

EXPLORING NORTH TEXAS PARENTS' RESPONSE TO CDC HPV CANCER  
PREVENTION MESSAGING

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ABSTRACT

The Centers for Disease Control and Prevention (CDC) recommends human papillomavirus (HPV) vaccine for 11-12 year old boys and girls. HPV is sexually transmitted and can result in several types of cancer. In response to low HPV vaccination rates across the nation, the CDC conducted focus groups among mothers of 10 to 15 year old boys and girls in three cities during July, 2013, to identify barriers to HPV vaccination and test HPV vaccination messaging. No southwest state was included in the original CDC study. The purpose of this study was to explore responses to the CDC HPV cancer prevention messaging by replicating the CDC focus group study in North Texas. Data from focus groups in Tarrant County were compared between each group and to the CDC data. All groups had content that aligned with the CDC framework. However, organization of the health system as a facilitator or barrier to obtaining three recommended doses, the importance of testimonials, and the role of husband and children in vaccination decision-making were three unique themes that emerged. Data collected will be useful in promotion of HPV vaccination in the future, specifically in the Tarrant County community. Understanding how messaging influences parents' decisions to vaccinate is important because current HPV vaccination rates are low in the local community.

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## Exploring North Texas Parents' Response to CDC HPV Cancer Prevention Messaging

*Healthy People 2020* (HP2020) is a set of science-based, 10-year national objectives to improve health of all Americans (U.S. Department of Health and Human Services [USDHHS], 2013a). The current national objectives include 42 topic areas, each with specific, measurable objectives to be achieved by 2020. *Immunization and Infectious Diseases* (IID) is one topic area. The goal of IID is to increase immunization rates and reduce preventable infectious diseases, which are still major causes of illness, disability, and death in the United States (USDHHS, 2013d). Objective IID-11 is to increase routine vaccination coverage levels for adolescents and includes several sub-objectives pertaining to specific adolescent vaccines (USDHHS, 2013d). Objectives IID-11.4 and IID-11.5 focus specifically on increasing human papillomavirus (HPV) vaccination rates for females and males.

The HPV vaccine is an adolescent vaccine recommended for boys and girls 11-12 years old (Centers for Disease Control and Prevention [CDC], 2015b). The current vaccine protects against nine types of HPV, a sexually transmitted infection that can progress to cancers of the anus, cervix, oropharynx, penis, vagina, and vulva (CDC, 2015b). There are approximately 27,000 (10.8 per 100,000 in 2004-2008) cases of HPV-associated cancers each year in the United States (CDC, 2015b; CDC, 2012). Only 16.6 percent of females (2008) and 6.9 percent of males (2012) 13-15 years old completed the three dose series of HPV vaccine (USDHHS, 2013b, 2013c). In comparison to other high-income countries, the U.S. is behind. For girls who have completed the three-dose series, Australia has a 71.2 percent HPV vaccination rate and the United Kingdom has a 60.4 percent HPV vaccination rate (CDC, 2015b). The

HP2020 target is that 80.0 percent of females and males aged 13-15 years old will complete the three-dose series of HPV vaccine (USDHHS, 2013b, 2013c). This target was set to achieve herd immunity and to maintain consistency with other vaccine recommendations (USDHHS, 2013b, 2013c). Although the 2014 vaccination data show that rates have increased since baseline, rates would have to more than double for girls and almost quadruple for boys in order to reach the HP2020 target of 80.0 percent.

The HP2020 data show HPV vaccination rates are low in the United States (USDHHS, 2013b, 2013c). The common barriers to HPV vaccine initiation identified throughout the literature were that the HPV vaccine is recommended (versus required), vaccination may be associated with social stigma because HPV is sexually transmitted, vaccination requires parental consent at the recommended age of 11-12 years old, and a provider recommendation is significant in promotion of the vaccine. Many research studies used social marketing, a public health nursing intervention, to further understand barriers, test messages, and implement marketing campaigns to increase HPV vaccination. Increased HPV vaccine coverage has the potential to prevent nearly three million cases of HPV and \$7 billion in health care costs (CDC, 2015b). HPV vaccination is a primary prevention strategy and requires present action in the present to prevent physical, emotional, and financial burden of disease downstream (CDC, 2015a; Manchanda, 2013).

### **Literature Review**

The literature search began using the key terms “HPV” and “social marketing” in the CINAHL and Medline databases. Search limits were adolescents in the 10-15 year old age range, key words must be in the abstract, and the study must be conducted in a

developed country. The literature was analyzed to reach the point of saturation for this project (n=25). In 2008, when HP2020 baseline data were collected, the HPV vaccine was still relatively new and vaccination rates were low (USDHHS, 2013b, 2013c). However, in 2013, HPV vaccination rates were still low in the United States and CDC officials were concerned about missed opportunities for HPV vaccination (Wrangham, 2013). In a report to the Federal Vaccine Advisory Committee, CDC officials suggested “reframing the vaccine from an STD prevention vaccine to an ‘anti-cancer’ vaccine in a new media campaign” as a strategy to promote HPV vaccination” (Wrangham, 2013, p. 1).

That year, the CDC conducted focus groups to identify barriers to HPV vaccination and solicit feedback on HPV messaging (CDC, 2014). Focus groups (n=45) were conducted among mothers’ of 10-15 year old boys and girls in Philadelphia, Pennsylvania; Birmingham, Alabama; and Sunnyvale, California (CDC, 2014). Because HPV vaccination requires parental consent, it is important to understand mothers’ knowledge, attitudes, and beliefs regarding HPV vaccination in order for interventions to be successful. The CDC used results from these focus groups to develop HPV cancer prevention messaging, which is currently being used across the country to promote HPV vaccination (CDC, 2014, 2015a).

Several common themes emerged from the focus groups and throughout the literature review. The primary finding was that health care providers serve as barriers or facilitators to HPV vaccination. A quality provider recommendation that normalizes the HPV vaccine is most successful in increasing HPV vaccine initiation (American Cancer Society [ACS], 2015; CDC, 2014, 2015b; George Washington University Center Cancer

Institute, 2015; Gilkey, Moss, McRee, & Brewer, 2012; Henry, Stroup, Warner, & Kepka, 2016; Medscape, 2015; Niccolai, Hansen, Credle, & Shapiro, 2016; Perkins et al., 2014). Community-based social marketing campaigns have been an effective strategy to increase HPV vaccination rates by reaching parents and health care providers (Cates & Coyne-Beasley, 2015; Cates, Diehl, Crandell, & Coyne-Beasley, 2014; Cates, Shafer, Diehl, & Deal, 2011; CDC, 2015b; Niccolai & Hansen, 2015a; Reiter, Stubbs, Panozzo, Whitesell, & Brewer, 2011). However, many parents are unaware of the benefits of HPV vaccination for boys, and not surprisingly, the rate of HPV vaccination for boys is lower than for girls (Cates et al., 2014; Cates, Ortiz, Shafer, Romocki, & Coyne-Beasley, 2012; CDC, 2014; CDC, 2015b; George Washington University Cancer Institute, 2013; Gilkey et al., 2012; Niccolai et al., 2016). Interestingly, low income and minority communities tend to have higher rates of HPV vaccination, possibly due to increased provider recommendation at clinics. Providers may perceive the clinic population to be at higher risk (Gilkey et al., 2012; Henry et al., 2016; Perkins et al., 2014). Although this project focused on parents, it is evident that providers need additional HPV vaccine education.

### **Methods**

Fifteen of the 25 articles selected for the literature review evaluated research that used social marketing techniques to gather data or implement marketing campaigns for the HPV vaccine. Social marketing is a public health nursing intervention that utilizes commercial marketing principles to influence the knowledge, attitudes, values, beliefs, behaviors, and practices for the population-of-interest (Minnesota Department of Health [MDOH], 2001). Understanding the social environment and target audience is best practice and key to an effective social marketing intervention (MDOH, 2001). An



example of an effective social marketing intervention is the CDC social marketing campaign for HPV vaccination. To design the social marketing campaign, the CDC conducted focus groups among the target population, mothers' of 10-15 year old boys and girls, to collect subjective data about HPV vaccine awareness, knowledge, and beliefs, to identify barriers to HPV vaccination, and to test HPV messaging (CDC, 2014; Community Toolbox, 2015; MDOH, 2001). This research project extended the target audience to include mothers' living in North Texas, a population not included in the original CDC study.

### **Participants**

The inclusion criteria were mothers of 10-15 year old boys or girls who reside in Tarrant County and speak English, however, persons with limited English proficiency could participate. Participants were recruited using convenience sampling through existing TCU public health nursing connections. Seven groups were contacted, three declined due to social stigma surrounding vaccination, and one network failed to follow up. Three focus groups were conducted in Tarrant County among a Caucasian/White community (n=6 participants), African American/Black community (n=6 participants), and a mixed community that included Caucasian/White, Asian-American, and Middle Eastern mothers (n=9 participants).

### **Focus Groups**

All participants were screened using modified CDC screening questions (Appendix A). The participants selected focus group locations. Two focus groups were held at participant homes and one focus group was held at TCU. Participants signed a participant information sheet upon arrival to the group (Appendix B). The moderator

used the CDC moderator guide to ask questions as the CDC did (Appendix C). The groups were audio recorded and professionally transcribed. There was one note-taker in the room. Light refreshments were provided and participants received a \$10 Visa gift card in appreciation for their time. Each group lasted approximately one hour.

## **Results**

### **Focus Group #1**

This focus group was conducted among Caucasian/White mothers. This group had general knowledge and awareness of adolescent vaccinations, including HPV. A provider recommendation was the most influential factor contributing to vaccination and most of the mothers had already talked to their provider about HPV vaccination. Provider reminder systems, or lack thereof, were noted as potential barriers or facilitators to completing the three dose series. Fear of long-term side effects was the greatest barrier to vaccination.

### **Focus Group #2**

This group was conducted among African American/Black mothers. This group had general lack of knowledge about adolescent vaccines, including HPV. Some participants believed that the HPV vaccine protected against ovarian cancer and syphilis. Personal testimonials were more important than a provider recommendation as a facilitator to vaccination. The cost of the vaccine was a potential barrier to vaccination. There was a fear of long-term side effects from the vaccine, including death. This was the only group that mentioned death as a potential side effect from the vaccine itself. There was also a general distrust of the government recommending HPV vaccination.

**Focus Group #3**

This group was conducted among mixed community that included Caucasian/White, Asian-American, and Middle Eastern mothers. All participants in this community were Muslim. The group itself lasted approximately one-hour, however, it was followed up by an impromptu two-hour discussion with participants. This group strongly preferred cancer prevention messaging to any mention of sexual transmission. Husband and children involvement in the vaccination decision-making process was important. There was a fear of long-term side effects and they wanted myths to be addressed. A provider recommendation was important. This group asked for additional community education, specific to their community.

**Group Features**

There were some features consistent across all groups. All participants actively contributed and were open to learning. All mothers reported using the Internet and being technologically savvy. All groups linked Rick Perry to the HPV vaccine, which is a finding unique to Texas. In contrast, each group had a distinct personality. For example, in one group members were more reserved and evaluated other mothers' responses before giving their own, while in another group members were more outspoken and quicker to answer. There were also variations in mothers' comfort with terminology. Some group members were comfortable reading HPV messages aloud to the group, while others preferred to read them quietly to themselves.

