



CHAPTER 10. Oral and Oropharyngeal Cancer

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ORAL AND OROPHARYNGEAL CANCER

IMPORTANCE OF ORAL AND OROPHARYNGEAL CANCER FOR CANCER PREVENTION AND CONTROL

At the first meeting of the New Jersey Task Force on Cancer Prevention, Early Detection and Treatment, members voted to create a separate workgroup on oral and oropharyngeal cancer, although not mandated to do so in the Executive Order. Task Force members reasoned that oral and oropharyngeal cancer requires special attention. The public is less aware of cancers in this body region than of cancer in other sites. Initial detection of early lesions primarily involves dentists and dental auxiliaries rather than medical personnel. Furthermore, the anatomical location and adjacent structures present unique treatment options.

Oral and oropharyngeal cancer include cancer of the lip, tongue, floor of the mouth, palate, gingiva and alveolar mucosa, buccal mucosa, and oropharynx, as well as the pharyngeal tonsils and salivary glands. It is estimated that in 2007 oral and oropharyngeal cancer will account for up to 34,360 new cancer cases and 7,550 deaths^{1,2} representing 2.4% of all new cancer cases and 1.3% of all cancer deaths.^{1,2} Males are approximately twice as likely as females to be diagnosed with and to die from oral and oropharyngeal cancer.¹

As in the case of many cancers, blacks bear a disproportionate disease burden compared to whites. From 1998 to 2002, the incidence rate of oral and oropharyngeal cancers was 20% higher in black males than white males. There was a smaller difference in incidence rates between white and black females. During the same time period, oral and oropharyngeal cancer mortality rates were 82% higher among black males than white males, with a smaller disparity observed among black and white females. Five-year relative survival rates were also higher for whites than for blacks. These disparities are suspected to be attributable, at least in part, to differences in alcohol and tobacco use, known risk factors for developing oral and oropharyngeal cancers.^{3,4}

The majority of oral and oropharyngeal cancer cases occur among persons over 45 years of age, and the average age of diagnosis is 64 years for whites and 57 years for blacks.³ In the United States, oral and oropharyngeal cancers are the sixth most common cancers among white males and the fourth most common among black males.^{5,6} From 1975 through 2002, trends in five-year relative cancer survival rates increased from 55% to 62% for whites and from 36% to 40% for blacks.²

More than 90% of oral cancers are squamous cell carcinoma. The remaining oral cancers are salivary gland malignancies, melanomas, sarcomas, and lymphomas.⁷ Therefore, the primary focus of a cancer control program for oral and oropharyngeal cancers should be squamous cell carcinoma, the predominant type. National efforts to reduce morbidity and mortality associated with oral and oropharyngeal cancer center on two areas: primary prevention and early detection.

The most significant known risk factors for oral and oropharyngeal squamous cell carcinoma are long-term tobacco use and excessive alcohol consumption.^{3-6,8-11} Alcohol increases the absorption of carcinogens by the tissues of the oral cavity and oropharynx. Furthermore, research shows that alcohol is also, by itself, a risk factor for oral and oropharyngeal cancer.¹²⁻¹⁴ A study of individuals who had never smoked demonstrated that alcohol could more than double the risk of developing oral and oropharyngeal cancer.^{12,13} Evidence further suggests that the combined use of both alcohol and tobacco increases an



individual's risk more than the sum of their independent effects.³ While some studies have shown that the use of the betel (areca) quid, popular in the Asian population, independently increases the risk of developing oral and oropharyngeal cancers, there is a body of evidence showing that the combined effects of chewing betel quid and smoking have more serious consequences for oral cancer risk.¹⁵ Immunosuppression¹⁶ and, in the case of lip cancer, long-term sun exposure^{5,9} are also identified risk factors. There is increasing evidence to suggest that the consumption of fruits and vegetables may be associated with a reduction in the risk of oral and oropharyngeal cancers.^{17,18} Immunosuppressed patients, particularly those diagnosed with HIV/AIDS, are at increased risk for many types of cancer that may present in the oral cavity and pharynx, including squamous cell carcinoma, Kaposi sarcoma, and non-Hodgkin's lymphoma.

Evidence is also growing to support previous reports that infection with human papillomavirus (HPV), particularly genotype 16, is an independent risk factor for squamous cell carcinoma of the oral cavity and oropharynx.¹⁹ One study found HPV 16 DNA in 50% of oropharyngeal cancers and 36% of oral cavity cancers. It appears that HPV-related oral cancers are associated with an improved prognosis.^{19,20} The availability and use of the recently approved HPV vaccines, which have been proven effective in preventing HPV 16 and HPV 18 infections, may result in an eventual decline in HPV-related oral cancers, especially if the vaccine is provided to both men and women.

The most significant indicator in predicting survival is the stage of disease at time of diagnosis. Cases diagnosed in the early (localized) stages have a five-year survival rate of more than 82%, while cases diagnosed in the late (advanced) stages have a poor five-year survival rate, less than 25%.²¹ According to the National Cancer Institute (NCI), only one-third of cases are diagnosed in the early stages, whereas two-thirds have already spread regionally or have metastasized.²¹ For blacks, the statistics are far worse than for the population as a whole—75% of oral and oropharyngeal cancers in this segment of the population have regional or distant spread at the time of diagnosis.²¹

In a recent study, approximately 86% of dentists and 79% of dental hygienists reported that they routinely provide oral cancer examinations to their patients 40 years of age or older at their initial appointment; and 80% and 76%, respectively, indicated they provide this examination at recall appointments.⁴ However, very few dentists were found to be routinely offering alcohol abuse and tobacco cessation counseling.⁴ While oral cancer screening has become a seemingly routine practice among dental health professionals, these services reach only those individuals who are able to seek oral health services. Due to lack of access to oral healthcare, many people are not offered oral cancer screenings.

