

About this document: This is an installment of the Massachusetts State Oral Health Series (MOHS), developed by the Massachusetts Department of Public Health (DPH). The series focuses on important issues in oral health in the state through topic-specific installments. This issue outlines oral cancer programs and statistics in Massachusetts. Please visit www.mass.gov/orgs/office-of-oral-health for more information.

FOCUS ON ORAL HEALTH

In recent years, oropharyngeal cancer has become an area with growing disparities both nationally and in Massachusetts. This document will outline the issues surrounding this cancer in Massachusetts, including the incidence and mortality data, programs, and next steps. Below are the programs and policies that have made oral health a priority:



United States

Oral Health is a [Healthy People 2030](#)¹ leading health indicator topic



Massachusetts

[Title V](#)² program previously selected Oral Health as a state priority in 2010

THE FACTS

Oropharyngeal cancer, also known as just oral cancer, is a relatively uncommon but potentially **serious** disease. Oropharyngeal cancer affects the oral cavity or the pharynx which is situated immediately behind the mouth and nasal cavity. To improve survival, it is important to focus both on **prevention** and **early detection** of the disease.

Risk Factors³

- Age: 55 and older
- Gender: Male
- Human Papilloma Virus (HPV) infection (oral and tonsil cancer)
- Excess Body Weight
- Ultraviolet Light (lip cancer)
- Diet high in salt-cured fish and meat (nasopharyngeal cancer)
- Genetic Anemia Syndromes (Fanconi Anemia and Dyskeratosis Congenita)
- Tobacco use
- Alcohol use: (daily drink in excess of 6 oz. of distilled liquor, 5 oz. of wine, or 36 oz. of beer)

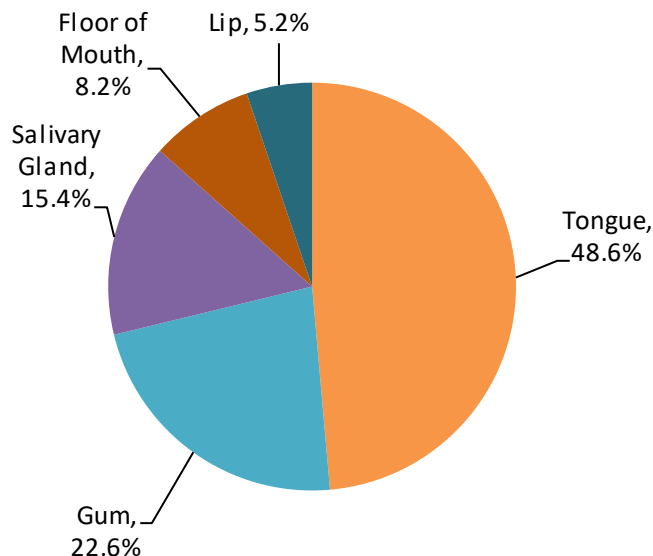
THE DATA Cancer Data Sources

The primary sources of data for oropharyngeal cancer incidence and mortality in Massachusetts are the Massachusetts Cancer Registry (MCR) and the Massachusetts Registry of Vital Records and Statistics (MRVRS), respectively. National data comes from the National Cancer Institute's Surveillance, Epidemiology, and End Results Program (SEER) which includes data from 18 states and regions representative of the US. All rates are per 100,000 and age-adjusted to US Standard 2000 population. Statistical significance in this report is set at $p < .05$.