**Data Analysis**

Constant comparison methodology was used to analyze the data. Findings were compared between each group and to the CDC data. The CDC framework was the

starting point for interpreting data, however, themes emerged that were not identified in the original framework. The three major themes identified in the CDC framework were facilitators; barriers; and knowledge, attitudes, and beliefs. All groups had some content that aligned with the CDC framework, however, organization of the health system as a facilitator or barrier to obtaining three doses, importance of personal testimonials, and role of husband and children in vaccination decision-making emerged throughout the focus groups in Tarrant County.

## **Discussion**

### **Environmental Considerations**

In the CDC study, participants attended the focus groups at an assigned location. In this study, focus group participants selected the focus group location. Two groups were held at participant homes and one group was held at TCU. At the homes, participants sat on couches and the environment was more fluid. At TCU, participants sat around a table and the moderator had more control over the environment.

### **Limitations**

In this study, the investigator selectively modified the CDC protocol to adapt to practical matters. One of the CDC screening questions would have disqualified participants based on immediate family member employment in the medical industry. An aunt with nieces and nephews in the 10-15 year old age range, and a mother with a 17-year-old child were allowed to participate in the focus group. In these circumstances, the adaptations were to protect the integrity of the group and not turn away willing participants that were a vital part of the group.

### **Future**

Throughout work on this project, several opportunities for future research emerged. While this project focused specifically on parents, it is clear that providers can serve as barriers or facilitators to vaccination and additional research on provider education would be valuable. The role of social marketing, specifically using channels appropriate for reaching each audience should be further explored. Group members were asked where they would prefer to see HPV vaccination messages. One group said in “mom magazines”, one group said on TV channels like MTV, and one group said on NPR. Understanding funding sources for the vaccine on both the provider and patient side is important because cost can serve as a barrier or facilitator to vaccination. It would be valuable to conduct a Hispanic focus group. The Hispanic population was not represented throughout these focus groups, yet this community makes up a significant portion of the Texas population. It would also be interesting to learn more about how other countries have been successful in increasing HPV vaccination rates.

### **Conclusion**

Understanding how marketing influences parents' decisions is important because current HPV vaccination rates are low in the United States. Data collected will be useful in promotion of HPV vaccination in the future, specifically in the Tarrant County community. Using social marketing at the community level to increase HPV vaccination rates is an effective strategy to work toward the HP2020 target of 80.0 percent (USDHHS, 2013b, 2013c).

### **Lessons Learned**

Several lessons were learned from this experience. The significance of partnerships was key to this project. My focus groups would not have been possible

without the help of some key community partners. Moderating the focus groups taught me important communication skills and allowed me to see the influence culture has on the decision-making process first hand. Having this understanding will help me as a nurse at the bedside or in the community. Throughout this experience, I was also able to learn what it means to empower a community with a voice, and share the tools and education they need to make an informed decision about HPV vaccination.

## References with Selected Annotations

Abdelmutti, N., & Hoffman-Goetz, L. (2010). Risk messages about HPV, cervical cancer, and the HPV vaccine Gardasil in North American news magazines. *Journal of Cancer Education, 25*(3), 451-456. doi:10.1007/s13187-010-0087-9

This research is a qualitative analysis of the top two circulating news magazines in Canada and the United States for articles related to HPV, cervical cancer, and HPV vaccination published from January 2006-December 2007, when the HPV vaccine was new. The top two Canadian magazines analyzed were *Maclean's* and *Time Canada*. The top two United States magazines were *Newsweek* and *Time*. Researchers included articles if all three keywords—*HPV*, *cervical cancer*, and *Gardasil* or *HPV vaccine*—appeared at least once in the article. In total, 15 articles met the inclusion criteria and were used in the study. Six of the articles were from Canadian magazines, four of the articles were from U.S. magazines, and five articles were published in both *Time Canada* and *Time*. HPV messages were coded related to fright factors, which can trigger alarm, fear, and anxiety. The fright factors were coded separately for HPV, HPV vaccine, and cervical cancer. The researchers found fewer fright factors associated with cervical cancer (n=20), compared to HPV (n=49) and HPV vaccine (n=43). Magazine articles warned of the risks of HPV and cervical cancer, yet emphasized lack of vaccine safety information. This research is a Level III qualitative study with moderate quality evidence because of the selected sample. This research is relevant to my project because news media can have a significant effect on

public opinion related to health issues and mothers' initial impressions and misperceptions of the HPV vaccine could influence subsequent vaccination decisions.

American Cancer Society. (2015). *HPV VACs (Vaccinate Adolescents against Cancers)*

*myth busting*. Retrieved from

[http://smhs.gwu.edu/cancercontroltap/sites/cancercontroltap/files/3.1-](http://smhs.gwu.edu/cancercontroltap/sites/cancercontroltap/files/3.1-Myth%20busting%20doc.pdf)

[Myth%20busting%20doc.pdf](http://smhs.gwu.edu/cancercontroltap/sites/cancercontroltap/files/3.1-Myth%20busting%20doc.pdf)

This fact sheet lists 12 myths related to HPV and HPV vaccination and an evidence based response for each myth. The purpose of this document is to provide health care providers with appropriate responses to common HPV vaccination concerns. The fact sheet addresses side effects, vaccine safety, and vaccine recommendations using evidence primarily compiled from the CDC and National Cancer Institute. According to studies referenced in this document, there is no correlation between receiving the HPV vaccine and increased engagement in sexual activity. Because many parents (37%) have no prior knowledge of HPV vaccination, a provider recommendation is the strongest predictor of vaccination. The HPV vaccine provides long-term protection. This evidence is Level V, expert advice. The myths addressed in this fact sheet may come up during focus groups. This fact sheet is useful by providing a basic understanding of common concerns and appropriate responses.

Cates, J.R., & Coyne-Beasley, T. (2015). Social marketing to promote HPV vaccination in pre-teenage children: Talk about a sexually transmitted infection. *Human*



*Vaccines & Immunotherapeutics*, 11(2). 347-349.

doi:10.4161/21645515.2014.994458

This commentary addresses parents' reluctance to vaccinate for HPV at the recommended age of 11-12 years old. This commentary, based on several studies by researchers at the University of North Carolina at Chapel Hill, supports the idea of using social marketing strategies to promote HPV vaccination among parents and providers. According to the research, discussing the risk of getting a sexually transmitted infection at some point in life was the most motivating factor to get the HPV vaccination. These commentators recommended emphasizing the source of HPV as a sexually transmitted infection, then discussing the benefits as cancer prevention. This is different from the cancer prevention "only" approach recommended by the CDC to promote HPV vaccination. This commentary is Level V, moderate quality evidence, based on expert opinion. My project will explore whether discussing cancer prevention only, HPV as a sexually transmitted infection, or a combination of the two messages is most effective in promotion of the HPV vaccine among North Texas mothers.

Cates, J. R., Diehl, S. J., Crandell, J. L., & Coyne-Beasley, T. (2014). Intervention effects from a social marketing campaign to promote HPV vaccination in preteen boys. *Vaccine*, 32(33), 4171–4178. doi:10.1016/j.vaccine.2014.05.044

This quantitative research evaluated a HPV social marketing intervention among parents and health care providers of 9-13 year old boys. The three-month long campaign targeted counties in North Carolina using radio ads,

posters, brochures, webinars, fact sheets for providers, and a website to promote HPV vaccination in 11-12 year old boys. Data from the North Carolina Immunization Registry were used to assess vaccination rates in the 13 intervention counties compared to 15 control counties with similar socioeconomic status. Findings indicated that probability of HPV vaccination increased by 34% in intervention counties, suggesting that social marketing techniques are effective in promoting vaccination uptake among parents and health care providers. This research is similar to a study also conducted by Cates (2011), which evaluated a social marketing campaign to increase HPV vaccination rates in girls. This research is Level II, moderate quality evidence. This research campaign can serve as a model for other county-based HPV campaigns because of the increase in HPV vaccination rates of both boys and girls.

Cates, J. R., Ortiz, R., Shafer, A., Romocki, L. S., & Coyne-Beasley, T. (2012).

Designing messages to motivate parents to get their preteenage sons vaccinated against human papillomavirus. *Perspectives on Sexual and Reproductive Health*, 44(1), 39–47. doi:10.1363/4403912

This qualitative research study used focus groups to test HPV vaccination messages among 29 Black parents of 11-12 year old boys. Researchers chose the Black community as the target audience for focus groups because of its higher prevalence of HPV-related cancers. Participants were recruited through convenience sampling. Researchers also conducted intercept interviews to test HPV vaccine promotional posters among parents (n=100) of

9-13 year old boys at a university-based pediatric and adolescent health clinic, serving a racially diverse (46% Black, 44% White, 10% other) community. Focus group themes included low awareness of HPV disease and vaccine, perceived susceptibility and severity, benefits and barriers to HPV vaccination, and self-efficacy. Parents preferred racially diverse photos featuring both parents and information from trusted sources. Because the HPV vaccine has been heavily marketed to prevent cervical cancer, researchers found that parents were unaware of the benefits of vaccination for boys, although the HPV vaccine is licensed for use in boys 9-26 years old and recommended at 11-12 years old. This research is a Level III qualitative study with moderate quality evidence because the sample is not entirely representative. Because my project will be conducted among mothers of boys and girls, this research is useful in providing information specific to parents of boys.

Cates, J.R., Shafer, A., Diehl, S.J., & Deal, A.M. (2011). Evaluating a county-sponsored social marketing campaign to increase mothers' initiation of HPV vaccine for their pre-teen daughters in a primarily rural area. *Social Marketing Quarterly*, 17(1), 4-26. doi:10.1080/15245004.2010.546943

This mixed methods study evaluated a social marketing campaign to increase HPV vaccination rates of 11-12 year old girls in four rural North Carolina counties. The three-month long campaign used posters, brochures, news releases, and a website to reach health care providers and mothers of 11-12 year old girls. Two weeks after the campaign, researchers collected surveys

from 225 mothers of 9-18 year old girls in the intervention counties. The data collected were segmented into groups based on age (9-13 or 14-18 years old) because the campaign primarily targeted mothers of 11-12 year olds. The mail-survey asked about awareness of HPV vaccine messages and actions taken in response to the HPV campaign. Mothers of 9-13 year old girls with some campaign awareness (n=85) were more likely to take action than mothers unaware of the campaign (n=18). About 80% of health care providers surveyed (n=35) responded to surveys saying they were more likely to recommend the HPV vaccine after the campaign. Data were also gathered from the North Carolina Immunization Registry for girls 9-19 years old (n=704,964) to compare HPV vaccination rates in the intervention counties with the non-intervention counties in the region (n=9) and the state (n=96 counties). Six months following the campaign, HPV vaccination rates were 2% higher in two out of four intervention counties compared to 96 non-intervention counties. This research is Level II, moderate quality evidence. This research is relevant to my project because it shows that social marketing can be effective way to reach parents and providers to promote HPV vaccination.

Centers for Disease Control and Prevention. (2012, April 20). Human papillomavirus-associated cancers – United States, 2004-2008. *Morbidity and Mortality Weekly Report*, 61(15), 258-261. Retrieved from <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6115a2.htm>

Centers for Disease Control and Prevention. (2014, September). *Parents' attitudes and beliefs about human papillomavirus (HPV) vaccine*. Unpublished manuscript. Available by request from the CDC Office of Adolescent Immunization Communications.

