

# Human Papillomavirus (HPV) Vaccine: The Educational and Marketing Campaigns in Canada, the United States, and Germany

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Hanna Fastrich, BS  
Pascale C. Jean, MPH, RD, LD/N  
Challayne Kenney, BMLSc

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## ABSTRACT

*Human papillomavirus (HPV) is the most common genital infection worldwide and is responsible for 99% of cervical cancers. Cervical cancer is considered one of the most preventable female cancers, yet there are 500,000 new cases diagnosed in women each year. The relationship between certain type of HPV and cervical cancer has led to the development of a vaccine, Gardasil®. This paper reviews and compares the educational and promotional campaigns about the HPV vaccine in Canada, United States, and Germany. Mass media are used to promote the vaccine to the same targeted population in all three countries. The vaccine is promoted as cervical cancer prevention in both the United States and Germany and does not focus on HPV prevention. In Canada, the campaign along with an HPV campaign was launched to educate young women about prevention. Although the campaign aimed at educating youth about sexual behavior, it took an approach, focusing on the shame of acquiring the disease. Because health and education issues are determined at a provincial level, in Canada, the federal government pledged \$300 million for vaccination programs. There are no federal laws in the United States that require HPV immunization of children. School and childcare laws for immunizations are state laws and vary state-to-state. In Germany, the HPV vaccine was included in the children's vaccination schedule. Cervical cancer incidence and mortality rates have been radically decreased with the advent of screening programs in Canada, the United States, and Germany. The virus affects men and women, but the vaccine is currently available only for girls. To be effective, the HPV vaccine should be used in conjunction with safer sexual practices and prevention guidelines. Moreover, improving health literacy may encourage skill development for behavior change.*

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## Introduction

Chronic diseases are among the most prevalent, expensive and preventable health problems affecting the world presently. Chronic diseases are defined as a disease that persists for 3 months or more. Generally chronic diseases, cannot be prevented nor cured by vaccines or just disappear (NCHS, 2004) but the advance in research is changing the outlook of certain types of chronic diseases, especially in cervical cancer. Cervical cancer is considered one of the most preventable female cancers, yet there are 500,000 new cases diagnosed in women each year. Of those new cases, 80% of them are found in low-income countries (WHO, 2006). Past prevention has been attributed to the secondary intervention of screening programs and primary intervention with the generation of a vaccine.

Human papillomavirus (HPV) is the most common genital infection worldwide and is the sexually transmitted infection (STI) responsible for 99% of cervical cancer cases (WHO, 2006). The discovery that the infection of certain HPV types can lead to cervical cancer has resulted in the development of a vaccine. Since 2006, several countries, such as the Canada, United States and

Germany, have approved the quadrivalent vaccine, Gardasil®. Gardasil®, products produced by Merck pharmaceutical (Merck & Co., 2006), is found to be effective in preventing two types of HPV (16 & 18), which are responsible for 70% of cervical cancer cases and two other types (6 & 11), which are responsible for 90% of genital wart cases (CDC, 2006). In anticipation of this approval and with the assumption that a possible competitor from GlaxoSmithKline called Cervarix bivalent vaccine for types 16 and 18, many issues have been raised on how to properly design and implement an effective vaccination program for the general population (Lippman, Melnychuck, Shimmin, & Boscoe, 2007). Developed countries like Canada, the United States, and Germany have the resources to provide access to the vaccine for the public, but the different healthcare systems necessitate the creation of different ways to achieve the same goal. National advising governing bodies in all three countries, such as the National Advisory Committee of Immunization (NACI, 2007), Center for Disease Control and Prevention (CDC, 2006), the Food and Drug Administration (FDA) (CDC, 2006), the German Standing Vaccination Committee (STIKO, 2007), have all endorsed and

approved Gardasil<sup>®</sup> and the recommendations of all three countries are significantly different (NACI, 2007; CDC, 2006; STIKO, 2007). In Canada, NACI (2007) recommends the vaccine for girls age 9-13, and also suggested that females between the ages of 14 and 26 may benefit from it, but the 14-26 years old patient must pay the cost or have it covered by their insurance. In the US, CDC (2006) recommends the vaccine for 11-12 years old girls, but it can be provided to girls as young as 9 years old. The vaccine is also found effective for 13-26 years-old females (CDC, 2006). In Germany, the STIKO (2007) recommends the HPV vaccination for girls 12-17 years old (RKI, 2007). Although the route for creating an effective vaccination program has been different in each country, all three share a need for an effective communication strategy (WHO, 2006; Sherris, et al., 2006).