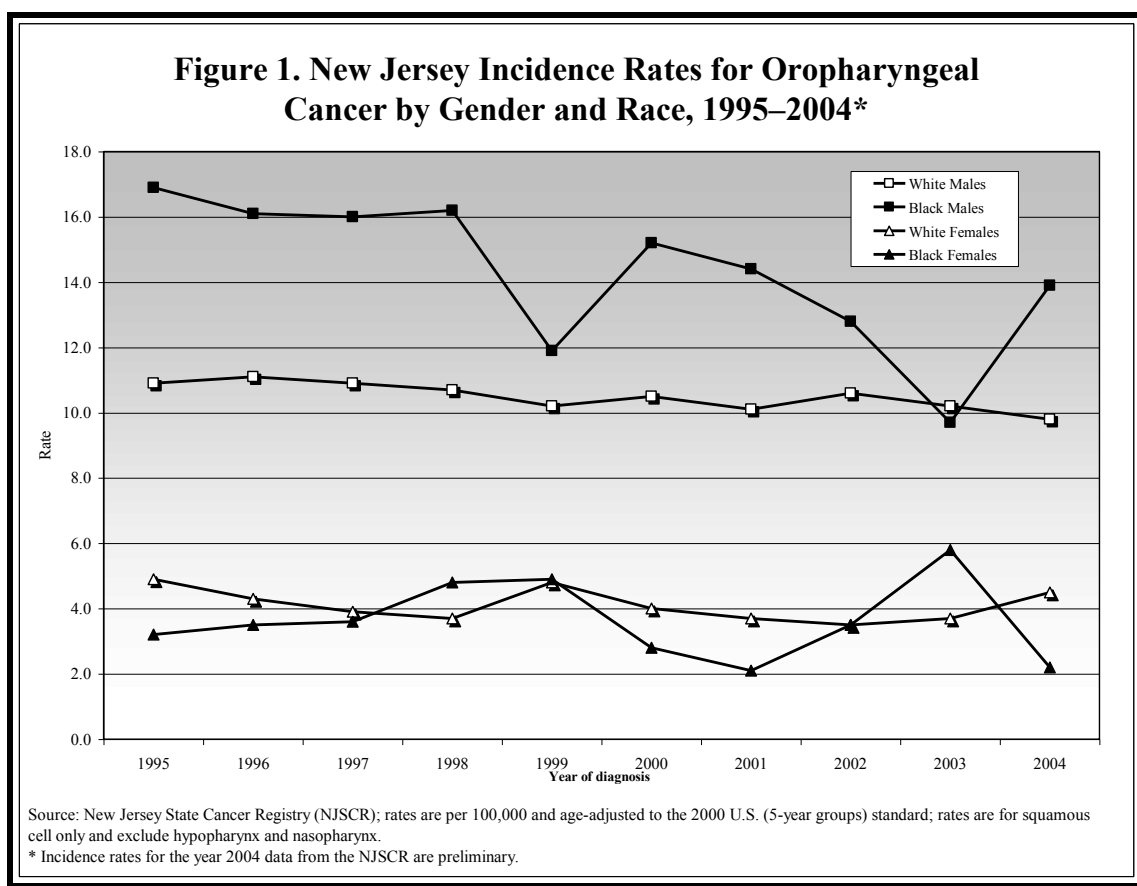
In 1996, the National Institute of Dental Research of the National Institutes of Health and the American Dental Association held the Oral Cancer Strategic Planning Conference to begin addressing oral and oropharyngeal cancer.⁸ The national group convened for this conference determined that each state should develop a state model to address oral cancer education, prevention, and early detection. The goals, objectives, and strategies in this *Plan* are based on those developed by the national oral cancer group.²²



ORAL AND OROPHARYNGEAL CANCER IN NEW JERSEY

In this section we discuss the status of oral and oropharyngeal cancer in New Jersey, including incidence, mortality, prevalence, survival, and risk factors.

Incidence. New Jersey mirrors the national falling trend for oral and oropharyngeal cancer incidence. Since the mid-1980s, New Jersey and U.S. incidence rates for oropharyngeal cancer have been declining.²³ For New Jersey males, incidence rates are higher among blacks than whites. In 2004*, the incidence rate for black males was 13.9 per 100,000** compared to 9.8 per 100,000** for white males. Males have traditionally had higher incidence rates than females in New Jersey (Figure 1). The incidence for females in New Jersey has generally been similar among races. In 2004*, black females had an incidence rate of 2.2 per 100,000** compared to 4.5 per 100,000** for white females (Figure 1).²⁴



*Incidence rates for year 2004 data from the New Jersey State Cancer Registry are preliminary.

**Rates are per 100,000 and age-adjusted to the 2000 U.S. standard. Rates are for squamous cell only and exclude hypopharynx and nasopharynx.



In a study of New Jersey patients with AIDS, approximately 6% also had a cancer. Of these, 50% had Kaposi sarcoma; 33% had non-Hodgkin's lymphoma; and 17% had lung, oral, and other cancers. This subgroup requires special consideration with regard to diagnosis and management and is discussed separately in the chapter on Emerging Issues.

