

Circulating Tumor DNA for Surveillance of HPV+ Oropharynx Cancer in Rural and Underserved Settings



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INTRODUCTION

Surveillance is critical after definitive therapy for oropharyngeal squamous cell carcinoma (OPSCC). NCCN guidelines currently recommend a minimum of nine, and up to 24, visits in the first five years of standard surveillance without recurrence.¹ Circulating tumor DNA (ctDNA) is a quantitative biomarker for HPV circulating tumor DNA with a variety of emerging applications in HPV+ OPSCC which may be used as an adjunct tool for surveillance in rural settings.²

HYPOTHESIS

ctDNA will prove as a useful and accurate screening tool for patients from rural or underserved areas.

METHODS

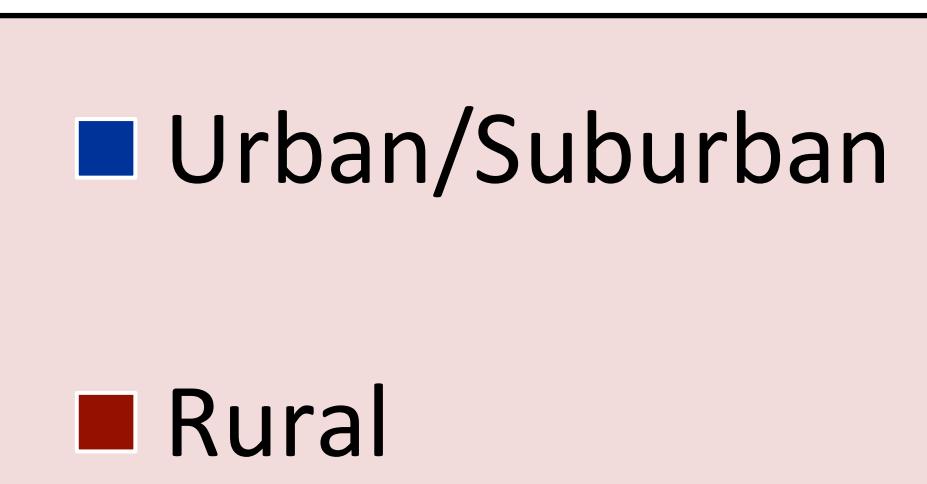
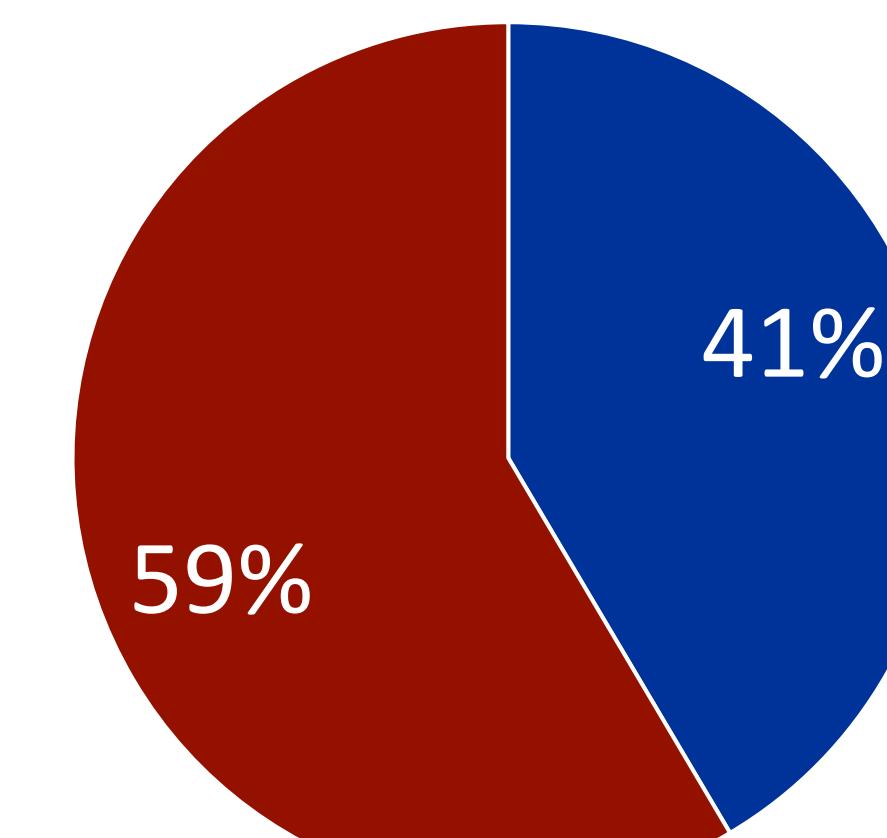
At a single institution between January 2021 – June 2025, ctDNA was measured via NavDx® blood collections for patients with HPV + OPSCC undergoing definitive treatment including surgery +/- adjuvant radiotherapy/chemoradiotherapy or definitive chemoradiation. ctDNA was measured at varying time points before and after treatment.

