This is the third and final article in our series about oral and pharyngeal cancer (OPC) in Florida\(^1\) for Today’s FDA. This article adds to the literature by examining and reporting on survival rates of OPC by geographic regions in Florida and identifies a group with poor survival. We also highlight the results of a targeted media campaign that was designed to increase OPC examinations among the group with the poorest OPC survival. Based on the outcome of our media campaign, we also propose important changes in the way we disseminate and structure oral health information to “at-risk” groups.

Five-year survival data of OPC reveals overall disease-specific survival rates of less than 60 percent; those individuals who do survive often endure major functional, cosmetic and psychological burden due to a dysfunctional ability to speak, swallow, breathe and chew. Seventy-five percent of all OPCs begin in the oral cavity. According to the National Cancer Institute’s Surveillance, Epidemiology, and Ends Results (SEER) program, 30 percent of oral cancers originate in the tongue; 17 percent in the lip; and 14 percent in the floor of the mouth.\(^2\) In Florida between 2001 and 2010, the percentage of oral cancers originating in the tongue was 30 percent; the percentage originating in the lip was 9 percent; and the percentage in the floor of mouth was 14 percent. For pharyngeal cancer in Florida (2001-2010) the percentage originating in the base of tongue was 27 percent, and in tonsils was 31 percent. From 2007-2011, Florida’s rate of oral cavity and pharynx cancers was 14.29 percent higher than the national average.\(^4\)

We further analyzed Florida cancer data by geographic regions in Florida, using pre-existing geographic regions (north, central and south) established by the Florida Agency for Health Care Administration (AHCA).\(^5\) Our goal was to determine if geographic differences in survival existed for oral cancer and separately for pharyngeal cancer.

For oral cancer, we found the survival rate for the southern region was higher than the northern region: hazard ratio, or HR, (south vs. north) = 0.83, \(p=0.002\); and the survival rate also was higher for central Florida compared to northern Florida HR (central vs. north) = 0.88, \(p=0.027\). In short, people with oral cancer survived a shorter time in northern Florida than in central or southern Florida.

For pharyngeal cancer, we found the survival rate was higher for the southern region than the northern region HR (south vs. north) = 0.81, \(p<0.001\); and the survival rate also was higher for central Florida compared to northern Florida HR (central vs. north) = 0.88, \(p=0.027\). In short, people with oral cancer survived a shorter time in northern Florida than in central or southern Florida.

We extended the survival data analysis to determine factors that might be contributing to this regional difference. Overall, we found that African-American men were significantly more likely to be
diagnosed at a later stage, contributing to poorer survival rates. Moreover, there were twice as many African-American men with OPC in the northern geographic region than that in the other two regions. We concluded that late-stage diagnosis largely contributed to the differences in five-year survival by geographic region and that the effect was strong among African-American men.

We extensively studied the reasons for a late-stage OPC diagnosis, knowing that the OPC diagnosis relies on patient presentation and a dentist's visual and tactile examination of the oral and neck structures with biopsy confirmation. The reasons for a late-stage diagnosis as cited in the literature were varied. They ranged from the lack of examinations for OPC, the quality of dental training about OPC examinations, the public's lack of awareness of the disease, patient's fear of results of a dental examination, and access to discretionary resources to pay for the examination by a dentist. We, however, concluded that a major reason African-American men did not seek OPC examinations was that the health messages about OPC lacked relevancy for them.

Based on this body of work, we initiated a media campaign to promote OPC examinations. Our media campaign used posters in local businesses, brochures, church handheld fans, and magnets on the side of cars or trucks. We chose these modes for delivering the information based on input from individuals residing in these communities where survival from OPC was most problematic. The messages were highly tailored for African-American men and were developed in conjunction with local community members. Greater detail about this media campaign can be found in two of our publications and on our website at http://take-the-bite.dental.ufl.edu/resources/media-campaign/.

The media campaign's overall purpose was to test whether targeted messages for a specific group were effective in increasing examinations for OPC, and if so, what the targeting made the message successful. It is of note that few, if any, studies in this field have tried to figure out what the critical ingredients are in an effective health message. Thus, our work was at the cutting edge.

Our study as reported in the American Journal of Public Health used two waves of telephone surveys of individuals residing in 36 rural census tracts in northern Florida (N=806). The second survey occurred after our media campaign. Our hypothesis was that raising concern about OPC among individuals who had never had an OPC examination would result in a greater likelihood of receiving a first-time OPC examination following the media campaign. Key findings of this study were: (1) seeing more modes of message delivery (message exposure) corresponded with heightened concern about the disease (OPC), particularly among African-American participants; (2) men who reported heightened concern about OPC were more likely to receive an OPC examination for the first time; and, (3) again, among men, more message exposure was associated with a higher probability of getting a first-time OPC examination. This relationship was partially mediated (caused) by increased concern about OPC.

The take-home message from this study for dentists is that health messages have to be relevant to the intended audience, and that relevance only can be judged through the eyes of that audience. This lesson seems simple and believable, but how often do we, as professionals, ask the "audience" whether a message is applicable to their understanding and feelings about the disease? We suspect the target audience is rarely consulted. For the individual dentist, knowing the circumstances of your group of patients and your community could facilitate drawing new "at-risk" patients to healthier lifestyles through effective interactions with you.

The principles we identified through our media campaign are broadly applicable and also can be applied to stemming the tide of OPC across Florida in the group of younger men. However, the question is, are the existing messages about OPC relevant to this younger "at-risk" group? Is the mode/method used to deliver that message appropriate for the younger adult? Take a look at the materials for yourself on OPC and human papilloma virus (HPV) and ask how "relevant" are these messages to those children who should be vaccinated against HPV, their parents and to those younger adults who should be examined for early stage lesions? At the very least, the individual dentist can choose the message's mode of delivery more effectively, so it fits the use patterns of the younger adult and tailor the message so it is relevant to the "at-risk" younger individual.

We sincerely hope that this series of articles has been helpful in understanding OPC in Florida and in understanding potential...
strategies for mitigating the negative outcomes of OPC. We can, however, do much more. OPC has few strong champions. Scarcely anyone is at the public health table seeking resources to combat this disease. OPC is an orphan cancer, not totally owned by the dental or medical professions. By further embracing the dental profession’s obligation to improve survival of OPC through promoting prevention and OPC examinations at every opportunity, with every group, and in every venue, much more progress could be made in fighting this disease.

We shall forever be grateful to the Florida Dental Association and its members for their support and encouragement of this work. Thank you.

References