

Professional and community efforts to prevent morbidity and mortality from oral cancer

MICHAEL C. ALFANO, D.M.D., Ph.D.; ALICE M. HOROWITZ, Ph.D.

How many times have we heard, “No one ever did that to me before,” after palpating the neck or manipulating the tongue of a patient to gain visibility during an oral cancer examination? How often are patients surprised when we tell them that oral cancer kills more Americans each year than either melanoma or cervical cancer? The fact of the matter is most Americans do not

receive regular oral cancer examinations, or even know of the existence of oral cancer. Moreover, most Americans are unaware of the risk factors for, or the signs and symptoms of, oral cancer.^{1,2} Thankfully, this unfortunate situation is changing rapidly.

By increasing awareness of oral cancer among the dental profession and the public, earlier diagnosis of these cancers with improved cure rates is likely.

Many organizations and publications are focusing broad public attention on the danger signs of and available means to prevent oral and pharyngeal cancer. Among these are The Journal of the American Dental Association, through this supplement; the Report on the Future of Dentistry commissioned by the ADA; the surgeon general’s report on oral health; Healthy People 2010—our Nation’s Health Objectives; the National

Institute of Dental and Craniofacial Research, or NIDCR; National Cancer Institute; Division of Oral Health at the Centers for Disease Control and Prevention, or CDC; a new privately funded ADA-led outdoor billboard campaign; and numerous dental schools,

Background. Oral and pharyngeal cancers cause significant morbidity and mortality, yet there has been little improvement in survival rates in the past 30 years. Because early diagnoses significantly increase survival rates, the authors summarize several approaches to educating and mobilizing the dental profession and the public about this problem. Clinicians are invited to initiate similar programs to catalyze change in their own communities.

Methods. The authors found that many approaches have been used to define the problem and initiate change. These include surveys, focus groups, development of consortia, media programs, flyers, leaflets, prescription pads, legislation and professional endorsements.

Results. In Maryland in 1996, only 20 percent of adults reported receiving an oral cancer examination, and most oral cancers were diagnosed at late stages by physicians, not dentists. Results of the public educational campaigns in the regions of New York/New Jersey and Maryland have not been formally evaluated, but there is a developing consensus that oral cancer diagnostic practices in the regions with active educational programs are increasing.

Conclusions. Coalitions or partnerships among individuals and organizations from government, academia, private practice, industry, the general community and the media can affect awareness about oral cancer prevention and early detection on a regional basis.

Clinical Implications. By increasing awareness of oral cancer among the dental profession and the public, earlier diagnosis of these cancers with consequent improved cure rates is likely. Providing oral cancer diagnostic services as a routine part of an oral examination also may motivate patients to visit the dentist at least once a year.

dental societies and statewide programs.¹⁻⁹ Indeed, it is easy to argue that the single most important service a dentist can provide is an oral cancer examination, because it is one of the few dental services that can save a patient's life when performed routinely.

To assist others in the development of community-based efforts to elevate the public's awareness of the causes and deadliness of oral cancer, as well as the importance of tobacco use cessation, we will review some high-impact regional outreach programs and some national initiatives.

ORAL CANCER CONSORTIUM

In early 1999, the dental schools at Columbia University, New York University, the State University of New York at Stony Brook, and the University of Medicine and Dentistry of New Jersey along with the New York City Health and Hospitals Corporation and ABC-TV formed a coalition to increase public awareness about oral cancer. This coalition—the Oral Cancer Consortium—now consists of more than 20 institutional members, including the New Jersey Dental Association and the New York County Dental Society, and it continues to grow.³ Indeed, it is the largest such coalition in the country and has proven to be effective in training area dentists in oral cancer diagnostic techniques and in conducting large annual regional cancer screening programs.

