

# HPV Vaccination



## Engaging Community Partners For Success





*“If you could prevent your child from developing a certain type of cancer as an adult later in life, would you do it?”*

*The question the Outer Banks Hospital Cancer Committee used to frame conversations about increasing the HPV vaccination rate among students enrolled in local public schools.*

**H**uman Papillomavirus (HPV) is a very common virus that infects epithelial tissue, including the surfaces of the skin and mucosal surfaces that line cavities of the body, such as the nose, mouth, throat, and genital surfaces. Most HPV types infect cutaneous epithelial cells and cause a benign condition commonly known as warts. However, persistent infections with high-risk, oncogenic HPV types, such as HPV 16 and 18, can cause cancers of the cervix, vulva, vagina, anus, and penis, as well as cancers of the oropharynx, including the back of the throat, base of the tongue, and tonsils. Among women diagnosed with an HPV-related cancer, cervical cancer is the most common. For men diagnosed with an HPV cancer, oropharyngeal cancer is the most common.

### **Our Call to Action**

In early 2014 a Cancer Committee analysis of cancer registry data at Outer Banks Hospital, Nags Head, N.C., revealed that the incidence of HPV-related cancers, particularly head and neck cancers, was on the rise. Although alarming, our local cancer incidence compared consistently with national findings. That same year, during the discussion to select our cancer program’s annual prevention goal, one Cancer Committee member, a gynecologist,

reported a large percentage of unvaccinated patients presenting for gynecological care. He made a passionate plea for an organized campaign to promote HPV vaccination in our community as our cancer prevention goal for 2014.

Our Cancer Committee chair, a radiation oncologist who has been treating HPV-related cancers for more than 20 years, recalled one of his first patients, a young woman with advanced cancer of the cervix, caused by the HPV virus. Her quality of life was forever changed as a result of this now-preventable disease.

Cancer Committee members shared their personal family experiences with healthcare and discussed concerns about the underutilization of HPV vaccines in our community. Members speculated that barriers to effective vaccination in our community included a lack of awareness of the relationship between certain HPV infections and the incidence of cancer and subsequent missed clinical opportunities for vaccination.

Increasing HPV vaccination is one of the most achievable cancer prevention opportunities and it has recently become a public health priority. The Outer Banks Hospital chose the complex (and somewhat controversial) cancer prevention initiative to improve HPV vaccination rates in our local schools.



Cancer Committee Meeting, Outer Banks Hospital, Nags Head, N.C.

### Getting Started

The Outer Banks Hospital Cancer Committee established a multidisciplinary workgroup led by two prominent cancer care team providers who served as project champions. The workgroup reviewed the literature and modeled our HPV vaccination awareness campaign after evidence-based strategies found in the literature. For example, the President’s Cancer Panel Annual Report, published in February 2014, explored the underutilization of HPV vaccines and outlined strategies to accelerate vaccination. We set out on a coordinated community education campaign

focused on increasing awareness of the cancer prevention benefit of HPV vaccination, gaining parental acceptance, and engaging local providers to promote vaccination to reduce missed opportunities.

### Vaccination Recommendations

Ideally, adolescents should be vaccinated before they are exposed to HPV. The Centers for Disease Control and Prevention (CDC) recommends HPV vaccination for girls and boys at ages 11 or 12 years to protect against cancers caused by HPV infections. Currently, HPV vaccines are administered as a three-dose series over six months. Literature widely available through the CDC and the National Cancer Institute (NCI) report a high safety profile for the vaccine, similar to other adolescent vaccines.