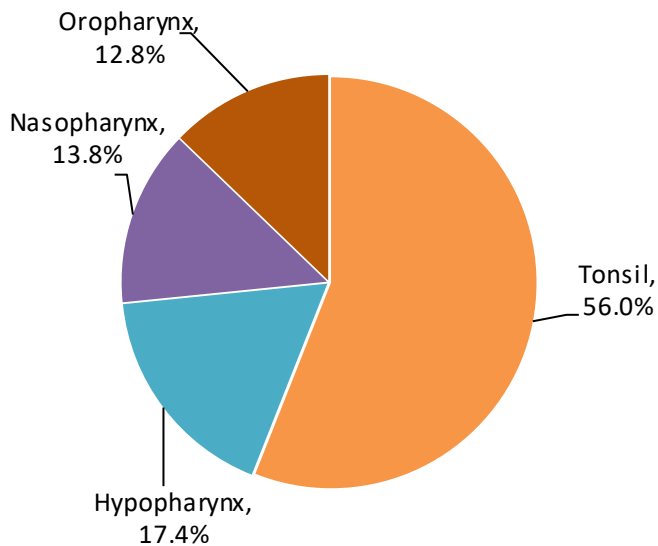
Types of Oropharyngeal Cancer

Between 2013 and 2017, there were 5,048 incident cases of oropharyngeal cancer diagnosed in Massachusetts. The anatomical locations for oropharyngeal cancer are shown in the charts below. The most common site for cancer in the oral cavity is the tongue and the most common site for cancer of the pharynx is the tonsil. There were 257 cases classified as other oropharyngeal cancer without specifying which one.

Cancers of the Oral Cavity, MA, 2013-2017 (N=3195)



Cancers of the Pharynx, MA, 2013-2017 (N=1853)



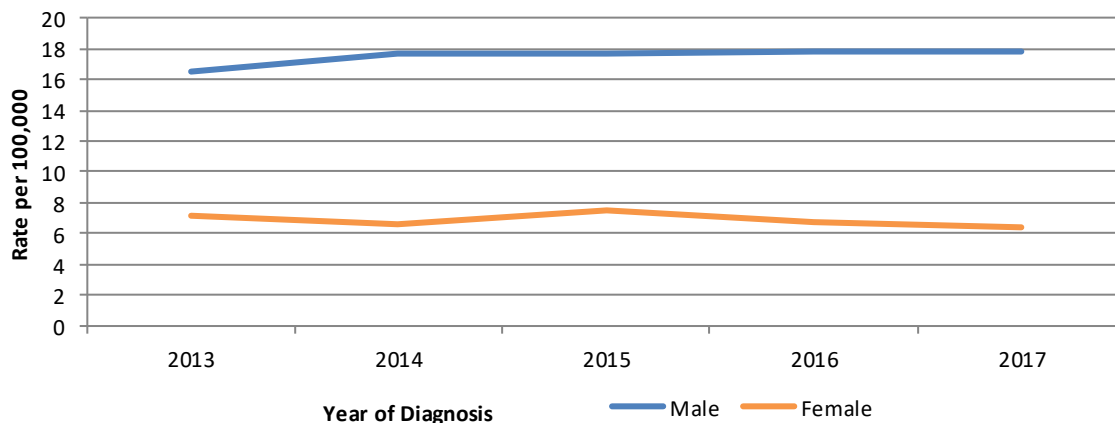
Source: Massachusetts Cancer Registry

Oropharyngeal Cancer Incidence

In Massachusetts:

- The incidence rate for males from 2013 to 2017 (17.8/100,000) was significantly higher than females (7.1 per 100,000).
- Cases among males increased non-significantly from 16.5/100,000 in 2013 to 17.8/100,000 in 2017.
- Cases among females decreased non-significantly from 7.2/100,000 in 2013 to 6.4/100,000 in 2017.

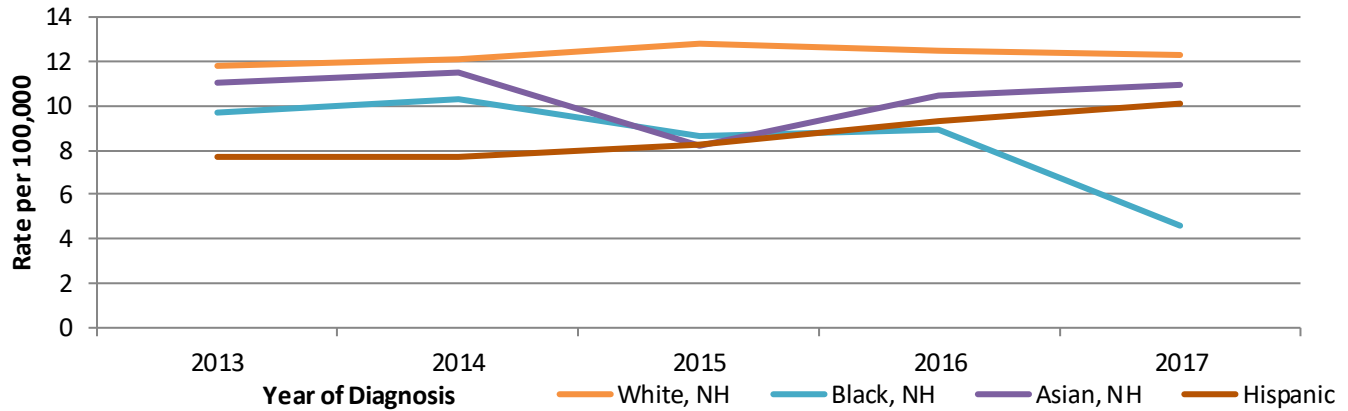
Age-Adjusted Incidence Rate of Oropharyngeal Cancer by Sex, MA, 2013-2017