To date, thousands of patients have been examined free of charge in these screenings; both cancerous and precancerous lesions have been identified, and lives likely have been saved. However, although this screening program is important, it is not an end in itself. The primary purpose of these screenings is to serve as a significant media event to focus public attention on oral cancer, and to create a sense of urgency among consumers that prompts them to visit their private dentists and ask to receive an oral cancer examination. Ultimately, oral cancer examinations must become a routine part of dental examinations if more oral cancers are to be detected in early, curable stages of the disease.

The approach of the Oral Cancer Consortium is to reach the public through several media techniques, and to reach area dentists through a com-

bination of continuing education courses, an interactive online oral cancer course (www.nyu.edu/dental/ce/oralcancerscreening.html) and alumni mailings sponsored by various institutions. The public media campaign includes public service announcements on ABC-TV, a Web site (www.oral-cancer.org), advertisements placed in major newspapers (Figure), radio and television interviews with members of the Oral Cancer Consortium and declarations of an Oral Cancer Awareness Week by both the governor of New York and the mayor of New York City.

In addition, consortium members give prescription pads to physicians in area hospitals referring patients for oral cancer examinations, a toll-free bilingual hotline has been established, and brochures about oral cancer are handed out in the dental clinics of dental schools and participating hospitals. However, the most effective tool identified to date is the use of live remote television broadcasts to entice consumers to the regional oral cancer screenings and into their own dentists' offices for an oral cancer examination.

The most effective tool identified is the use of live remote television broadcasts to entice consumers to the regional oral cancer screenings and into their own dentists' offices.

In the 1999 screening, the local ABC-TV morning meteorologist, broadcasting live from New York, interviewed representatives from each dental school in the consortium. These interviews included discussions about the causes of oral cancer, the deadliness of the disease and the components of an oral cancer examination. In fact, a dentist performed an oral cancer examination live on camera. To make the experience less intimidating to patients, this activity occurred in a festive atmosphere in which breakfast was served, a band played and staff members urged the public to come to the oral cancer screening site. In total, about 18 minutes of air time was provided by the network—a valuable contribution in a major media market such as metropolitan New York.⁴


For the 2000 screening, a well-equipped dental van was parked outside the New York County Dental Society, which is in a busy part of midtown Manhattan. The ABC-TV weather anchorman broadcast live from outside the van, and a line of patients quickly wrapped around the corner, generating considerable excitement about this issue. Four segments appeared on the evening and late news that night, during which

Which Kills More Americans Every Year?

A. MELANOMA
B. CERVICAL CANCER
C. ORAL CANCER

It's **Oral Cancer** — and it's more common
than you think. *It kills one American every hour.* Don't become
a statistic. **Ask your dentist** or visit one of
our centers this week for a *Free Oral Cancer Exam*.

The Consortium for Prevention and Early Detection of Oral Cancer.
For more information, call Toll Free: 1-877-263-3401
or visit our Web site: <http://www.oral-cancer.org/>



**Free Oral Cancer
Screening**

THE FOLLOWING LOCATIONS
WILL OFFER FREE SCREENINGS
ON SELECTED DAYS.

**SUNY Stony Brook School of
Dental Medicine (Long Island)**
June 2 10 a.m. to 7 p.m.
June 3 10 a.m. to 4 p.m.

**Columbia University School of
Dental and Oral Surgery**
(NYC, Upper West Side)
June 2 9 a.m. to 4 p.m.

**New York City Health and
Hospitals Corporation—Oral
Health, Programs and Policy (Fort
Greene [Brooklyn, Staten Island],
Bushwick [Brooklyn/Queens],
Jamaica [Queens], and Brownsville
[Brooklyn/Staten Island])**
June 2, 3, 4 8:30 a.m. to 4:30 p.m.

NYU College of Dentistry
(NYC, East Side).
June 2, 3, 4 10 a.m. to 7 p.m.

UMDNJ New Jersey Dental School
(Newark, NJ)
June 2, 3 9 a.m. to 4 p.m.


We thank WABC-TV  for promotional
assistance and **Zila**® Pharmaceuticals for
making this ad possible.

