.
 - SC: ≥1 HPV vaccine dose 41.9% females; 18.1% males in 2012
 - US: ≥1 HPV vaccine dose 53.8% females; 20.8% males in 2012
- Young adults, who have not received the HPV vaccine before turning 18 years of age and entering college, have the opportunity to get vaccinated
- Thus, college students are ideal to target in HPV vaccination research given the high incidence and prevalence of HPV in this population.
- Promoting HPV vaccine uptake among college students is important to curtail the subsequent burden of HPV-associated diseases, such as genital warts and cervical cancer.

The overall goal of the study was to explore current HPV and HPV vaccination messages on the University of South Carolina's (USC) campus and identify opportunities to develop health communication materials to increase awareness of and promote uptake of HPV vaccination. This poster describes results of two studies focused on this overall goal.

- Fall 2013: Independent Research Study (Mentor: Dr. Heather Brandt) - Exploring HPV vaccination on campus
- Spring 2014: Magellan Mini-Grant Study (Mentor: Dr. Heather Brandt) - Developing HPV vaccination materials

METHODS

Fall 2013: Independent Research Study
 Conducted 21 in-depth interviews with USC faculty, staff, and students
 Semi-structured interview guide assessing:

- Overall campus health
- Perceptions of students' HPV knowledge
- Perceptions of students' needed information on HPV
- Barriers to HPV vaccination
- Ways to increase uptake of HPV vaccination on campus

Interviews were audio-recorded, transcribed verbatim, and coded using thematic analysis methods

Spring 2014: Magellan Mini-Grant Study
 Reviewed existing health education and health communication messages and materials for college students, especially for HPV vaccination, and best practices

- Used SAM (Suitability Assessment of Materials) to review characteristics of existing materials and messages, including assessing reading grade level
 - SAM (Doak et al. 1996) facilitates review of the following categories to assess the appropriateness of a material:
 1. Organization
 2. Literacy Demand
 3. Graphics
 4. Layout and Typography
 5. Learning Stimulation, Motivation
 6. Cultural Appropriateness
- Evaluating content focused on HPV-related information for college students
 - HPV content was assessed based on a score of 0 (low) – 5 (high)
 - Content was rated based on language, HPV information, and graphic content
- Reading grade level was calculated using the Flesch-Kincaid Index

Fall 2013: Independent Research Study
Participants:

- Twenty-one participants took part in interviews
- Participants were 81% female; 71% White; and 76% 18-39 years old.
- 57% were Students; 24% Staff; 19% Faculty
 - Among students: 55% PhD or Graduate Students; 9% Undergraduate Sophomores; 9% Undergraduate Juniors; 27% Undergraduate Seniors

Emergent themes from interviews were organized into five categories: health issues among college students; communication strategies to increase knowledge of HPV/HPV vaccination; vaccination barriers; role of distrust; and role of the "South" in facilitating/hindering vaccination.

- Health issues among College Students: The most commonly reported perceived health issues among college students were STIs, alcohol use/abuse, and other substance abuse. Selected quotes from participants are shown below.
- Communication Strategies to Increase Knowledge of HPV and HPV Vaccination: Recommendations focused on efforts to build on existing vaccination efforts, developing appropriate HPV message content and defining communication channels, and finding potential educators or sources of HPV/HPV vaccination information.



• Barriers to HPV Vaccination: Participants identified several barriers to HPV vaccination among students, including lack of perceived risk; lack of knowledge; cost of HPV vaccination; lack of insurance coverage; parental influence; and not knowing where to go to get vaccinated. Participants also mentioned lack of knowledge about sexual health, in general, and healthy sexual behaviors as one of the largest barriers regarding students' health. Most of these comments were also related to perceived lack of risk.

• Role of Distrust: Many participants stated that medical system distrust and stigma factor in to HPV vaccination considerations for certain racial and ethnic groups because of past historical events. One participant suggested the way to deal with this issue is to acknowledge the feelings of these communities and make sure that information provided is accurate and easy-to-understand.

• Role of the "South" in Facilitating/Hindering Vaccination: Participants described the atmosphere in the South as much more accepting to sexual health and healthy sexual practices, by having things such as condom dispensers or health educators to talk to without being ridiculed. Participants all mentioned the religion in the South or the "Bible Belt" as a huge barrier to open conversations about sexual health education and safer sex practices. Place was perceived as an important factor in HPV vaccination.