In July, 2013, the CDC conducted approximately 45 focus groups among mothers of 10-15 year old boys and girls in Philadelphia, Pennsylvania; Birmingham, Alabama; and Sunnyvale, California, to identify barriers to HPV vaccination and solicit feedback on HPV messaging. Focus groups were segmented based on language (English or Spanish), gender of child, and educational level. The majority of mothers had a general understanding of HPV and awareness of HPV vaccination, however, there was a knowledge gap regarding the correct age range for vaccination and HPV vaccination for boys. Factors influencing vaccination decisions included prevention of disease; provider recommendation; family history of reproductive cancers or personal experience; social responsibility; fear of side effects (short and long term); lack of information about the disease, vaccine, and benefits for boys; permission for child to become sexually active; age of child; and personal beliefs. This is Level III qualitative data with high quality evidence. This study will serve as the model for my project. Focus groups will be replicated in Tarrant County and findings will be compared to determine if similar factors influence vaccination decisions among mothers in Tarrant County.

Centers for Disease Control and Prevention. (2015a). *HPV vaccine is cancer prevention communications campaign* [PowerPoint slides]. Available by request from the CDC Office of Adolescent Immunization Communications.

This PowerPoint is a living document, updated regularly by the CDC. It addresses the goals, strategies, and objectives of the CDC HPV communications campaign, which is guided by the Healthy People 2020 objectives IID-11.4 and 11.5, to “increase the vaccination coverage level to 80% for HPV vaccine series completion by age 13 to 15 years” of girls and boys, respectively (Slide 3). The CDC has developed several strategies to work towards the Healthy People 2020 HPV target. The CDC has identified health care providers, parents, immunization programs, and medical professional society partners as key players in the marketing plan. Three messages were developed by the CDC, which can be tailored by audience, based on research, to promote the campaign. Through a combination of videos, fact sheets, posters, webinars, newsletters, and conferences, the CDC is trying to remove barriers and promote HPV awareness and vaccination. This document is Level V organizational experience with high quality evidence. My project relates to this document by conducting audience research among mothers in the Tarrant County community.

Centers for Disease Control and Prevention. (2015b, June 25). *You are the key to HPV cancer prevention: Understanding the burden of HPV disease, the importance of the HPV vaccine recommendation, and successfully communicating about HPV*

*vaccination* [PowerPoint slides]. Available by request from the CDC Office of Adolescent Immunization Communications.

The purpose of this PowerPoint is to be used as a community teaching and advocacy tool. Community presenters can use all or part of the presentation, tailored to their specific points of interest. This presentation, developed by the CDC, provides general HPV facts, information regarding the importance of HPV vaccination for cancer prevention, and the rationale for vaccination at 11-12 years old. According to the CDC, most females and males will be infected with at least one type of HPV in their lives, most commonly during the teen and college-aged years. Persistent HPV infection can lead to cancer in both men and women. Nearly 18,000 women and 9,000 men in the United States are diagnosed with cancer caused by HPV each year. Texas has one of the highest rates of HPV-associated cancers. Yet, among high-income countries, the United States has the lowest percentage of girls vaccinated against HPV (33.4% compared to 60-70% in the UK and Australia). Provider recommendation is the most influential factor affecting parental decision to vaccinate. This document is Level V expert opinion with high quality evidence. This PowerPoint informs my project by providing background information on HPV and HPV-associated cancers, epidemiological data, and recommendations for HPV vaccination success and is specific for community health education.

Community Toolbox. (2015). *Conducting focus groups*. Retrieved from

<http://ctb.ku.edu/en/table-of-contents/assessment/assessing-community-needs-and-resources/conduct-focus-groups/main>

This resource provides general information on focus groups specifically geared toward community health work and social change. Focus groups enable trained leaders to gather qualitative data through small group discussions. During focus groups, participants answer open-ended questions and have the chance to be expressive and provide information in a structured environment. Focus groups are used to learn more about a topic and to guide future action. This resource provides tips for planning a focus group, such as finding a trained leader, using a representative sample, offering incentives, meeting logistics, preparing questions, and recruitment of members. This resource is useful because it provides best practice guidelines I will follow when conducting my focus groups.

Friedman, A.L., & Sheppard, H. (2007). Exploring the knowledge, attitudes, beliefs, and communication preferences of the general public regarding HPV: Findings from CDC focus group research and implications for practice. *Health Education and Behavior*, 34(3), 471-485. doi:10.1177/1090198106292022

The CDC conducted 35 focus groups in 2003, before the HPV vaccine was approved and available to the public. The purpose of this research was to gather information about the public's HPV knowledge, attitudes, and beliefs in order to inform HPV vaccine education in anticipation of a new HPV vaccine. Focus groups were conducted among people 25-45 years old living in



Kelseyville, California; Miami, Florida; Atlanta, Georgia; Kansas City, Missouri; Lumberton, North Carolina; and McAllen, Texas, for a total of 314 participants. Groups were segmented based on gender, race/ethnicity, and urban/rural location. Researchers found that all groups had minimal awareness and knowledge of HPV and that HPV was linked with STD-associated stigma. Making the link between HPV and cervical cancer motivated some parents to learn more about HPV, while producing fear and anxiety in others. The CDC concluded that messages for the public should provide accurate and factual information on HPV without creating undue fear and anxiety; distinguish HPV infection from other sexually transmitted infections; and be transparent about the HPV vaccine as it evolves. This research is a Level III qualitative study with high quality evidence. This research provides background information on the strategies taken by the CDC to educate the public about HPV vaccination.

Gainforth, H.L., Cao, W., & Latimer-Cheung, A.E. (2012). Message framing and parents' intentions to have their children vaccinated against HPV. *Public Health Nursing*, 29(6). 542-552. doi:10.1111/j.1525-1446.2012.01038.x

This quasi-experimental research, conducted in Canada, compared gain framing messaging versus loss framing messaging and the effects on parents' decisions to vaccinate their child with the HPV vaccine. Parents (n = 367) of 10-12 year old boys and girls with at least one child who had not been vaccinated with HPV were used as the audience. Parents were randomly assigned to read a gain-framed message, loss-framed message, or mixed-

frame message on HPV vaccination. Researchers found that parents who received the gain or mixed framed messages found the overall tone to be more positive and were more likely to talk to their health care provider about the HPV vaccine ( $p < .01$ ). Based on the Bonferroni pairwise comparisons, no other significant effects emerged. This research is Level II, moderate quality evidence due to the smaller sample size. This is relevant to my project because it is valuable to know how different message types can influence parents' decisions to vaccinate.

George Washington University Cancer Institute. (2013). *Texas: Human papillomavirus cancer & prevention profile*. Retrieved from

<https://smhs.gwu.edu/cancercontroltap/sites/cancercontroltap/files/Texas.pdf>

This document uses data from the 2013 National Immunization Survey-Teen and the United States Cancer Statistics database to provide state specific data on HPV vaccination rates and missed opportunities, prevalence of provider recommendation, and new cervical and oropharyngeal cancer cases. According to the document, in Texas, 38.9% of girls and 15% of boys between 13-17 years old received three doses of HPV vaccine, both short of the Healthy People 2020 targets of 80%. The percentage of providers recommending the HPV vaccine in Texas is 31.6% for boys and 57.1% for girls. This is below the national averages for both boys (41.6%) and girls (64.4%). Additionally, the rate of new cervical cancer cases (2007-2011) is higher in Texas, 9.3 cases per 100,000 females in Texas, compared to the U.S. baseline, 8.0 cases per 100,000 females and the Healthy People 2020

target of 7.2 cases per 100,000 females. The rate of oropharyngeal cancer cases in girls is higher in Texas (2.0 cases per 100,000 females) than the national average (1.4 cases per 100,000 females), a 42.9% difference. This document provides data specific to Texas, showing the need for HPV vaccination promotion in Texas.

George Washington University Cancer Institute (2015, December 9). *HPV vaccine myth busting: Using social media to reach health care providers* [PowerPoint slides]. Available by request from the George Washington University Cancer Institute.

This webinar, presented by the Communications Coordinator at the George Washington Cancer Institute, was targeted towards local health department workers and vaccine advocates. The purpose of the webinar was to provide HPV and HPV vaccine education along with tips to reach health care providers through social media to encourage HPV vaccine recommendation. Components of a strong provider vaccine recommendation include a discussion of HPV, the risks, and benefits to vaccination; encouraging vaccination for all 11-12 year old boys and girls, even if not the specific purpose of the visit; consistently recommending HPV vaccine as a routine immunization; and encouraging same-day vaccination. The webinar encouraged the use of social media as an effective outlet to reach providers and promote HPV vaccination. This is relevant to my project because it is important to understand the components of a strong provider recommendation and how social media can be used to promote HPV vaccination.

Gerberding, J.L. (2004, January). *Report to Congress: Prevention of genital human papillomavirus infection*. Retrieved from the Centers for Disease Control and Prevention website: <http://www.cdc.gov/std/hpv/2004hpv-report.pdf>

In a report to Congress, Gerberding (2004), discussed epidemiology, transmission, and prevention of HPV and the progression of HPV to cervical cancer. Although most HPV infections go away without treatment, persistent infection with certain types of HPV can lead to cervical cancer. This document was written before approval of HPV vaccines, however, it states a “study projected that an effective vaccine could prevent 1,300 deaths annually from cervical cancer if all 12-year old girls living in the United States were vaccinated” (page 17). Currently, in 2015, there is an effective HPV vaccine, yet not even 40% of 12-year old girls in the United States have received all three doses (CDC, 2015). This document is Level V expert opinion with a high quality evidence base. Gerberding (2004) is useful to my project by providing the basic facts about HPV, the progression of HPV infection to cervical cancer, history of HPV vaccination, and potential impacts the vaccine can have if used effectively.

Gilkey, M.B., Moss, J.L., McRee, A.L., & Brewer, N.T. (2012). Do correlates of HPV vaccine initiation differ between adolescent boys and girls? *Vaccine*, 30(2012), 5928-5934. doi.org/10.1016.j.vaccine.2012.07.045

Researchers analyzed data for differences in vaccination rates between adolescent boys and girls. Data from the 2010 North Carolina Child Health Assessment and Monitoring Program survey were analyzed, which surveyed

751 parents of children 11-17 years old. Findings indicated that only 14% of boys had received one or more doses of HPV vaccine, compared to 44% of girls. A provider recommendation was cited as the most influential factor in HPV vaccination uptake, consistent with other studies. Researchers found that HPV vaccine initiation was higher for boys between the ages of 13-15 who are non-white or non-black and live in low-income household. These data are consistent with Henry (2016) findings that HPV vaccination rates were highest among low-income Hispanic communities. This is Level III, moderate quality evidence because the sample is not entirely representative and possible recall bias related to respondent answers on the survey. These data show a need for HPV vaccine promotion to mothers of boys, especially those in higher income communities. It is relevant to my project because the focus groups will include mothers of boys and girls with different demographics.

Henry, K.A., Stroup, A.M., Warner, E.L., & Kepka, D. (2016). Geographic factors and human papillomavirus (HPV) vaccination initiation among adolescent girls in the United States [Published online]. *Cancer Epidemiology, Biomarkers, & Prevention*. doi:10.1158/1055-9965.EPI-11-0562

This research used data from the 2011 and 2012 National Immunization Survey-Teen to look at data for girls 13-17 years old (n= 20,565).

