Human Papillomavirus Vaccination in BC: The Case for Physician Advocates

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1 Statement of the Problem

In 2005, the incidence rate of cervical cancer in British Columbia was 6.7 per 100,000 women and the mortality rate was 2.0 per 100,000 women (British Columbia Cancer Agency, 2005). These rates are representative of the observed national decrease in incidence and mortality of cervical cancer between 1996 and 2004 of 2.3% and 3.3% per year respectively (Canadian Cancer Society, 2009). These decreases have largely been attributed to the widespread regular use of Papanicolaou (Pap) test screening whereby malignant as well as pre-malignant lesions can be detected early and treated (Canadian Cancer Society, 2009); it is estimated that much larger decreases in cervical cancer will be observed if optimal uptake of the vaccine against Human Papillomavirus (HPV) is achieved.

Currently in British Columbia, there is a publically-funded school-based HPV immunization program for girls in grades 6 and 9. Given the minor status of these girls, their parents not only serve as their primary source for guidance and support regarding immunization issues (Zimet, 2005), but are also required to provide the consent for the immunization itself, and so it follows that parental attitudes towards the vaccine play a crucial role in HPV vaccine uptake (Ogilvie et al., 2007). Last year, the school-based program’s first year in British Columbia, the program successfully immunized approximately 64% of eligible girls in the program, a result that is in agreement with the results from a recent national survey which estimated parental intention to immunize their daughters against HPV in British Columbia at 63% (Ogilvie et al., 2007). Given this vaccine’s huge potential impact on the incidence of HPV infection and/or cervical cancer, and by extension the morbidity and mortality associated with them, it is an important public health priority to achieve maximum uptake of this important vaccine.

Research has shown that one of parents’ most trusted sources of information regarding their own and their children's health is a health care professional, specifically their family physician (Dempsey, Zimet, Davis, & Koutsky, 2006). Additionally, it has been shown that there is a lack of perceived severity and susceptibility associated with HPV infection among parents, and that this coupled with a lack of trusted and unbiased information regarding the safety of the vaccine are main factors in a parent’s reluctance to have his or her daughter immunized in the school based program (Ogilvie et al., 2007). Accordingly, this project hopes to identify potential opportunities to involve physicians in the promotion of the HPV vaccine in BC, following the logic that parents will be most likely to accept the promotion strategy’s messages if they are being delivered and/or supported by physicians.

Although the survey itself is not based on a health communication theory, the rationale behind the need for this particular survey lends itself to the Health Belief Model (Glanz, Lewis, & Rimer, 1990). In explanation, the health belief model stipulates that in order for behavior change to occur, in this case for a mother (the more likely decision maker regarding daughters’ health issues, and the typical focus of research regarding parental vaccination decision-making) to consent to having her daughter vaccinated, the mother must perceive her daughter to be susceptible to HPV infection, and believe that the implications of this infection are severe. Similarly, the mother must also believe that the benefits of this behavior are high (i.e. will effectively protect her daughter from HPV infection), and that the barriers to the behavior are low. These changes in perception can only be accomplished through changes in attitudes, beliefs and knowledge associated with the HPV infection and vaccination among parents. These substantial changes in parents’ perspectives will be difficult to accomplish, and will only be helped if the changes are supported by a trusted source like a family physician.
Given these conditions, the behavioural focus of the resulting communications campaign will be to have parents, specifically mothers, of girls between the ages of 10-13 consent to HPV immunization in the school-based program. There has been much research into mothers’ attitudes towards immunization in general, as well as towards HPV immunization specifically. Factors that have been identified as contributing to acceptance of HPV immunization among these women include the benefit to society (Constantine & Jerman, 2007), the desire to protect her children from harm (Gonik, 2006), concern about the disease characteristics (Mays, Sturm, & Zimet, 2004), and physician recommendations (Ogilvie et al., 2007). Barriers to accepting the HPV vaccine were identified as low perception of severity of and susceptibility to HPV infection of their children (Zimet, 2005), concerns over vaccine safety and efficacy (Constantine & Jerman, 2007), concerns about the influence of immunization on sexual behaviour (Ogilvie et al., 2007), and her desire to wait until her daughter is older to receive the immunization (Marlow, Waller, & Wardle, 2007).

Overall, most studies have found that approximately 75% of mothers intend to have their daughters immunized in the school-based program, while only 6% claimed they would not accept the vaccine under any circumstances (Marlow, Waller, & Wardle, 2007). A significant proportion (19%), however, claimed that they were unsure about the immunization (Marlow, Waller, & Wardle, 2007). The competing behaviour among these mothers, then, is to not sign the consent form on account of feeling unable to make the right decision regarding HPV immunization for their daughters. A successful campaign will focus on eliminating this uncertainty by increasing the perceived benefits of immunizing their daughters against HPV for the mothers through highlighting the health benefits for their daughters, while decreasing the barriers to the behaviour, through education surrounding vaccine efficacy and misconceptions about its effects on sexual behavior. These messages will be increasingly effective when they are delivered by physicians, since they are already strong influencers of the behavior on an individual basis. Similarly, decreasing the benefits of not consenting to the immunization for the mothers will involve demonstrating the risk of infection to their daughters through the establishment of severity and susceptibility of HPV infection, while creating conceptual barriers to not consenting by establishing this behaviour as a lost opportunity to protect their daughters from cervical cancer in the future. Again, these messages will be especially poignant coming from a physician, since mothers already view physicians as people who are charged with protecting their daughter’s health.

Research has shown that the success of an HPV vaccine promotion campaign will depend on changing mothers’ beliefs and attitudes as well as increasing their knowledge about HPV and the vaccine. (Kahn, 2007). Numerous studies have demonstrated that there is low knowledge among most people surrounding HPV infection and its association with genital warts and cervical cancer (Gonik, 2006). Although HPV is the most widespread sexually transmitted disease in Canada, and most sexually active people will be exposed to HPV infection within their lifetime, perceived susceptibility to HPV of daughters, remains low among mothers. (Ogilvie et al., 2007). Some of this lack of susceptibility may be due to a lack of knowledge about HPV infection itself and how widespread it actually is among adolescents (Kahn, 2007). Similarly, there is a demonstrated lack of understanding among mothers about the potential severity of HPV infection, and many surveyed mothers were completely unaware of the link between HPV infection and cervical cancer (Friedman & Shepeard, 2007). This link must be firmly established through information and education, so that mothers begin to view the HPV vaccine as a vaccine against cancer, rather than a vaccine against a sexually transmitted infection (Friedman & Shepeard, 2007).
In addition to knowledge needs surrounding HPV infection itself, there have been demonstrated knowledge gaps for mothers around the HPV vaccine. There is a need to further educate mothers about the safety and efficacy of the vaccine in an effort to quell their concerns about potential side-effects to immunization (Mays, Sturm, & Zimet, 2004). In the same vein, many of the undecided mothers claim that they would be willing to immunize their daughters at a later age, which demonstrates a lack of understanding of the prophylactic nature of the vaccine (Marlow, Waller, & Wardle, 2007). As such, education materials aimed at these mothers will have to include a good justification for why the vaccine is recommended at a particular age if they are going to be successful in convincing the mothers to consent to HPV immunization through the provincial grade 6 programs (Marlow, Waller, & Wardle, 2007). Although there is a demonstrated need for more information about HPV and HPV immunization for parents, research has shown that simply educating mothers is not sufficient, and it is necessary to consider their beliefs and attitudes since these may be more influential than knowledge on the parental decision-making process (Dempsey, Zimet, Davis, & Koutsy, 2006).

