

Expanding Head and Neck Cancer Screening Access in Rural Central Pennsylvania Through the LION Mobile Clinic and Community Partners

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Key Personnel: Head and Neck Cancer Nurse Coordinators, Division of Head and Neck Surgery Faculty

Project overview

We are requesting support for a community-based head and neck cancer screening event through the student-run LION Mobile Clinic during Head and Neck Cancer Awareness Month 2026, bringing cancer prevention education and screening to rural central Pennsylvania communities facing severe barriers to early detection. The project is developed with LION Mobile Clinic leadership, a YMCA/food bank food distribution event for veterans, and Penn State Clinical and Translational Science Institute's Implementation Science and Community Engagement Cores.

1. Target population

Our project targets rural residents of central Pennsylvania who face documented disparities in head and neck cancer outcomes and access to subspecialty care. A recent workforce analysis found that 19 of 34 nonmetropolitan Pennsylvania counties have zero practicing otolaryngologists, with rural areas averaging just 1.0 otolaryngologist per 100,000 residents compared to 2.4 in metropolitan areas. Consequently, rural residence has been independently associated with advanced tumor stage at presentation and worse survival outcomes.

These communities also face higher tobacco use rates, lower HPV vaccination uptake, and limited health literacy. With HPV-associated oropharyngeal cancers now the fastest-growing cause of head and neck cancer (predominantly affecting non-smoking adults ages 35-55), screening must extend beyond traditional tobacco users. While population-wide screening is not recommended and tertiary care-based programs show limited effectiveness, mobile screening in rural, high-risk populations addresses a critical gap where current approaches have failed. This grant supports the first event targeting high-risk Veterans with access barriers, financial constraints, and food insecurity. The last food distribution event served 275 veterans.

The LION Mobile Clinic has served over 3,300 community members since 2022. This event will target Huntingdon, Clinton, Union, Mifflin, Clearfield, and Centre counties with limited otolaryngology access. Spanish-language materials will reach Hispanic/Latino community members. This project aligns with Pennsylvania's Rural Transformation Plan, Penn State Health's health equity mission, and Penn State's CAHE-RUC INSPIRE PA program bringing specialists into communities.

2. Methodology

Screening Protocol: Participants will complete a brief health history questionnaire assessing demographic information, tobacco and alcohol use, HPV vaccination status, symptoms, and an anonymous survey component evaluating social determinants of health (food insecurity, insurance status), barriers to healthcare access, and participant perception of community cancer screening needs to complement our existing state-wide needs and resource assessments. This will be followed by a comprehensive oral cavity, head, and neck examination performed by medical students, otolaryngology residents, fellows, and advanced practice providers overseen by attending otolaryngologists. Participants with suspicious findings will receive same-day counseling and facilitated referral to Penn State Health and community clinic partners, assisted by head and neck cancer nurse coordinators.

Health Education Component: Each screening event will include a patient education table staffed by trained medical student volunteers and otolaryngology practitioners with informational materials addressing modifiable head and neck cancer risk factors: tobacco and alcohol cessation resources, HPV vaccination information, and oral cancer self-examination instruction. Educational materials will be provided in English and Spanish.

Follow-up and Navigation: Department of Otolaryngology research staff, head and neck cancer nurse coordinators, and volunteer trainees will conduct phone follow-up at 30- and 90-days post-screening for participants with positive findings, addressing transportation, scheduling, and financial barriers.

Community Engagement: Pre-event outreach will leverage LION Mobile Clinic channels including community bulletin boards, faith organizations, senior centers, YMCA, food banks, and agricultural extension networks. Events

will employ the "tailgate medicine" model, creating a welcoming atmosphere that reduces barriers. CAHE-RUC partners will assist in planning and screening.

3. Expected outcome

We aim to do initial risk assessments with >100 participants with more in-depth screening with 30-50 participants at this initial rural screening site, April 13th, 2026 in conjunction with Head and Neck Cancer Awareness Month and the Penn State Health "Let's Get Ahead Campaign." Based on published head and neck cancer screening clinic data, we anticipate identifying suspicious findings requiring specialist referral at rates of 5-12%, with same-day counseling and no-cost navigation support to mitigate anxiety and financial burden associated with diagnostic evaluation. Through our structured navigation protocol, we expect to achieve specialist referral completion rates exceeding 60%, surpassing the approximately 50% follow-up rates reported in hospital-based screening programs. Every patient seen also will receive education about head and neck cancer and HPV vaccination, helping to create additional community value and trust for our initiative despite low specialist referral rates.