The access of the vaccine has raised different concerns amongst all three developed countries. One of the common concerns is the possibility that it will lead to a bigger health disparity as access to and awareness of the vaccine will be higher in populations that are already participating in regular cervical cancer screening programs. A challenge for developed countries will be to design a comprehensive approach that increases vaccination by all eligible parties (WHO, 2006). According to the World Health Organization (WHO, 2006), advocacy and communication is a key component in reaching an effective immunization system. Health literacy is increasingly thought of as a desirable outcome of educational initiatives that target health-related issues (Nutbeam, 2000). Although many definitions exist, it fundamentally aims to increase the ability to manage health through building skills and competencies and is a concept that we argue as being integral to empowering parents, teenagers, adults, and health professionals in being able to make an informed decision regarding HPV vaccination, as well as to be able to advocate for that decision (Nutbeam, 2000).

This paper reviews the educational and promotional campaigns of the HPV vaccination in Canada, United States, and Germany, with the purpose of comparing communication strategies in the three countries. This paper also aims to discern the role of health literacy in the effectiveness of current advocacy and communication methods and to provide recommendations for future directions.

### **HPV Prevention**

Parental attitudes and beliefs have been shown to be a large influence on teenagers' attitudes and beliefs surrounding health-related practices (Sherris, et al., 2006). Studies have also shown that women who are diagnosed with the disease have never been

screened, have low economic status, and do not have access to healthcare (WHO, 2006). According to researchers, "integrated educational programs that deliver information through multiple media" (Sherris, et al., 2006) are the most effective way to raise awareness in the general population. Intention to participate in vaccination programs has been shown to increase knowledge of HPV, its relation to cervical cancer, and the advantages and disadvantages of the vaccine (Sherris, et al., 2006).

#### *HPV Prevention in Canada*

Cervical cancer incidence and mortality rates have been radically decreased with the advent of screening programs in Canada in the 1950s (Murphy, 2007). Currently in Canada there are approximately 1,350 new cases of cervical cancer every year and about 400 deaths (Morris & Nguyen, 2008). The Papanicolaou (Pap) smear is still the gold standard test used for detecting abnormalities in cervical cells and research is currently underway to determine if integrating liquid-based cytology or routine HPV DNA tests would significantly improve current screening programs (Murphy, 2007).

Cervical cancer is considered a preventable disease in Canada, but its incidence is not evenly distributed amongst all women. Populations at high-risk for cervical cancer include First Nations women and those who do not regularly participate in screening programs, such as the homeless, sexually active teenagers, and women of lower socio-economic status (Morris & Nguyen, 2008; Lippman, et al., 2007). More can be done to decrease the impact of cervical cancer in women in Canada by targeting these high-risk groups and improving organization of screening programs in all provinces (Sherris, et al., 2006; Lippman, et al., 2007). The inclusion of a vaccine for HPV in Canada's cervical cancer prevention strategy could decrease the burden of the disease, but the extent of its contribution depends on many factors including the length of protection offered by the vaccine, the access of the vaccine to high-risk populations, and improvements to screening programs that aid prevention programs in remaining cost-effective (Morris & Nguyen, 2008; Lippman, et al., 2007). Currently the Gardasil<sup>®</sup> vaccine is given as a series of three injections over a six-month period and costs approximately \$400.

#### *HPV Prevention in the United States*

According to the CDC (2006), approximately 20 million Americans are currently affected by HPV and 6.2 million become infected each year. Approximately half of infected males and females with HPV are teenagers and young adults between the age of 15 and 24 years of age (Cates, 1999). The

American Cancer Society (2008) estimated that in 2008, 11,070 diagnosed cases and 3,870 deaths of cervical cancer are expected. It is estimated that more than \$2 billion is spent on the treatment of cervical cancer per year in the United States (Brown et al., 2001). In June 2006, the Food and Drug Administration (FDA) approved Gardasil® in the US, as the vaccine to prevent cervical cancer and other diseases in females caused by certain types of HPV. The Advisory Committee on Immunization Practices (ACIP) voted to recommend the use of the vaccine for females, ages 9-26 years (CDC, 2006). A series of 3 injections over a 6-month period, which will cost approximately \$360, is required and no serious side effects have been associated with the vaccine.