Data Source: MCR; rates are per 100,000 and age-adjusted to the US standard 2000 population

- From 2013-2017, the age-adjusted incidence rate of oropharyngeal cancer for White, non-Hispanics (NH) was significantly higher than that of Black, NHs, Asian, NHs, and Hispanics.
- From 2013-2017, there was a statistically significant increase in incidence among Hispanics.

Trends in the Age-Adjusted Incidence Rate of Oropharyngeal Cancer in MA by Race/Ethnicity and Diagnosis Year, 2013-2017



Data Source: MCR; rates are per 100,000 and age-adjusted to the US standard 2000 population

Note: 'Non-Hispanic' is denoted as 'NH'; Race and ethnicity data for other groups was suppressed due to small sample size.

Oropharyngeal Cancer Incidence Rates by Race/Ethnicity in Massachusetts 2013-2017*

Race / Ethnicity	n	Incidence Rate (95% CI)
White, NH	4,417	12.3 (11.9-12.7)
Black, NH	187	8.3 (7.1-9.5)
Asian, NH	193	10.4 (8.9-11.8)
Hispanic	203	8.7 (7.5-9.9)

Data Source: MCR; *age adjusted to the US 2000 standard population

- White NHs had significantly higher rates of oropharyngeal cancer when compared to all other

Stage at Diagnosis

- Oropharyngeal cancer stages are classified as **local** (confined to primary site), **regional** (spread to regional lymph nodes/organs), and **distant** (metastasized to distant organs). Those with oropharyngeal cancer diagnosed at the distant stage are more likely to experience poorer outcomes.
- Males were significantly more likely to be diagnosed at the distant stage than females.
- Black NHs and Asian NHs were significantly more likely to be diagnosed at a distant stage of oropharyngeal cancer when compared to other groups (cases reported with an unknown stage (3.2%) were excluded from this analysis.)

Stage at Diagnosis by Sex(%)

	n	Local	Regional	Distant
Male	3468	25.7	57.1	14.7
Female	1580	43.4	40.4	11.4

Data Source: MCR

Stage at Diagnosis by Race / Ethnicity (%)

	n	Local	Regional	Distant
White, NH	4417	31.3	52.7	13.0
Black, NH	187	24.1	52.4	19.2
Asian, NH	193	34.2	42.0	19.2
Hispanic	203	32.0	49.3	16.8

Data Source: MCR

Oropharyngeal Cancer Mortality

In Massachusetts,

- There were 985 deaths due to oropharyngeal cancer from 2013-2017.
- The mortality rate for oropharyngeal cancer among males decreased non-significantly from 3.9 per 100,000 in 2013 to 3.8 per 100,000 in 2017. The mortality rate among females did not change.
- The overall mortality rate for males (3.5 per 100,000) was significantly higher than for females (1.3).
- For the 2013-2017 period, the mortality rates did not differ significantly among the four racial and ethnic groups.