Primary outcomes include: (1) number of individuals screened, (2) proportion with abnormal findings, (3) proportion referred for specialist evaluation, (4) referral completion rate at 30 and 90 days, (5) barriers identified through initial surveys and phone follow-up with non-completers and (6) cost efficacy of rural screening. These metrics will provide critical data on the efficacy of rural mobile head and neck cancer screening and for quality improvement for future screening endeavors, an area where evidence is currently limited despite known limitations of tertiary care-based screening approaches.

4. Community health impact

This project provides direct subspecialty screening access enabling earlier detection when five-year survival rates exceed 80%, creating a replicable model that can be scaled across LION Mobile Clinic and CAHE-RUC INSPIRE PA programs to Federally Qualified Health Centers, community partners, and rural Penn State Health sites.

Through Community Engaged Research and Implementation Science frameworks, in collaboration with these research cores at Penn State School of Medicine, this project will generate pilot data on screening feasibility, participant characteristics, and referral barriers supporting applications to NCI's Community Oncology Research Program, NCI Center to Reduce Cancer Health Disparities, American Cancer Society Institutional Research Grants and Patient-Centered Outcomes Research Institute (PCORI). These larger external grants will enable expansion and rigorous evaluation of interventions to improve rural head and neck cancer outcomes and provide a pathway for sustainability.

Finally, we anticipate this project progressing to the publication of screening outcomes and barriers and facilitators to mobile head and neck cancer screening. This publication will help to drive efforts to expand the head and neck cancer screening paradigm to broader rural communities.

5. Cost

The AHNS award of \$1,000 will support LION Mobile Clinic rental and staffing for one screening event (\$500), clinical examination supplies (\$200), and promotional supplies (\$300).

6. Other available funding

Educational materials will be created and printed using funding through the Department of Otolaryngology – Head and Neck Surgery at Penn State Health. Development of implementation science framework and metrics within RedCap as a data repository and research assistants will be funded using grants from the Ear, Nose, and Throat Foundation of Central PA.

References:

1. Sciscent BY, Chan K, Eberly HW, Goldenberg D, Goyal N. An Analysis of the Otolaryngology Workforce in Pennsylvania. *OTO Open*. 2024 Oct 9;8(4):e70026.
2. Clarke JA, Despotis AM, Ramirez RJ, Zevallos JP, Mazul AL. Head and Neck Cancer Survival Disparities by Race and Rural-Urban Context. *Cancer Epidemiol Biomarkers Prev*. 2020 Oct;29(10):1955-1961.
3. Shuman AG, McKiernan JT, Thomas D, et al. Outcomes of a head and neck cancer screening clinic. *Oral Oncol*. 2013 Dec;49(12):1136-40.
4. Choi KY, Chan K, VanDyke E, Van Scoy LJ. Exploratory Qualitative Analysis of Needs Assessment and Obstacles Faced by Head and Neck Cancer Patients in Central Pennsylvania. *Laryngoscope Investig Otolaryngol*. 2025 Jul 16;10(4):e70204.

Otolaryngology (College of Medicine) / The Pennsylvania State University
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 American Head and Neck Society
 Project Dates: 04/01/2026 - 05/31/2026

	04/01/2026 - 05/31/2026	Total
Direct Costs		
Salaries (Category I)		
<u>Lighthall, Jessyka G (Principal Investigator)</u>	0	0
Mentor/Admin PI		
<u>Meci, Andrew Vlad (Principal Investigator)</u>	0	0
Student PI		
<u>Kang, Yena (Co-Investigator)</u>	0	0
Total Salaries	0	0
Total Salaries and Wages	0	0
Fringe		
<u>Category I @ 40.60%</u>	0	0
Total Fringe	0	0
Total Salaries, Wages and Fringe	0	0
Modified Total Direct Costs		
<u>LION Mobile Clinic Rental</u>	500	500
One event, includes staffing		
<u>Clinical Examination Supplies</u>	200	200
<u>Educational and Outreach Supplies</u>	300	300
Program-branded materials for participant engagement		
Total Modified Total Direct Costs	1,000	1,000
Total Direct Costs	1,000	1,000
F&A Costs (TDC basis)		
Total Requested From Sponsor	1,000	1,000
Total Project Costs	1,000	1,000

Awards of \$1,000 will be given to an organization in support of a patient or community-oriented project held in April 2026. Indirect costs and salary are not supported as part of this award.

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