The American Cancer Society (ACS, 2008) issued a guideline for early detection of cervical cancer. There are two tests that can detect or help prevent cervical cancer: the Pap smear test, which looks for pre-cancers and the HPV test, which looks for the virus (CDC, 2008). Both tests are conducted at yearly gynecological visit. ACS recommends that testing start 3 years after first sexual contact and repeated every year. Women, 70 years and older, who have had 3 or more normal Pap tests in a row and no abnormal pap test in the last 10 years and women who have had total hysterectomy may choose to stop being tested for cervical cancer (ACS, 2006).

Prevention is and will continue to remain the key to health promotion and disease prevention. In the United States, the cervical cancer rate declined by 74% between 1955 and 1992 and continues to decline by approximately 4% each year (ACS, 2008). The decrease has been linked to the widespread cervical cancer screening using the Pap test and treatment of pre-cancerous cervical abnormalities (CDC, 2006). It is estimated that half of the women diagnosed with cervical cancer in the USA have never been screened and the majority are in the low socioeconomic status, uninsured and/or underinsured and immigrants (ACS Cancer Facts and Figures, 2008). According to ACS, cervical cancer is twice more likely in Hispanic women and that African-American women develop it about 50% more often than non-Hispanic white women. The 5-year survival rate, used to produce a standard way to discuss outlook for survival, for earliest stage of invasive cervical cancer is 92% and overall is about 72% (ACS Cancer Facts and Figures, 2008).

#### *HPV Prevention in Germany*

Seventy percent of German women will have HPV infection during their lifetime (RKI, 2007). This infection may cause cervical cancer which is the eighth most commonly diagnosed cancer in women of all ages and the second most in women ages 15- 44

(WHO/ICO, 2007). The HPV vaccination can reduce the cervical cancer occurrence among this group. In March 2007, the STIKO, a committee at the Robert-Koch-Institute, affiliated with the German Government Health Authorities, recommended the HPV vaccination for girls 12-17 years old (RKI, 2007).

STIKO, a national committee affiliated to the German Health Authorities, accredits and approves all new vaccines. STIKO's recommendations are being used as an obligatory base for the national health care system. STIKO will also monitor and evaluate vaccines that are already on the market. This recommendation ensured that every girl within the recommended age has a legal right to obtain the vaccination covered by their insurance. However, the vaccination is not mandatory and it is not implemented by a school-based or other immunization programs. In October 2007 a survey conducted by the Occupational Union of Gynecologists showed that approximately 37% of girls aged 12-17 had already been vaccinated (Berufsverband der Frauenärzte e.V., 2007). Most compulsory insurance companies also cover the costs for young women until the age of 27.

Following the recommendation of STIKO, the HPV vaccine was included in the children's vaccination schedule, which is available at every doctor's office. The implementation of the HPV vaccine in Germany is provided by the general practitioners and gynecologists. Furthermore, general practitioners and gynecologists are the major resource for information and consultation, either through pamphlets or personal counseling. Mass media, such as commercials broadcasted via radio and television are also used to educate the general population. Currently, there are two vaccines available in Germany. The first one approved was Gardasil® (Sanofi Pasteur MSD GmbH) on September 20, 2006, and Cervarix (Glaxo Smith Kline Biologicals S.A.) was licensed a year later. The costs for the series of shots will cost approximately 477€ (Ärzte für Individuelle Impfscheidung e.V., 2008).

#### **Target Population**

The efficacy of the HPV vaccine has been mainly studied in women 16-26 years of age, but it is recommended to be administered before first sexual contact. Prevention of HPV can also be achieved by certain behavior changes, such as delay of first sexual contact, condom use, and limiting number of sexual partners, regular Pap smears, and smoking cessation. (Lippman, et al., 2007; CDC, 2006; ACS, 2008). The virus affects men and women, but the vaccine is currently only available for females. HPV can also

cause other types of cancer, such as cancer of vulva, vagina, anus, and penis (CDC, 2006), which are not as prevalent as cervical cancer. To be effective, the HPV vaccine should be used complementary to safer sexual practices and participation in screening programs (Lippman, et al., 2007; WHO, 2006; CDC, 2006).