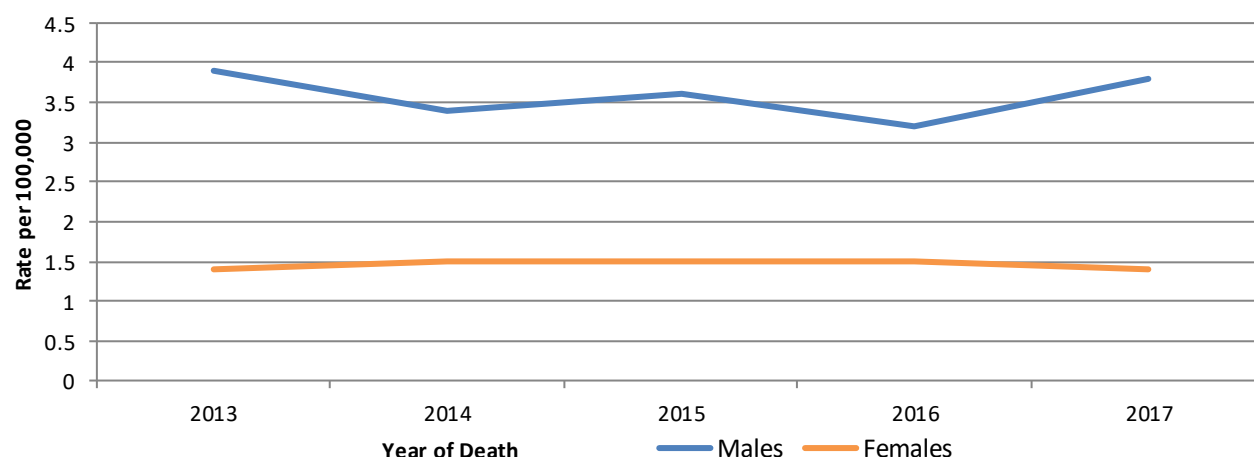
Oropharyngeal Cancer Mortality Rates by Race/Ethnicity in Massachusetts 2013-2017

Race / Ethnicity	n	Mortality Rate (95% CI)
White, NH	856	2.3 (2.1-2.5)
Black, NH	43	2.2 (1.5-2.8)
Asian, NH	40	2.4 (1.7-3.1)
Hispanic	38	1.8 (1.3-2.4)

Data Source: MRVS; rates are per 100,000 and age adjusted to the US standard 2000 population

Race and ethnicity data for other groups was suppressed due to small sample size.

Oropharyngeal Cancer Mortality Rate in MA by Sex, 2013-2017



Data Source: MRVS; rates are per 100,000 and age adjusted to the US 2000 standard population

National Survival

Massachusetts does not have survival statistics, but nationally, there is a disparity in oropharyngeal cancer survival by race and ethnicity with Blacks, both Hispanic and non-Hispanic, having a 50% five-year survival rate for 2010-2016, significantly lower than Whites (68%). Overall survival was 66%.⁵ Research has suggested that this inequity is due to late-stage diagnosis of the disease and attitudes towards dental treatment.⁵ Blacks, both Hispanic and non-Hispanic, have lower rates of dental visits, due to a variety of factors including limited knowledge on the importance of dental care which is further complicated by distrust in healthcare providers generally,⁵ which can lead to late-stage diagnosis. While the incidence of oropharyngeal cancer was significantly elevated for White, NHs, there was no difference in the mortality rate, indicating an inequity between incidence and mortality for oropharyngeal cancer. This inequity in oropharyngeal cancer mortality is unjust and rooted in racism and must be addressed through a racial justice lens when considering future programing.⁶

PROGRAMS IN MA

The Massachusetts Department of Public Health oropharyngeal cancer-related programming has placed a large focus on prevention efforts through the Massachusetts Tobacco Cessation and Prevention Program (MTCP)⁷ along with the Bureau of Substance Abuse Services (BSAS).⁸ In addition, there is a focus on:

- **Improving** medical and dental integration to enhance early detection and treatment for oral cancer
- **Developing** partnerships with medical, dental, and community partners
- **Training** providers in oral health screening and prevention activities
- **Designing** evidence-based school-based, clinic-based, interventions, particularly around tobacco use
- **Monitoring** state trends related to the top oral cancer risk factors, particularly alcohol and tobacco use, and **evaluating** current programs to establish best practices.

The Massachusetts Tobacco Cessation And Prevention Program (MTCP): QuitWorks Program

For the past 20 years, the Massachusetts Tobacco Cessation and Prevention Program has worked to establish a culture of support within the state to help smokers quit, prevent youth from starting to smoke and protecting everyone from the harmful effects of secondhand smoke. The program encompasses several initiatives aimed at improving the health of all those affected using tobacco, youth and adults alike. For providers helping their patients quit tobacco, MTCP designed the **QuitWorks** system.⁹

About QuitWorks: QuitWorks is a free tool available to providers to help link patients who want to quit to the full range of the state's tobacco treatment services. Of patients whose providers used QuitWorks, **86% said their provider increased their level of motivation to quit**, thus reinforcing the significance of the provider-patient relationship in the successful quit smoking process.⁸