### Strategies & Action Plan

From the beginning, our Cancer Committee leadership underscored the importance of establishing strategic partnerships with

Table 1. HPV Vaccination Baseline Audits, Rising 9th Graders & Graduates

#### RISING 9TH GRADERS 2014–2015

YEAR	SCHOOL	TOTAL	BOYS	GIRLS	NORTH CAROLINA IMMUNIZATION REGISTRY (NCIR)
July 2014	MMS	131	65	66	129
July 2014	CHSS	46	26	20	45
July 2014	FFMS	191	85	106	190

#### GRADUATES JUNE 2014

YEAR	SCHOOL	TOTAL	BOYS	GIRLS	NORTH CAROLINA IMMUNIZATION REGISTRY (NCIR)
July 2014	MMS	111	50	61	100
July 2014	CHSS	37	17	20	35
July 2014	FFMS	185	95	90	166

We now know that HPV vaccination is a powerful tool in our cancer prevention toolkit and this message resonates with parents.

key community leaders to ensure program acceptance and, in the end, programmatic success. With our hospital President's support in hand, the Director of Community Outreach met with leadership from our local health department and the Superintendent of Schools to educate them about our HPV vaccination education initiative and gain their support. The County Lead School Nurse soon became an active member of our workgroup.

Over the summer of 2014, school nurses conducted an audit of student vaccination records for all rising 9th and 12th grade students (Table 1, below). The results of this audit showed alarmingly low rates of vaccination. This baseline data served as both a validation of the work that needed to be done and a baseline metric to monitor the impact of our efforts.

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Outer Banks Hospital's provider newsletter.

	HPV: 0	%POP	HPV: 1	%POP	HPV: 2	%POP	HPV: 3	%POP	PAST DUE	TOTAL % VACCINE EXPOSURE
	99	76%	11	8%	13	10%	6	5%	14	23%
	35	76%	6	13%	2	4%	2	4%	4	22%
	145	76%	13	7%	20	6%	20	10%	unknown	24%
	HPV: 0	%POP	HPV: 1	%POP	HPV: 2	%POP	HPV: 3	%POP	PAST DUE	TOTAL % VACCINE EXPOSURE
	68	61%	8	7%	2	2%	22	20%	9	29%
	22	59%	5	14%	0	0%	8	22%	1	35%
	107	58%	12	6%	16	9%	32	17%	24	32%





Date

First Name, Last Name, Credentials

Practice Name

Mailing Address

City, State, Zip

Dear [Provider's Name]:

The Outer Banks Hospital is working toward accreditation of our Cancer Services Program from the American College of Surgeons' Commission on Cancer. I am currently serving as Chair of the Outer Banks Hospital Cancer Committee, and I am writing this letter on the committee's behalf.

During 2014, the Cancer Committee selected HPV vaccination as our cancer prevention goal. According to the National Cancer Institute (NCI), HPV is the cause of most cervical cancers and HPV vaccination has the potential to decrease cervical cancer deaths by two-thirds worldwide. According to the Centers for Disease Control and Prevention (CDC), infection with HPV also causes 95% of anal cancer in men and women, 65% of vaginal cancer, 60% of oropharyngeal cancer in men and women, 50% of vulva cancer, and 35% of penile cancer. All of these cancers are preventable, if early action is taken.

As part of our initiative, we initially collected primary data among all 8th and 12th grade students in Dare County Schools during the summer of 2014 to establish a baseline. We learned that a mere 8% of all rising 8th graders and rising 12th graders had received all three doses of the vaccine.

Our goal is to increase the percentage of Dare County youth who receive all three doses of the HPV vaccine. We need your help!

The CDC recommends that preteen boys and girls age 11 or 12 should receive all three doses of the vaccine over a six-month time period. Giving the vaccine at this age is important so that children develop an immune response to the virus before they become sexually active later on. Giving the vaccine at this age may also be more comfortable for some parents as they can protect their child from developing some cancers later in life, without the need to talk about the purpose of the vaccine administration; thus, eliminating the parental misperception that the vaccine will encourage early sexual activity. We support the CDC guidelines for cancer prevention and we have therefore adopted its current recommendations.

Sincerely,

[Providers Name]

Program Name

Mailing Address

City, State, Zip

**Table 2. 2014–2015 Vaccination Rates Compared**

	BASELINE AUDIT JULY 2014	FOLLOW UP AUDIT JULY 2015
8th Graders	6%	16%
12th Graders	20%	23%

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After reviewing audit results, we collaborated with school leaders to identify educational strategies for success. A common perception shared by many was the fear that a conversation about the HPV vaccine would promote early sexual behavior, an alarming topic for most parents of preteen children. As a result, more often than not, the conversation stopped there and the cancer-prevention benefit was left unexplored.