Researchers analyzed HPV vaccine initiation along with geographic factors. Results showed that HPV vaccine initiation was higher among the Hispanic population and in poor communities. Mothers younger than 35 years old

without a college degree were more likely to vaccinate their daughters against HPV. Among Hispanics, researchers found that those living in high poverty zip codes were more likely to initiate HPV vaccination compared to Hispanics living in lower poverty zip codes. Consistent with other studies, this research found that a provider recommendation is the most influential factor in HPV vaccine initiation. Researchers speculate that high HPV vaccination rates in poor communities could be related to increased vaccination access through federal programs or through community interventions. This research is Level III, moderate quality evidence because of possible recall bias. This research is relevant to my project by showing how geographic factors can influence HPV vaccination rates. Because I will conduct focus groups among different socioeconomic statuses, I can compare the differences. This research also shows a need for more HPV education in low poverty communities and among non-Hispanic populations.

Hull, P.C., Williams, E. A., Khabele, D., Dean, C., Bond, B., & Sanderson, M. (2014). HPV vaccine use among African American girls: Qualitative formative research using a participatory social marketing approach. *Gynecologic Oncology*, 132 (Supplement 1), S13-S30. doi:10.1016/j.ygyno.2014.01.046

This qualitative research study used focus groups to test HPV vaccination messages among African American girls 11-18 years old (n=34) and their mothers' (n=31). The purpose of the study was to generate HPV message recommendations specifically for the African American community.

Researchers focused on this population because African American women

have a higher incidence of cervical cancer (8.1 per 100,000) compared to White women (6.5 per 100,000) and HPV vaccine uptake is lower (60.8% compared to 74.8%) in African American girls than in White girls. Separate focus groups were conducted for mothers and daughters and groups were segmented based on daughter's vaccination status and mother's intent to vaccinate. Findings indicated that most mothers undecided about HPV vaccination would choose to vaccinate if the HPV vaccine were presented like any other routine vaccine. The idea of "normalizing" the HPV vaccine is consistent with other findings. Researchers suggested placing less emphasis on HPV as a sexually transmitted infection in messages targeted towards preteenagers. This finding is consistent with the CDC cancer prevention approach. This is a Level III qualitative study with moderate quality evidence due to identification of selection and recall bias. This research is relevant to my project by using social marketing to focus on a specific population. However, it is questionable whether the findings from the focus groups are specific to the African American community or whether they could be true for other populations as well.

Manchandra, R. (2013). *The upstream doctors: Medical innovators track sickness to the source*. TED Books.

Medscape. (2015). *Preventing HPV-associated disease: Targeting an adolescent health priority* [Webinar]. Retrieved from [http://www.medscape.org/viewarticle/854933\\_transcript](http://www.medscape.org/viewarticle/854933_transcript)

The purpose of this webinar, targeted to health care providers, was to provide basic HPV facts, benefits of HPV vaccination, and strategies to improve HPV vaccination rates. The webinar primarily focused on the importance and influence a provider recommendation can have to increase HPV vaccination rates. In research cited by the webinar, the most common reason parents did not vaccinate their child was never being offered the vaccine to begin with. Among parents of adolescent boys who received a provider recommendation, 55% chose to vaccinate, compared with 1% of those who did not receive a provider recommendation. Additionally, the webinar emphasized the importance of a high quality recommendation. A high quality provider recommendation recommends the vaccination by a certain age, endorses the vaccine, consistently recommends the vaccine for everyone eligible, and encourages same-day vaccination. Among parents that received a high quality recommendation, 73% chose to vaccinate. This shows the positive effect a provider recommendation can have to increase HPV vaccination rates. This is Level V expert opinion research with high quality evidence. This is relevant to my project by providing insight into the missed opportunities for HPV vaccination.

Niccolai, L.M., & Hansen, C.E. (2015). Practice- and community-based interventions to increase human papillomavirus vaccine coverage: A systematic review. *JAMA Pediatrics*, 169(7), 686-692. doi:10.1001/jamapediatrics.2015.0310

This systematic review analyzed the literature to determine the effectiveness of interventions to promote HPV. A search was conducted on the PubMed,



MEDLINE, and Web of Science databases using *HPV* or *human papillomavirus*; *vaccine* or *vaccination*; and *intervention* or *randomized* as the keywords in titles or abstracts. Inclusion criteria were *conducted in the United States, focused on adolescents less than 18 years old, reported an outcome of actual HPV vaccination rates, and included a comparison group*. Exclusion criteria were studies that *examined only intentions or attitudes, only included young adults 18 years and older, were development or feasibility studies, or were only published as conference abstracts*. Fourteen articles met the search criteria. HPV interventions included reminder and recall systems (n=7), physician-focused interventions (n=7), school-based programs (n=2), and social marketing (n=2); however, some used multiple strategies. Findings indicated that most interventions increased HPV vaccination. Results showed that different strategies can be effective and choice of strategy can vary based on community and resources. This is a Level IV systemic literature review with moderate quality evidence due to the type and quality of included studies. This is relevant to my project by identifying social marketing as one effective strategy to improve HPV vaccination rates.

Niccolai, L.M., Hansen, C.E., Credle, M., & Shapiro, E.D. (2016). Parents' recall and reflections on experiences related to HPV vaccination for their children.

*Qualitative Health Research*, 26(6), 842-850. doi:10.1177/1049732315575712

This qualitative research analyzed HPV vaccination experiences for low-income minority parents of adolescents. The purpose of the study was to address HPV-related health disparities. In-depth interviews were conducted

among 38 parents with children between 10-18 years old who receive primary care at an urban hospital-based outpatient clinic. Participants were predominately female (n=31), Black (n=18), and Hispanic (n=13). Common themes were a low level of HPV vaccine awareness and knowledge, reliance on providers' vaccination recommendation, variability in strength of provider recommendations, low completion of the three-dose series, and a limited understanding of the rationale for vaccination for boys. Many parents had increased enthusiasm about the HPV vaccine after learning brief information, reiterating the importance of a strong provider recommendation. The findings from this study are interesting because Henry (2016) and Gilkey (2012) found that low income and minority populations are more likely to initiate HPV vaccination. According Niccolai et al. (2016), low income and minority populations are generally reliant on a provider recommendation, so perhaps the providers in the target populations of the other studies were more proactive in recommending HPV vaccination. This is a Level III qualitative research study with moderate quality of evidence due to a sample size that is not entirely representative. This research informs my project by providing HPV vaccine information specific to a low-income minority community. Depending on my focus group population, I may be able to identify some common themes or differences.

Public Health Nursing Section, Minnesota Department of Health. (2001). Social marketing. In *Public health interventions: Applications for public health nursing*

*practice* (pp.285-311). Retrieved from

[http://www.health.state.mn.us/divs/opi/cd/phn/docs/0301wheel\\_manual.pdf](http://www.health.state.mn.us/divs/opi/cd/phn/docs/0301wheel_manual.pdf)

This resource guide about public health nursing interventions states, “social marketing utilizes commercial marketing principles and technologies for programs designed to influence the knowledge, attitudes, values, beliefs, behaviors, and practices of the population-of-interest.” This document provides the basic steps for social marketing, best practices, and evidence supporting the effectiveness of social marketing. This is Level V expert opinion with high quality evidence. This document is relevant because social marketing is the strategy I am using to guide my project.

Reiter, P.L., Stubbs, B., Panozzo, C.A., Whitesell, D., & Brewer, N.T. (2011). HPV and HPV vaccine education intervention: Effects on parents, healthcare staff, and school staff. *Cancer Epidemiology, Biomarkers, & Prevention* 20(11), 2354-2361. doi:10.1158/1055-9965.EPI-11-0562

This research study evaluated the effects of HPV vaccine education sessions conducted with parents (n=376), school staff (n=456), and health care staff (n=118) at middle schools in North Carolina. Participants received a 30-40 minute PowerPoint presentation providing information on HPV prevalence and transmission, diseases associated with HPV infection, vaccine recommendation, dosage schedule, vaccine efficiency and safety, and insurance coverage for the vaccine. All participants completed pre- and post-education session surveys, rating their knowledge and beliefs on HPV vaccination. Following the education sessions, HPV vaccine knowledge

increased among all three groups. The majority of parents (97%) and staff members (85%) indicated support of school-based vaccination clinics following the education session. This research is a Level II quasi-experimental study with moderate quality evidence. This research is relevant to my project because it shows the value of HPV vaccine education programs.

Perkins, R.B., Clark, J.A., Apte, G., Vercruyssen, J.L., Sumner, J.J., Wall-Haas, C.L., & ... Pierre-Joseph, N. (2014). Missed opportunities for HPV vaccination in adolescent girls: A qualitative study. *Pediatrics*, 134(3), e666-e674.  
doi:10.1542/peds.2014-0442

The purpose of this qualitative research was to explore why parents and providers delayed HPV vaccination. Interviews were conducted with parents (n=124) and providers (n=37) of 11-17 year old girls at one public clinic (n=70) and three private practice locations (n=54). Provider recommendation of HPV vaccination was more frequent at the public clinic (80%) compared to private practices (67%). Because low-income and minority parents more frequently visit public clinics, this could be a contributing factor to why Henry (2016) and Gilkey (2012) found a higher rate of HPV vaccine initiation for this population. According to Perkins (2014), 77% of girls 11-21 years old initiated HPV vaccination at the public clinic compared to 54% at the private practice. Lack of a physician recommendation for HPV vaccination was cited as the most common reason for delay. Perkins (2014) found varying responses from providers. Some providers at the private practices had reservations about

HPV vaccination at 11 years old and reported more parental resistance. Compared to health care providers at public clinics, those at private practices expected to see their patients annually, so they placed less emphasis on HPV vaccination. Some health care providers reported basing their HPV vaccine recommendations on a risk profile, delaying vaccination until girls were sexually active. Providers with higher HPV vaccination rates presented HPV as a routine vaccine. This research is consistent with other studies, suggesting that a strong provider recommendation and normalizing the HPV vaccine is the most successful approach. According to the research, HPV vaccination delays meant to be temporary often become permanent due to a variety of reasons. This research is a Level III qualitative study with moderate quality evidence because of possible recall bias. This research is relevant to project because it is important to understand why parents and providers choose to delay HPV vaccination.

U.S. Department of Health and Human Services. (2013a). *About Healthy People*.

