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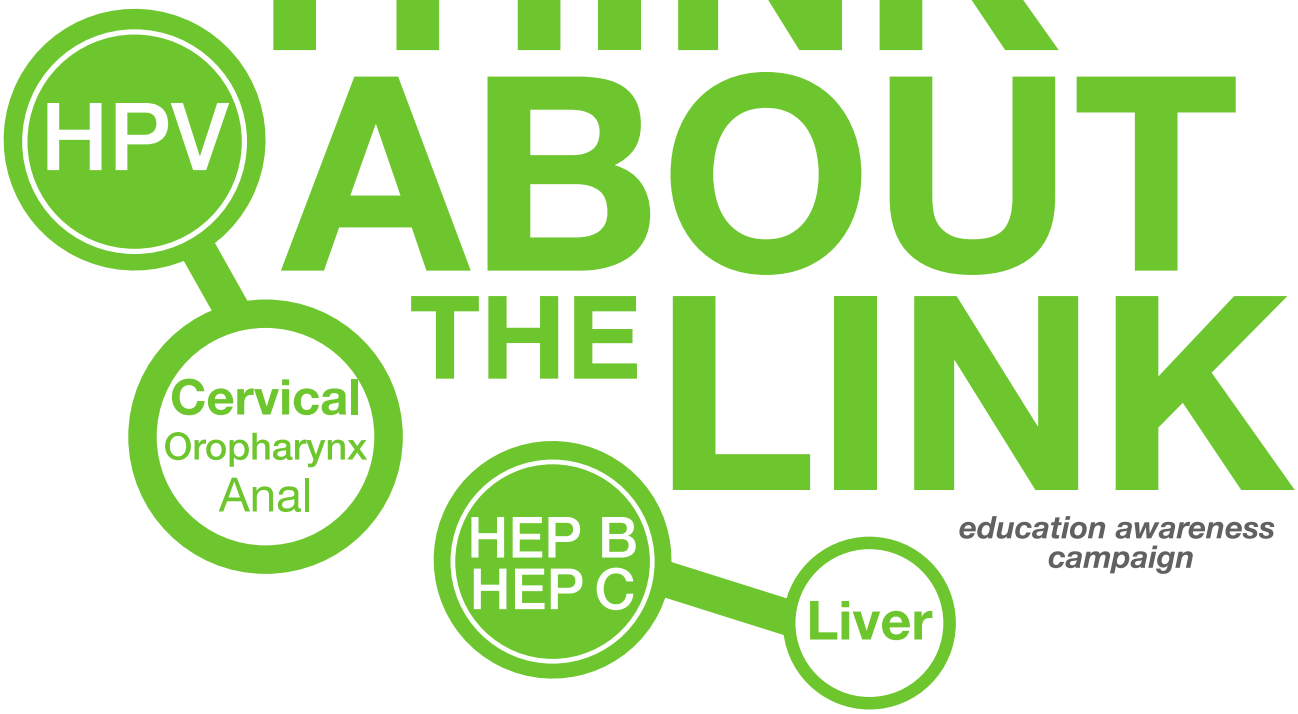

education awareness campaign

Survey Research Executive Summary

January 2016

www.PreventCancer.org

Study Overview

The purpose of this study was to understand familiarity, perceptions, and behavior as it relates to human papillomavirus (HPV), hepatitis B, and hepatitis C, both in relation to the virus and vaccinations/treatment.

Specific research objectives were to:

- Measure virus and vaccine familiarity
- Evaluate vaccination recommendations, strategies for compliance, education methods, and compliance barriers
- Measure awareness of HPV, hepatitis B, and hepatitis C facts
- Evaluate perceptions of vaccinations in general
- Understand perceived child vaccination necessity among parents

To meet those objectives, Russell Research, an independent survey research firm, conducted an online study among the following populations:

657 Healthcare Professionals

- 253 Pediatricians (sample error of +/- 6.2 percent)
- 252 Primary Care Physicians/Internal Medicine/Family Medicine (referred to as "General Practitioners" in the report) (sample error of +/- 6.2 percent)
- 152 Nurse Practitioners/Physician Assistants (sample error of +/- 7.9 percent)
- At a 95 percent confidence level, a margin of sample error of +/- 3.8 percent applies to the total healthcare professional sample.