CONCLUSIONS

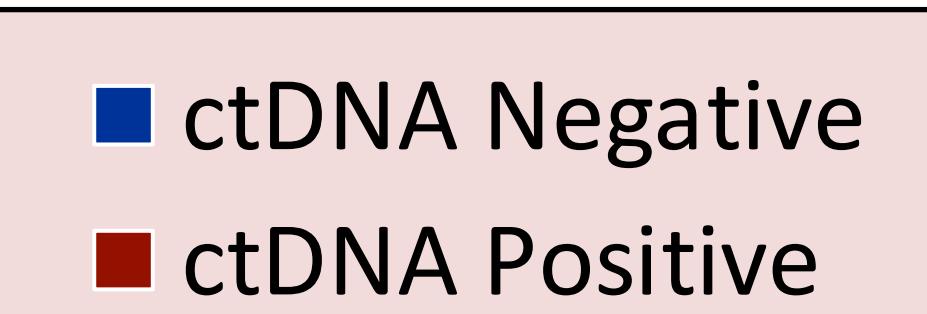
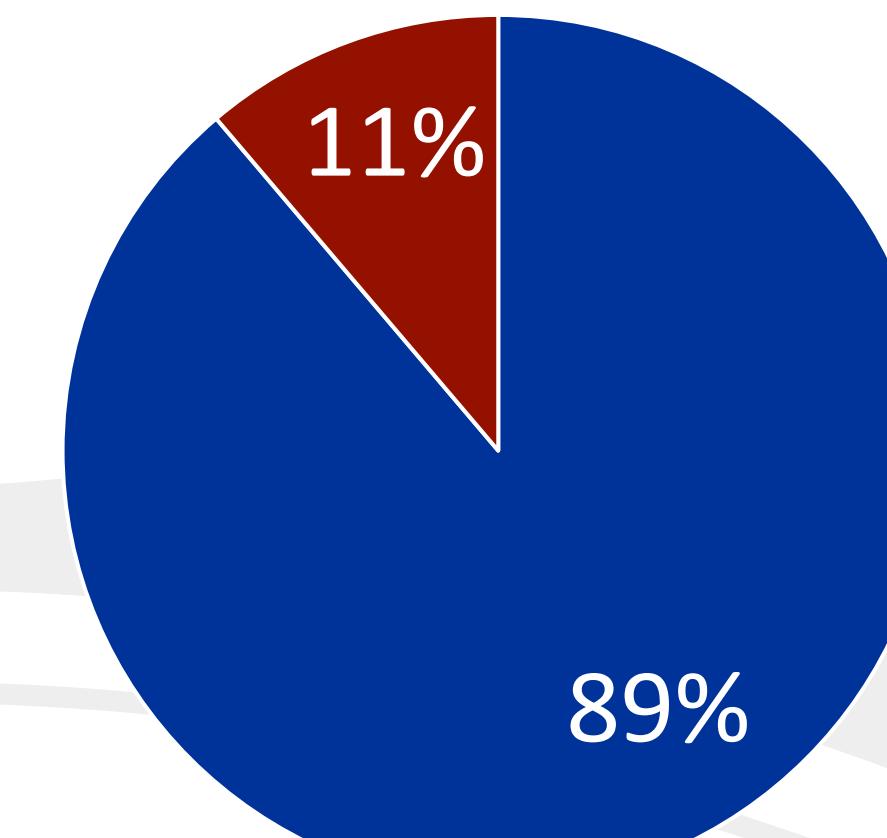
The majority of patients had negative ctDNA levels collected during post-treatment surveillance visits and **no patients in our cohort had proven residual or recurrent disease with concurrent negative ctDNA levels**. While in-person evaluations will always be critical in monitoring for recurrence, incorporating virtual visits with concurrent ctDNA levels in low-risk patients may be a novel surveillance options for patients living in rural settings and improve overall adherence given decreased travel burden.