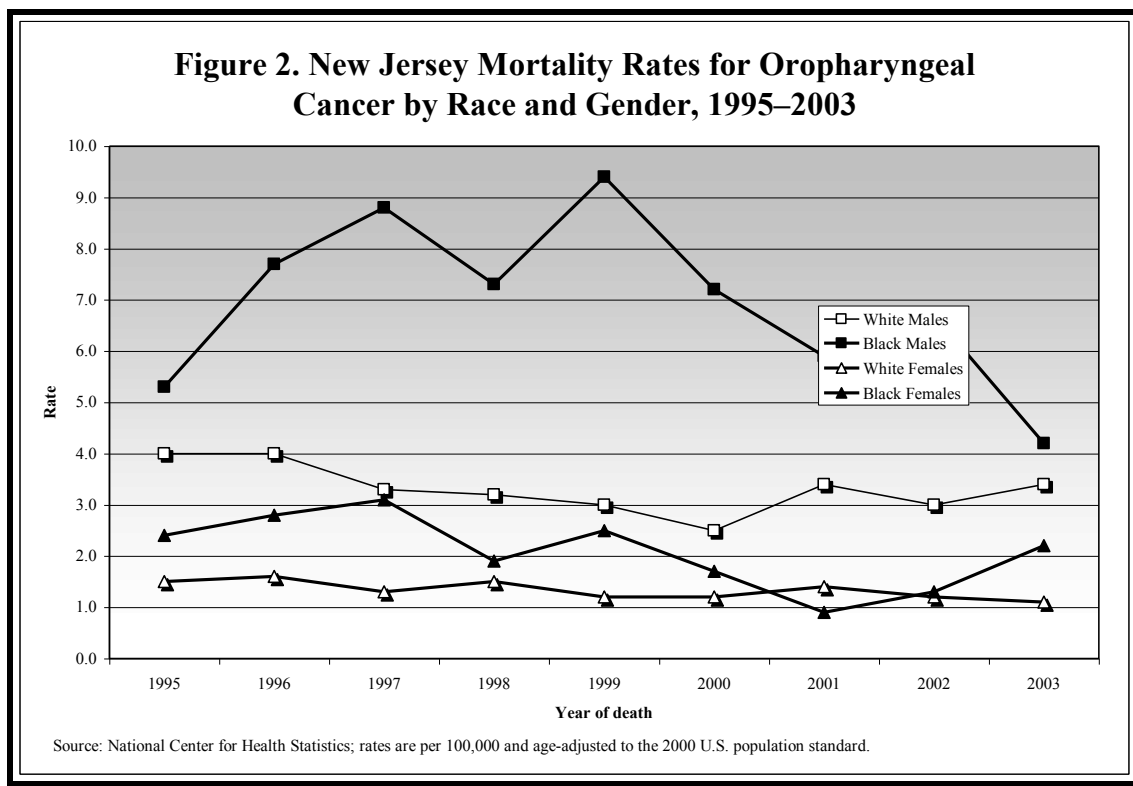
Mortality. Overall, oral and oropharyngeal cancer deaths in New Jersey mirror the decrease seen in the U.S.²³ In 2003, New Jersey males (all races combined) had a mortality rate of 3.4 per 100,000**, and New Jersey females had a mortality rate of 1.2 per 100,000**. Mortality rates differ by race, with black males generally having higher rates than white males. However, rates for both groups have declined over the years. Mortality rates for New Jersey black males declined from 5.3 per 100,000** in 1995 to 4.2 per 100,000** in 2003; mortality rates for white males declined from 4.0 per 100,000** in 1995 to 3.4 per 100,000** in 2003 (Figure 2). The mortality rates for females in New Jersey remained relatively stable between 1995 and 2003 (Figure 2).²⁴

Prevalence. Estimates indicate that on January 1, 2003, there were 6,160 or 0.1% of New Jersey men and women alive who had ever been diagnosed with oral cancer. As with other cancers, the prevalence of oral cancer increases with age and is highest in the 65+ age group (0.3%). The percent prevalence of oral cancer is the same for white males and black males (0.1%). However, the percent prevalence is higher for white females than black females (0.1% versus less than 0.05%, respectively).²⁵

Survival. The five-year relative survival rate for oral and oropharyngeal cancer diagnosed in New Jersey (all races combined) from 1994–1997 is 51.1%. This rate is lower than the U.S. rate of 59.0%. Disparities in survival exist between blacks and whites. In New Jersey, black men have a much lower survival rate than white men (29.0% versus 55.2%, respectively) for the period 1994–1997. Black females also have a much lower survival rate than white females (37.8% versus 57.4%, respectively).²⁶

With early detection, survival rates are considerably higher. The five-year survival rate for oral and oropharyngeal cancer diagnosed with localized disease is 81%.²⁷ In 2004, only 32% of those with oral and oropharyngeal cancer in New Jersey were diagnosed in the early stages, and 62% were diagnosed in late stages.²⁴ Through the use of oral cancer screenings, dentists and primary care physicians can recognize abnormal tissue changes and detect cancer at earlier stages during regular checkups, thereby increasing survival rates.

