

Oral Cancer Review

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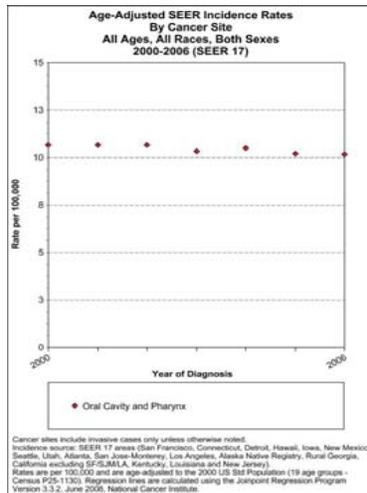
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Oral Cancer Burden in the US

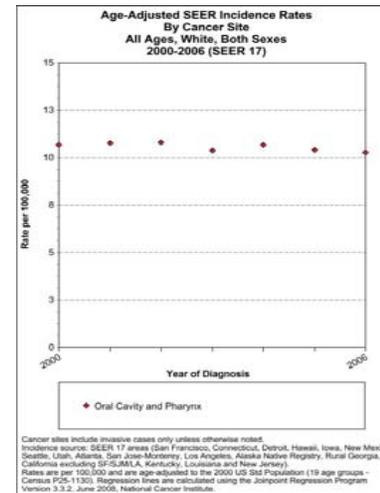
- It is estimated that 35,310 new cases of oral cancer will be diagnosed in 2008.
- In 2008, an estimated 7,590 people will die of these cancers.
- Overall incidence of oral cancer in the U.S. is 10.4 per 100,000 persons.
- For all stages combined, the 5-year relative survival rate is 60%.
- When oral cancer is diagnosed early, the 5-year relative survival rate is 82% and if the cancer has spread to lymph nodes the 5-year survival drops to 53% and for distant metastasis the 5-year survival rates is 28%.

SEER Cancer Statistics Review 1975-2005 (<http://seer.cancer.gov>)

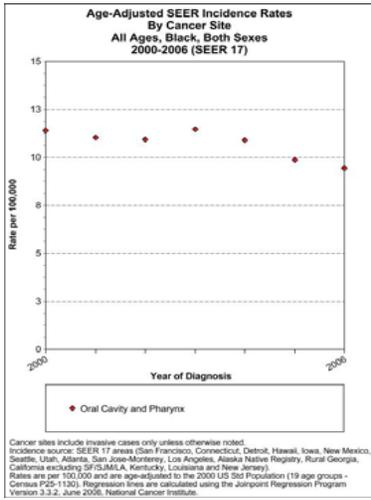
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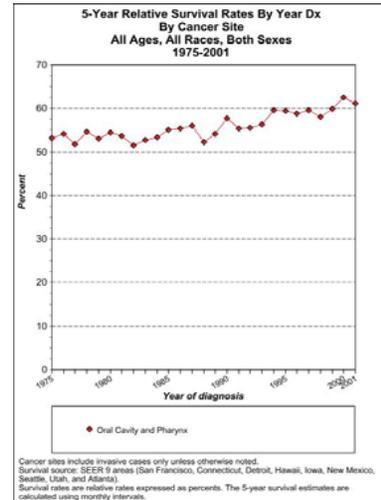
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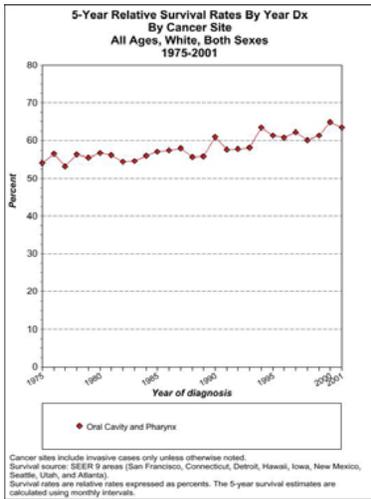
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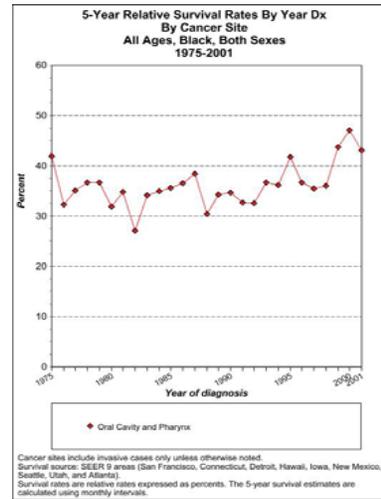
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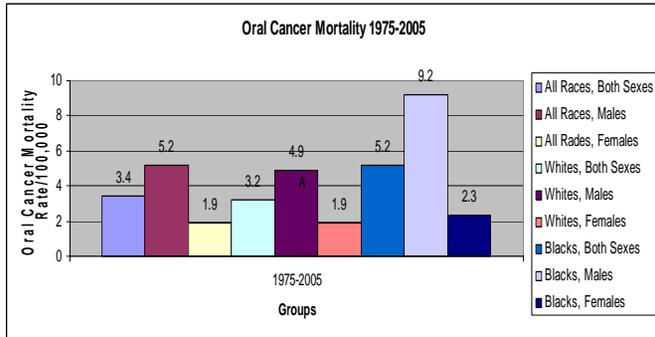