One of the main barriers to mothers consenting to immunizing their daughters against HPV is the belief that their child is not, or should not be, susceptible to infection by a virus that is sexually transmitted (Mays, Sturm, & Zimet, 2004). This belief manifests itself in a number of ways from mothers either believing that their child will wait until marriage to have sex and therefore is not at risk of infection, to the belief that deciding to immunize their daughter implicitly or explicitly acknowledges that they believe that their daughter is at risk for an STI, or that they are in some way condoning their daughters sexual activity (Mays, Sturm, & Zimet, 2004). In fact, since it has been shown that vaccine acceptance, unlike vaccine rejection, is not linked to a mother’s perceived sexual behaviour of their daughter, it is important to shift a mother’s belief about HPV immunization towards protection from cervical cancer, and remove its association with sexual activity (Mays, Sturm, & Zimet, 2004). Similarly, mothers must believe that preventing HPV infection in their daughters is not necessarily within their control, and that immunization is the best and most reliable protection from infection; indeed, many mothers reasoned in favour of the vaccine due to the provision of added protection against unpredictable and uncontrollable circumstances (Mays, Sturm, & Zimet, 2004). Therefore, it is important for mothers to understand and believe that HPV immunization is safe, effective and important to protecting their daughters from cervical cancer, in order to carry out the campaign’s behavioural objective of consenting to having them immunized during the school-based program in Grade 6.

Given the complexity of the issues that need to be addressed when attempting to persuade mothers to consent to having their daughters vaccinated in the school-based program against HPV, it is essential to add physicians to the promotion effort in order to establish a sense of trust and validity among the target population. It is for this reason that this survey is being conducted, in an effort to design an effective communications campaign that utilizes physicians to affect behaviour change among mothers within the health belief model framework.

Specifically for this project, the BC Center for Disease Control (BCCDC) has pre-determined that the desired target group for this survey and communications strategy will be General Practitioner Oncologists (GPOs), or a general practitioner who provides oncology care in a primary care setting. The rationale for this is two-fold: first, these physicians are particularly well suited to serving as HPV vaccine advocates since as General Practitioners they are parents’ likely source for information about the vaccine; and second, as doctors who treat cervical cancer, their intimate knowledge about the morbidity and mortality associated with the disease makes them particularly passionate about the vaccine, and the prevention of the disease. Indeed, this group of physicians has already demonstrated support for the HPV
vaccine through their participation in education events throughout the province, and through their biannual newsletter.

1.1 Surveying Physicians

Research has shown that physicians have lower response rates to questionnaires than do other health care professionals. According to one study, while the average response rate following the first mailing of questionnaires to other health professionals is 62%, that average response rate drops down to 54% among physicians (Bhandari, et al., 2003). Despite this fact, however, research continues to show that surveying physicians is one of the most effective ways to elicit their opinions on issues affecting practice, the delivery of clinical preventive services, as well as the implementation of public health interventions (Kellerman & Herold, 2001). Given this fact, it is important to understand how to increase physician response rates, in order to protect the validity and generalizability of this study’s results.

The low response rate among physicians is surprising, when considering that mail surveys of highly educated, professional persons (like physicians) should theoretically elicit higher response rates than those of less educated respondents (Kellerman & Herold, 2001). Some possible explanations for this discrepancy may be that some professionals may resist surveys or questions that stereotype or generalize issues, are restrictive in answers, do not make sense to them, or take too much time out of an already overburdened schedule (Kellerman & Herold, 2001). In a systematic review of all of the literature on methodological strategies to increasing physician response rates to surveys, several key strategies were identified (Kellerman & Herold, 2001). Strategies shown to increase response rates were the use of first-class postage, the use of shorter (i.e. one to two pages) surveys, personalized packaging of the mail-outs, and monetary incentives (Kellerman & Herold, 2001). Indeed, research consistently showed that monetary incentives, regardless of the amount, were consistently associated with increased response rates, as was the timing of such incentives, pre-payment being preferable to post-payment (Kellerman & Herold, 2001). Specifically, one study found that when incentives were used the odds of response were more than doubled when money was the incentive and were almost doubled when incentives were not conditional on response (Edwards, et al., 2002). Other strategies to increase response rates include making questionnaires and letters more personal, follow up contact, providing non-respondents with a second copy of the questionnaire, and designing questionnaires to be of more interest to participants (Edwards, et al., 2002). Lastly, questionnaires originating from universities were more likely to be returned than questionnaires from other sources (Edwards, et al., 2002).

Strategies that were shown to have negligible effects on increasing the response rate were: Pre-notification of survey participants, the use of non-monetary incentives or a phone call as follow-up, or the use of phone calls or personal interviews as survey methods versus mailed surveys (Kellerman & Herold, 2001). Another issue that has been examined is the role of non-response bias in physician surveys. Studies on this topic have found that there was little difference in demographic variables among respondents and non-respondents when surveying physicians (Kellerman & Herold, 2001). This can be explained by the fact that physicians as a group are more homogenous regarding knowledge, training, attitudes, and behaviour than the general population, and variations that do exist among physicians may not be associated with willingness to respond or survey content as in the general population (Kellerman & Herold, 2001). This finding has two implications in surveying physicians: One, considering the consistently positive effect of monetary incentives, limited resources may be best directed towards a sufficient monetary incentive in the first mailing, rather than to follow-up mailings (Kellerman & Herold, 2001); and, second, during the interpretation of data gathered from physician surveys with low response
rates, non-response bias may not be as crucial as in surveys for the general population (Kellerman & Herold, 2001).

Finally, since the mailed questionnaire is recommended when the respondent needs greater control over time, pace, and sequence or response, when privacy of response is important, and when the sample is a highly literate population (Edwards, et al., 2002), this option serves as the best method for surveying physicians. Similarly, as advances have been made with web-based surveys, this offers a good alternative to the mailed survey (Braithwaite, Emery, de Lusignan, & Sutton, 2003), albeit with acknowledged shortcomings. The main consideration with web-based surveys is that respondents are not usually representative of the general population, even within a certain health care specialty (Braithwaite, Emery, de Lusignan, & Sutton, 2003). For this reason, if an electronic survey is to be used, there must be an alternative hard copy survey that can be completed by those who prefer to do so, to eliminate any potential biases (Braithwaite, Emery, de Lusignan, & Sutton, 2003).