Figure. Oral cancer screening advertisement.

the public was introduced to a new painless brush biopsy technique.

Donna Shalala, then-secretary of the U.S. Department of Health and Human Services, endorsed the approach of the Oral Cancer Consortium, which is being incorporated by several other groups around the country. Area dentists have embraced the program, and another, expanded screening will be conducted in the fall of 2001. Consortium members are committed to helping other groups develop programs, and will eagerly

share media materials and expertise. In addition to ABC-TV, sponsors of the program have included Zila Pharmaceuticals (Phoenix, Ariz.) and OralScan Laboratories (Suffern, N.Y.), as well as some of the dental schools in the consortium.

MARYLAND MODEL FOR ORAL CANCER PREVENTION AND EARLY DETECTION

Maryland took a somewhat different approach from that of the regional consortium; it developed a state model of oral cancer prevention and early detection. The basis for this is that states have different populations, different oral cancer incidences and different mortality rates. In addition, state practice acts and other laws (for example, those that address tobacco purchasing and use) vary greatly. Thus, in the early 1990s, a small group began a partnership with the ultimate aim of decreasing morbidity and mortality from oral cancer in Maryland. The rationale for such an effort was simple; the oral cancer incidence was moderately high and the mortality rate was deplorable, especially among African-American males.

Partners. The state's partners included the American Cancer Society; local health departments; local churches; the Maryland Department of Health and Mental Hygiene; the University of Maryland's schools of dentistry, medicine and nursing; the National Institute of Dental and Craniofacial Research, or NIDCR; health care provider associations (for example, dentists, nurse practitioners, dental hygienists, family practice physicians); and the Department of Veterans Affairs. Their plan was to develop, implement and evaluate programs to

prevent and control the onset of premalignant and malignant lesions, with the ultimate goal of reducing morbidity and mortality from these cancers. Long-range objectives included the following:

- increasing the public's awareness, knowledge and understanding of oral cancer prevention;
- increasing health care practitioners' awareness and understanding of their role in oral cancer prevention and early detection;
- increasing the number of oral cancer examinations performed by health care providers;
- developing activities, policies, regulations and legislation aimed at improving access to programs for oral cancer prevention and early detection as well as successful treatment.

Needs assessment. A statewide needs assessment was conducted to determine which interventions were appropriate and could be implemented and, most important, whether the outcomes of these interventions could be measured. Also, participants envisioned that the baseline data could be used as leverage to obtain funding for the intervention phase. Thus, numerous organizations and individuals were invited to help with the needs assessment, including the partner groups mentioned above, as well as several dental students and volunteer researchers from the United States and abroad. Briefly, the needs assessment (phase I) consisted of the following:

.....

Many providers did not know the two most important types of lesions for which to look or the most common sites of oral cancer.

.....

- mail surveys to determine the knowledge and practices of Maryland dentists, dental hygienists, adult and family nurse practitioners and family practice physicians concerning oral cancer⁵⁻¹⁰;
- a telephone survey to assess the knowledge and practices of adults regarding risk factors for, and signs and symptoms of, oral cancers and whether respondents had ever had an oral cancer examination²;
- focus groups composed of all-provider groups and the public to obtain more in-depth information regarding knowledge and practices related to oral cancer¹¹⁻¹⁵;
- a determination of the best methods for educating providers (through continuing education) and the public about oral cancer prevention and early detection;
- a determination of the stage at which most oral cancers were detected and which practitioners were most likely to have diagnosed them.