1,026 General Population Adults

- At a 95 percent confidence level, a margin of sample error of +/- 3.1% percent applies to the total general population sample.

Augmented General Population Samples

- The general population sample was augmented in order to have readable samples of three ethnic segments:
    - 211 African-Americans
    - 207 Hispanics
    - 207 Asian-Americans
- At a 95 percent confidence level, a margin of sample error of +/- 6.8 percent applies to each of these segments.

Interviewing for the study was conducted from December 18 – 29, 2015.

Sample Criteria

In order to qualify for study inclusion, respondents were screened to meet the following criteria:

Healthcare Professionals

- Ages 25 or older
- Spend 70% or more of their time in clinical practice or direct patient care
- Board certified or board-eligible (Pediatrician/HCP)
- Nationally certified or eligible for certification (Nurse Practitioner/Physician Assistant)
- Regularly perform physicals and other routine preventative care to their patients

General Population

- 50% Female, 50% Male
- Ages 18 and older

Sample for the study was sourced from the Research Now consumer and physician panels.

Statistical Notation

The statistical significance of a result in this survey is the probability that the observed relationship (e.g., between variables) or a difference (e.g., between means) in a sample occurred by pure chance, and that in the population from which the sample was drawn, no such relationship or differences exist. Using less technical terms, one could say that the statistical significance of a result tells us something about the degree to which the result is "true". More technically, the value of the p-value represents a decreasing index of the reliability of a result. The higher the p-value, the less we can believe that the observed relation between variables in the sample is a reliable indicator of the relation between the respective variables in the population. Specifically, the p-value represents the probability of error that is involved in accepting our observed result as valid, that is, as "representative of the population." For example, a p-value of .05 (i.e.,1/20) indicates that there is a 5% probability that the relation between the variables found in our sample is a "fluke."

The following statistical notations are used throughout the report:

☐ = Indicates figure is significantly higher than other sub-group at a 95% confidence level (i.e. p-value of .05 or less).

P = Pediatricians

G = General Practitioner (PCP/IM/FM)

N = Nurse Practitioners / Physician Assistants

Healthcare Professionals

Although most healthcare professionals believe in recommending vaccines on schedule, a considerable percentage of patients who meet the CDC guidance criteria are not being recommended the HPV vaccination, and to a lesser extent, the vaccination for hepatitis B.

- More than four-fifths of healthcare professionals (82%) typically recommend the HPV vaccination on schedule and six in seven (87%) recommend the hepatitis B vaccine on schedule. This includes virtually all pediatricians (96% HPV, 99% hepatitis B).
- However an average of 74% of patients who meet the CDC criteria for the HPV vaccination ultimately receive a recommendation from their healthcare professional. The percentage is identical for the hepatitis B vaccination (74%).
- Three in ten pediatricians (29%) indicate they do not recommend the HPV vaccination to all of their patients who meet the CDC guidance criteria and this percentage is far higher among general practitioners (63% don't recommend to all patients) and nurse practitioners/physician assistants (57%).
- The percentage of CDC applicable patients who receive the HPV vaccination is made even lower due to compliance issues. On average, healthcare professionals indicate 62% of the patients who are recommended the HPV vaccination comply and receive it on schedule. This includes 69% of patients recommended the vaccination by a pediatrician.
- Compliance tends to be higher for the hepatitis B vaccination. Pediatricians indicate 92% of patients who are recommended the vaccination comply and receive it on schedule, though this percentage is below 70% for other segments (67% general practitioners, 69% nurse practitioners/physician assistants).

Patients and parents are viewed as only possessing limited knowledge about HPV and hepatitis B.