RESULTS

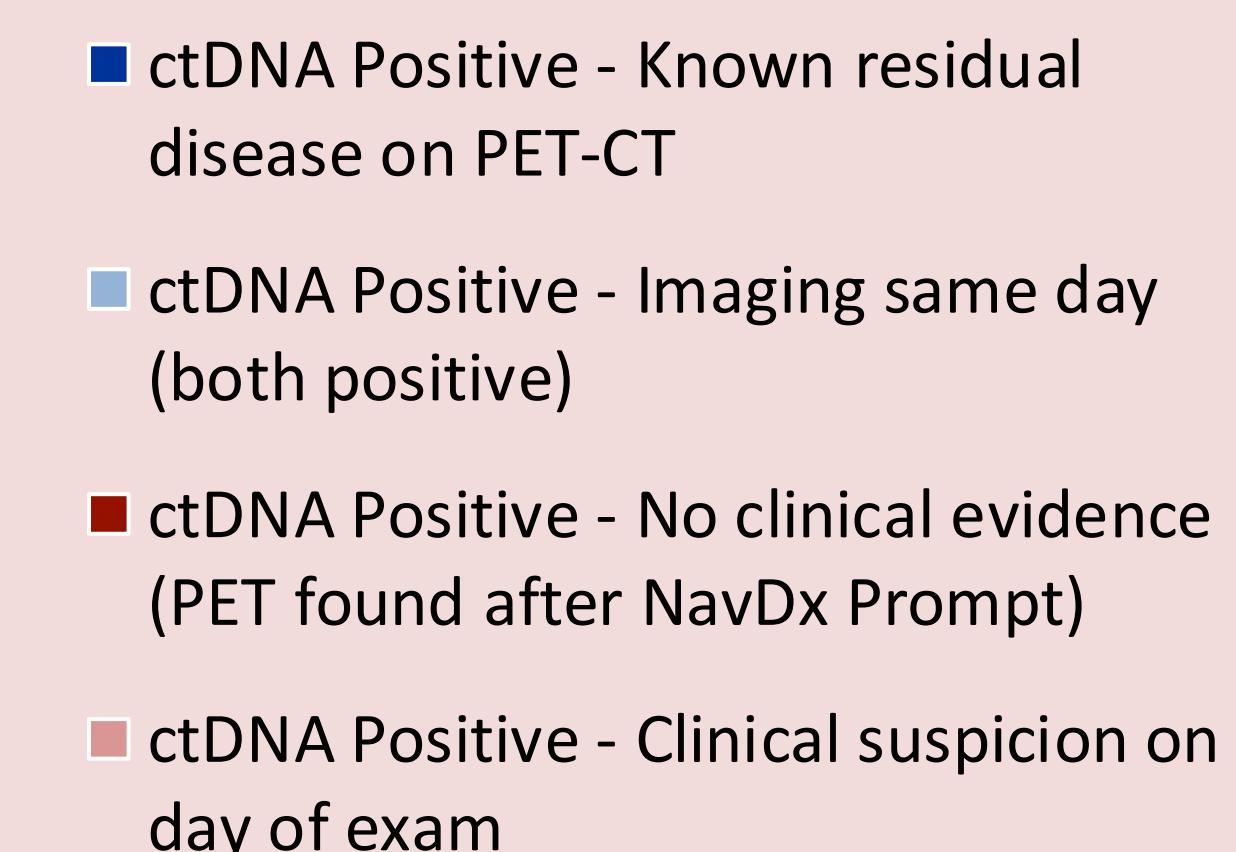
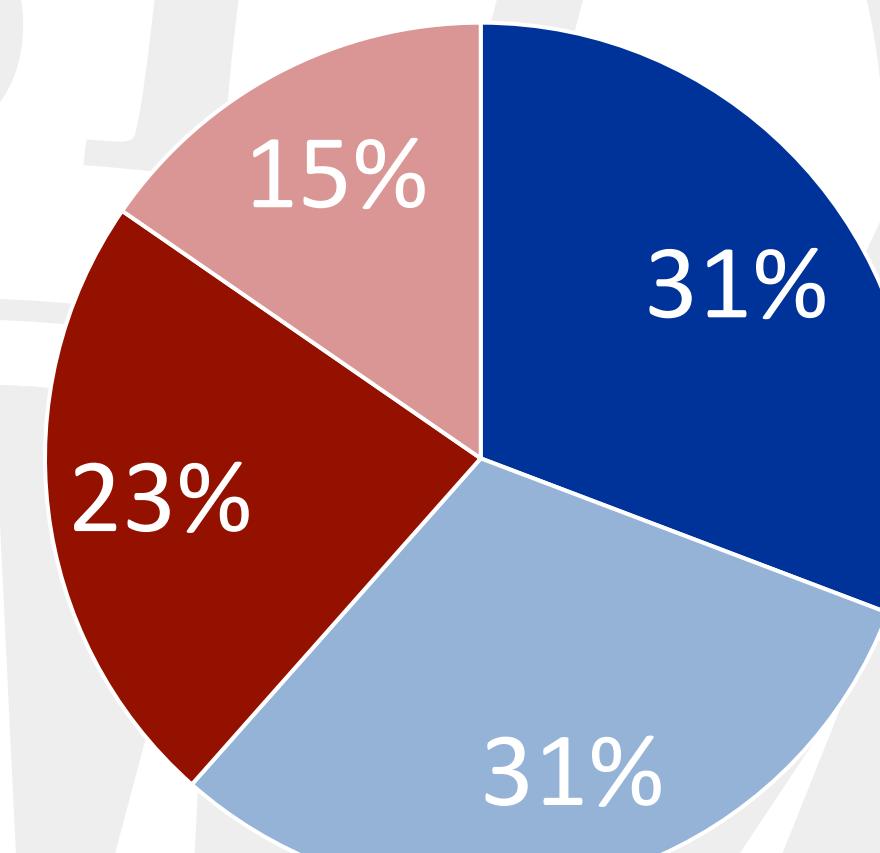
All Patients



All Tested Rural Patients In Surveillance



Positive Rural Patients



- 236 patients were identified with HPV+ OPSCC
- 138/236 patients were living in rural areas, defined by a city population of <50,000
- They traveled a median of 184 miles each way for a median time of 169 minutes
- 116/138 rural patients completed treatment and had at least 1 ctDNA drawn
- **13/116 rural patients had positive ctDNA levels sometime after treatment**
- **4/13 had known residual disease**
- **4/13 had imaging same day as ctDNA where both were positive**
- **3/13 had no clinical evidence of recurrence on exam, but positive ctDNA led to a PET-CT which confirmed recurrent disease**
- **2/13 had clinical suspicion for recurrence on exam and same day ctDNA was positive**

References:

1. Cohen EE, LaMonte SJ, Erb NL, et al. American Cancer Society Head and Neck Cancer Survivorship Care Guideline. *CA Cancer J Clin.* 2016;66(3):203-239. doi:10.3322/caac.21343
2. Das D, Hirayama S, Aye L, et al. Circulating tumor human papillomavirus DNA whole genome sequencing enables human papillomavirus-associated oropharynx cancer early detection. *J Natl Cancer Inst.* Published online September 10, 2025. doi:10.1093/jnci/djaf249