Improving Diagnoses of Oral Cancer

ORAL and pharyngeal cancer—cancer of the lip, tongue, pharynx and mouth—affects approximately 30,000 people annually. This disease claims the lives of almost 8,000 people each year, or about one person every hour. Oral cancer surgery can be very disfiguring and thus psychologically traumatic in a socity that places a high value on physical appearance. Treatment of this condition also often results in severe loss of oral function, and chronic discomfort including difficulty in chewing, swallowing, and speaking.

The major risk factors for oral and pharyngeal cancer are tobacco use and alcohol abuse, which together account for about 75% of all oral and pharyngeal cancer in the United States.[1] Risk also increases with greater consumption; heavy drinkers who smoke more than one pack of cigarettes a day are 24 times more likely to develop oral cancer than people who do not use either substance. Some research also has implicated some human papilloma (HPV) and herpes simplex viruses in diagnosed oral cancer.

Men's risk of being diagnosed with oral or pharyngeal cancer is twice that of women, and African American men suffer disproportionately from this disease. Whereas oral cancer is the sixth leading cancer in U.S. men and the fourteenth most common cancer in U.S. women, it is the fourth leading cancer in African American men, who are also more likely to be diagnosed at an earlier age and at a more advanced stage and are more likely to die of the disease.[2] Ninety-five percent of oral cancer cases are diagnosed in people older than 45 years and the median age of diagnosis is 64 years.

Compared with other cancers, oral and pharyngeal cancer has one of the poorest 5-year survival rates: only 52% of people diagnosed with oral cancer survive 5 years. Early detection of oral cancer increases the chance that a person will be alive 5 years after initial diagnosis; the 5-year survival rate is 81% for those diagnosed with early-stage oral cancer but only 22% for persons diagnosed with advanced stage cancer. However, only 35% of oral cancer is detected at the earliest stage. Again, African American men are at a disadvantage—only 19% of African American men diagnosed with oral and pharyngeal cancer are identified at Stage I, compared with 38% of white men.[3] African American men have a 5-year survival rate of 34%, compared with the 56% survival rate for white men.

The delay in diagnosis may be partly due to the public's overall lack of knowledge of the signs and symptoms of oral cancer and to the need for an increase in annual screening exams for oral cancer, particularly for those at higher risk. In one study, only 14% of U.S. adults aged 40 years or older reported having had an oral cancer examination within the past 12 months. Both

Warning Signs of Oral Cancer

- A sore in the mouth that does not heal (most common symptom)
- A white or red patch on the gums, tongue, tonsil, or lining of the mouth that will not go away
- A lump or thickening in the cheek
- A sore throat or a feeling that something is caught in the throat
- Difficulty chewing or swallowing
- Difficulty moving the jaw or tongue
- Numbness of the tongue or other area of the mouth
- Swelling of the jaw that causes dentures to fit poorly or become uncomfortable
- Loosening of the teeth or pain around the teeth or jaw
- Voice changes
- A lump or mass in the neck
- Weight loss

[1]Blot,W.J., et al. Smoking and drinking in relation to oral and pharyngeal cancers. Cancer Research, 48(11):3282-7, 1988.
[2]U.S. Department of Health and Human Services. Healthy people 2010: national health promotion and disease prevention objectives. Full report, with commentary. Washington, D.C.: January 2000.
[3]Ries, L.A., et al. SEER cancer statistics review, 1973-1996. Bethesda, MD: National Cancer Institute, 1999.

the National Cancer Institute and the National Institute of Dental and Craniofacial Research support efforts to promote the early detection of oral cancer during routine dental examinations, and the *Guide to Clinical Preventive Services* advises that a complete oral cavity exam should be part of routine preventive care for persons with significant risk for oral cancer, such as those with a history of smoking and alcohol use.

A recent study found that not all dentists thoroughly screen patients for risk factors. The National Oral Cancer Survey of Dentists found that some dentists had misinformation about risk factors. Although nearly all dentists asked patients about their cancer history and current tobacco use, fewer asked about types and amounts of products used, and only half asked about past alcohol use. "We need to know more about designing effective intervention approaches to encourage providers to screen more frequently for early signs of oral cancer and teach patients to recognize the symptoms of oral cancer and request oral cancer examinations," said Alice Horowitz, PhD, senior scientist at the National Institute of Dental and Craniofacial Research and one of the researchers who developed the survey.