2 Description of the Field Organization

The BC Centre for Disease Control (BCCDC) provides provincial and national leadership in public health through surveillance, detection, treatment, and prevention of infectious diseases and also provides consultation services. The Centre provides both direct diagnostic and treatment services for people with diseases of public health importance and analytical and policy support to all levels of government and health authorities. BCCDC investigates and evaluates the occurrence of communicable diseases in BC and is the provincial reporting centre for reportable cases and categories of communicable diseases. In addition, the Centre creates opportunities for scientists, health professionals, University and other partners to contribute their knowledge and experience in resolving the outstanding health challenges facing British Columbians.

The BCCDC is an agency of the Provincial Health Services Authority (PHSA), which is one of six health authorities – the other five health authorities serve geographic regions of BC. PHSA's primary role is to ensure that BC residents have access to a coordinated network of high-quality specialized health care services.

This project will be completed in close cooperation with the Department of Communications at the BCCDC, as well as the Department of Epidemiology Services, specifically its Division of Immunizations. The project preceptor is the Director of Communications, while most of the other support for the project comes from within the Division of Immunizations. This division has been involved in many projects surrounding the HPV vaccine and has specific funding for HPV vaccine research and promotion, and this project hopes to add to that stream of knowledge. While this specific project is being undertaken, the department of STI/HIV services is also conducting a larger, more general survey of all general practitioner physicians to determine their knowledge, attitudes and beliefs surrounding the HPV vaccine. The staff at the BCCDC is very experienced in conducting surveys in general, as well as surveys of physicians, and their expertise in this area will be invaluable to this project. The BCCDC is affiliated with the University of British Columbia (UBC) for research. As such, all research done at the BCCDC must be approved by UBC’s independent ethics review board, before it can be conducted.
3 Scope of Work and Methods

This project is intended to increase the potential public health impact of the HPV vaccine by increasing the vaccine’s uptake in British Columbia’s provincially funded school-based grades 6 and 9 immunization programs. The BCCDC hopes to accomplish this increase through a strategic communications campaign that utilizes General Practitioner Oncologists (GPOs) as spokespeople, since they have been shown to be one of the main influencers of the target behavior. This project intends to inform this campaign by conducting a survey to assess GPOs’ current practices, attitudes and beliefs towards the HPV vaccine, as well as potential opportunities to involve GPOs in HPV vaccine promotion, in order to develop informed and evidence-based communications recommendations to achieve maximum vaccine uptake in British Columbia.

3.1 Methods

From October 20th to November 16th, 2009 a survey was conducted regarding HPV vaccine promotion in a provincial sample of General Practitioner Oncologists in British Columbia. This study was reviewed by the University of British Columbia’s Behavioural Research Ethics Board and was approved as minimal risk research.

3.1.1 Population

The target population of the survey were General Practitioners in Oncology in British Columbia. Since the BCCDC did not have access to contact information for all GPOs in BC, and also did not have the GPOs’ consent for being contacted to conduct research, the British Columbia Cancer Agency (BCCA) where these physician’s are trained was contacted. The BCCA had contact information, as well as the permission to contact all of the GPO’s in BC. It was therefore determined from a logistical perspective that the best option was to collaborate with the BCCA to conduct a survey of 44 GPOs who currently work within the community. (Currently there are 77 total members of the General Practitioner in Oncology Network in BC, although only 44 of these GPOs work within the community, which for our research purposes are the relevant physicians).

3.1.2 Survey Design

The survey instrument was designed with the focus of identifying specific activities that the GPOs would be willing to participate in, as well as to ask them for the permission to contact them in the future to actually participate in the stated activities. Additionally, it was important to determine the physicians’ current knowledge about the HPV vaccination program, as well which resources, if any, they were currently using to promote HPV vaccination. Lastly, it was also important to determine if the physicians themselves felt that they needed more resources or information to effectively promote the HPV vaccination.

The survey was also designed according to proven strategies to increase response rates among physicians. For this reason, two introduction letters were written, one from a respected physician at the BCCDC and the other from a respected physician at the BCCA, to not only show support for the study among the GPOs colleagues, but also to explain the importance of the study to the GPOs in a way that personalized the research for the physician, a proven strategy for increasing response rates. In addition, the survey was designed to be short (only 15 questions long), and allowed the physician’s the option to write-in responses whenever appropriate, so as not to turn them off by providing limiting responses. The
The survey was also made to fit on two pages, since research has shown that surveys that are longer than 2 pages have lower response rates. Lastly, a $20 gift certificate to Starbucks Coffee was included with the survey, as a pre-paid, condition free incentive for completing the survey.

The survey was pilot-tested and reviewed by a physician at the BCCDC in order to determine the survey’s clarity and accuracy. The physician’s suggestions were incorporated to the final copy of the survey.

3.1.3 Survey Administration

Each physician was mailed a package which included an introduction letter from the BCCDC and from the BCCA respectively, a hard copy of the survey with a consent statement and instructions, a postage-paid pre-labeled return envelope and a $20 gift certificate for Starbucks Coffee. The instructions specified that the physician had the option to complete the hard-copy of the survey and return it via mail or fax, or that he or she could access an online version of the survey hosted by Survey Monkey and complete the survey online.

Two email reminders were sent to all of the GPOs, encouraging them to complete the survey, and also provided a hyperlink in the email to the online survey. Responses from all channels were accepted until November 16th, 2009.

4 Results

4.1 Survey Response and Characteristics of Respondents

Of the 44 General Practitioner Oncologists that were contacted to participate in the survey, two mailed packages were returned to sender due to incorrect mailing addresses. Of the 42 surveys that were delivered, 24 GPOs (57%) returned completed surveys, with 83% of respondents responding by mail and only 17% of respondents opting to complete the survey online (Table 1). As presented in Table 2, the majority of survey respondents were between the age of 45 to 54 years old, worked in a community with a population less than 30,000 people, had been in practice for over 15 years, and were mostly of White/Caucasian ethnic and/or racial background. Male and females were approximately evenly represented. There is no demographic data available for survey non-respondents.

4.2 Knowledge and attitudes towards HPV vaccine

Responses to survey questions regarding knowledge and attitudes towards HPV vaccine are shown in Table 3. As suspected in this group, there was a high level of awareness of the provincially-funded HPV program in BC, and approximately 67% of respondents have received some form of Continuing Medical Education training about the HPV vaccine. Similarly, 75% of respondents claimed to recommend the HPV vaccine to eligible girls all the time; Two respondents left the question blank, but wrote into the comments that the question was not applicable since they did not see this demographic in their practices.