Retrieved from <http://www.healthypeople.gov/2020/About-Healthy-People>

U.S. Department of Health and Human Services. (2013b). *IID-11.4. Increase the vaccination coverage level of 3 doses of human papillomavirus (HPV) vaccine for females by age 13 to 15 years*. Retrieved

from [http://www.healthypeople.gov/node/4657/data\\_details](http://www.healthypeople.gov/node/4657/data_details)

U.S. Department of Health and Human Services. (2013c). *IID-11.5. Increase the vaccination coverage level of 3 doses of human papillomavirus (HPV) vaccine for*

*males by age 13 to 15 years.* Retrieved

from [http://www.healthypeople.gov/node/10676/data\\_details](http://www.healthypeople.gov/node/10676/data_details)

U.S. Department of Health and Human Services. (2013d). *Immunization and infectious disease.* Retrieved from <http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases>

Wrangham, T. (2013, August 5). *CDC upset about low HPV vaccine uptake.* Retrieved from the National Vaccine Information Center website: <http://www.nvic.org/cdc-launches-media-campaigns-to-increase-vaccine.aspx>

In this report to the 2013 Federal Vaccine Advisory Committee, low HPV vaccine uptake was a primary topic of discussion. Six years after the development of the HPV vaccine, CDC officials were concerned about missed opportunities for HPV vaccination and low HPV vaccine uptake across the United States. This document suggests “reframing the vaccine from an STD prevention vaccine to an ‘anti-cancer’ vaccine in a new media campaign” as a strategy to promote HPV vaccination (1). This idea is consistent with the current approach the CDC has taken to promote the HPV vaccine as cancer prevention. This document is relevant to my project because my focus groups will explore how North Texas mothers’ respond to the CDC cancer prevention marketing approach. This document provides background on the development of the HPV cancer prevention marketing strategy.

## List of Appendices

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Appendix A

*Adapted CDC Screening Questions*



**Screening Instrument for Mothers – English  
TCU Version**

Recruit:

- Eight (8) per group
- Recruit according to grid

Time	Date	Group Type	Location
		Mothers High Education	
		Mothers Low Education	
		Mothers Mixed Education	
		Mothers Low or High Education (depending on which sites agree to participate)	

*Hello, my name is Maggie and I'm a student in the Honors College at Texas Christian University. I am talking today with mothers in the area as part of a study for my Honors project. My study is modeled after a Centers for Disease Control and Prevention (CDC) study. I am not selling anything. I have a few brief questions that will take just two to three minutes of your time, and if you qualify and are interested, I will invite you to take part in a discussion that will take place at a later date.*

1. Have you participated in a focus group within the last six months?

- 01 Yes **[THANK & TERMINATE]**  
02 No

2. Is anyone in your immediate family employed in the following industries?

- 01 Advertising, public relations and/or market research  
02 Any form of news media (TV, radio, newspaper, magazine, or Internet)  
03 Any health clinic, doctor or dentist office, hospital, medical laboratory or research institution, pharmacy, pharmaceutical company, or public health organization  
04 Other health organization

**[IF YES TO ANY, THANK & TERMINATE]**

3. Do you have a child between the ages of 10-15 in your household?

- 01 Yes **[Go to 3b]**  
02 No **[THANK & TERMINATE]**

3b. How many children do you have between the ages of 10 and 15? **[Go to 3c]**

- 01 No other children  
02 RECORD NUMBER of children \_\_\_\_\_

3c. What is that child's gender? **[Go to 3d]**

- 01 Male  
02 Female

**[DOCUMENT ON GRID]**

3d. How old is your oldest child between the ages of 10-15? **[Go to Q4]**

Record Age\_\_\_\_\_

**[DOCUMENT; AIM FOR A MIX/GROUP]**

4. Has your child had any vaccinations in his or her lifetime?

01 Yes

02 No **[THANK & TERMINATE]**

5. Are you (you and partner) the primary decision maker of medical decisions regarding your child?

01 Yes

02 No **[THANK & TERMINATE]**

6. Has your child been to a health care provider for a routine visit in the past three years?

01 Yes

02 No

**[DOCUMENT ON GRID]**

7. What is your race/ethnicity?

01 African-American/Black

02 Asian-American

03 Caucasian/White

04 Hispanic-American

04 Other (please specify)\_\_\_\_\_

**[DOCUMENT; AIM FOR A MIX]**

8. How old are you?\_\_\_\_\_ **[DOCUMENT; AIM FOR A MIX]**

9. What is your marital status?

01 Now Married

02 Widowed

03 Divorced

04 Separated

05 Never married

**[DOCUMENT; AIM FOR A MIX]**

10. Which of the following categories best describes your completed level of education?

01 Some college or less

02 Bachelor's degree or Master's degree

(PREFER NO MORE THAN 2 MASTER LEVEL IN A GROUP)

03 PhD or JD **[THANK AND TERMINATE]**

**[DOCUMENT; PLACE IN APPROPRIATE EDUCATION LEVEL GROUP]**

**11. [ASSESS AND VERIFY ABILITY TO SPEAK AND UNDERSTAND ENGLISH]**

*Your focus group will be held on \_\_\_\_\_ at \_\_\_\_\_ and will last for approximately one hour. Because we know your time is valuable, at the end of the discussion we will offer you \$10 cash as a token of appreciation for your participation.*

*Are you willing to attend?*

01 Yes

02 No **[THANK & TERMINATE]**

*Prior to the start of the group, you will receive an information sheet with such information as sponsorship of the study and contacts for more information. If after we hang up, you have a question about this interview or decide you can't participate, please contact my supervising faculty, Dr. Pam Frable at 817-257-5840 or Ms. Sharon Canclini at 817-257-6745.*

Name \_\_\_\_\_

Email \_\_\_\_\_

Address (only if participant does not have email) \_\_\_\_\_

City, State, Zip Code \_\_\_\_\_

Phone Number Where We Can Contact You \_\_\_\_\_

Appendix B

*Adapted CDC Consent Information for Participants*



**Consent Information for Participants – English  
TCU Version**

<b>What is the title of the study?</b>	Exploring North Texas Parents' Response to CDC HPV Cancer Prevention Messaging
<b>What is the purpose of the study?</b>	<hr/> You are being asked to participate in a discussion being held for my Honors project. My study is modeled after a Centers for Disease Control and Prevention (CDC) study. In the discussion, you will be asked your opinions and experiences regarding a current public health issue. Your answers can help efforts to improve educational materials. The discussion will be audio-recorded to be sure we get all the information.
<b>Please remember that</b>	<hr/> <ul style="list-style-type: none"> <li>• You chose to participate.</li> <li>• You are not required to answer the questions.</li> <li>• The session should last about one hour.</li> <li>• You will receive a \$10 cash incentive for participating in the discussion.</li> <li>• You are free to leave at any time without losing the cash incentive or other penalty.</li> <li>• There will be observers taking notes in the room.</li> </ul>
<b>What are the risks?</b>	<hr/> The risks in taking part in the study are the same as you would face in daily life activities. Your participation is voluntary and you can discontinue at any time.
<b>What are the benefits?</b>	<hr/> <ul style="list-style-type: none"> <li>• You may be better informed about a public health issue.</li> <li>• You may have a sense of satisfaction from contributing.</li> <li>• Your comments may help improve the information parents receive.</li> </ul>
<b>How do you protect my confidentiality?</b>	<hr/> We will keep the information you give us private to the extent allowed by law. Your name will not be used in the final report. No statement you make will be linked to you by name. Only members of the research staff will be allowed to look at the records. When we present this study or publish its results, your name or other facts that point to you will not show or be used.
<b>Whom should I contact if I have concerns about my rights as a study participant?</b>	<hr/> Dr. Tim Barth, Co-Chair, TCU Institutional Review Board, Phone 817-257-6427. Dr. Anna Petursdottir, Chair, TCU Institutional Review Board, Phone 817-257-6436 Dr. Bonnie Melhart, TCU Research Integrity Office, Telephone 817-257-7104

Your signature indicates that you have read or been read the information provided above, you have received answers to all of your questions and have been told whom to call if you have any questions, you have freely decided to participate in this research, and you understand that you are not giving up any of your legal rights.

**Participant Name (please print):** \_\_\_\_\_

**Participant Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Investigator Name (please print):** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Investigator Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Appendix C

*Adapted CDC Moderators' Guides and Worksheets*

**Moderators' Guides and Worksheets - English  
TCU Version**

**I. INTRODUCTION (5 minutes;  $\Sigma$  = 5 minutes)**

1. Purpose of the discussion
  - a. Ask if anyone has questions about participant information sheet.
  - b. Today's discussion will want to get your opinions, as mothers of adolescents to find out what you know about adolescent vaccines, HPV in particular. Also, we want to find out your attitudes related to these vaccines and get some feedback on some materials.
2. CDC Relationship
  - Today's conversation is modeled after a conversation designed by the Centers for Disease Control and Prevention in Atlanta, Georgia. I would like to get your honest opinion and ideas about vaccinating your child and some materials the CDC developed for parents like yourselves. I will be comparing your responses to those of parents in Philadelphia, Pennsylvania; Birmingham, Alabama; and Sunnyvale, California.
3. Observers
  - a. Mention observers.
4. Audio-recording
  - a. This session is being taped so we can write an accurate report later. Please only use your first name.
5. Comments kept confidential – no personal identifiers in reports
6. Respondent information
  - a. Name and age of your child
  - b. If you do go online, where do you tend to spend most of your time?

**II. KNOWLEDGE AND AWARENESS OF ADOLESCENT VACCINES (10 minutes;  $\Sigma$  = 15 minutes)**

*I'd like to talk briefly about three adolescent vaccines.*

1. What vaccines does your adolescent need?

*HPV vaccine did/didn't come up, let's talk about that.*

2. What have you read/seen/or heard about the HPV vaccine?
  - a. What disease or diseases do you associate with the human papillomavirus?
  - b. Is the vaccine for boys, girls, or both?
  - c. What is the age range for adolescents to receive this vaccine?
  - d. Any other thoughts/impressions?
3. Have you ever talked to a doctor or nurse about this vaccine?

**PROBES:**

- a. What did the doctor/nurse tell you about the HPV vaccine?



- b. Did they recommend the vaccine?
- c. Did they give you any brochures or handouts?
  - Was this information helpful in making a decision about whether or not your child should get this vaccine? Why or why not?
- d. The HPV vaccine requires three shots over six months.
- e. What are ways to help you remember to take your child to the doctor for all three shots?
  - Reminders?
  - How would you like to receive those reminders?
    1. E-mail?
    2. Text message?
    3. Phone call?

### III. BARRIERS AND FACILITATORS OF HPV VACCINE (20 minutes; $\Sigma = 35$ minutes)

***\*Note to Moderators-Throughout the discussion you may need to redirect participants often that our focus is about HPV in this section.\****

*I would like you to complete a brainstorming activity. Today we may have people that have made a choice to vaccinate their children against HPV and there may be others who have not vaccinated their child against HPV. We value both points of view. On the note pad in front of you, I would like you to take time to jot down your thoughts. Because this is a brainstorming activity, I'd like you to just quickly write down all the ideas that come to mind.*

1. Please write down at least five to seven factors that would positively influence you to vaccinate your child against HPV. [NOTE: Provide time for note taking]

[NOTE: Collect a response from each person and write answers on the flip chart (Positively Influence).]

*Now, I would like to understand the relative importance of these factors. I'm going to give each of you a set of five colored dots. I want you to use the set of dots as votes, placing them on the flip chart paper next to the factor that is most persuasive/influential in your decision making process to vaccinate your child against HPV. If a particular factor is really important to your decision, you may place more than one dot by that factor to indicate how important it is. After you've read over the list on the flip chart pages so that you can make an informed choice, please stand up, go to the flip chart and put your dots where they need to be.*

[NOTE: Count dots, capture number next to item, identify patterns/themes, and debrief.]

2. Next, please brainstorm at least five to seven factors that possibly have or would influence you to not vaccinate your child against HPV. [NOTE: Provide time for note taking]

[NOTE: Collect responses on a flip chart page (Negatively Influence/Discourage).]