** Rates are per 100,000 and age-adjusted to the 2000 U.S. population standard.

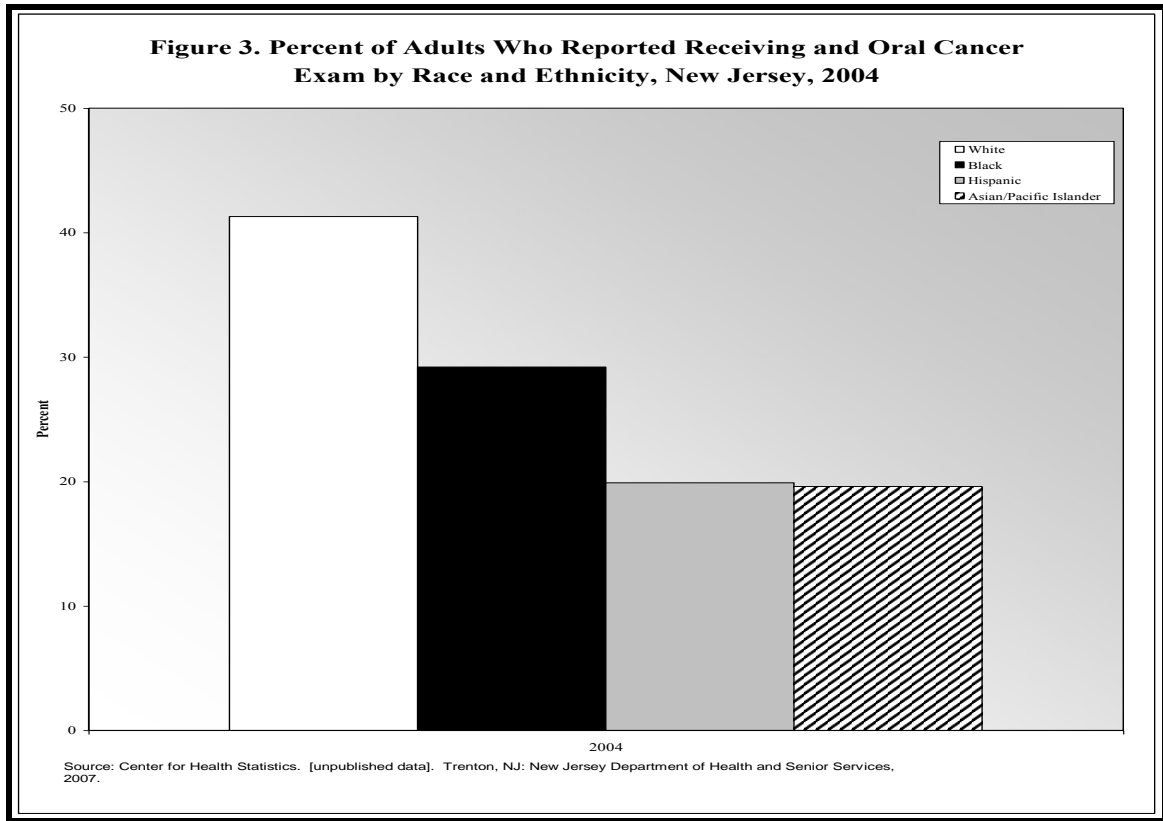


Risk factors. According to the 2004 Behavioral Risk Factor Surveillance System (BRFSS), 75.8% of New Jersey residents visited a dentist or dental clinic within the preceding year. Since a majority of residents are already visiting dentists, an opportunity exists to increase the number of routine oral cancer examinations in this setting. Little or no difference is observed for gender or age, and dental visits are positively associated with education and income level. When these data are analyzed by race and ethnicity, a disparity in dental care in New Jersey becomes evident. While this disparity has lessened in recent years for whites and Hispanics, it has not improved among the black population. In 2004, 20.2% of whites surveyed responded that they had not visited a dentist or dental clinic in the past year, compared to 32.2% of blacks and 33.4% of Hispanics. Comparatively, in 1999, 24.4% of whites, 29.9% of blacks, and 41.1% of Hispanics responded negatively to the same question. The racial and ethnic disparities in dental care persist among the black population.²⁸

In order to measure public awareness of oral cancer in New Jersey, the Oral Cancer Workgroup requested that state-added questions be included in the 2004 New Jersey Behavioral Risk Factor Survey. According to 2004 data, almost 85% of residents indicated that they had heard of oral cancer. The response was highest in whites (92.0%), followed by Asian/Pacific Islanders (79.4%), blacks (76.7%), and Hispanics (54.5%). Awareness of oral cancer is similar for males and females of all races and ethnicities. Data from the 2004 survey indicate that those who have heard of oral cancer are not very aware of the early signs of the disease. The following percentages of adults who had heard of oral cancer were aware of these early signs: white or red patches in the mouth (9.8%), sores or ulcers in the mouth that do not heal (69.4%), swelling that does not go away (2.3%), and bleeding in the mouth (5.8%). Almost 95% of respondents who had heard of oral cancer were aware that tobacco increases the risk of the disease, but only about 30% were aware that alcohol and sun exposure also increase the risk of oral cancer. In order to estimate the percent of New Jersey residents that receives oral cancer exams, a



question regarding oral cancer exams was also added to the New Jersey Behavior Risk Factor Survey. In 2005, 34.9% of respondents (all races and ethnicities) responded that they had ever had an oral cancer exam. Responses were similar for men and women (35.1% and 34.7%, respectively), but highest in whites (41.3%), followed by blacks (29.2%), Hispanics (19.9%), and Asian/Pacific Islanders (19.6%) (Figure 3).²⁹ Based on these data, public education on oral cancer is greatly needed to increase awareness of this disease and the availability of screening.



Conclusions. To target oral and oropharyngeal cancer in New Jersey and the surrounding region, the Oral Cancer Consortium was formed in 1998 by a group of professional and public health organizations and agencies united by a common mission. The Oral Cancer Consortium is dedicated to the prevention, early detection, and discovery of the biological basis and treatment of oral and oropharyngeal cancer among the citizens they serve and society at large. To educate healthcare professionals and the public about the importance of comprehensive oral and oropharyngeal examinations, the Consortium emphasizes the following: community outreach to increase public awareness, prevention to change habits and environmental factors, early detection to effect the highest cure rates, clinical trials to develop best-treatment practices, research into the biological basis for disease to prevent occurrence, and application of outcomes in treatment to cure the disease in affected populations.



HEALTHY NEW JERSEY 2010 GOALS

<i>Healthy New Jersey Goal</i>	Reduce the percentage of oral and oropharyngeal cancer diagnosed in the late (regional and distant) stages of disease to 40.0 % for all males and 35.0% for all females by 2010.
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Table 1. Percentage of oral cancers diagnosed in late stages, New Jersey, 1999–2002, and [Healthy New Jersey 2010](#) projected target rates.