Three respondents claimed to recommend the vaccine sometimes, with one respondent commenting simply that “some parents worry.” The remaining comments discussed that it was often parents, not the girls, requesting advice/information, and that there is a need for more materials targeted at parents. Only one respondent claimed to never recommend the vaccine, and commented that there is currently no proof that the vaccine actually decreases the risk of cervical cancer.
<table>
<thead>
<tr>
<th>Surveys Returned</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response Rate (n=42)</td>
<td>57%</td>
</tr>
<tr>
<td>Survey Method</td>
<td>Number of Respondents</td>
</tr>
<tr>
<td>Returned by Mail</td>
<td>20</td>
</tr>
<tr>
<td>Returned Online</td>
<td>4</td>
</tr>
</tbody>
</table>

**Table 1**: Survey Response Rate.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number of Respondents</th>
<th>Percentage (n=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35-44 years old</td>
<td>7</td>
<td>29.2%</td>
</tr>
<tr>
<td>45-54 years old</td>
<td>12</td>
<td>50.0%</td>
</tr>
<tr>
<td>55-64 years old</td>
<td>5</td>
<td>20.8%</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>41.7%</td>
</tr>
<tr>
<td>Female</td>
<td>13</td>
<td>54.2%</td>
</tr>
<tr>
<td>Prefer not to disclose</td>
<td>1</td>
<td>4.2%</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Years in practice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 to 10 years</td>
<td>6</td>
<td>25.0%</td>
</tr>
<tr>
<td>11 to 15 years</td>
<td>4</td>
<td>16.7%</td>
</tr>
<tr>
<td>More than 15 years</td>
<td>14</td>
<td>58.3%</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Population Size of Community</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 5,000</td>
<td>2</td>
<td>8.3%</td>
</tr>
<tr>
<td>5,000 - 10,000</td>
<td>5</td>
<td>20.8%</td>
</tr>
<tr>
<td>10,001 - 30,000</td>
<td>8</td>
<td>33.3%</td>
</tr>
<tr>
<td>30,001 - 50,000</td>
<td>2</td>
<td>8.3%</td>
</tr>
<tr>
<td>50,0001 - 100,000</td>
<td>5</td>
<td>20.8%</td>
</tr>
<tr>
<td>More than 100,000</td>
<td>2</td>
<td>8.3%</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Ethnic/Racial Background</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>22</td>
<td>91.7%</td>
</tr>
<tr>
<td>Black</td>
<td>1</td>
<td>4.2%</td>
</tr>
<tr>
<td>Prefer not to disclose</td>
<td>1</td>
<td>4.2%</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Table 2**: Survey Respondents’ Characteristics.
<table>
<thead>
<tr>
<th>Have you ever received any continuing medical education training about the HPV vaccine?</th>
<th>Number of Respondents</th>
<th>Percentage (n=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not remember</td>
<td>4</td>
<td>16.7%</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>16.7%</td>
</tr>
<tr>
<td>Yes</td>
<td>16</td>
<td>66.7%</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100%</td>
</tr>
<tr>
<td>How aware are you of the current provincially-funded school-based grades 6 &amp; 9 HPV immunization program for BC girls?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very aware</td>
<td>15</td>
<td>62.5%</td>
</tr>
<tr>
<td>Somewhat aware</td>
<td>9</td>
<td>37.5%</td>
</tr>
<tr>
<td>Not aware</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100%</td>
</tr>
<tr>
<td>Do you currently recommend the HPV vaccine to your eligible girls for the grades 6 &amp; 9 program?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, all the time</td>
<td>18</td>
<td>75.0%</td>
</tr>
<tr>
<td>Yes, sometimes</td>
<td>3</td>
<td>12.5%</td>
</tr>
<tr>
<td>No, never</td>
<td>1</td>
<td>4.2%</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>8.3%</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 3: Respondents’ current knowledge and practices regarding HPV vaccination.

### 4.3 Resources, Information and Relationships

Table 4 and Figures 1 and 2 show a breakdown of the resources these physicians are using to counsel their patients about the HPV vaccine, their information needs regarding the HPV vaccine, as well as the current working relationships they have with other health care professionals in their community. Notably, 41.7% of respondents claimed that they required more information about statistics regarding HPV infection and vaccination. Most of the respondents also claimed to have working relationships with family physicians in private practice (91.7%) and pharmacists in the community (83.3%), while only 2 respondents claimed to have working relationships with a School Nurse in the community. The three most common resources respondents used for HPV vaccine counseling were the Canadian Immunization Guide, the information from the vaccine manufacturer and information from health units.

### 4.4 Physicians as public supporters of the HPV vaccine

As shown in Table 4, 41.7% of respondents agreed to share their contact information as well as the activities that they were willing to participate in as public supporters of the HPV vaccine with their local health authorities. Of the two that did not respond, one commented that he or she was not actually a community physician, and several of the physicians who declined to share their contact information wrote in reasons such as that they were uncomfortable with public speaking, or that they would be away from their practice for a year. Table 5 and Figure 3 also show the activities that respondents are willing to participate in as public supporters of the HPV vaccine, with organizing Continuing Medical Education (CME) on HPV as the activity most are willing to participate in at 37.5% of respondents, followed by conducting CMEs and making local presentations at 33.3% each, respectively. Several comments were also written in suggesting that this participation was contingent on training and/or support to carry out the tasks.
<table>
<thead>
<tr>
<th>Resource</th>
<th>Number of Respondents</th>
<th>Percentage (n=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ImmunizeBC website</td>
<td>5</td>
<td>20.8%</td>
</tr>
<tr>
<td>Canadian Paediatric Society Manual</td>
<td>1</td>
<td>4.2%</td>
</tr>
<tr>
<td>Canadian Immunization Guide</td>
<td>9</td>
<td>37.5%</td>
</tr>
<tr>
<td>Vaccine manufacturer’s materials</td>
<td>8</td>
<td>33.3%</td>
</tr>
<tr>
<td>Information from Health Units</td>
<td>8</td>
<td>33.3%</td>
</tr>
<tr>
<td>Society of Obstetricians and Gynaecologists of Canada</td>
<td>5</td>
<td>20.8%</td>
</tr>
<tr>
<td>None of the Above</td>
<td>4</td>
<td>16.7%</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>20.8%</td>
</tr>
</tbody>
</table>

**Do you require more information about HPV Vaccine:**

<table>
<thead>
<tr>
<th>Information</th>
<th>Number of Respondents</th>
<th>Percentage (n=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>5</td>
<td>20.8%</td>
</tr>
<tr>
<td>Immunogenicity</td>
<td>2</td>
<td>8.3%</td>
</tr>
<tr>
<td>Duration of coverage</td>
<td>5</td>
<td>20.8%</td>
</tr>
<tr>
<td>Statistics such as HPV infection, cervical cancer, or genital warts rates</td>
<td>10</td>
<td>41.7%</td>
</tr>
<tr>
<td>Adverse Events</td>
<td>7</td>
<td>29.2%</td>
</tr>
<tr>
<td>No, I do not require more information</td>
<td>11</td>
<td>45.8%</td>
</tr>
</tbody>
</table>