*Now, I would like to understand the relative importance of these factors. I'm going to give each of you a set of five colored dots. I want you to use the set of dots as votes, placing them on the flip chart paper next to the factor that is most persuasive/influential in your decision-making process to not vaccinate your child against HPV. If a particular factor is really important to your decision, you may place more than one dot by that factor to indicate how important it is. After you've read over the list on the flip chart so that you can make an informed choice, please stand up, go to the flip chart and put your dots where they need to be.*

[NOTE: Count dots, capture number next to item, and identify patterns/themes.]

[NOTE: Use the time to go in depth about these reasons probing to find out more about why they feel the way they do and what could be done to ease their minds. For example: If safety concerns/adverse effects/long-term effects appear probe for in-depth explanation of what safety means (i.e., death, sterility or needing a booster in the future).]

**Probe:** Are any of the factors on either flip chart important enough to:

- Influence your decision to vaccinate? If so, what makes these factors so influential?
- Influence your decision to not vaccinate? If so, what makes these factors so influential?

#### **IV. MESSAGE TESTING (20 minutes; $\Sigma$ = 55 minutes)**

*Today, I would like to understand more clearly what parents want to know about HPV and the HPV vaccine. Please provide your open and honest reactions to the messages. With your partner, read through these messages. Then, as a team, rank-order them from most influential to least influential in affecting your decision to vaccinate your child against HPV.*

[NOTE: Hand out messages on note cards. Have each pair write down their rank order on a notepad. Ask each team to verbally recite their rank order and debrief.]

Now that you have ranked the messages, I'd like you to edit this information to make it as meaningful as possible to parents like you. I'd like to share information with the CDC about how you would make these messages better. I would like you and your partner to take the top two messages and make these messages as powerful/most appealing as possible. You can change or substitute words, remove words or phrases that aren't important or add information to make the message more powerful.

Probes:

- What, if anything, did you change/edit?
- What, if anything, did you add?
- What, if anything, did you remove?
- Was there anything you did not believe?

1. Where would you prefer/expect to see such messages?

- Internet?
- TV?
- Radio?

- Social Media?

[NOTE: Probe to get specific TV/radio stations, websites, etc.]

2. If you wanted to learn more about the HPV, where would you go? Who would you ask?

Probes:

- Doctor?
- Internet? What websites?
- Family/Friends?

3. Is there any additional information, something we haven't talked about so far during our discussion that you want to know regarding the HPV vaccine that would help inform your decision on whether or not to vaccinate your child?

**V. Wrap-Up/False Close (5 minutes;  $\Sigma$  = 60 minutes)**

- I'm going to step out for a minute and see if there are any additional questions from my colleagues. Please feel free to talk amongst yourselves and when I come back, we will discuss if you have any further questions about HPV.
- Those are all the questions I have for you today/this evening. I appreciate the information you have provided. Please leave all the materials and worksheets I gave you tonight.
- I'll be sharing the results of the study with the CDC. Thank you.

Appendix D

*Boller Presentation PowerPoint*

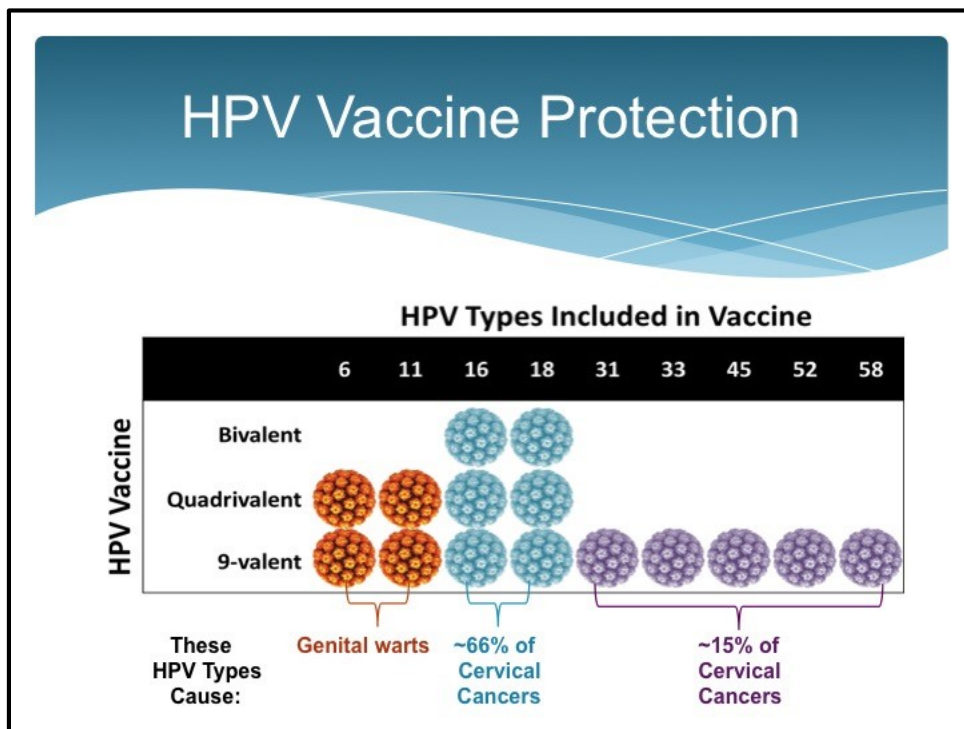
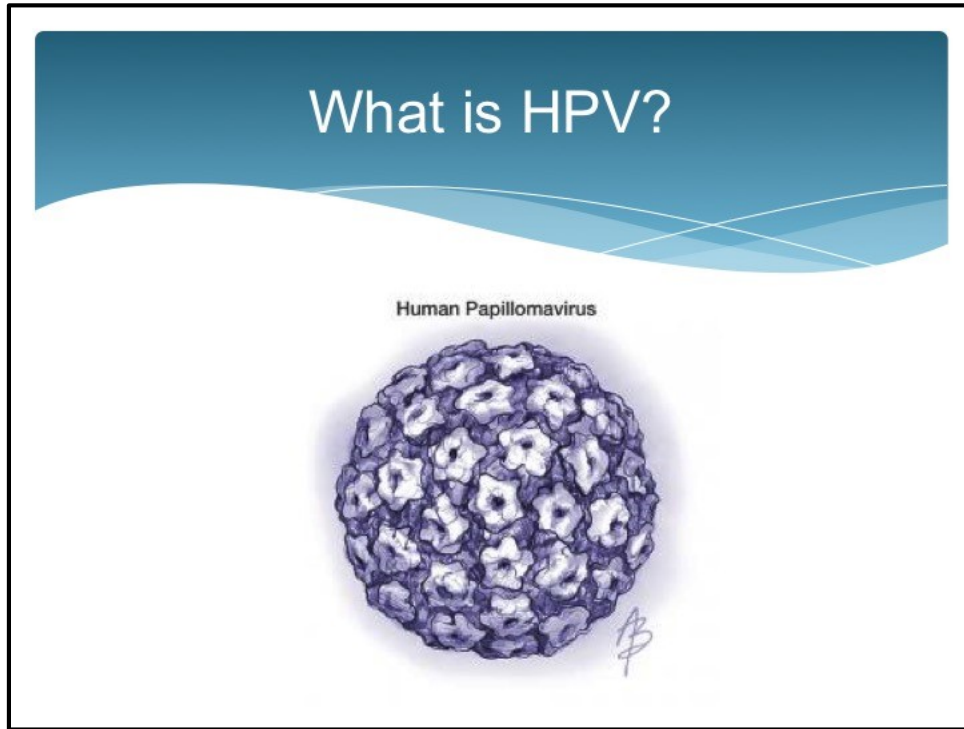
*March 31, 2016*

Exploring North Texas Parents' Response to CDC HPV Cancer Prevention Messaging

Maggie Gross  
Harris College of Nursing & Health Sciences  
John V. Roach Honors College

## My Journey

- Shot@Life Champion Summit
- Tarrant County Public Health Department Internship
- Discussion with CDC Office of Adolescent Immunization Communications

