

Human papillomavirus (HPV) related oropharyngeal cancer is now the most common HPV related malignancy in the United States. There is a large knowledge paucity amongst the general public regarding head and neck cancer, the association with HPV and its preventability with vaccination. It is also suggested that there is a higher prevalence of head and neck cancer amongst socioeconomically vulnerable individuals partially due to harmful habits such as smoking and drinking which are more common among low-income populations.

Our targeted population is Missouri State Fair attendees. The University of Missouri Department of Otolaryngology – Head and Neck Surgery has hosted free head and neck cancer screenings along with a short educational intervention at the Missouri State Fair the past two years with the help of Ellis Fischel Cancer Center and departmental support. In 2022, our first year, we screened 155 volunteers and 102 completed a survey which included sociodemographic factors as well as subjective knowledge of head and neck cancer and HPV both before and after a short educational intervention. History of tobacco use, or current tobacco use was present in 34.3% of respondents. Previous or current alcohol use which was defined by 4 or more drinks per day was present in 5.9% of respondents. On a Likert scale from 1 to 5 with 1 being not informed at all and 5 being extremely informed, pre-educational subjective knowledge of head and neck cancer and HPV was 2.35 and 2.22 respectively. After our short educational intervention these increased to 4.82 and 4.78 ( $p < 0.05$ ). This information has allowed us to effectively identify a targeted population with risk factors for head and neck cancer who feel they subjectively have little knowledge regarding head and neck cancer and HPV. We also have provided evidence that our short educational intervention significantly increases subjective knowledge regarding head and neck cancer and HPV. We replicated this last year at the Missouri State Fair in 2023 with very similar results.

The past few years Ellis Fischel Cancer Center and the Department of Otolaryngology – Head and Neck Surgery have been gracious enough to financially support our screening events. Ellis Fischel Cancer Center has also provided decoration for our booth. Our budget has previously included the cost of our booth at the state fair, admission ticket and one meal voucher per volunteer (which includes 4 to 6 residents, 4 to 6 medical students, and 2 to 4 attendings). We also provide our volunteers with an MU health care tee shirt. Additional costs include the materials needed to screen individuals such as gloves, tongue depressors, and gauze as well as material provided to fair attendees including educational pamphlets, cooling towels and pens. The total estimated cost is roughly \$4,000.

With the continued support from Ellis Fischel Cancer Center and the Department of Otolaryngology, we intend to continue educating and screening the general population of Missouri at next year's Missouri State Fair. If we are fortunate enough to receive an award from the American Head & Neck Society, we would have enough funding to be able to also include medical students and residents from other specialties who wish to learn more about screening for head and neck cancer and its association with HPV. In a voluntary survey found in the literature, medical students and US residents in pediatrics, obstetrics and gynecology, family medicine, and otolaryngology participants were asked about HPV cancer knowledge and patient counseling practices. Only 56.1% of residents in non-ENT specialties correctly identified HN cancer as a potential HPV manifestation, this rate did not significantly increase throughout residency training. Only 39.7% of non-ENT residents discussed HN cancer with their patients when counseling on the vaccine. Poor provider knowledge of HPV and lack of effective patient

counseling regarding vaccine recommendations are detrimental to the US population. We would like to include our colleagues to help collectively offer the best preventative care we can for populations at risk of HPV associated head and neck cancer.

According to our own survey from our first screening event at the Missouri State Fair, only 15% of participants reported that a health care professional had ever mentioned an association between HPV and head and neck cancer previously. This suggests that more needs to be done to educate and counsel patients about head and neck cancer and HPV. With this knowledge of our program's effectiveness, widespread development of similar programs via primary care colleagues and at other highly attended events can help to shift to knowledge gap and intent to vaccinate. Every effort should be made to educate the public and increase vaccination rates to decrease the incidence of a preventable disease.