Population	1999	2000	2001	2002	Target	Preferred 2010 Endpoint
White males	58.1	56.8	60.1	62.2	40.0	20.0
Black males	68.1	75.5	65.9	67.9	40.0	20.0
White females	43.8	48.0	41.1	48.4	35.0	15.0
Black females	52.3	61.5	72.0	75.7	35.0	15.0

Source: New Jersey Department of Health and Senior Services, Center for Health Statistics, [Healthy New Jersey 2010: Update 2005](#).



GOALS, OBJECTIVES, AND STRATEGIES

In support of the Healthy New Jersey 2010 goal for oral and oropharyngeal cancer, the recommendations of the Oral and Oropharyngeal Cancer Workgroup are summarized below for the following focal areas:

- Public awareness
- Public access
- Professional awareness and education
- Research and surveillance

PUBLIC AWARENESS

The Oral and Oropharyngeal Cancer Workgroup defined public awareness and education as the highest priority in oral and oropharyngeal cancer control in New Jersey. Early detection and treatment methods are the most successful mechanisms for reducing morbidity and mortality from oral and oropharyngeal cancer.^{30,31} It is therefore essential to raise public awareness about lifestyle behaviors that put one at increased risk. The public must also be informed about the signs and symptoms of oral and oropharyngeal cancer. Finally, the public needs to know about professionals and facilities that employ proven, state-of-the-art early detection and treatment methods.

Despite the success achieved under the first edition of this *Plan*, increasing awareness of oropharyngeal cancer, its risk factors, early signs and symptoms, and the need for screening remains a top priority. The workgroup recognizes a lack of resources to measure public awareness of the issues surrounding oral and oropharyngeal cancer as a barrier to implementation.

Although the overall level of knowledge about risk factors for oral and oropharyngeal cancer is low, adults who have a higher level of knowledge of risk factors for oral and oropharyngeal cancer are more likely to have an oral and oropharyngeal cancer examination.³² These findings are consistent with trends seen for other cancers, including cervical, breast, and colorectal, suggesting that conducting comprehensive educational interventions might increase the number of oral and oropharyngeal cancer examinations being conducted.³³

Currently in New Jersey, additional public awareness and education efforts for oral and oropharyngeal cancer are needed to enhance those already under way. The Oral Cancer Consortium, whose mission includes raising awareness in the general public, conducts an annual screening that is widely advertised. The New Jersey Department of Health and Senior Services Children's Oral Health Education Program provides oral health education to school-aged children throughout the state's 21 counties. The age-appropriate programs, employing a variety of teaching methods, address smoking and spit tobacco cessation, good oral hygiene practices, and oral cancer awareness. The New Jersey Dental Association's statewide programs for Children's Dental Health Week expose New Jersey children to important information about tobacco and proper diet, as well as care of teeth and gingiva. The mission of the New Jersey Breathes Tobacco Control Coalition, a 47-member statewide agency, is to alter the social norm of tobacco acceptance fostered by the tobacco industry. Through awareness and education, New Jersey Breathes has been instrumental in providing support for tobacco control policies, increased tobacco taxes, and increased access to nicotine treatment, with the ultimate goal of reducing tobacco



consumption, thus improving the health of New Jersey residents. Data from the New Jersey Comprehensive Tobacco Control Program indicate that the percentage of New Jersey adults who were current smokers significantly declined from 19.8% in 2000 to 17.4% in 2005. Any new tobacco control and oral health programs should build on existing activities, such as those of the New Jersey Comprehensive Tobacco Control Program.³⁴⁻³⁷ However, existing activities are insufficient, as oral and oropharyngeal cancer incidence and mortality have remained fairly steady for most groups over the past several years (Figures 1 and 2).

The Oral and Oropharyngeal Cancer Workgroup recognizes the importance of enhancing public awareness efforts already under way in New Jersey. Although cognizant of the fact that this is only the beginning of a continuous, dynamic process, the workgroup proposes two areas in which funds and resources can be dedicated to begin work. First, the workgroup suggests concentrating education and awareness efforts on the population at highest risk. Research has shown that this type of health promotion is necessary to enhance oral and oropharyngeal cancer prevention and early detection.³⁸ Targeting high-risk segments of the population for educational programs can be accomplished by first determining areas of the state where pockets of at-risk individuals reside and then reviewing and improving existing educational materials for use with this population. To enhance work being done during Children's Dental Health Week, scholastic education about oral and oropharyngeal cancer should be a component of the standard curriculum. Most importantly, it is essential to collaborate with national and local organizations that have made oral and oropharyngeal cancer education and awareness part of their mission, such as the Oral Cancer Consortium, the American Dental Association, the American Academy of Oral Medicine, the University of Medicine and Dentistry of New Jersey (UMDNJ) New Jersey Dental School, and New Jersey Breathes. Through collaboration, media campaigns can be implemented and high-risk populations can be well targeted.

Secondly, the Oral and Oropharyngeal Cancer Workgroup proposes continuing to work on strengthening laws and regulations concerning tobacco and alcohol, the two primary risk factors for oral and oropharyngeal cancer. Under the first edition of this *Plan*, the Oral and Oropharyngeal Workgroup worked closely with the Lung Cancer Workgroup and Advocacy Ad Hoc Committee to ensure passage of the New Jersey Smoke-Free Air Act (prohibiting smoking inside public buildings), as well as to increase the tobacco tax, making it the highest state tobacco excise tax in the nation. These represented significant steps in limiting tobacco exposure; however, more steps are needed to protect New Jersey residents from tobacco exposure.