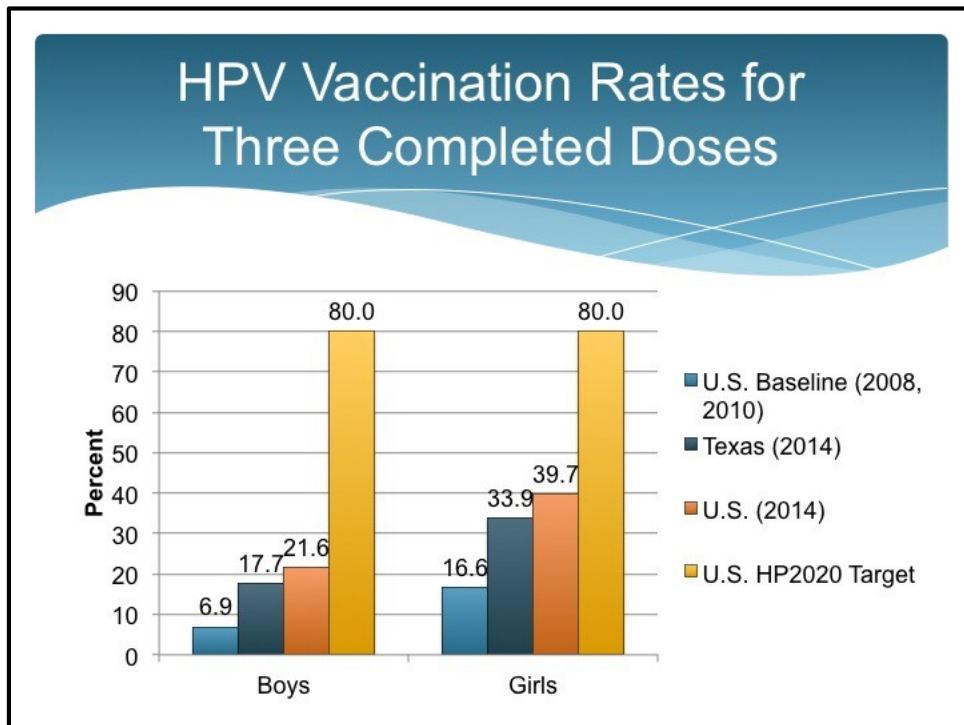


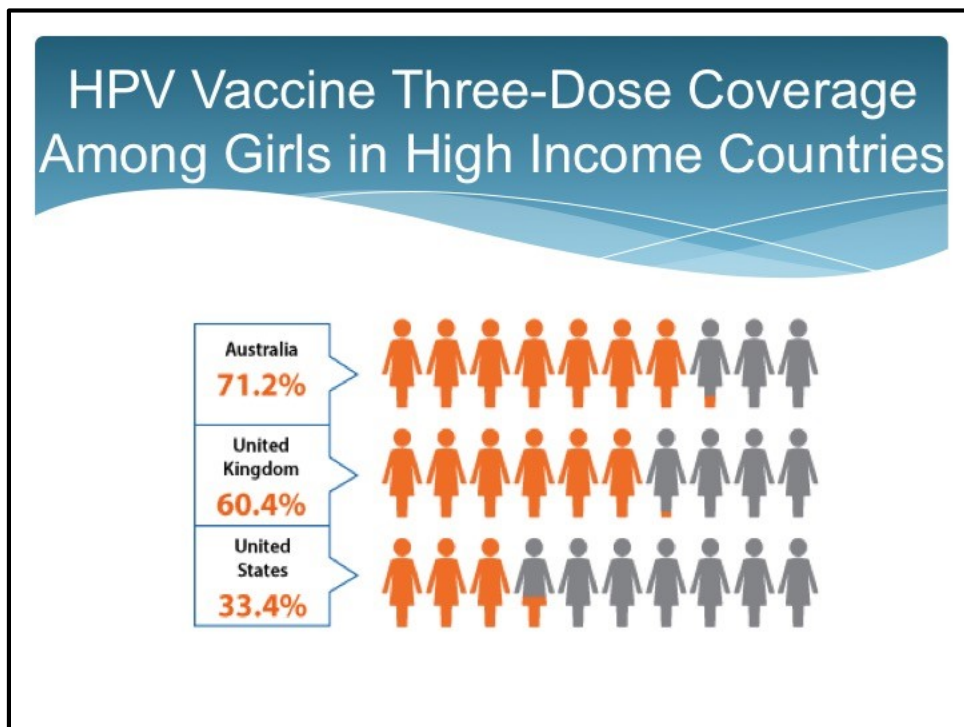
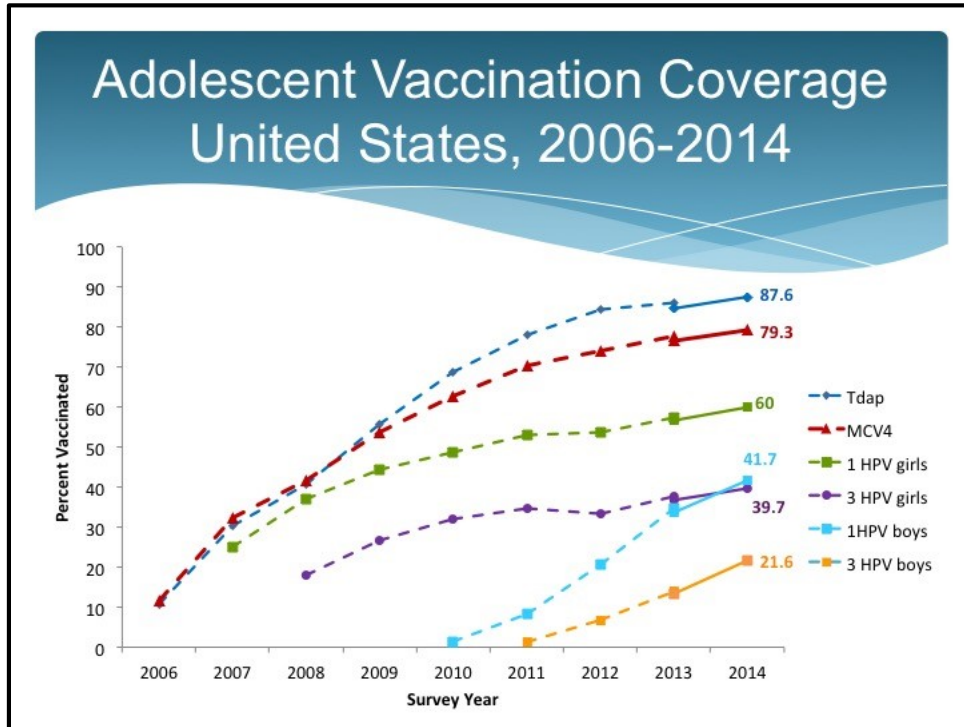


**HPV vaccine is cancer prevention.**

Talk to the doctor about vaccinating your 11-12 year old **sons and daughters** against HPV.

#UCanStopHPV







## What makes the HPV vaccine unique?

1

- Recommended, not required

2

- Parental consent for vaccination at the recommended age

3

- Social stigma because HPV is sexually transmitted

4

- Lack of provider recommendation

## Original CDC Study

### ***Parents' Attitudes and Beliefs About HPV Vaccine***

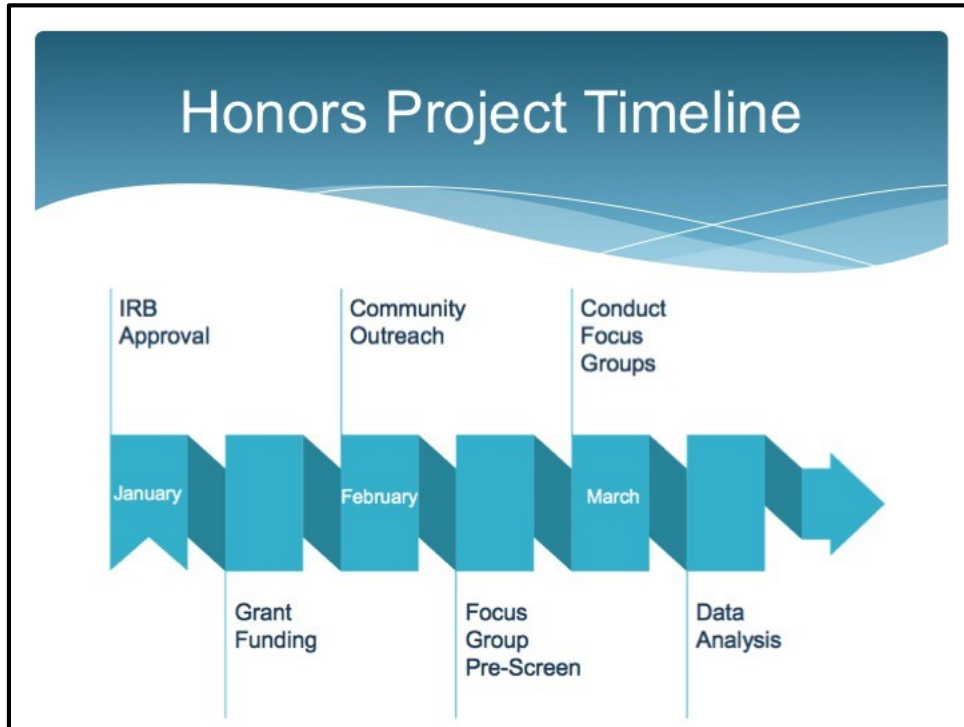
- \* Identify barriers to HPV vaccination and test HPV messaging
- \* Mothers of 10-15 year old boys and girls
- \* July, 2013
- \* Approximately 45 focus groups
- \* Locations
  - Philadelphia, Pennsylvania
  - Birmingham, Alabama
  - Sunnyvale, California

## Honors Project Protocol

- \* Conduct two to four focus groups modeled after the CDC focus groups in Tarrant County
  - 8-10 participants per group
- \* Modifications from original CDC study
  - Focus groups will only be conducted in English
  - Participants will be recruited using convenience sampling
  - Groups will be segmented only on education level

## Participant Population

<div style="background-color: #005696; color: white; padding: 5px; text-align: center; font-weight: bold;">Inclusion Criteria</div> <ul style="list-style-type: none"> <li>• Mother of 10-15 year old boy or girl</li> <li>• Must reside in Tarrant County</li> <li>• Must be English-speaking, however, persons with limited English proficiency may participate</li> </ul>	<div style="background-color: #005696; color: white; padding: 5px; text-align: center; font-weight: bold;">Exclusion Criteria</div> <ul style="list-style-type: none"> <li>• Mothers without children 10-15 years old</li> <li>• Do not live in Tarrant County</li> <li>• No English language proficiency</li> </ul>
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## Focus Group Procedure

- \* CDC screening questions
  - Deviations
- \* Participant information sheet
- \* Light refreshments provided
- \* CDC Moderator Guide
- \* Audio recorded & professionally transcribed
- \* Note-taker
- \* Participant incentive
- \* One hour

The illustration shows a brown clipboard with a silver clip at the top left. On the clipboard is a white sheet of paper with several lines of text, representing a checklist. A yellow pencil with a pink eraser and a silver band is positioned diagonally across the bottom right of the paper.

# Preliminary Findings

## Focus Group 1

Population	Participant Characteristics	Location
<ul style="list-style-type: none"><li>• Caucasian/White</li></ul>	<ul style="list-style-type: none"><li>• Six participants</li><li>• Three mothers of boys</li><li>• Three mothers of girls</li><li>• All had children within 10-15 age range</li></ul>	<ul style="list-style-type: none"><li>• Participant home</li></ul>

## Preliminary Findings 1

- \* General knowledge and awareness of adolescent vaccinations, including HPV
- \* Provider recommendation the most influential factor contributing to vaccination
- \* Provider reminder systems (or lack of) can be facilitator or barrier to completing three-dose series
- \* Fear of long-term side effects is greatest barrier to vaccination

## Focus Group 2

Population	Participant Characteristics	Location
<ul style="list-style-type: none"> <li>• African American/Black</li> </ul>	<ul style="list-style-type: none"> <li>• Six participants</li> <li>• Two mothers of boys</li> <li>• Three mothers of girls</li> <li>• One aunt*</li> <li>• One mother with 17 year old child*</li> </ul>	<ul style="list-style-type: none"> <li>• TCU</li> </ul>

## Preliminary Findings 2

- \* General lack of knowledge about adolescent vaccines
- \* General lack of knowledge of HPV vaccine
  - Ex: ovarian cancer, syphilis
- \* Personal testimonials important
- \* Cost of vaccine a barrier
- \* Fear of long term side effects, including death
- \* Distrust of government recommending vaccination

## Focus Group 3

Population	Participant Characteristics	Location
<ul style="list-style-type: none"> <li>• Caucasian/ White</li> <li>• Asian-American</li> <li>• Middle Eastern</li> </ul>	<ul style="list-style-type: none"> <li>• Nine participants</li> <li>• All Muslim</li> <li>• All children within age range</li> </ul>	<ul style="list-style-type: none"> <li>• Participant home</li> <li>• Focus group followed up by impromptu two-hour discussion with participants*</li> </ul>