"Early detection is a major issue within the dental and medical profession," stated Sol Silverman, Jr., DDS, Professor and Chairman, Department of Oral Medicine, University of California, San Francisco, who noted that little improvement has been made during the past 2 decades in improving early detection of oral cancer before it spreads beyond the primary site. "More information on oral cancer needs to be integrated throughout the various courses provided in schools of dentistry and dental hygiene, and medical and nursing schools. Early detection should be emphasized. Patient histories should include tobacco and alcohol use, and patients should receive tobacco cessation education," he continued. Continuing education courses for dentists and other health professionals are also important to reinforce knowledge about risk factors for oral cancer, review screening techniques, and provide information on the latest medical developments in detection and treatment.

"For most people who develop oral cancer, the results are devastating," according to U.S. Assistant Surgeon General William Maas, DDS, MPH, Director, Division of Oral Health, NCCDPHP, CDC. "We need to educate the public about the risk factors and warning signs. We also need to work with physicians and dental professionals to encourage screening of patients at high risk, such as those older than age 40 years who have risk factors such as tobacco and heavy alcohol use. These efforts can facilitate early detection and management of suspicious lesions."

Educating About Dangers of Spit Tobacco and Oral Cancer

For years, chew, or spit tobacco, has been associated with glamorous sports, such as baseball, horse racing, and auto racing. It was common to see athletes chewing and spitting during televised games. This situation is changing, largely because of the efforts of the National Spit Tobacco Education Program (NSTEP), an initiative of Oral Health America that is supported by CDC and The Robert Wood Johnson Foundation. Major collaborators include Major League Baseball, American Baseball Coaches Association, and Little League Baseball. Since its launch in 1994, NSTEP has been promoting oral health and educating young people, parents, and coaches about oral cancer prevention and the dangers of smokeless tobacco.

Although a "smokeless" substance might might seem less harmful than a "smoked" tobacco product, this presumption is far from true. Each year, 10–16 million Americans use smokeless tobacco; their risk for some types of cancer can be as much as 50 times greater than that of nontobacco users. One dip, or chew,

contains five times as much nicotine as one cigarette and at least 2,500 known chemicals, including 28 known carcinogens such as formaldehyde, nickel, polonium-210, and nitrosamines. The highest rates of smokeless tobacco use are found in the South. According to CDC's Youth Risk Behavioral Survey (YRBS, 1998), about 13% of male high school students currently use chewing tobacco or snuff.

"Many people don't know that spit tobacco is not a safe alternative to smoking cigarettes," said Paul Turner, director of coalition development for NSTEP, which receives support from CDC's Division of Oral Health and the Office on Smoking and Health. "At NSTEP, we are constantly working to develop new grassroots community coalitions that use ballpark events as a nucleus for community health education." NSTEP currently has active coalitions in eight states, and two additional states are poised to implement NSTEP programs. NSTEP coalitions include representatives from health departments, dental professional societies, universities and schools, athletes, parents, coaches, tobacco control groups, and others.

One of the major successes of this program thus far is the banning of free spit tobacco from ballparks, where formerly it was readily available in the dugouts for players' use. Another accomplishment is that NSTEP staff have worked with television networks so that cameramen don't focus on players who are chewing smokeless tobacco during televised games. In addition, since 1995, Oral Health America has secured more than $100 million in donated air time for NSTEP PSAs featuring celebrities such as Garth Brooks.

A variety of educational materials are available from NSTEP for use in community health education programs. More information about NSTEP can be obtained from the national program office at 770/753-0952 or by visiting NSTEP's Web page at **www.nstep.org.**

State Innovations in Oral Cancer

One of the 10 strategies recommended by participants of the National Strategic Planning Conference on Preventing and Controlling Oral and Pharyngeal Cancer, convened in 1996 by CDC with cosponsorship from the National Institute of Dental Research and the American Dental Association, was to develop statewide models for educating all relevant groups about oral cancer. Two states, Maryland and Illinois, have made strides in assessing local needs related to oral cancer prevention, detection, and control. In Maryland, as part of preliminary research to develop a comprehensive statewide education program on oral cancer, a survey of various public health professionals was conducted to determine their knowledge and screening behaviors regarding oral cancer. Focus groups of health professionals and the general public also were conducted to determine how people receive their information on oral cancer and oral health.