- More than four in five healthcare professionals (82%) indicate their typical patient/parent has limited knowledge about HPV and more than three in four healthcare professionals (78%) indicate their typical patient/parent has limited knowledge about hepatitis B.
- This can translate to sub-optimal compliance as more than four in five pediatricians (82%) indicate parents are somewhat open to the HPV vaccine, compared to nearly one in seven (13%) who indicate parents are very open to the vaccine.

Further, an opportunity exists for further education among healthcare professionals, as many lack knowledge about these vaccinations.

- Approximately two-thirds of pediatricians indicate they are very knowledgeable about the HPV (64%) and hepatitis B (67%) vaccinations, with one-third (34% HPV, 31%) who are only somewhat knowledgeable.
- A majority of general practitioners (54%) and nurse practitioners/physician assistants (57%) indicate they are somewhat knowledgeable about the HPV vaccination. Two in five or less (40% general practitioners, 36% nurse practitioners/physician assistants) are very knowledgeable.
- Similarly, one-half of general practitioners (50%) and nearly three-fifths of nurse practitioners/physician assistants (57%) indicate they are somewhat knowledgeable about the hepatitis B vaccination. Less than one-half (45% general practitioners, 35% nurse practitioners/physician assistants) are very knowledgeable.

Healthcare Professionals (Cont'd.)

Parent comfort and age are the primary barriers to recommendation of the HPV vaccination while lack of risk, side effects, and sexual activity most often prevent patient compliance.

- Healthcare professionals who don't always recommend the HPV vaccinate most often cite patients being too young (40%) as a reason for not recommending. This is underscored by one-third of healthcare professionals (32%), including one-quarter of pediatricians (26%), who believe 11-12 years old is too young for the HPV vaccination.
- Further, more than two in five pediatricians who don't always recommend the HPV vaccination identify parents being uncomfortable (43%) as a reason.
- On the patient side, healthcare professionals identify the primary compliance barriers as being patients not believing they're at risk (54%), concern over side effects (50%), not being sexually active (50%), and not feeling their age group is impacted (35%). Pediatricians more widely report these reasons as being barriers.
- Parental compliance barriers are very similar, with the most widely reported barriers being parents not believing their children are at risk (54%), concern over side effects (50%), their children not being sexually active (50%), and the feeling it will increase sexual promiscuity (47%).

Lack of perceived risk is the primary barrier to Hepatitis B vaccination compliance.

- Two in five healthcare professionals who don't always recommend the hepatitis B vaccine (41%) identify patients not being high risk as a reason for not recommending the vaccine. Nearly as many pediatricians (39%) identify parents being uncomfortable as also being a barrier.
- Three in five healthcare professionals who don't have complete patient compliance (60%) indicate patients not believing they're at risk is a barrier to compliance and more than two in five (43%) identify it as the primary compliance barrier. Concern over side effects (34%) and multiple shots in the vaccine schedule (34%) are also common patient compliance barriers.

Cancer prevention is an effective vaccination compliance strategy, however is not widely used for hepatitis B compliance.

- Five in six healthcare professionals (84%) indicate their typical patient/parent only has limited knowledge about the HPV vaccine and lowered cancer risk and virtually all (94%) believe most patients are not fully aware of all the facts about the risks of HPV.
- Six in seven healthcare professionals (87%), including virtually all pediatricians (95%), use cancer prevention as a compliance strategy for the HPV vaccination.
- Nine in ten healthcare professionals (91%) indicate cancer prevention works very or somewhat well for HPV vaccination compliance.
- Less than three in ten healthcare professionals (27%), including one in three pediatricians (33%), use cancer prevention as a compliance strategy for the hepatitis B vaccination.
- Seven in ten healthcare professionals (70%) indicate cancer prevention works very or somewhat well for hepatitis B vaccination compliance.

Healthcare Professionals (Cont'd.)

Healthcare professionals often initiate the vaccination conversation and primarily use direct conversation and written materials for patient education.

- More than four-fifths of healthcare professionals indicate they initiate the first conversation about the HPV (81%) and hepatitis B (84%) conversations.
- Direct conversation (77% HPV, 76% hepatitis B) and written materials (69% HPV, 66% hepatitis B) are most frequently used to educate patients.