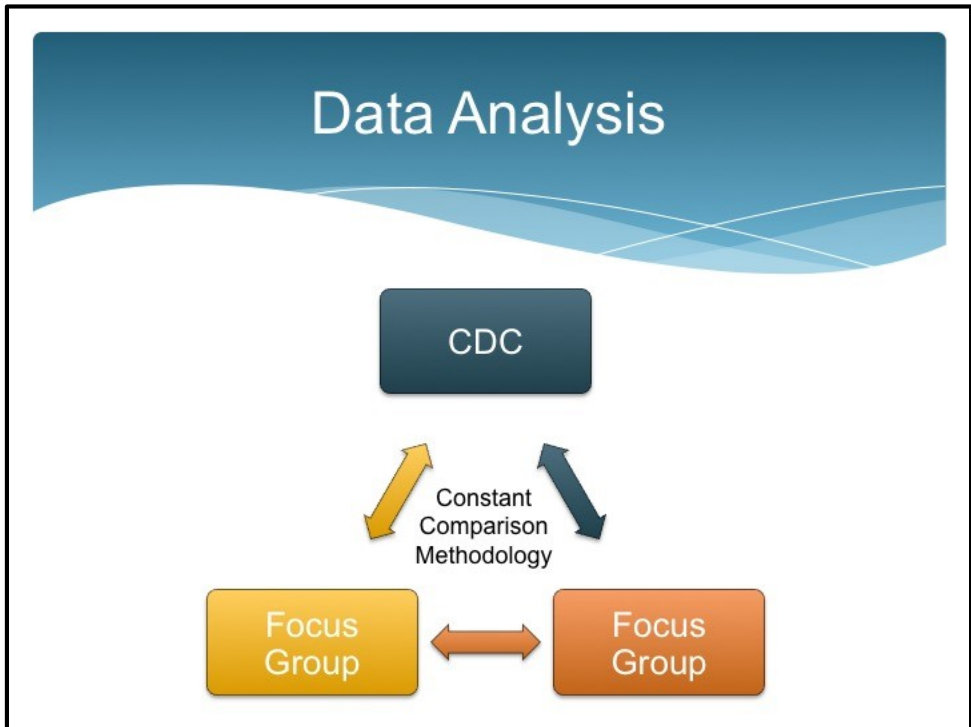


## Preliminary Findings 3

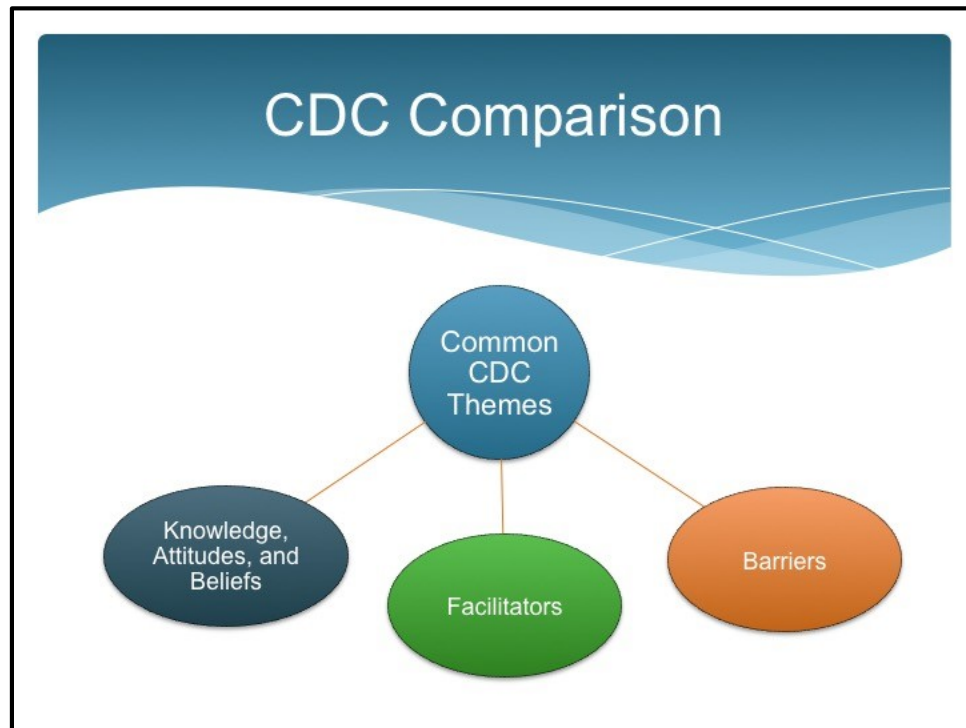
- \* Cancer prevention messaging preferred
- \* Husband and children involvement in decision to vaccinate
- \* Fear of long term side effects
- \* Want myths to be addressed
- \* Provider recommendation important
- \* Want additional community education

## Additional Findings Across All Groups

- \* Actively contributed
- \* Open to learning
- \* Technologically savvy
- \* Groups had individual personalities
- \* Variations in comfort with terminology
- \* Linked Rick Perry to HPV vaccine







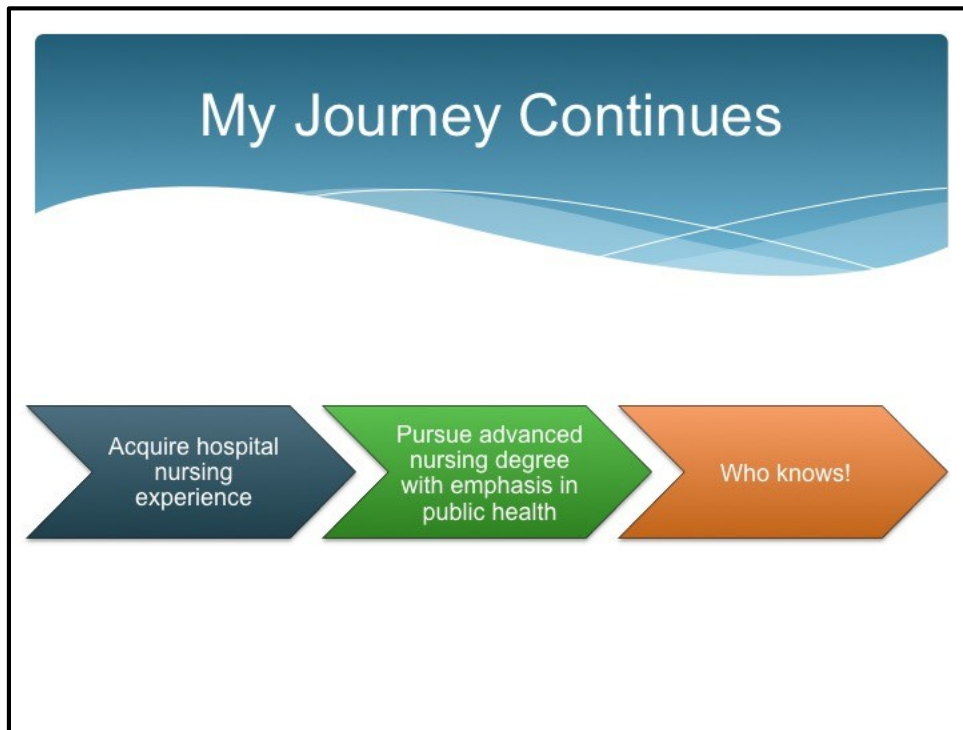
## Results

- \* Preliminarily all groups had some content that matches up with CDC framework
- \* Three unique themes emerged
  1. Organization of health system as a facilitator or barrier to obtaining three doses
  2. Importance of testimonials
  3. Role of husband and children in vaccination decision making



## Project Future

- \* Provider education
- \* Social marketing
  - Market segmentation by audience
  - Use channels appropriate for each audience
  - Understanding risk
- \* Consider role of faith community
- \* Funding the vaccine
- \* Hispanic focus group
- \* Learn from other countries



## Thank You

- \* John V. Roach Honors College Undergraduate Research Grant
- \* JP Morgan Chase Public Health Nursing Fund
- \* Jill Roark, CDC Office of Adolescent Immunization Communications
- \* Community partners
- \* Dr. Pam Frable, Ms. Sharon Canclini, and Ms. Alysha Sapp

Appendix E

*Harris College of Nursing & Health Sciences Student Research Symposium Poster*

*April 7, 2016*

# Exploring North Texas Parents' Response to CDC HPV Cancer Prevention Messaging

Maggie Gross, Nursing, Texas Christian University

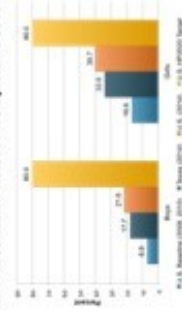


## BACKGROUND

Human papillomavirus (HPV) infection is sexually transmitted and can progress to many different cancers in both men and women, including genital, oral, and throat cancers.

- HPV Vaccine
- Protection against 9 types of HPV, including two most likely to progress to cancer
- Three-dose series over six months
- Recommended for 11-12 year old boys & girls; approved for 9-26 year old boys & girls

## HPV Vaccination Rates: 3 Completed Doses



## What makes the HPV vaccine unique?

1. Recommended, not required
2. Parental consent for vaccination at the recommended age required
3. Social stigma because HPV is sexually transmitted
4. Lack of provider recommendation

**Original CDC Study, July, 2013**

- ~45 focus groups among mothers of 10-15 year old boys and girls to identify barriers to HPV vaccination and to test HPV messaging
- Philadelphia, PA; Birmingham, AL; and Sunnyvale, CA

## METHODS

**Social Marketing** is a public health nursing intervention that utilizes commercial marketing principles to influence knowledge, attitudes, values, beliefs, behaviors, and practices for the population-of-interest. The CDC used focus groups to collect subjective data and test messages among the target population. Mothers of 10-15 year old boys and girls. This project extended the target audience to include mothers' living in North Texas, a population not included in the original CDC study.

## Literature Review

Articles (n=25) relating to HPV vaccination and social marketing were analyzed to reach the point of saturation for this project. Key themes selected:

- Health care providers can serve as barriers or facilitators to HPV vaccination
- Community-based social marketing campaigns have been an effective strategy to increase HPV vaccination rates
- Many parents lack knowledge on the benefits of HPV vaccination for boys
- Low income and minority communities tend to have higher rates of HPV vaccination

## Honors Project Protocol

- Conduct two to four focus groups modeled after the CDC focus groups in Tarrant County
- Participants recruited using convenience sampling through existing public health nursing connections
- Inclusion criteria were mother of 10-15 year old boy or girl who lives in Tarrant County and speaks English

## Focus Group Procedure

- CDC screening questions and moderator guide
- Light refreshments, participant incentive
- Audio recorded & professionally transcribed
- Note-taker

## FOCUS GROUPS

Three focus groups were conducted. All groups actively contributed, were open to learning, and had an individual personality.

Focus Group #1	Focus Group #2	Focus Group #3
<ul style="list-style-type: none"> <li>• Caucasian/White participants</li> <li>• Six participants</li> </ul>	<ul style="list-style-type: none"> <li>• African American/Black participants</li> <li>• Six participants</li> </ul>	<ul style="list-style-type: none"> <li>• Caucasian/White, Asian-American, Middle Eastern participants</li> <li>• Nine participants</li> <li>• All Muslim</li> </ul>

## RESULTS

**Data Analysis**  
CDC framework is baseline for data interpretation.



Three common themes identified by the CDC

1. Knowledge, Attitudes, and Beliefs
2. Facilitators
3. Barriers

## Focus Group Themes

Preliminarily, all groups hold some content that matches up with CDC framework. Three unique themes emerged:

1. Organization of health systems as a facilitator or barrier to obtaining three doses
2. Importance of testimonials
3. Role of husband and children in vaccination decision making

## DISCUSSION

**Environmental Considerations**  
In the CDC study, participants were assigned a particular location. My focus group locations were determined by the participants. Two groups were held at participant homes, where the environment was fluid. One group was held at TCU, which provided the moderator with more control over the environment.

## Limitations

- Modification of the CDC protocol to protect integrity of group and not turn away willing participants who were vital members of group
- Screening questions
- Aunt
- Mother with 17-year old child

## Lessons Learned

- Significance of partnerships
- Persistence
- Influence of culture on decision making
- Community empowerment

## Project Future

- Additional research on provider education
- Explore role of social marketing, specifically channels appropriate for each audience
- Funding sources for the vaccine on both provider and patient side
- Conduct a Hispanic focus group

## Thank You

- John V. Roach Honors College Undergraduate Research Grant
- JP Morgan Chase Public Health Nursing Fund
- Jill Roark, CDC Office of Adolescent Immunization Communications
- Community partners
- Dr. P. Frable, Ms. S. Candini, Ms. A. Sapp