Overall, the findings demonstrated that the general adult public in Maryland was not knowledgeable about oral cancer prevention and early detection.² Further, only 20 percent of these adults reported that they had received an oral cancer examination in the past year. Unfortunately, the researchers also found that when asked why they had not had an oral cancer examination, most respondents replied that their dentist or physician did not tell them to have one or that they did not know they were supposed to have such an examination.²

The results of another study showed that most oral cancers in Maryland were detected at a late stage and were diagnosed by physicians.¹⁶ Furthermore, although most surveyed dentists and dental hygienists reported providing oral cancer examinations, the majority of respondents did not palpate—an important part of the examination—and did not provide examinations to edentulous patients.^{6,7,11} Moreover, many providers did not know the two most important types of lesions for which to look (that is, red and white patches) or the most common sites of oral cancer (that is, lateral borders of the tongue, floor of the mouth and lips).

Applying the findings. These findings have been used in several ways, including being shared with a variety of groups, such as state provider associations (for example, a state medical society) and state legislators. Based on the data from these studies, the state assembly passed legislation to develop statewide oral cancer prevention programs. This legislation, which was strongly supported by Maryland Gov. Parris Glendening and the state health department, provided funds to the state's Office of Oral Health. The office is using these funds to develop an oral cancer examination training program for health care providers, an educational and awareness program for providers, and a campaign for the public.

Oral cancer awareness week. In addition, the governor proclaimed Sept. 16-22, 2001, as Maryland Oral Cancer Awareness Week. It is interesting to note that the week's media activities were patterned largely after those used by New York's Oral Cancer Consortium. Free oral cancer examinations were provided at numerous sites throughout the state and the closing event

took place at the National Museum of Dentistry in Baltimore. Many dignitaries attended, including U.S. Chief Dental Officer Dr. Dushanka V. Kleinman and key state legislators who sponsored the oral cancer legislation.

Educational materials about oral cancer examinations and risk factors, including one for people with low literacy, were developed, tested and published for use during the week's activities as well as later on. All of the materials are available on the Internet ("www.Maryland-oralcancer.org"). The initiative will continue during the winter and spring of 2002, with additional media and educational interventions anticipated.

In addition, the Maryland Department of Health and Mental Hygiene identified oral cancer as one of seven targeted cancers in the state for which tobacco settlement funds are to be used. Because of their special interest in oral cancer prevention, six Maryland counties, including two of the largest jurisdictions in the state, opted to target oral cancer prevention in their use of these funds.

The surgeon general's report on oral health¹⁷ and Healthy People 2010¹⁸ also included the information from Maryland's needs assessment. Moreover, these results were the basis on which the NIDCR and the National Cancer Institute led a Request for Applications on State Models of Oral Cancer Prevention and Early Detection for a three-year phase I needs assessment. Five grants have been funded and, thus, more statewide activities are anticipated. Depending on the results of the phase I grants, phase II grants (which consist of interventions) will be funded in the future.

NATIONAL EFFORTS

Other institutions have initiated prevention and early detection activities as well. For example, the Division of Oral Health, CDC, is working with a consortium of public and private-sector organizations to develop a national program for the prevention, early detection, and control of oral and pharyngeal cancers. Building on a strategic planning conference held in 1996¹⁹ co-sponsored by the CDC, ADA and NIDCR, CDC has facilitated meetings of the Oral Cancer Work Group, a coalition of federal and state agencies and private health-related organizations, in 1997, 1999 and 2001. Recommended strategies being addressed cover four main areas: public health policy; public education; professional edu-

cation and practice; and data collection, evaluation and research.¹⁹

The CDC Division of Oral Health also has awarded grants to several state cancer registries to evaluate the completeness, timeliness and quality of oral and pharyngeal cancer data. These projects will enhance our understanding of the burden of these cancers and provide insight into effective preventive strategies and justification for increased efforts and commitment of resources.

Brian R. Hill, an oral cancer survivor, recently established an exciting foundation called the Oral Cancer Foundation ("www.oralcancerfoundation.org"). The foundation is a nonprofit entity designed for advocacy and service to increase awareness and understanding about oral cancer prevention, early detection and treatment. At the forefront of the foundation's agenda is the goal to establish in the minds of the American public the need to undergo annual oral cancer examinations.