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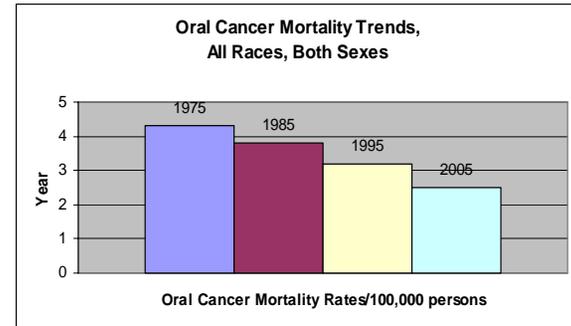
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US Oral Cancer Mortality 1975-2005 (CDC)



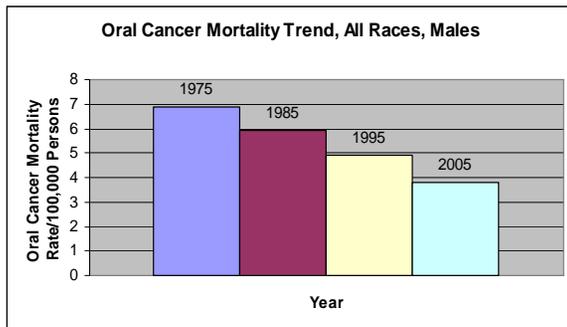
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US Oral Cancer Mortality Trend



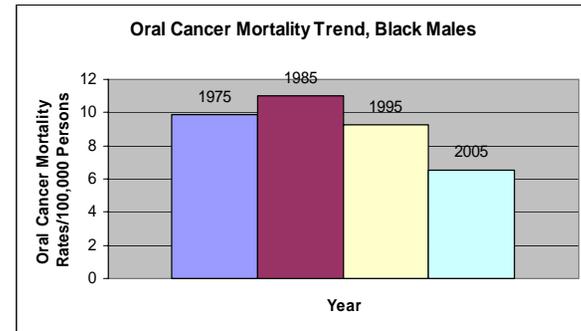
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US Oral Cancer Mortality Trend



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Oral Cancer Mortality Trend US



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Risk Factors in the U.S.