Alcohol, as well, is an important risk factor for oral and oropharyngeal cancer, both independently and in combination with tobacco use. Studies have shown that, even among individuals who have never smoked, heavy alcohol consumption is significantly associated with increased risk of oral and oropharyngeal cancers.¹²⁻¹⁴

As a result of the 1996 Oral Cancer National Strategic Planning Conference, the Centers for Disease Control and Prevention issued public health policy recommendations regarding the prevention and control of tobacco and alcohol use as a strategy for reducing oral cancer incidence. These include:

- Increase excise taxes on tobacco and alcohol products to provide targeted funding for oral cancer prevention programs.
- Strengthen and enforce laws regarding youth access to tobacco and alcohol.
- Add strong statements to tobacco and alcohol warning labels about the risk of oral cancer.⁸



Without accurate and appropriate information about oral and oropharyngeal cancer, New Jersey residents, regardless of age, race, or ethnicity, cannot make informed decisions about their own health, including the need to seek out an oral and oropharyngeal cancer examination.³⁹ By improving the knowledge of the general public about the risk factors, signs, and symptoms of oral and oropharyngeal cancer, all populations will be positively influenced. It is nevertheless critical that education efforts be designed to reach those identified as least likely to receive oral and oropharyngeal cancer examinations. Thus, the Oral and Oropharyngeal Cancer Workgroup proposes the following goal, objectives, and strategies.

GOAL OR-1 To heighten public awareness and knowledge of oral and oropharyngeal cancer and the need for early detection in New Jersey.

Objective OR-1.1

To increase direct public education to groups at high risk for oral and oropharyngeal cancer.

Strategies

- OR-1.1.1** Collaborate with the Oral Cancer Consortium and other agencies to coordinate and support national oral and oropharyngeal cancer awareness and education campaigns.
- OR-1.1.2** Conduct continual review of the limited number of oral and oropharyngeal cancer educational materials currently available for specific target groups and assess their accuracy, comprehensiveness, reading level, and acceptability.
- OR-1.1.3** Encourage addition of comprehensive oral and oropharyngeal cancer education as an essential component to elementary and secondary school health curricula across New Jersey.
- OR-1.1.4** Work with the American Dental Association and other professional groups and associations in their endeavors to create a media campaign to increase awareness of oral and oropharyngeal cancer in the general public.
- OR-1.1.5** Work with the addictions treatment programs surrounding tobacco, alcohol, and other drugs to increase awareness of oral and oropharyngeal cancer in these high-risk populations.
- OR-1.1.6** Maintain representation from the Oral and Oropharyngeal Cancer Workgroup on New Jersey Breathes in order to collaborate with leading tobacco control advocates and to support oral health funding from a larger collaborative.
- OR-1.1.7** Maintain an Oral Cancer Workgroup Speakers Bureau.



Objective OR-1.2

To strengthen tobacco and alcohol laws and regulations.

Strategies

- OR-1.2.1** Work with New Jersey Breathes to promote tobacco control standards that include oral and oropharyngeal cancer.
- OR-1.2.2** Encourage warning labels on tobacco and alcohol products to include oral and oropharyngeal cancer risk factors.
- OR-1.2.3** Reinforce no-smoking laws and encourage more comprehensive regulation of tobacco products.
- OR-1.2.4** Advocate for expanding legislation promoting indoor and outdoor smoke-free environments.
- OR-1.2.5** Support the reduction of youth access to tobacco through Tobacco Age of Sale Enforcement (TASE) Operations and alcohol through the “We Check 21” Program.
- OR-1.2.6** Support the increase of tobacco and alcohol taxes.

PUBLIC ACCESS

The Access and Resources chapter of the first edition of this *Plan* clearly demonstrated the need for better access and resources for cancer screening, early detection, and treatment in New Jersey. These issues continue to present barriers to New Jersey residents. Since oral and oropharyngeal cancer is one of the most preventable and treatable cancers, improving access and resources is essential to decreasing morbidity and mortality from oral and oropharyngeal cancer. Even if public awareness can be heightened and even if dentists and physicians can be better educated and motivated, access issues are likely to persist as obstacles to early detection of oral and oropharyngeal cancer.⁴⁰

The incidence and mortality data presented earlier in this chapter demonstrate that racial and gender disparities continue to persist. Given the stark differences between oral and oropharyngeal cancer stage at diagnosis and survival data between the nation’s black and white populations, as well as the relationship between socioeconomic level and oral and oropharyngeal cancer survival, access issues must be addressed.

The lack of availability of dental health professionals and the inadequate ratio of dentists to specific residents is a major barrier to access to dental care.⁴¹ In New Jersey, as in the U.S., too few dentists are serving the high-risk population. A number of specific urban and rural areas throughout New Jersey have been designated as Dental Health Professional Shortage Areas by the U.S. Department of Health and Human Services due to the lack of availability of dentists.^{42,43}



The Oral Cancer Consortium, described earlier in this chapter, has recognized these problems as well. Currently, the member organizations of the Oral Cancer Consortium, along with the Oral and Oropharyngeal Workgroup, have been conducting and promoting free oral and oropharyngeal cancer screening events throughout New Jersey to improve access to care. The Consortium strives to increase the number of patients being screened, increase the number of facilities offering free screening, and improve access to screening for populations at high risk. Additionally, the Consortium is offering public and professional educational programs in early detection of oral and oropharyngeal cancer. However, without a secure source of ongoing funding, the Consortium will not be able to reach the entire dental community, and efforts to educate the general public will be limited.

To complement the work being done by the Oral Cancer Consortium, the Oral and Oropharyngeal Cancer Workgroup proposes the following. First, the Oral and Oropharyngeal Cancer Workgroup and the Oral Cancer Consortium must continue to partner to begin centralizing the oral and oropharyngeal cancer efforts within New Jersey.