**Do you currently have a working relationship with any of the following healthcare professionals in your community?**

<table>
<thead>
<tr>
<th>Professional</th>
<th>Number of Respondents</th>
<th>Percentage (n=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Nurse</td>
<td>2</td>
<td>8.3%</td>
</tr>
<tr>
<td>Health Units</td>
<td>15</td>
<td>62.5%</td>
</tr>
<tr>
<td>Medical Health Officer</td>
<td>5</td>
<td>20.8%</td>
</tr>
<tr>
<td>Family Physician in private practice</td>
<td>22</td>
<td>91.7%</td>
</tr>
<tr>
<td>Specialist in private practice</td>
<td>11</td>
<td>45.8%</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>20</td>
<td>83.3%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

**Table 4:** Respondents’ HPV Vaccine Resource Usage and Needs.
Figure 1: Resource usage for HPV vaccine counseling.

Figure 2: Information needs for HPV vaccine counselling.
<table>
<thead>
<tr>
<th>Do you agree to share your contact information, as well as specified activities, with your local health authority?</th>
<th>Number of respondents</th>
<th>Percentage of respondents (n=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, please</td>
<td>10</td>
<td>41.7%</td>
</tr>
<tr>
<td>No, thank you</td>
<td>12</td>
<td>50.0%</td>
</tr>
<tr>
<td>No Response</td>
<td>2</td>
<td>8.3%</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.0%</td>
</tr>
<tr>
<td>As a public Supporter of HPV would you be willing to:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Be available as an expert relating to HPV issues for media inquiries in my community</td>
<td>6</td>
<td>25.0%</td>
</tr>
<tr>
<td>Make presentations at local schools to parents and staff, parent advisory groups, or at local town hall meetings</td>
<td>8</td>
<td>33.3%</td>
</tr>
<tr>
<td>Help conduct Continuing Medical Education on HPV in my community/for my colleagues</td>
<td>8</td>
<td>33.3%</td>
</tr>
<tr>
<td>Help organize Continuing Medical Education on HPV in my community/for my colleagues</td>
<td>9</td>
<td>37.5%</td>
</tr>
<tr>
<td>Write a letter to local newspapers supporting the HPV vaccine and/or school based program</td>
<td>7</td>
<td>29.2%</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

Table 5: Respondents’ activity within the community.

Figure 3: Public supporters of HPV vaccine activities.
5 Discussion

The survey response rate of 57% was similar to the average response rate of physicians to surveys, which according to most studies conducted is 54%. An interesting observation is that 83% of respondents chose to return a hard-copy of the survey by mail, rather than completing the survey online. One factor which may have played a role is that the original mailing contained a copy of the survey, as well as a pre-addressed postage paid envelope, which may have made this option more appealing than having to take an extra step to access the online survey. The physicians did receive two email reminders which contained electronic links to the online survey which attempted to make this option an easier choice, however if most of the physicians did not feel completely proficient with computers and/or the internet, this may have had no effect. Over 70% of the respondents were above the age of 45 and therefore they may have felt more comfortable using the more traditional mail survey method. Also, approximately 62% of respondents lived in communities with populations under 30,000 which may have had an impact on internet access or reliance of the respondents. Lastly, research has shown that physicians as a group tend to shy away from limiting multiple choice answers, and the online version of the survey may have been more restricting in this case; Indeed, on the online version of the survey, you could only write in additional information in designated places, while many of the physicians wrote in qualifying statements next to their responses in the mailed surveys, while others also wrote in explanations when they left a question blank. For this reason, the mail survey may have been the survey method of choice since it provided the physician with more control over his or her answers, and also allowed for a pseudo conversation between the people administering the survey, and the people completing the survey.

As suspected, this group of physicians was highly supportive of the HPV vaccine. There was however one physician who noted his or her opposition to the vaccine, which is an indication that there is still perhaps a need for more education of health care professionals about the vaccine. That being said, 66.7% of respondents had received some continuing medical education training about the HPV vaccine, and this was a likely factor in the high proportion (87.5%) of respondents who either always or sometimes recommended the HPV vaccine to eligible girls. Most of those who only sometimes recommended the vaccine, or did not respond, provided an explanation as to why this was the case (such as that they didn’t see this demographic, or that they didn’t work in the community), and implied that if these exceptions did not exist, they would be always recommending the vaccine. This support is very important as it is clear that the physician buy-in exists, although it has yet to be effectively capitalized on. In the same vein, only 62.5% of physicians were very aware of the provincial vaccination program in British Columbia, which also speaks to a need for increased communication between the public health sector and the professional realm since these physicians are often a first contact point for parents trying to decide to vaccinate their daughters. It is impossible for physicians to support or buy into a program if they are not aware of it, or are not provided the opportunity, and this serves as a huge lost opportunity to maximize the success of an important public health program.

Although 91.7% and 83.3% of respondents claimed to have working relationships with other family physicians and pharmacists in their community, respectively, only 62% claimed to have a working relationship with their health unit. This suggests that the health units and private practices in these communities are not integrated, and that there is not as much communication between these units as there should be. Achieving physician support and buy-in of public health programs will only serve to increase their success, while physicians will be better able to care and provide for their patients’ health when they are aware of all of the programs that are offered. Indeed, a move to a more integrated and holistic health
care system will be mutually beneficial to all health care professionals involved, as well as to the health of all British Columbians.

One notable observation in terms of the resources physicians are using is that only 20.8% of physicians claim to use the BCCDC’s website “ImmunizeBC” as a resource to counsel patients about HPV and HPV vaccine. When asked, however, what other resources they would like to counsel patients, a few of the physicians wrote that they would like a website. This suggests that there is likely not enough awareness of this website, or possibly that the website does not meet the needs of these respondents, and this finding merits some further evaluation to optimize the website. Further to this, 41.7% of respondents noted that they would like more information on statistics about HPV infection rates, cervical cancer rates or genital warts rates. In fact, there was at least some need for more information in every suggested category, and considering these respondents are physicians and should be experts on the topic, it is important to meet these information needs immediately. Other resources that the respondents wrote in that they would like included an informational video, and more materials such as brochures and pamphlets with comprehensive information that was targeted at parents. This information is useful since it demonstrates that most respondents would like to further inform their patients about the vaccine, but that they require appropriate support and resources to accomplish this task. Further research could focus on what resources in particular would be the most effective and efficient, with input from these important stakeholders.