We now know that HPV vaccination is a powerful tool in our cancer prevention toolkit and this message resonates with parents. Our workgroup identified a key strategic approach to keep the focus on cancer prevention throughout all community education efforts.

**Engaging Local Providers**

Primary care providers (PCPs) are uniquely influential in promoting vaccination of adolescents. The Outer Banks Hospital Cancer Committee recognized the importance of a strong, consistent vaccination recommendation from patients’ trusted PCPs, and so developed strategies centered around:

- Raising PCP awareness of the cancer prevention benefit of the HPV vaccine.
- Communicating cancer prevention benefits to patients and parents at every opportunity.
- Encouraging PCPs to recommend HPV vaccination in the same manner as they recommend other adolescent vaccines.

Our Cancer Committee chair developed a “Dear Colleague” letter (left), which was distributed to all local primary care providers. The letter summarized the alarmingly low vaccination rates found in our recent audit and emphasized the cancer prevention benefits of HPV vaccination. This strategy not only highlighted the key aspects of our HPV vaccination initiative but also served to promote collaboration between the hospital Cancer Committee, primary care providers, and local school officials to improve the health of our community.

To keep this concept first and foremost in the minds of our local providers, we followed up with a cover story on our HPV cancer prevention initiative in our provider newsletter, MEDNET (page 59).

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Outer Banks Hospital's community newsletter.



One of the Outer Banks Hospital Health Clips housed on the hospital's YouTube Channel and posted on the County Schools' website.

**Table 3. HPV Vaccination Rates, 2014–2016 \***

**RISING 9TH GRADERS**

YEAR	SCHOOL	TOTAL	BOYS	GIRLS	NCIR	HPV: 0	%POP
July 2016	MMS	132	64	68	132	82	62%
July 2015		131	65	66	130	83	63%
July 2014		131			129	99	76%
July 2016	CHSS	37	17	20	37	20	54%
July 2015		46	26	20	45	29	63%
July 2014		46			45	35	76%
July 2016	FFMS	209	114	95	202	134	64%
July 2015		191	85	106	190	115	60%
July 2014		191			190	145	76%

**GRADUATES**

YEAR	SCHOOL	TOTAL	BOYS	GIRLS	NCIR	HPV: 0	%POP
July 2016	MMS	104	58	46	103	53	51%
July 2015		111	50	61	105	62	56%
July 2014		111			100	68	61%
July 2016	CHSS	29	18	11	29	17	59%
July 2015		37	17	20	45	21	57%
July 2014		37			45	22	59%
July 2016	FFMS	163	82	81	153	91	56%
July 2015		185	95	90	175	103	56%
July 2014		185			166	107	58%

\* Data Collection and Presentation by M. Coley, R. Winnett, & J. Wyant: DCDHHS School Nurses

	HPV: 1	%POP	HPV: 2	%POP	HPV: 3	%POP	PAST DUE	TOTAL % VACCINE EXPOSURE
	12	9%	10	8%	28	21%	18	38%
	14	11%	12	9%	20	15%	17	35%
	11	8%	13	10%	6	5%	14	23%
Percent Increase in Total Students Exposed to HPV Vaccination—MMS								15%
	11	30%	2	5%	4	11%	12	46%
	2	4%	7	15%	7	15%	8	35%
	6	13%	2	4%	2	4%	4	22%
Percent Increase in Total Students Exposed to HPV Vaccination—CHSS								24%
	19	9%	30	9%	30	14%	31	33%
	21	11%	34	10%	34	18%	26	39%
	13	7%	20	6%	20	10%	unknown	24%
Percent Increase in Total Students Exposed to HPV Vaccination—FFMS								9%