Second, the workgroup proposes that hospitals be used as access points to provide at-risk patients with oral and oropharyngeal cancer screening. The Oral and Oropharyngeal Cancer Workgroup recognizes that population segments at highest risk for oral and oropharyngeal cancer may overlap significantly with groups of individuals unlikely to voluntarily seek screening and unlikely to visit a primary care physician and/or dentist routinely. Individuals who may not seek routine medical and dental examinations may become patients at hospitals as a result of illness or accidents. Admission to the hospital may provide the opportunity to screen these patients, particularly those at increased risk for oral and oropharyngeal squamous cell carcinoma. To target populations that might otherwise utilize oral and oropharyngeal cancer screening, but are not doing so because of barriers, the Oral and Oropharyngeal Cancer Workgroup proposes that examinations and screenings be offered in conjunction with other existing services, such as screening for other types of cancer and at meetings for addicted populations.

Third, the Oral and Oropharyngeal Cancer Workgroup recommends that general dental residency programs in New Jersey, particularly those serving urban populations, be supported. Currently, residency programs are supported by aid from the federal government from Medicare reimbursement. Direct medical education aid (DME) and indirect medical education aid (IME) support residency positions. Hospitals support the programs to a certain extent as well. Saint Joseph's Regional Medical Center found that DME and IME offset much of the hospital's expense, and residents can easily justify their existence financially, even in hospitals where most patients are on New Jersey Charity Care or Medicaid.

However, additional dental residency slots in urban hospitals are needed to develop screening programs for all hospital-admitted patients. This approach to more widespread oral cancer screening also requires a multi-disciplinary protocol involving the Emergency Department and the medical and surgical services at these hospitals. Therefore, funding is needed to increase the number of residents and to provide essential professional human resources for the delivery of diagnostic care and treatment to this underserved segment. This early experience will also better prepare young dentists to assume leadership roles in cancer prevention, detection, and care throughout their professional careers.

New Jersey must improve access to oral and oropharyngeal cancer screening and must outreach to all segments of the population. Existing data are inadequate to quantify the relative contributions made by risk factors and barriers to care (e.g., access to prompt and accurate diagnosis and appropriate care,



nutrition and general health, genetics, use of alcohol and tobacco, etc.). The differences noted between black and white New Jersey residents in oral and oropharyngeal cancer incidence and mortality must be further investigated in order to improve access to care for all populations. The following goal, objective, and strategies are offered to begin the process of improving access and resources for oral and oropharyngeal cancer care.

GOAL OR-2

To increase access to oral and oropharyngeal cancer screening and the ability to reach all segments of the population.

Objective OR-2.1

To increase community outreach for oral and oropharyngeal cancer screening.

Strategies

- OR-2.1.1** Partner with the Oral Cancer Consortium to determine areas in which collaboration on screening can be effective.
- OR-2.1.2** Use the hospital as an access point and develop protocols in these institutions for the oral and oropharyngeal examination of every at-risk patient admitted, beginning with those hospitals with dental residency programs. Additionally, appropriate protocols should be adapted and spread to hospitals that do not have dental residency programs.
- OR-2.1.3** Piggy-back oral and oropharyngeal cancer examinations onto existing outreach programs with appropriately equipped facilities to increase screening without creating substantial cost fluctuation, by using the following venues: mobile units; outpatient facilities run by medical centers, nursing homes, and assisted-living facilities; free oral and oropharyngeal cancer screenings in major urban hubs; free oral and oropharyngeal cancer screenings in remote and underserved areas; and free oral and oropharyngeal cancer screenings at meetings for those with addictions, as well as meetings for other high-risk groups.
- OR-2.1.4** Partner with New Jersey Department of Human Services Division of Addiction Services and addictions providers to disseminate oral and oropharyngeal cancer education to “12 Step” groups for those with addictions as well as for other high-risk groups.

PROFESSIONAL AWARENESS AND EDUCATION

Mortality from oral and oropharyngeal cancer has remained high and, while survival has increased significantly for whites, blacks have experienced very little increase, despite significant advances in cancer treatment.^{1,2} It is generally acknowledged that only primary prevention and early detection offer significant opportunities for improving survival statistics and the quality of life of survivors.³⁰ (The role of healthcare providers in primary prevention is dealt with earlier in this report.) Of the many



obstacles to early detection of oral and oropharyngeal cancer, one that can be overcome is the current inadequacy of education and training among healthcare providers. There is strong evidence that professional awareness, education, training, and motivation fall below desirable levels.⁴ Studies have shown that dental health professionals are not as knowledgeable about oral cancer prevention and early detection as they could be and that they recognize these deficiencies.^{4,9} As noted earlier, many dentists do not provide annual oral cancer examinations, even though they recognize their importance.^{4,5} Furthermore, an insufficient proportion of dental healthcare providers counsel patients on tobacco and alcohol use, the primary risk factors for oral and oropharyngeal cancer. In a recent study, 61% of dentists reported discussing tobacco cessation, and 33% reported discussing alcohol use. The proportion of dental hygienists discussing these risk factors with patients was even lower.⁴

While organized dentistry is beginning to acknowledge this responsibility, there appears to be no strong incentive for any group of clinicians to make oral and oropharyngeal cancer prevention and early detection a priority in the way that dermatologists have for skin cancer detection. As dentistry is beginning to take ownership of this issue, the upgrading of awareness, education, training, and motivation should be applied across many disciplines, including family practice and internal medicine.