- Participants made recommendations for specific HPV and HPV vaccination information to communicate with students:
- General information about HPV and HPV vaccination.
 - HPV affects both males and females.
 - Cost of treatment of HPV-mediated conditions, such as genital warts and cervical cancer.
 - HPV Vaccination:
 - Need for HPV vaccination
 - Age range of vaccination
 - Side effects of vaccination
 - Where students can get vaccinated
 - Efficacy of vaccination
 - Cost of vaccination
 - Programs to help pay for HPV vaccination

RESULTS

- Spring 2014: Magellan Mini-Grant Study**
- Table 1 shows the results of the review of existing HPV materials.
 - Only one material (ID# 15) received a superior score. However, eight materials were classified as adequate.
 - Review of existing materials provided insight on the absence of suitable materials for college students.

Table 1. Summary of Evaluation of Existing Materials

ID#	Title Source	SCC Percentage Rating / Interpretation	Reading Grade Level (Flesch-Kincaid)	HPV Content Score (Percent Rating)
01	Genital Herpes Source: College of Charleston Student Health Services	Not Suitable	8.3	4
02	Human Papillomavirus (HPV) Source: University of Georgia University Health Center	Adequate	7.9	5
03	Human Papillomavirus Source: University of Mississippi Health Center	Not Suitable	8.4	3
04	Are you interested in reaching the HPV vaccine? Source: University of Pennsylvania Student Health Services	Adequate	7.9	4
05	Ask the Surgeon Source: WHO Health Promotion	Not Suitable	7.1	2
06	HPV Vaccine for Women and Men Source: Penn State University Health Services	Adequate	8.2	3
07	Pap Test and HPV Source: Vanderbilt Medical School	Not Suitable	8.4	2
08	Immunizations & Lab Services Source: City College of San Francisco Student Health Services	Not Suitable	10.8	3
09	HPV Vaccine Information Source: University of Maryland University Health Center	Adequate	6.3	4
10	Sex And Aids Source: Columbia University Health Promotion	Not Suitable	7.4	2
11	Immunizations They're Not Just for Children Source: American College Health Association #1	Adequate	N/A	3
12	Get Vaccinated! Source: USA Strategic	Adequate	N/A	3
13	HPV Inflatables #1 Source: National Research Center for Women and Families	Adequate	N/A	4
14	HPV Inflatables #2 Source: Planned Parenthood	Adequate	N/A	3
15	Source: Seattle Cancer Alliance	Superior	N/A	4

Suitability Assessment of Materials (SAM) percentage ratings: 70-100 Superior; 40-69 Adequate; 0-39 Not Suitable. For selected materials, reading grade level was unable to be calculated.

- Next Steps**
- HPV vaccination messages will be developed based on research findings along with the help of Dr. Brandt, Healthy Carolina, Campus Wellness, peer leaders, and the Sexual Health Council.
 - Use of InDesign by Adobe to create messages using all appropriate university brand information found in the marketing toolbox (<http://usc.edu/boobox/>).
 - The messages will be in formats suitable for college students, such as print materials (e.g., flyers/posters, and pictograms/infographics) and social media (e.g., Facebook, Twitter, Instagram).



CONCLUSION

- The college campus is an ideal place to address low levels of HPV vaccination awareness, knowledge, and uptake.
- Independent research study results underscored the need for efforts on the USC campus to address HPV vaccination.
- Based on limited HPV vaccination knowledge and current efforts to increase participation in HPV vaccination, there is much opportunity to address HPV vaccination among students at USC.
- Providing medically accurate, appealing messages and materials on HPV vaccination can help to increase vaccination uptake, which in turn decreases risk of certain cancers and STDs.

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Photo 1: Rosemary Corriero with Arnold School of Public Health graduate students, Cancer Prevention and Control Program Colloquium, April 18, 2014 (JPG of photo attached to report)



Photo 2: Rosemary Corriero with one of her mentors, Dr. Heather Brandt, at Discovery Day, April 25, 2014 (JPG of photo attached to report)