The overarching goal of this study was to identify specific opportunities to involve general practitioner oncologists in the promotion of the HPV vaccine. Almost half of the respondents agreed to have their contact information, as well as the activities that they were willing to participate in to promote the vaccine, with their local health unit. This is an important outcome not only functionally for the health units who will now have a contact list for physicians that they can contact as resources for publically supporting the vaccine, but also structurally for the field of public health which has typically been thought of as separate or at times even counter to the practices of private physicians. This study has demonstrated that physicians are willing to and have a desire to be involved with public health programs, and has identified specific ways in which they are willing to achieve this involvement. In this case, these particular physicians were identified to be surveyed, since by virtue of their specialty they were considered to already have a vested interest in the HPV vaccination program, and were therefore important stakeholders in the program. Future public health programs would likely also benefit by identifying potential health care professional stakeholders prior to the roll-out of a program, in an effort to achieve buy-in and support from the people who will likely have great influence on the program’s success. Indeed it is likely that if GPOs had been more involved in the planning or roll-out of the publically funded school-based HPV vaccination program, the program may have been met with more support initially. Regardless, now that these public supporters have been identified, it will be imperative to act on their offered support to ensure the maximum uptake of this vaccine to help decrease the morbidity and mortality associated with HPV infection, genital warts and cervical cancer.

This study was subject to several limitations. Due to the small sample size, there were some limitations to the analysis of the data. If further research is done with larger sample sizes, it will be possible to test for association between certain demographic factors and HPV vaccine attitudes, practices and knowledge. Additionally, this survey was conducted on a specific specialty of physicians, and further research will have to be done to determine the generalizability of the results. General practitioners will also have important roles in the success of the HPV vaccination program, and so their views will also be
important to assess. Although the response rate was satisfactory for this survey, it is not known whether non-respondents had different views about HPV vaccination than did survey respondents.

5.1 Specific Recommendations

How to Involve General Practitioner Oncologists in an HPV Vaccine Promotions Strategy

1. Centralize
   • Establish initial contact with the volunteered physicians within one month
   • Centralize the HPV promotions campaign at the BCCDC to ensure efficiency

2. Educate
   • Create a CME course on HPV, and organize events throughout the province

3. Propagate
   • Create a public relations plan for province-wide media coverage of physician written support letters and public presentations

4. Train
   • Provide training and support to the volunteered physicians so that they are on message for the promotions campaign

5. Expand
   • Solicit volunteered physicians for names of other interested physicians, as well as set up sign-up opportunities at CME events

6. Unify
   • Create one comprehensive, low-health literacy, research-driven, parent-targeted booklet about HPV and the vaccination program to distribute to physician’s offices and to health units

7. Optimize
   • Assess how to optimize the ImmunizeBC website

8. Communicate
   • Establish a BCCDC monthly newsletter to physicians to inform them about current public health research, programs, and insights into the social aspects of health

5.2 Recommendations Rationale

Ten physicians have offered their personal contact information to be contacted to act as public supporters of the HPV vaccine, and it could be quite discouraging if this offer for help was not accepted and pursued in a timely manner. It is therefore important that a communications strategy be formed to include these physicians in HPV vaccine promotion, not only to continue on the path of outreach to include physicians as stakeholders in the vaccination program, but also to allow observation and evaluation of the impact of physician-promoted public health programs to inform future endeavours of this nature.

Since the health units are all run fairly independently, logistically and strategically speaking it would be best to centralize the execution of an HPV promotion strategy involving these physicians in an agency like the BC Centre for Disease Control. A centralized campaign will allow for an organized and
appropriately allotted use of these physicians, as well as allow for a stream-lined and research-supported placement of these physicians given that there are only ten of them. If the campaign is centralized at the BCCDC, the first step to organizing a promotion strategy will be to personally contact these ten physicians to establish an initial dialogue, and to acknowledge their offer of support. This engagement will ensure that these physicians feel appreciated and involved, which will maintain their interests as stakeholders in the program.

Given the activities that the physicians have indicated that they are willing to participate in, the BCCDC will have to evaluate how and if it will facilitate each of these activities. For example, over one third of respondents indicated that they are willing to either organize or conduct Continuing Medical Education (CME) training within their communities, and since the results show that there are still some gaps in knowledge among these physicians regarding the school-based HPV vaccination program itself, as well as HPV infection and vaccination information and statistics, facilitating these sessions will be an important step in HPV promotion. Of the physicians who have provided their contact information, the ones who have indicated that they are willing to participate in organizing or conducting CME training are important contacts for moving forward with this initiative.

Research has shown that there is a need for a professional and unbiased information source presence regarding HPV infection and vaccination in the media. For this reason, the physicians who have indicated that they are willing to write letters to local newspapers or to be available as experts for media inquiries are invaluable assets to an HPV promotion strategy. In addition to providing an important component of a successful campaign to change parental behaviours, in this case to encourage them to consent to the school-based HPV vaccination program, these physicians can participate in these activities across the province; Although only a few of the physician contacts have agreed to participate in these specific activities, the activities lend themselves to being easily disbursed across the province. For example, a physician in Terrace BC can write a letter to a local newspaper, but that letter can also be distributed to newspapers province-wide. Or, the BCCDC can pro-actively provide contact information to media outlets of the physicians who have agreed to act as experts, who can obviously be contacted by any media sources within the province by either phone or email. As several of the physicians themselves indicated, however, it will be important for the BCCDC to provide these so-called “HPV vaccine representatives” with the proper training and support to ensure that they remain on message and synchronized with the promotion strategies as a whole.

The BCCDC currently has two powerpoint presentations targeted at parents and teachers respectively about the HPV vaccine and the school-based program, originally intended to be used by public health nurses during school presentations. These presentations can also be adapted to be presented by the physicians who have agreed to make presentations within their communities. Again, training should be provided to support these physicians, as well as to prepare them for questions from specific audiences. Again, given the limited amount of physicians willing to participate in this activity, it will be important for the BCCDC to strategize (in consultation with the appropriate health units) where the best places and times are for making these presentations. Also, consideration should be given to possibly obtaining media coverage of the events to further the reach of the presentation, and the public endorsement of the physician of the vaccination program in order to fully capitalize on limited resources.

Lastly, this survey may not be representative of how many family practitioner oncologists are willing to participate in the suggested activities. Although the response rate of 57% was typical for physician surveys, this does not automatically mean that the remaining 43% are unsupportive of the vaccine, or unwilling to act as public supporters. There may have been time constraints which kept them
from completing the survey, they may have not received it, or they may have been away from their office. With this in mind, it may be fruitful to ask the physician’s currently on the contact list if they are aware of any other physicians who might be willing to participate in a promotion strategy, and if they would be willing to share their contact information. This will provide an opening to begin a dialogue with more Family Practitioner Oncologists. Additionally, if and when CME trainings are held, it will be important to provide attendees of these events with the opportunity to sign up as public supporters, should they want to do that.