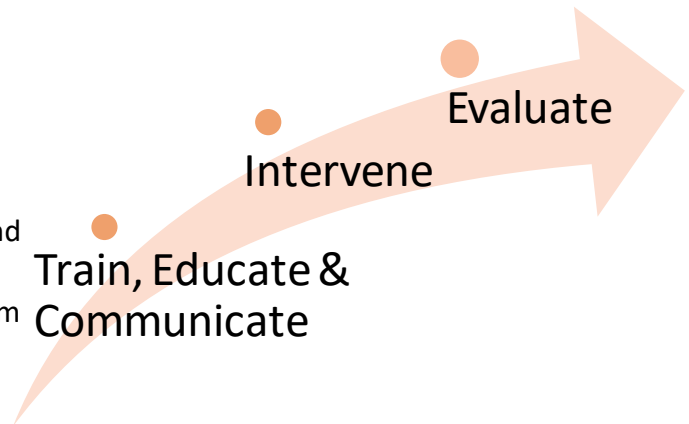
How can providers use QuitWorks?

- **Ask:** All providers should ask their patients about tobacco use. The QuitWorks website listed below provides several resources for providers looking to have conversations with patients about their tobacco use.
- **Assist:** Each time a provider helps assist a patient in quitting tobacco, the **patient's likelihood of quitting increases by 30%.**⁷ It is important that providers commit to assisting their patients in quitting tobacco throughout the process.
- **Refer:** Refer patients who are interested in quitting to QuitWorks. Providers fax a simple referral form or utilize the electronic web referral to connect a patient, both available on the QuitWorks website. Once the referral form is received, a counselor calls the patient, completes an assessment, and helps connect the patient with services. Within 1 month, a patient contact report is sent to the referring provider confirming services received. The provider also receives a 6-month outcome report after a follow-up with the patient. Visit quitworks.makesmokinghistory.org for the referral forms and more details on the process.

NEXT STEPS IN MA

The **goal of the DPH Office of Oral Health** is to improve, promote, and protect the oral health of all Massachusetts residents throughout their lifespan by focusing on prevention, education, and linkage of dental and medical care. The next steps include:

- **Prevention:** Developing strong community and clinical partnerships and collectively seeking opportunities to prevent oral cancer.
- **Education:** Continuing and expanding efforts to educate medical providers, dental providers, community partners, and the public on oral cancer prevention, early detection, and treatment.
- **Linkage:** Continuing efforts to link medical and dental practices to promote comprehensive oral health services and help patients establish a dental home.
- **Surveillance and Evaluation:** Developing a plan for long term surveillance of statewide oral health outcomes, including oral cancer.



Dental and medical providers can aid in this effort by: ensuring that all provider staff receive **training and education** focused on the importance of tobacco and alcohol cessation and prevention, ensuring that staff are **assessing** the risk factors for oropharyngeal cancer, ensuring appropriate staff members are trained on oropharyngeal cancer **screening/referrals**, and **communicating** between medical and dental practices.

Community stakeholders can aid in this effort by: **developing** programs and materials related to early detection and prevention of oropharyngeal cancer, **engaging** with community members and other stakeholders to identify the barriers to accessing oral health care in the community, **connecting** those at high risk for oropharyngeal cancer with resources that might help them prevent disease, and **communicating** with providers to determine

RESOURCES

For information on oral cancer:

<https://www.nidcr.nih.gov/oralhealth/Topics/OralCancer>

For information on oral health trainings available to providers in Massachusetts:

www.smilesforlife.org

For more information on the programs at DPH:

<http://www.mass.gov/eohhs/gov/departments/dph/>

For the Massachusetts resources on tobacco cessation:

Visit makesmokinghistory.org or call 1-800-QUIT-NOW



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3. [American Cancer Society: Risk Factors for Oral Cavity and Oral Cancers](#)
4. American Cancer Society. 'What are the risk factors for nasopharyngeal cancer?' <http://www.cancer.org/cancer/nasopharyngealcancer/detailedguide/nasopharyngeal-cancer-risk-factors>
5. [American Cancer Society, Cancer Facts and Figures, 2021](#)
6. Dodd, V. J., Watson, J. M., Choi, Y., Tomar, S. L., & Logan, H. L. (2008). Oral cancer in African Americans: addressing health disparities.
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8. MDPH BSAS: <http://www.mass.gov/eohhs/gov/departments/dph/programs/substance-abuse/>
9. Massachusetts QuitWorks: <http://quitworks.makesmokinghistory.org/>