"Our survey found that only 23% of the public surveyed in Maryland could correctly identify one early sign of oral cancer, and 39% responded that they did not know any signs," stated Harold S. Goodman, DMD, MPH, State Dental Director. Beginning in fall 2001, the Maryland Department of Health and Mental Hygiene's Office of Oral Health, with assistance from the University of Maryland School of Dentistry, hopes to pilot test and evaluate an oral cancer prevention and early detection intervention throughout the state, targeting dental and nondental providers and consumers.

Components of a Clinical Examination for Oral Cancer

1. Check lymph nodes in the neck and under the lower jaw
2. Check cheeks and lips
3. Check gums
4. Pull tongue forward
5. Check palate
6. Check back of throat
7. Check floor of mouth

The office has also developed and will distribute a wallet card that lists the eight steps of an oral cancer examination to be distributed through governmental agency and church sites (see "Components of a Clinical Examination for Oral Cancer," p. 15).

Illinois' approach has been to incorporate oral cancer into the state's comprehensive cancer control program. "Last year, CDC selected Illinois as one of six states to receive technical assistance in developing a comprehensive cancer program," stated Lewis Lampiris, DDS, MPH, Chief of the Division of Oral Health, Illinois Department of Public Health. As part of the process, the state formed the Illinois Partnership for Cancer Prevention and Control, and Dr. Lampiris' division developed a position paper on oral cancer that focused on identifying and promoting policies relevant to prevention, early detection, and treatment. This paper convinced state officials to integrate oral cancer into its state plan, "Moving Forward With Cancer Prevention and Control: An Illinois Framework for Action." According to Dr. Lampiris, this "gives us a lot of flexibility in addressing oral cancer within the broader context of comprehensive cancer prevention and control." In 2001, in partnership with the state's schools of dentistry and dental hygiene, the division plans to conduct a statewide assessment of the knowledge, attitudes, and screening activities of health professionals related to oral cancer, implement improvements in surveillance, and develop education programs for health care workers.

Improved Surveillance

To develop more effective approaches to preventing oral cancer, public health professionals need a better understanding of groups at high risk for oral cancer, as well as of the health settings in which diagnoses at specific stages are most frequently made. The oral cavity is one of the eight major cancer sites formally endorsed for surveillance by the Council of State and Territorial Epidemiologists, a group that advises CDC and other federal and state agencies about information that should be collected in the National Public Health Surveillance System.

Although cancer incidence data have been collected since the early 1970s by the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program, the data were collected from only five states and six metropolitan areas. Since 1994, funds have been provided to states through CDC's National Program of Cancer Registries (NPCR) to enhance cancer surveillance. Currently, 45 states, the District of Columbia, and three territories participate in the NPCR, and, as a result, cancer incidence data now are available for most states. Currently, data are compiled and made available annually by the North American Association of Central Cancer Registries (www.naaccr.org). When analyzed, these data will provide more information about stage-specific cancer incidence.

According to Dolores Malvitz, Division of Oral Health, NCCDPHP, CDC, exploring and analyzing these and other newly available data will provide a more complete picture of oral cancer that can be used by states and other organizations to improve interventions. "We need to learn more about the patterns of oral cancer, such as which health professional—dentist or physician or other—most frequently makes the initial diagnosis," she said. "These additional state data will help us characterize more completely the nature and extent of oral cancer as a health problem."

More information on oral and pharyngeal cancer can be found in *Oral Health in America: A Report of the Surgeon General,* as well as at the following Web sites:
CDC: **www.cdc.gov/nccdphp/oh/oh-home.htm**
NIDCR: **www.nidcr.nih.gov/Spectrum/NIDCR3/3menu.htm**