CONCLUSION

Collectively, the activities described above, along with others not cited, suggest that after decades of simply accepting the grim statistics associated with dentistry's No. 1 killer, we are on our way to truly making a difference. Each of us can make a difference, whether it is on a one-to-one basis with patients in offices or clinics, or as part of a group effort in our communities. Individually and collectively, we can make a significant difference in reducing the morbidity and mortality rates from oral cancer. ■

Dr. Alfano is the dean, New York College of Dentistry, New York University, 345 E. 24th St., New York, N.Y. 10010-4086, e-mail "michael.alfano@nyu.edu". Address reprint requests to Dr. Alfano.

Dr. Horowitz is a senior scientist, National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, Md.

1. Horowitz AM, Nourjah PA. Factors associated with having oral cancer examinations among US adults 40 years of age or older. *J Public Health Dent* 1996;56:331-5.
2. Horowitz AM, Moon HS, Goodman HS, Yellowitz JA. Maryland adults' knowledge of oral cancer and having oral cancer examinations. *J Public Health Dent* 1998;58:281-7.
3. Alfano MC. Message from the dean. *Nexus* 2000;1(2):2-3.
4. Bloom E. An amazing week in the life of NYU College of Dentistry. *Nexus* 2000;1(2):4-7.
5. Khoo LS, Neloms SM, Goodman HS, Horowitz AM. Epidemiology of oral cancer in Maryland (abstract). *J Dent Res* 2000;79:553.
6. Horowitz AM, Drury TF, Canto MT. Practices of Maryland dentists: oral cancer prevention and early detection—baseline data from 1995. *Oral Diseases* 2000;6:282-8.
7. Canto MT, Drury TF, Horowitz AM. Maryland dentists' knowledge of oral cancer risk factors and diagnostic procedures. *Health Promotion Practice* 2001;2:255-62.
8. Syme SE, Drury TF, Horowitz AM. Maryland dental hygienists' assessment of patients' risk behaviors for oral cancer. *J Dent Hyg* 2001;75:25-38.

9. Syme SE, Drury TF, Horowitz AM. Maryland dental hygienists' knowledge and opinions of oral cancer risk factors and diagnostic procedures. *Oral Dis* 2001;7:177-84.
10. Siriphant P, Drury TF, Horowitz AM, Harris RM. Oral cancer knowledge and opinions among Maryland nurse practitioners. *J Public Health Dent* 2001;61:138-44.
11. Canto MT, Horowitz AM, Drury TF, Goodman HS. Maryland family physicians' knowledge, opinions and practices about oral cancer. *Oral Cancer* (in press).
12. Canto MT, Horowitz AM, Child WL. Maryland physicians' views on oral cancer prevention and early detection. *Oral Cancer* (in press).
13. Horowitz AM, Siriphant P, Sheikh A, Child WL. Perspectives of Maryland dentists on oral cancer. *JADA* 2001;132:65-72.
14. Siriphant P, Horowitz AM, Child WL. Perspectives of Maryland adult and family practice nurse practitioners on oral cancer. *J Public Health Dent* 2001;61:145-9.
15. Horowitz AM, Siriphant P, Canto MT. Maryland dental hygienists perspectives on oral cancer (abstract). Boston: American Public Health Association; 2000.
16. Horowitz AM, Canto MT, Drury TF, Child WL. Perspectives of Maryland adults on oral cancer. *J Public Health Dent* (in press).
17. U.S. Department of Health and Human Services. Oral health in America: A report of the surgeon general. Rockville, Md.: U.S. Department of Health and Human Services, U.S. Public Health Service, National Institute of Dental and Craniofacial Research, National Institutes of Health; 2000.
18. U.S. Department of Health and Human Services. Healthy people 2010: Understanding and improving health. Washington: U.S. Department of Health and Human Services; 2000.
19. Preventing and controlling oral and pharyngeal cancer. Recommendations from a national strategic planning conference. *MMWR Morb Mortal Wkly Rep* 1998;47(RR-14):1-12.