In terms of resources for counselling patients about HPV, several physicians indicated that there was a need for comprehensive materials such as a brochure, that were targeted at parents. One physician suggested that a BC Cancer Agency endorsed information booklet would also be helpful. The information that most physicians wanted in these materials was mostly related to statistics about HPV infection, cervical cancer and genital warts, as well as more information surrounding vaccine safety and adverse events. (Although more research should be done to confirm that this information will be useful to parents, the physician’s seemed to suggest that this information would be helpful to them when counselling parents.) In order to support physicians in promoting the HPV vaccination program, they must have the appropriate materials. It is therefore essential for the BCCDC and/or the BCCA create a comprehensive publication that can act as the authority on all things HPV related, that is available for physicians and/or public health nurses to give to parents. This document should be research-driven in terms of messaging and in terms of addressing the top concerns of undecided parents, and it should be written for low-literacy audiences such that it is accessible to all BC residents. Relating to current resources, one notable observation was that only 20.8% said that they used the BCCDC’s ImmunizeBC website, while two physicians actually commented that they would like a website with resources. Depending on the BCCDC’s priorities, it may be worthwhile to assess whether this is a result of low awareness of the website, or rather that it does not cater to this particular group in terms of content. Either way, the website does contain helpful information and it would be beneficial to increase its usage.

As a general observation, it appears that there may be a disconnect between physicians in private practice and public health professionals. In fact, one physician, rather than completing the survey, provided a lesson in the social aspects of this issue. This lesson illustrated that physicians in private practice may not be familiar with the type of work and research that is done at the BCCDC, and this can be detrimental to any public health program. Ultimately, both groups are striving for the same goal of keeping British Columbians healthy, and it therefore makes perfect sense that there should be a shift to convergence between these disciplines. Furthermore, awareness of public health programs and research among physicians will only help this convergence, while generally bringing the physicians in as partners and stakeholders in public health programs, ultimately making them more successful. In terms of this issue, I highly recommend that the BCCDC, in partnership with the health units, create a regular form of communication with the physicians of British Columbia. One way to do this would be to establish a monthly newsletter that details current public health programs and initiatives, as well as provides in-depth coverage of some of the social aspects of disease and health. This step alone will go a long way in creating a more harmonious health system in British Columbia. This idea can also be taken further to become more interactive, using social media, forums, and mixers in the future.

This study has illustrated that there are opportunities to involve physicians in the promotion of a public health program, and specifically in this case, that family physician oncologists are willing to act as public supporters for the HPV vaccine and school-based program. With the support of these trusted
voices among parents, the HPV vaccine program will hopefully achieve optimal uptake, and BC girls will be protected from cervical cancer.

5.3 General Considerations for an HPV Promotions Campaign

Involving physician’s as public supporters of the HPV vaccine will serve as one component of a successful HPV promotion strategy. Ultimately, however, the campaign’s success will be dependent on its basis on research-driven messaging and delivery. Specifically, when designing a comprehensive publication for physicians to distribute to mothers about HPV infection and vaccination, based on current research surrounding HPV, there are four key communication strategies that must be employed to increase their acceptance and uptake of the HPV vaccine.

The first strategy is empowerment (Friedman & Shepeard, 2007). This can be accomplished by educating mothers on the natural history, transmission and prevention of HPV while also emphasizing available options for preventing and treating its potential consequences. Secondly, it is critical to promote accurate portrayals of HPV risk without creating undue anxiety or complacency (Friedman & Shepeard, 2007). This delicate balance must be established so that the ubiquitous nature of HPV does not lead to exaggerated fears of cancer, but still challenges the current public perception that HPV infection is mostly harmless, a perception which can inadvertently promote complacent attitudes towards immunization. Thirdly, there is a need to distinguish HPV infection from other sexually transmitted infections (Friedman & Shepeard, 2007). This strategy has two justifications: the first is that the global movement to destigmatize STIs may lead people to miss-identify HPV infection as something that can easily be tested for and treated through antibiotics, despite the fact that HPV’s natural history is not necessarily amenable to this process; Secondly, it is important to stress that most people who have been sexually active will have been exposed to HPV, in an effort to disassociate the infection from the notion of promiscuity or stigma. Lastly, current limitations and gaps in HPV science should be disclosed to the public (Friedman & Shepeard, 2007). This strategy is essential to earning the public’s trust by showing transparency through sharing of what is and is not known about HPV, so as to maintain credibility as the science continues to evolve. All of these strategies should be kept in mind when designing the promotion materials for the HPV vaccine.

Before a booklet for parents is finalized, it will be important to run focus groups with the target audience, in this case mothers, to determine if the booklet has any shortcomings and whether or not it is accomplishing the desired outcome. This will ensure that the resource is effective and beneficial to promoting HPV vaccine uptake among mothers. Also, since most of the mothers will be thinking about this topic when completing the consent form, it may be beneficial to also send out this booklet with the consent forms, which will allow mothers to access the important information immediately. Consideration however should be given to perhaps providing supplementary information regarding all of the vaccines on the consent form so as not to contribute to the fears of mothers by flagging the HPV vaccine as a vaccine of special interest.

Promotion of HPV immunization must happen through several strategies. In terms of advertising, there is a decided need for demonstrated support of HPV immunization that is not linked to the corporate beneficiaries of the vaccine (Ogilvie et al., 2007). Extensive advertising by the vaccine’s manufacturers may have lead to reservations among the public towards the vaccine’s true value, and unbiased and trusted advertisements are necessary to assert and defend the government’s position in favour of HPV immunization. Also, due to the media’s unprecedented focus on the HPV vaccine, it is crucial that the promotion of the vaccine also focus on publicity. It is important to increase the media’s coverage of the
government’s support for the program, as well as to use the media to clear up any misconceptions about
the HPV vaccine. And, since physicians and health care providers are repeatedly mentioned as trusted
sources of information, forming partnerships with these people and providing them with the resources
and encouragement to promote the HPV vaccine on an individual basis, as well as through providing
expert opinions or public endorsements of the immunization program will only add to any promotion
strategy.

Consumers have identified the following acceptable vehicles and settings for delivering
information regarding HPV infection and immunization: the internet, their health care provider,
gynaecologists, clinics, schools, magazines, local television news, and national television advertisements
(Friedman & Shepeard, 2007). Participants stressed the need for factual information to be delivered in a
serious tone in clear, simple language (Friedman & Shepeard, 2007). Paid advertisements should be
targeted to TV programs that mothers of daughters aged 10-13 are likely to watch, radio stations that they
are likely to listen to, and print materials should be placed in areas of high visibility to these particular
women. These three channels are necessary since the vaccine manufacturers have used these means, and
it is important to supplement their ads with reliable and unbiased information. The publicity can be
targeted at local and provincial news outlets (TV, radio and print) as well as through school newsletters
and word of mouth through physicians, family and friends. Consumers have also suggested the use of an
average person’s testimony about his or her experience with HPV immunization as a reliable message
source (Friedman & Shepeard, 2007), so another promotion strategy will be to have school information
sessions where mothers can explain why they chose to have their daughter immunized. This face-to-face
interaction could provide another crucial interaction with the target audience to further promote providing
consent for HPV immunization.