#### *Target Population in Canada*

In a 2007 report by the National Advisory Committee of Immunization (NACI, 2007), Gardasil<sup>®</sup> is recommended for girls age 9-13, which is most likely to be before sexual debut. It is suggested that females between the ages of 14 and 26 receive the vaccine as it may still benefit them, but the 14-26 year old patient must pay the \$404 cost or their private health insurance may cover the cost. Health and education issues are decided at a provincial/territorial level in Canada, but the funding for HPV vaccination programs has come from the federal government's contribution of government pledged \$300 million of the 2006 budget (Public Health Agency of Canada (PHAC), 2008). However, this money is only available until 2010 and each province/territory must decide whether to adopt the recommendations of the NACI (Canadian Immunization Committee (CIC), 2007; PHAC, 2008). Ontario was the first province to implement a school-based program for grade 8 girls and had a meager uptake of 53% of eligible girls that participated, despite a province-wide newspaper campaign ("Half of Eligible", 2008). Other provinces are following suit and starting their programs in September 2008; it is estimated that for those provinces that by piggy-backing the HPV vaccination with current Hepatitis B vaccinations, the rates could reach approximately 90% of eligible girls (Morris & Nguyen, 2008).

The mass media campaign operating in Canada uses the catch phrase "Spread the word, not the disease" and is operated by the Society of Obstetricians and Gynecologists of Canada (SOGC) (SOGC, 2008). The commercials target women and men and promote the [www.hpvinfos.ca](http://www.hpvinfos.ca) website for additional information. The website itself is geared towards teenage girls, their mothers, and healthcare providers. It is encouraged that women share information about HPV with their male sexual partner. As important decision-makers and a key influence in children's life, parents are also targeted in this campaign. Unfortunately, the fathers are not prevalent on the website, and instead focus on the mother-daughter relationship. Since the topic is being mentioned in newspapers, TVs, and school newsletters across the country, HPV is rapidly becoming a household topic of discussion.

#### *Target Population in the US*

In the United States, expert recommends the vaccine for 11-12 years old girls, but can be provided to girls as young as 9 years of age. The vaccine is also found effective for 13-26 years-old females who have not yet received or completed the vaccine series (CDC, 2006). The "One Less" campaign was promoted throughout the United States as a cancer prevention campaign (Peterson, 2006; Merck & Co., 2006). The campaign which targeted girls, young women and mothers did not focus on HPV prevention but on reducing the risk of acquiring cervical cancer. The ad which ran in both English and Spanish targeted females of all ethnic and racial background.

The Center for Disease Control and Prevention (CDC), the American Academic of Pediatrics (AAP), and the American Academy of Family Physician (AAFP), which are considered the standards of medical practice, all recommend administration of the vaccine and most physicians follow these recommendations. Currently, there are no federal laws requiring immunization of children with the HPV vaccine. In the US, school and childcare laws for immunizations are state laws and vary from state to state. Numerous states have attempted to mandate the vaccines for young girls, but the arguments amongst religious, political, and socio-cultural entities, including concerns such as, increases of sexual risk taking, sending mixed messages about abstinence, assuming parental authority, and increases in health disparities are offset by the value of providing a cost-effective, age-appropriate public health measure, which confronts a life-threatening problem (Vamos, McDermott & Daley, 2008).

Whereas some insurance companies may cover the cost of the HPV vaccine, it is currently available in the private sector for about \$360 for full series, in addition to the price of the doctor's visit. In some states free or low-cost vaccine are provided at local health department and individual may qualify under the Federal Vaccines for Children (VFC) Program or through the National Breast and Cervical Cancer Early Detection Program. CDC's website, which is considered a great resource to not only the general population but also to healthcare providers, has numerous fact sheets and educational pamphlets focusing on education, behaviors to prevent HPV and recommendation for the vaccine. The site also provides information about frequently asked questions, treatment of HPV, cervical cancer screenings and statistics. Materials are also available in different languages.

### *Target Population in Germany*

The German policy surrounding the marketing of vaccines applies to all drugs that are only available on prescription. Advertising and promotion is non-permissible for prescription drugs (Gesetz über die Werbung auf dem Gebiet des Heilwesens § 3a, 2006). Because general practitioners prescribe the vaccine, they are also not allowed to advertise for a certain brand of vaccine. Commercials and pamphlets may focus on the vaccine as a cervical cancer prevention method, but the vaccine or the pharmaceutical company can not be mentioned.