- Use of tobacco products
- Use of alcohol products
- Age
- A previous oral cancer lesion
- Certain viruses (HPV)
- Unprotected exposure to sunlight (lip cancer)
- Diet low in fruits and vegetables
- Marijuana use



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Oral Cancer – Maryland (1996)

- Maryland ranked seventh in mortality rates
- Maryland ranked sixth in mortality rate among males
- 3rd highest mortality rate in the US for African American males
- 5-year survival rate in Maryland for African Americans is 33% (whites - 55%)
- Nearly a 20% higher death rate from oral cancer in Maryland than the US



Ries et. al. SEER Cancer Statistics review, 1973-1996

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Oral Cancer Prevention Maryland – Early Steps

- Formation of small coalition
 - NIDCR
 - University of Maryland Dental School
 - Maryland Office of Oral Health
 - American Cancer Society
- Networking and Presentations
- Secure small grants and other funds
- Contract with Maryland Cancer Registry
- Maryland State Model for Oral Cancer Prevention

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Oral Cancer Prevention Maryland State Model

- Phase I - Needs Assessment
- Phase II - Development and Pilot Testing of Educational Interventions
- Phase III - Program Evaluation

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Oral Cancer Prevention Activities - Maryland

Phase I - Needs Assessment

- Building a partnership - DHMH, NIDCR, UMD, MSDA, MDHA, MAFP, ACS, others
- Assessment of funds
- Review of state epidemiological data
- Surveys and focus groups of health care providers
- Survey and focus groups of public
- Publication and dissemination of findings

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Maryland Survey - Public



- In Maryland, only 20% of the public reported having had an oral cancer examination in the past year. In addition, the survey included questions on knowledge, opinions and practices about oral cancer

Horowitz AM, Moon HS, Goodman HS, Yellowitz JA. Maryland adults' knowledge of oral cancer and having oral cancer examinations. J Public Health Dent 98;58:281 -7.

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National Survey - Public

- Poor knowledge about oral cancer risk factors, early signs and symptoms
- Approximately 14% reported having had an oral cancer examination in the past 12 months, the recommended periodicity

Horowitz AM, Nourjah P, Gift HG. US adult knowledge of risk factors for and signs of oral cancers: 1990. J Am Dent Assoc 1995;126:39-45.

Horowitz AM, Nourjah PA. Factors associated with having oral cancer examinations among US adults 40 years of age and older. J Public Health Dent 1996;56:331-5.

Canto MT, Drury TF, Horowitz AM. Oral Cancer Examinations among US Hispanics in 1998. J Cancer Edu 2003;18:43-47

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Maryland Survey – Health Professionals



- Dentists and dental hygienists, findings similar to the ones from the national surveys

Horowitz AM, Drury TF, Canto MT. Practices of Maryland dentists: oral cancer prevention and early detection- baseline data 1995. Oral Dis 200;6:282-8

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.

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Maryland Survey – Health Professionals



- Nurse practitioners & family physicians examine the lymph nodes in the neck but not for the purpose of detecting oral cancer.
- They do not examine the oral cavity.

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.
Canto MT, Horowitz AM, Drury TF, Goodman HS. Maryland family physicians' knowledge, opinions and practices about oral cancer. *Oral Oncol* 2002;38:416-24.

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National Survey – Dentists & Dental Hygienists

- Majority identified known risk factors (tobacco, age, prior cancer)
- Only 33% knew oral cancers are most often diagnosed in late stages
- They did not feel adequately trained to perform an oral cancer examination, or how to palpate lymph nodes

Yellowitz JA, Horowitz AM, Drury TF, Goodman HS. Survey of US dentists' knowledge and opinions about oral pharyngeal cancer. *J Am Dent Assoc* 2000;131:653-61.
Forrest JL, Drury TE, Horowitz AM. US dental hygienists' knowledge and opinions related to providing oral cancer examination. *J Cancer Educ* 2001;16:150-6.

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Oral Cancer Prevention Curriculum in US Medical Schools

- The survey assessed if oral cancer prevention was included in the health history and physical diagnosis course in medical schools
- Response rate was 63.2%
- 29% required inspection of all oral structures and 43% mentioned intraoral palpation

Ahluwalia KP, Yellowitz JA, Goodman HS, Horowitz AM. An assessment of oral cancer prevention curricula in U.S. medical schools. *J Cancer Educ* 1998;13:90-5.