Many high risk segments don't understand they're at increased risk.

- Nearly nine in ten general practitioners/nurse practitioners/physician assistants (88%) indicate their African-American female patients are not aware they are at increased risk of certain types of HPV-associated cancers.
- Nearly nine in ten general practitioners/nurse practitioners/physician assistants (88%) indicate their Hispanic adult patients are not aware they are at increased risk of certain types of HPV-associated cancers.
- Nearly three in four general practitioners/nurse practitioners/physician assistants (73%) indicate their Asian adult patients are not aware they are at increased risk of hepatitis B.
- Four in five general practitioners/nurse practitioners/physician assistants (80%) indicate their Baby Boomer patients are not aware they are at increased risk of certain types of hepatitis C-associated cancers.

Nurse practitioners and physician assistants can play a vital role in increasing compliance rates for the HPV and hepatitis B vaccinations.

- Nearly nine in ten nurse practitioners/physician assistants (88%) find they can sometimes be more effective than physicians in terms of persuading at risk patients to comply with HPV vaccinations.
- Five in six nurse practitioners/physician assistants (84%) find they can sometimes be more effective than physicians in terms of persuading at risk patients to comply with hepatitis B vaccinations.
- More than nine in ten nurse practitioners/physician assistants (93%) will often answer patient questions when they are afraid or unlikely to ask a physician.

Cost and lack of insurance coverage are the primary barriers to hepatitis C treatment compliance.

- Three in four healthcare professionals with hepatitis C patients (74%) identify the cost of treatment as a barrier to compliance and more than two-fifths (44%) name it as the primary barrier.
- Three in five healthcare professionals with hepatitis C patients (60%) find lack of insurance coverage as a barrier to compliance and one in four (26%) name it as the primary barrier.

General Population

There is not a high level of familiarity nor concern about HPV, hepatitis B, and hepatitis C among the general population.

- Less than one-half of adults are very or somewhat familiar with hepatitis C (49%), HPV (45%), and hepatitis B (44%), and less than one in seven adults are very familiar with any of these viruses (13% hepatitis C, 13% HPV, 12% hepatitis B).
- Females (52%) are significantly more likely than males (38%) to be very or somewhat familiar with HPV.
- Only one in five adults (20%) are very or somewhat concerned with being at increased risk for HPV, including slightly more than one-fifth of females (22%). Less than one in six are very or somewhat concerned about hepatitis C (16%) and hepatitis B (16%).
- Higher risk populations are also not very concerned, including only one-third of Asian-American adults (34%) and one-quarter of Hispanic adults (25%) who are very concerned with being at increased risk for hepatitis B, and less than three in ten Hispanic adults (27%) concerned with being at increased risk of hepatitis B.
- A lack of concern is typically driven by the belief that adults do not exhibit the common behaviors which result in transmission. This includes more than one-quarter of adults not worried about HPV because “it’s for people who do not practice safe sex” (27%) and “it affects people who have had multiple sex partners” (27%).
- People not practicing safe sex as a reason for not being worried was also the most cited reason for hepatitis B (25%) and hepatitis C (25%). Also most often cited as a reason for not being worried about hepatitis B and C was because “it’s caused by intravenous drug use” (25% hepatitis C, 20% hepatitis B).

Few adults have discussed prevention strategies or vaccinations for these viruses. As a result, there is limited familiarity with the HPV and hepatitis B vaccinations.