Since the HPV vaccine is provided in British Columbia for free, a price strategy must focus on the
more intangible costs and benefits of providing consent for HPV immunization. One cost that undecided
mothers may face when deciding to give consent is the time and effort it will take to seek more
information about the HPV vaccine. By providing these mothers with a booklet about HPV infection and
immunization that accompanies the consent form, they no longer need to make extra effort to learn more.
Even with this information however, mothers may still feel overwhelmed or not qualified to make this
decision for their daughters and these concerns have associated emotional costs. By focusing the
promotion campaign around physicians as public supporters of the vaccine, the anxiety associated with
this decision will be minimized. In regards to the issues surrounding the sexual implications of the
vaccine, mothers may experience conflicting messages as to how best to protect their daughters. Focusing
on the HPV vaccine’s role in protecting against a severe and life threatening disease such as cervical
cancer will be paramount to outweighing these moral costs with tangible health benefits for the women’s
daughters. Lastly, it is important to highlight the convenience of the school-based program, and remind
the mothers that if they do not consent now, but choose to have their daughter immunized later, not only
may she be less protected, but the mother will have to make the extra time and effort to take her to a
public health nurse for immunization. This will involve making a strong argument as to why girls need to
be immunized now, rather than later.

All aspects of an HPV promotion strategy should be focused around the clear message that the
HPV vaccine is an important, safe and effective way to protect girls against cervical cancer. And, of
course, all aspects of the promotion strategy should be continuously evaluated throughout the course of
the campaign, as well as following the campaign.
6 Conclusion

This study has shown that involving physicians in the promotion of public health programs and initiatives is a viable option. Given the authority that physicians have with the public on health care decisions, achieving physician support of public health programs will help to increase the success and impact of these programs, and is therefore an important consideration when designing any promotion or communications campaign in support of the public’s health. Specifically in this study, several opportunities have been identified to involve General Practitioner Oncologists in British Columbia in the promotion of the publicly funded, school-based HPV immunization program. Future public health programs should aim to identify specific groups of physicians who are likely stakeholders in the program early in the development phases to help ensure and promote public acceptance. There should also be efforts made to establish a dialogue between the public health field and the private practice physicians in BC, as mutual understanding and appreciation of each other’s roles will allow for more convergence between the two streams of health care. Future research could focus on the most effective ways to involve physicians in the promotion of public health programs, as well as evaluate the impact of physician support on the success of public health programs.

Appendix

1. Have you received any continuing medical education training about HPV vaccine?
   - Do not remember
   - No
   - Yes, please describe:

2. How aware are you of the current provincially-funded school-based Grades 6-9 HPV immunization program for BC girls?
   - Very aware
   - Somewhat aware
   - Not aware

3. Do you currently recommend the HPV vaccine to your eligible patients for the grades 6-9 program?
   - Yes, all the time
   - Yes, sometimes
   - No, never
   - Additional Comments:

4. What are the resources you currently use to counsel patients about HPV and HPV vaccines? Select all that apply.
   - Immunization website
   - Canadian Paediatric Society Manual
   - Canadian Immunization Guide
   - Vaccine manufacturer’s materials
   - Information from Health Units
   - Society of Obstetricians and Gynaecologists of Canada
   - None of the above
   - Other, please specify:

5. What other resources would you like to help you continue your training about HPV vaccine?

6. Do you require more information about HPV vaccine? (Select all that apply)
   - Safety
   - Immunogenicity
   - Duration of coverage
   - Statistics, such as HPV infection rates, cervical cancer rates, genital wart rates
   - Adverse events
   - No, I don’t require more information

7. If you are not recommending the HPV vaccine, would you be willing to change your mind?
   - Yes
   - No
   - Other:
   - Additional Comments:

8. What are the resources you currently use to counsel patients about HPV and HPV vaccines? Select all that apply.
   - Immunization website
   - Canadian Paediatric Society Manual
   - Canadian Immunization Guide
   - Vaccine manufacturer’s materials
   - Information from Health Units
   - Society of Obstetricians and Gynaecologists of Canada
   - None of the above
   - Other, please specify:

9. What other resources would you like to help you continue your training about HPV vaccine?

10. Do you require more information about HPV vaccine? (Select all that apply)
    - Safety
    - Immunogenicity
    - Duration of coverage
    - Statistics, such as HPV infection rates, cervical cancer rates, genital wart rates
    - Adverse events
    - No, I don’t require more information

11. If you are not recommending the HPV vaccine, would you be willing to change your mind?
    - Yes
    - No
    - Other:
    - Additional Comments:

12. What are the resources you currently use to counsel patients about HPV and HPV vaccines? Select all that apply.
    - Immunization website
    - Canadian Paediatric Society Manual
    - Canadian Immunization Guide
    - Vaccine manufacturer’s materials
    - Information from Health Units
    - Society of Obstetricians and Gynaecologists of Canada
    - None of the above
    - Other, please specify:

13. What other resources would you like to help you continue your training about HPV vaccine?

14. Do you require more information about HPV vaccine? (Select all that apply)
    - Safety
    - Immunogenicity
    - Duration of coverage
    - Statistics, such as HPV infection rates, cervical cancer rates, genital wart rates
    - Adverse events
    - No, I don’t require more information

15. If you are not recommending the HPV vaccine, would you be willing to change your mind?
    - Yes
    - No
    - Other:
    - Additional Comments:

16. What are the resources you currently use to counsel patients about HPV and HPV vaccines? Select all that apply.
    - Immunization website
    - Canadian Paediatric Society Manual
    - Canadian Immunization Guide
    - Vaccine manufacturer’s materials
    - Information from Health Units
    - Society of Obstetricians and Gynaecologists of Canada
    - None of the above
    - Other, please specify:

17. What other resources would you like to help you continue your training about HPV vaccine?

18. Do you require more information about HPV vaccine? (Select all that apply)
    - Safety
    - Immunogenicity
    - Duration of coverage
    - Statistics, such as HPV infection rates, cervical cancer rates, genital wart rates
    - Adverse events
    - No, I don’t require more information

19. If you are not recommending the HPV vaccine, would you be willing to change your mind?
    - Yes
    - No
    - Other:
    - Additional Comments:

20. What are the resources you currently use to counsel patients about HPV and HPV vaccines? Select all that apply.
    - Immunization website
    - Canadian Paediatric Society Manual
    - Canadian Immunization Guide
    - Vaccine manufacturer’s materials
    - Information from Health Units
    - Society of Obstetricians and Gynaecologists of Canada
    - None of the above
    - Other, please specify:

21. What other resources would you like to help you continue your training about HPV vaccine?

22. Do you require more information about HPV vaccine? (Select all that apply)
    - Safety
    - Immunogenicity
    - Duration of coverage
    - Statistics, such as HPV infection rates, cervical cancer rates, genital wart rates
    - Adverse events
    - No, I don’t require more information

23. If you are not recommending the HPV vaccine, would you be willing to change your mind?
    - Yes
    - No
    - Other:
    - Additional Comments:
References