The print materials regarding the vaccine are provided by the Occupational Union of Gynecologists (Berufsverband der Frauenärzte e.V., 2006) and by the two pharmaceutical companies producing the vaccine. TV commercials and radio advertisement allude to access further information at private general practitioners, gynecologist and/or the German Green Cross (DGK), an institution for preventative health care. The main goal of the ads is to inform girls, young women, and mothers about cervical cancer and the possibility of vaccination. The vaccine is marketed as cervical cancer prevention.

The TV ads and pamphlets portray concerned and caring mothers protecting their daughters from cervical cancer by assuring that they get vaccinated. The message targeting girls and young women contains information of the importance of early detection and prevention of cervical cancer via vaccination. The topic is addressed in a socially acceptable way that prohibits a sense of shame. The pamphlets also provide information about the importance of routine screenings, such as Pap smears and the cost coverage by the insurance companies. The "Tell someone" campaign informs mothers and daughters and encourages them to tell their friends about HPV and the vaccination.

HPV vaccination gained momentum in the media, especially after the approval of the second vaccine Cervarix. After STIKO recommended the vaccine, media cover decreased when two deaths, one in Germany and the other Austria, occurred in close proximity to obtaining the vaccine. These reported deaths aroused major public concerns, which cause young women in Germany to question their decision to get vaccinated. STIKO reenacted their recommendations because a direct link between the deaths and the vaccination could not be shown. Currently, insecurity persists among young women and mothers because the reports on the clarification were not made aware to the general public.

### **Discussion**

In all three countries, the information seems to be clear and understandable, the tactics used to grab the attention of teenagers and parents are certainly effective, but somewhat misleading. The campaigns did not focus on HPV prevention, which includes information about regular Pap test and healthy sexual behavior. To influence sexual behavior change and increase conversations about STIs, health literacy should be considered as the effective method to teach the necessary both knowledge and skills.

As an outcome of health promotion, health literacy contains measures that include health-related knowledge, attitudes, and motivation, as well as behavioral intentions, personal skills, and self-efficacy (Nutbeam, 2000). Rooted in developing skills and competencies, health education professionals have a challenge to increase ones health literacy by improving upon conventional media campaigns. Often it is not a question of motivation or knowledge, but in helping someone make a decision relating to their health, like whether to participate in a HPV vaccination program. Health literacy is about empowering people by guiding them through a process that increases their capability to manage their health.

Personal stories, such as those shared on [www.hpvinfos.ca](http://www.hpvinfos.ca) website, often describe genital warts as "ugly" or "embarrassing." The HPV website in Canada has created a group on the popular social networking website facebook. It is an effective way to reach today's generation of teenagers, but the message sent in a contest held on the webpage, portrays genital warts as disgusting and will lead to social banishment. The message being conveyed is that HPV, genital warts, cervical cancer, and sexual behavior are all topics unsuitable for public discussion. In the United States and Germany, the campaign focused on cervical cancer prevention. The "One Less Campaign" launched in the United States, did not focus of preventable measures of HPV virus, such as safer sexual practices and the importance of routine check-ups. In Germany, the campaign emphasized the importance of routine check-up but did not focus on safer sexual practices. When promoting a vaccine that helps with the prevention of an STI, the message that is being perceived as a social norm is often an undertone that needs to be considered.

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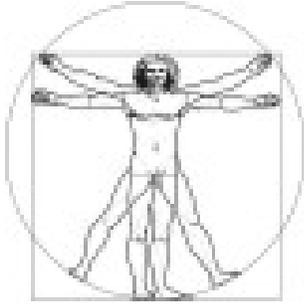
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#### **ABOUT THE AUTHORS**

Hanna Fastrich ([lost\\_in\\_pendleton@hotmail.com](mailto:lost_in_pendleton@hotmail.com)) is a student at the University of Cologne (Germany). Pascale C. Jean ([PCJeanRD@aol.com](mailto:PCJeanRD@aol.com)) is a doctoral student at the Robert Stempel School of Public Health, Florida International University, Miami, Florida (United States). Challayne Kenney ([challayne@gmail.com](mailto:challayne@gmail.com)) is a graduate student at Simon Fraser University in Burnaby, British Columbia (Canada). An earlier version of this paper was presented in May 2008 at the 10<sup>th</sup> Health Education and Injury Prevention Course and Field Conference, Cologne, Germany. Copyright 2008 by *Umwelt und Gesundheit Online* and the Gesellschaft für Umwelt, Gesundheit und Kommunikation.