The Oral and Oropharyngeal Cancer Workgroup offers three goals by which the involvement of dentists, hygienists, physicians, and nurses in the prevention and early detection of oral and oropharyngeal cancer can be upgraded to have a significant impact on mortality and quality of life for survivors. First, we propose that professional development about oral and oropharyngeal cancer begin with young professionals in medical and dental schools in New Jersey. Second, practicing clinicians should be educated and re-educated about comprehensive oral and oropharyngeal cancer examinations through continuing medical education classes. Third, to ensure that practicing clinicians are receiving training for oral and oropharyngeal cancer, the workgroup recommends that this type of professional education be added to the licensure requirements.

As stated in the public awareness section of this chapter, it is essential that high-risk populations be targeted. One method to reach specific populations is to educate professionals about the high-risk populations and make them more aware of the need to outreach to special populations.

The Oral and Oropharyngeal Cancer Workgroup offers the following goal, objectives, and strategies to address needs in professional awareness and education relating to oral and oropharyngeal cancer.

GOAL OR-3

To upgrade involvement of all dentists and hygienists and those physicians in appropriate specialties in the prevention and early detection of oral and oropharyngeal cancer by increasing the current level of awareness, education, training, and motivation among oral and oropharyngeal healthcare providers.

Objective OR-3.1

To provide appropriate education on oral and oropharyngeal cancer to physicians, dentists, and hygienists in training.



Strategy

- OR-3.1.1** Encourage the continuing provision of resources to appropriate educational facilities to incorporate oral cancer screening education.

Objective OR-3.2

To update and upgrade the knowledge and awareness of New Jersey's practicing clinicians in the area of oral and oropharyngeal cancer.

Strategy

- OR-3.2.1** Coordinate existing continuing education program for dentists, hygienists, and interested physicians on the primary prevention and early detection of oral and oropharyngeal cancer.

Objective OR-3.3

To assure the citizens of New Jersey that all licensed dentists in the state have adequate baseline knowledge of oral and oropharyngeal cancer prevention and early detection.

Strategy

- OR-3.3.1** Recommend to the New Jersey Board of Dentistry that oral and oropharyngeal cancer education become part of the 40-hour requirement for license renewal every two years.

RESEARCH AND SURVEILLANCE

Research is needed on key public health issues, as well as on basic biomedical mechanisms relating to oral and oropharyngeal cancer. Public health research should include both studies to better understand the epidemiology of this disease and outcomes assessments of the effect of early detection and intervention on survival. On the biomedical side, a better understanding of basic biological processes underscoring the natural history of this disease and development of novel treatment strategies are critical.

New Jersey, while experiencing a slightly lower incidence of the disease than the nation as a whole, nevertheless has higher mortality, with cases being diagnosed at later stages. Epidemiological research will identify those populations at higher risk and will help identify susceptible populations for early



detection and intervention. Research into the effectiveness and efficacy of risk-reduction interventions and early detection in oral and oropharyngeal cancer will guide development of policy for broader application.

The histologic type of oral and oropharyngeal cancer is predominantly squamous cell carcinoma, comprising greater than 90% of cases. Prior to the development of frank carcinoma, premalignant lesions may be clinically evident and identified on biopsy as mild, moderate, or severe dysplasia or as carcinoma in situ. Considerable investigation is ongoing into the genetic events leading to the development of squamous cell carcinoma. The basic biological processes of initiation and progression of this malignancy are being addressed, and reliable biomarkers for prognosis and response to treatment are being explored.

The workgroup's recommendation is, therefore, to encourage and support research on the epidemiology of oral and oropharyngeal cancer, the impact of early detection and intervention on oral and oropharyngeal cancer, the pathogenesis of progression or regression of dysplastic lesions in oral and oropharyngeal cancer, chemoprevention of oral and oropharyngeal cancer, and the development of improved technologies for identifying and characterizing oral and oropharyngeal cancer.

GOAL OR-4	To identify high-risk groups in order to maximize interventional and educational impact while permitting evaluation of cost-effectiveness.
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Objective OR-4.1

To assess knowledge of oral and oropharyngeal cancer and screening in the public and professional sectors.

Strategies

- OR-4.1.1** Survey a random sample of the New Jersey population to measure knowledge of oral and oropharyngeal cancer risks, signs, and recollection of oral and oropharyngeal cancer examinations. The survey will include demographic and geographic variables to assess bias in the sampling procedure.
- OR-4.1.2** Survey healthcare practitioners in New Jersey to measure knowledge of oral and oropharyngeal cancer risks, signs, and screening guidelines for oral and oropharyngeal cancer examinations.



Objective OR-4.2

To document prevalence of risk factors for oral and oropharyngeal cancer in New Jersey.

Strategy

- OR-4.2.1** Use BRFSS and other data sources (such as the National Health and Nutrition Examination Survey) to analyze the prevalence of tobacco and alcohol use, as well as nutritional habits, in New Jersey populations.

GOAL OR-5	To ensure that New Jersey residents and physicians remain up to date on the most currently available oral and oropharyngeal cancer technologies and resources.
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Objective OR-5.1

To continue to monitor and disseminate current advances in oral and oropharyngeal cancer prevention, screening, diagnosis, and treatment and its impact on incidence and mortality.

Strategies

- OR-5.1.1** Conduct periodic literature reviews to determine the state of the science in oral and oropharyngeal cancer research and to identify potentially promising new technologies.
- OR-5.1.2** Work with stakeholders to disseminate, as they become available, evidence-based advances to healthcare providers through CME offerings.

Objective OR-5.2

To continue to monitor trends in oral and oropharyngeal cancer incidence, mortality, and survival, especially trends in racial, ethnic, and gender disparities.

Strategy

- OR-5.2.1** Request appropriate data, as needed, from the New Jersey State Cancer Registry and other applicable sources.



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