	HPV: 1	%POP	HPV: 2	%POP	HPV: 3	%POP	PAST DUE	TOTAL % VACCINE EXPOSURE
	7	7%	8	8%	35	34%	12	48%
	13	12%	7	6%	23	21%	12	39%
	8	7%	2	12%	22	20%	9	29%
Percent Increase in Total Students Exposed to HPV Vaccination—MMS								15%
	3	10%	1	3%	8	28%	12	41%
	4	11%	3	8%	9	24%	4	43%
	5	14%	0	0%	8	22%	1	35%
Percent Increase in Total Students Exposed to HPV Vaccination—CHSS								6%
	11	7%	12	7%	39	24%	19	38%
	11	6%	14	8%	47	25%	14	39%
	12	6%	16	9%	32	17%	24	32%
Percent Increase in Total Students Exposed to HPV Vaccination—FFMS								6%



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### **Increasing Awareness & Gaining Parental Acceptance**

While promotional efforts were underway with our local PCPs, Outer Banks Hospital ran a parallel awareness campaign to educate parents. The cover story in our hospital's community newsletter highlighted the cancer prevention benefits of the HPV vaccination—with a call to action for parents to add the HPV vaccine to their back-to-school checklist (see page 61). This community newsletter is distributed bi-monthly as an insert to our local newspapers, with a circulation of approximately 15,000. The newsletter is also distributed to local provider offices.


In conjunction with the community newsletter, Outer Banks Hospital also produced a brief health clip video on HPV vaccination. The video is promoted through the newsletter and housed on the hospital's YouTube channel. The HPV video was also posted on the Dare County Schools' website.

The hospital's Director of Community Outreach and Dare County's Lead School Nurse attended parent meetings of rising 6th grade students at local schools. A flyer (available in both English and Spanish) was inserted into report cards informing parents that the HPV vaccine would be discussed at these parent meetings. The flyer was also used to help create awareness of the importance of the vaccine. The parent meetings were well attended, and the focus of the conversation remained cancer prevention—not premature sexual activity.

Last, but not least, the Dare County school system added an HPV vaccine information sheet (Figure 1, right) to the annual student code of conduct booklet distributed annually to all parents and students.

### **Results & Future Directions**

One year after our HPV Outreach Education Initiative, vaccination rates among 8th grade students increased from 6 percent to 16 percent (Table 2, page 61). Follow-up data after the second year of the HPV vaccination campaign shows continued improvements (Table 3, page 62).

HPV vaccination has the potential to prevent tens of thousands of individuals from certain cancers. It is critical that all stakeholders make HPV vaccination a priority so that prevention of the vast majority of cervical, vaginal, vulvar, anal, penile, and oropharyngeal cancers becomes a reality. Now that organizations such as the American Cancer Society (ACS) have endorsed the U.S. government's HPV vaccination recommendations, healthcare providers can access an array of practical resources readily available to promote the cancer prevention benefits of the HPV vaccine. 

*Robin Hearne, RN, MS, is director of Cancer Services and Amy Montgomery, MAEd, is director of Community Outreach at The Outer Banks Hospital, Nags Head, N.C.*

### **Resources**

1. CDC. Human Papillomavirus (HOV). [cdc.gov/hpv/index.html](http://cdc.gov/hpv/index.html). CDC. November 2015 HPV Vaccination Information for Clinicians. [cdc.gov/hpv/hcp/need-to-know.pdf](http://cdc.gov/hpv/hcp/need-to-know.pdf).
2. ACS. Get Vaccinated for a Healthy Back-to-School Start. [cancer.org/cancer/news/features/a-shot-at-a-healthy-school-year](http://cancer.org/cancer/news/features/a-shot-at-a-healthy-school-year).
3. Accelerating HPV Vaccine Uptake: Urgency for Action to Prevent Cancer; A Report to the President of the United States from The President's Cancer Panel; February 2014. [deainfo.nci.nih.gov/advisory/pcp/annualReports/HPV](http://deainfo.nci.nih.gov/advisory/pcp/annualReports/HPV).
4. National Foundation for Infectious Diseases. HPV Vaccination as a Public Health Priority: A Call to Action; August 2014. [nfid.org/publications/cta/hpv-call-to-action.pdf](http://nfid.org/publications/cta/hpv-call-to-action.pdf).

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