

PREVENTING CANCERS CAUSED BY HUMAN PAPILLOMAVIRUS

Human papillomaviruses (HPVs) are a family of DNA viruses that infect cutaneous or mucosal epithelial cells. About 40 types of HPV can potentially be transmitted through sexual contact, making HPV the most common sexually transmitted infection in both males and females. Over 14 million new cases are reported each year in the United States.¹ Most HPV infections are asymptomatic and are cleared by the host immune system within 1 to 2 years; however, some HPV infections persist and can lead to the development of certain types of cancers and precancerous lesions.² The factors affecting HPV persistence are poorly understood.

HPVs are divided into two classes: high-risk HPVs, which are oncogenic, and low-risk HPVs. The high-risk HPV subtypes, including HPV-16 and HPV-18, among others, are associated with a very high percentage of cervical, anal, genital, and oropharyngeal cancers (Table 1). Low-risk HPVs, such as HPV-6 and HPV-11, are associated with genital warts, laryngeal papillomas, and recurrent respiratory papillomatosis.³

Widespread use of the HPV vaccine has the potential to reduce the incidence of HPV-induced cancers by at least two-thirds.⁴ Currently the FDA has approved the use of 3 HPV vaccines (Table 2), all of which require 3 doses spaced over 6 months to provide full protection. Unfortunately, HPV vaccination rates among

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Table 1. Cancer types and percentage of cases caused by HPV infection.⁶

Cancer Type	Cases Caused by HPV Infection
Anal	91%
Cervical	91%
Vaginal	75%
Oropharyngeal	72%
Vulvar	69%
Penile	63%

Table 2. Approved HPV vaccines for use in adolescents and young adults.⁷

Product Name	HPV Types Targeted	Approved Patient Populations
Ceravix®	16, 18	Females 9-25 years of age
Gardasil®	6, 11, 16, 18	Males and females 9-26 years of age
Gardasil-9®	6, 11, 16, 18, 31, 33, 45, 52, 58	Females 9-26 years of age Males 9-15 years of age

UNIVERSITY OF MINNESOTA HEALTH SERVICE COMMITMENT

- **Access to our expertise** - we are available to consult about your patients, with or without a referral
- **Appointment access** - our goal, whenever possible, is to see your patient within 5 days if requested
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- **Referrals** - through our Physician Referral Service, you can make a referral, request a consult or admit a patient at 888-318-3627 (Adults) or 888-543-7866 (Pediatrics)

If you have feedback about University of Minnesota Health, please contact Levi Downs, MD, chief medical officer, at downs008@umn.edu

If you have questions about University of Minnesota Health Cancer Care, contact Edward Greeno, MD, executive medical director, oncology service line, at green048@umn.edu



CANCER REFERRALS

To schedule a consultation, referral or appointment: 855-486-7226

CANCER CARE LOCATIONS

Burnsville*
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* gynecologic oncologists available at these locations.

Clinic contact information:
mhealth.org/CancerCareLocations

Contact Minnesota HPV:
mnhpv.org

PREVENTING CANCERS

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U.S. adolescents are not on track to meet the Healthy People 2020 goal of 80% coverage. In 2014, only 40% of adolescent girls and 22% of adolescent boys completed a 3-dose HPV vaccine series.⁵

M Health physician researchers affiliated with Masonic Cancer Center, University of Minnesota have committed efforts toward encouraging use of the vaccine and preventing HPV-induced cancers. To realize these goals, they have joined forces with the university initiative Minnesota HPV. The initiative has brought together Masonic Cancer Center basic science researchers and clinicians, as well as University of Minnesota students and faculty from the medical school and the schools of nursing, dentistry, public health and the College of Pharmacy to meet one objective: increase HPV vaccination rates across Minnesota. (See p. 3 for a discussion of a program within the initiative.) M Health physicians have taken the lead in the initiative, which emphasizes multidisciplinary collaboration across health systems in hopes of ultimately reaching every Minnesotan. Minnesota HPV partners with Minnesota Department of Health and the American Cancer Society in this cancer-prevention initiative.

References

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We offer multidisciplinary cancer care at locations throughout the greater Twin Cities metro area. We value our relationship with you, your patients, and your office staff. We work hard to keep you informed of your patients' care by providing detailed reports, from diagnosis to treatment and follow-up. Our goal is to provide you with prompt service and communication for the patients that you refer to us.

To schedule a cancer consultation, referral or appointment: 855-486-7226

To schedule a physician meeting or visit: 612-867-3411

Collaborative Care

Many of our patients do not live within the Twin Cities metropolitan area. To minimize travel difficulties and lost time from school or work for our patients, we are committed to partnering with the patient's referring provider and other local providers. Some patients can be initially discussed over the phone in collaboration with the referring provider. We aim to expedite the process so that, in one trip to the Twin Cities, patients can be assessed and also complete surgery, if required. In many cases, care after discharge can also be provided locally.