- Less than one in seven adults have ever discussed prevention strategies for HPV (13%), including less than one in five females (18%), and less than three in ten Millennials (28%). One in eight adults (12%) have discussed the HPV vaccination with their physician, including one in five females (19%) and less than three in ten Millennials (27%).
- Approximately one in ten adults have ever discussed prevention strategies for hepatitis B (11%) and hepatitis C (9%). Only one in seven adults (14%) have ever discussed the hepatitis B vaccination with their physician.
- Aligning with the healthcare professional research, most adults who have ever discussed vaccinations indicate they were initiated by the physician (76% HPV, 68% hepatitis B).
- One in ten adults (10%) have been recommended the HPV vaccination by their physician, which includes one in seven females (15%) and one-quarter of Millennials (25%). One in seven adults (15%) have been recommended the hepatitis B vaccination.
- Only seven percent of adults indicate their physician has ever used cancer prevention as a vaccination compliance strategy. Among these adults, one-half (51%) indicated it was used for the HPV vaccination, which includes three-quarters of females (74%).
- Two in five adults indicate they are very or somewhat familiar with the HPV (39%) and hepatitis B vaccinations (39%). Females are significantly more likely than males to be familiar (51% of females familiar with HPV, 42% with hepatitis B).

General Population (Cont'd.)

A majority of adults are unaware of many facts about these viruses.

- Less than one-half of adults are aware the HPV virus can lead to cancer if untreated (47%), that with immunization, HPV-related cancers can be avoided (46%), and that the HPV vaccine can significantly reduce the risk of certain types of cancer (43%).
- While more than three in five adults (63%) are aware it's recommended girls are vaccinated, less than two in five (36%) are aware it's recommended boys are vaccinated.
- Less than three in ten adults (27%) are aware nearly one-half of 14-19 year old females are infected with the HPV virus.
- One in three adults (33%) are aware hepatitis B increases the risk of liver cancer.
- Three in ten adults (30%) are aware treatment for hepatitis C can cure you of the virus.
- One in four adults (24%) are aware the hepatitis B vaccine can lower your risk of liver cancer.

Increased physician communication could potentially increase compliance.

- More than nine in ten adults (92%) believe more education is needed about the dangers of the HPV virus.
- Four in five adults (81%) would more seriously consider vaccinations they have never received if their physician discussed the benefits.
- Nearly four in five adults (78%) would be more likely to get vaccinations if their physician provided more detailed information.

Most parents indicate their children have been vaccinated on schedule since birth, however a relatively low percentage indicate their children have received the hepatitis B and HPV vaccinations.

- More than nine in ten parents (92%) indicate their children have been vaccinated on their pediatrician's recommended schedule from birth.
- Less than two in five parents (38%) believe the HPV vaccination is absolutely necessary at age 11 to 12. A slight majority (56%) believe the hepatitis B vaccination is absolutely necessary at birth.
- However, only two-fifths of parents of girls ages 11-17 (39%) and less than two-fifths of parents of boys ages 11-17 (35%) indicate their children have received the HPV vaccination. Nearly three in five parents indicate their child has received the hepatitis B vaccination (57%).
- Parents of younger children are more likely to comply in the future, with four in five parents of girls under age 11 (80%) planning to have their daughter vaccinated for the HPV virus at age 11-12, and more than two-thirds of parents of boys under age 11 (68%) planning to have their son vaccinated for the HPV virus at age 11-12.
- Compliance could potentially be stronger - three in five parents (62%) indicate their children's pediatrician has not stressed the importance of having the HPV vaccination.

General Population (Cont'd.)

Large percentages of at risk populations do not know they're at risk.

- Less than one-fifth of African American females (22%) were previously aware African-American women have higher rates of certain types of HPV-associated cancers.
- Less than one in six Hispanic adults (17%) were previously aware Hispanic adults have higher rates of certain types of HPV-associated cancers.
- Less than one in seven Hispanic adults (13%) were previously aware Hispanic adults have higher rates of certain types of hepatitis B-associated cancers.
- One in eight Hispanic adults (12%) were previously aware Hispanic adults have higher rates of certain types of hepatitis C-associated cancers.
- Less than one in six Hispanic adults (16%) were previously aware liver cancer associated with hepatitis C can spread faster among Hispanic adults.
- Nearly three in ten Asian American adults (29%) were previously aware Asian adults have higher rates of certain types of hepatitis B-associated cancers.
- One in nine Baby Boomers (11%) were previously aware Baby Boomers have a higher rate of certain types of hepatitis C associated cancers.