Physician Outreach Program

The Cancer Care Outreach Program is designed to provide education and facilitate knowledge sharing between our team and the medical community.

To schedule a physician meeting or to visit our facility, contact Melinda Tuma Arvold, System Manager, Outreach Services: 612-867-3411; marvold1@fairview.org.



Masonic Cancer Center
UNIVERSITY OF MINNESOTA

Comprehensive Cancer Center designated by the National Cancer Institute

The Masonic Cancer Center is one of only 45 NCI-designated comprehensive cancer centers in the United States, a designation awarded only to institutions that make ongoing, significant advances in cancer research, treatment, and education.

To view all current, active clinical trials available through University of Minnesota Health Cancer Care, please visit z.umn.edu/cancertrials.

STUDY UNDERTAKES SYSTEMS-BASED APPROACH TO INCREASING HPV VACCINATION RATES

Contributed by Linda F. Carson, MD, FACOG

Research suggests that improving communication about HPV vaccination between primary care providers and parents of patients is the most important strategy for increasing vaccination rates in the United States.^{1,2} When providers positively, or strongly, recommend the vaccine, patients are four to five times more likely to pursue vaccination than they are when a weak recommendation is given.^{3,4} Unfortunately, primary care providers often give a weak HPV vaccine recommendation^{5,6} or no recommendation at all.⁷ When over 3,000 primary care providers in the United States were asked about the barriers to communicating about HPV vaccination with parents, 47% of primary care providers reported that discussing parental concerns took more time than was available at the appointment. Over half (55%) of providers agreed with the statement, “There was nothing I could say to change the minds of parents who wish to delay or refuse vaccination.”⁸

To address these concerns, Minnesota HPV has launched an ongoing research study to identify a systems-based approach to reversing the low HPV vaccination rates in Minnesota. The initiative seeks to engage healthcare providers where they are—in clinics, schools, pharmacies and other places in the community—and has created a toolkit designed to equip providers with information needed to help promote the HPV vaccine. To bring the toolkit to healthcare providers across the state, Minnesota HPV has teamed up with University of Minnesota Medical School’s Rural Physician Associate Program (RPAP). RPAP enables third-year medical students to live and train for 9 months in non-metropolitan communities, working under the supervision of preceptors who are family physicians. Partnering with Minnesota HPV, RPAP students are being trained to work with rural providers to identify barriers to HPV vaccination uptake (including difficulties in communicating with parents) and to help implement evidence-based solutions. Data on vaccination rates gathered before and after implementation of the program will be tracked and reported. Information on vaccination rates in communities without Minnesota HPV-partnered RPAP students will be tracked as comparative data.

TO LEARN ABOUT MINNESOTA HPV AND CONTACT ITS LEADERSHIP: MNHPV.ORG

MINNESOTA HPV PARTNERSHIPS

Regional and national:

- American Cancer Society
- American College of Pediatricians
- Centers for Disease Control and Prevention
- Indian Health Service
- Minnesota Department of Health
- National Institutes of Health

University of Minnesota:

- iHealth
- College of Pharmacy
- Masonic Cancer Center
- Medical School
- Metropolitan Physician Associate Program
- Rural Physician Associate Program
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- School of Nursing
- School of Public Health

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CONSULT

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PROGRAM UPDATES

Masonic Cancer Center group to host HPV prevention summit



Linda Carson, MD,
director of MN HPV and
summit coordinator

The Minnesota HPV Vaccination Summit has been announced for Mon., April 25, 2016. Held on the University of Minnesota campus, the day-long meeting will feature a multidisciplinary and interpro-

fessional panel of state and national HPV vaccination and cancer-prevention experts. Family medicine and primary care practitioners, pediatricians, OB/GYN providers, dentists, pharmacists, nurse practitioners, and others from

across Minnesota who are able to endorse the vaccine are invited to participate.

The summit's format will be similar to that of the national HPV vaccination summit held in Houston, Texas, Nov. 2015. The Houston summit brought together experts from the National Cancer Institute (NCI), the American Cancer Society, the Centers for Disease Control and Prevention, and more than 35 of the nation's NCI-designated cancer centers. Summit participants engaged with each other to provide a snapshot of actions underway in support HPV vaccination uptake and to share results, identify new opportunities for collectively engaging in cancer-control activities related to HPV vaccination, and to identify research opportunities related to HPV vaccination.

The Minnesota summit brings together cancer experts and healthcare leaders with the goal of maximizing the success of research into the prevention and treatment of gynecologic cancers and other cancers caused by HPV infection.

The Minnesota HPV Vaccination Summit is sponsored by the Gynecologic Oncology Translational Working Group, part of the Masonic Cancer Center, University of Minnesota.

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