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Coverage of Oral Cancer in the Popular Press

- Articles from magazines and newspapers from 1987 to April 1998
- 50 articles and news items identified (18 newspapers & 32 magazines)
- Overall the study demonstrates the lack of coverage about oral cancer in the popular press for the time period and provides a partial explanation of the public's lack of knowledge

Canto MT, Kawaguchi Y, Horowitz AM. Coverage and quality of oral cancer information in the popular press: 1987-98. *J Public Health Dent* 1998;58:241-7.

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Oral Cancer Educational Materials

- Assessment of quantity and adequacy of educational materials on oral cancer
- 77% (n=172) organizations responded
- 59 items received focused on or included the topic of oral cancer
- 20 were only on oral cancer
- Few educational materials and most written at a high grade level

Chung V, Horowitz AM, Canto MT, Siriphant P. Oral cancer educational materials for the general public: 1998. *J Public Health Dent* 200;60:49-52.

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Oral Cancer Educational Materials

- Assessment of printed oral cancer materials from 82 United States Air Force (USAF) dental clinics.
- Readability ranged from 7th to 13th grade.
- Few oral cancer materials were retrieved and the majority included misleading or incorrect information.

Mongeau SW, Horowitz AM. Assessment of reading level and content adequacy of oral cancer educational materials from USAF dental clinics. *Journal of Cancer Education* 2004;19:29-36.

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Oral Cancer Information in Health Education Textbooks

- This study evaluated the quality, completeness and accuracy of oral health information in 26 health education textbooks (elementary through high school).
- Findings - lack of adequate information on oral cancer.

Baysac MA, Horowitz AM, Ma DS. Oral cancer information in health education textbooks. *J Cancer Educ* 2004;19:12-6.

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Qualitative Research

- Focus groups with the public, dental hygienists, dentists, family nurse practitioners and physicians
- One-on-one interviews with physicians

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Focus Groups with Adults

- 3 focus groups
- Participants were surprised by high prevalence of oral cancer in Maryland
- Few had heard about oral cancer
- Participants said that they would be more comfortable discussing oral cancer with physicians than with their dentists

Horowitz AM, Canto MT, Child W. Maryland adults' perspectives on oral cancer prevention and early detection. *J Am Dent Assoc* 2002;133:1058-63.

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Focus Groups with Dental Providers

- 2 focus groups with dental hygienists (one face to face and one by telephone) & 2 focus groups with dentist
- Lack of recognition of Maryland's and the nation's oral cancer problem
- Lack of time or time constraints to routinely provide a comprehensive oral cancer examination
- Dentists provided different descriptions of the parts of an oral cancer examination

Horowitz AM, Siriphant P, Canto MT, Child WL. Maryland dental hygienists' views of oral cancer prevention and early detection. *J Dent Hyg* 2002;76:186-91.

Horowitz AM, Siriphant P, Sheikh A, Child WL. Perspective of Maryland dentists on oral cancer. *J Am Dent Assoc* 2001;132:65-72.

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Focus Groups with Adult and Family Practice Nurses

- 2 focus groups (one face to face & one by phone).
- They indicated that oral cancer is a neglected health problem.
- Identified barriers to providing an oral cancer examination is lack of training and unpleasant feeling about examining the mouth

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.

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Focus Group and Interviews with Physicians

- 1 focus group and 9 one-on-one interviews
- Unaware about oral cancer prevalence in Maryland
- Doing an oral cancer examination is dependent on their perceiving a benefit for their patient
- Interested on continuing medical education on oral cancer as part of another course

Canto MT, Horowitz AM, Child WL. Views of oral cancer prevention and early detection: Maryland physicians. *Oral Oncology* 2002;38:373-377.

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Oral Cancer Activities - Maryland

Phase II -Development and Pilot Testing of Educational Interventions

- Develop educational intervention(s) and pilot test -public and health care providers
- Develop, test and produce educational materials
- Implement educational interventions
- Continuation of partnership building

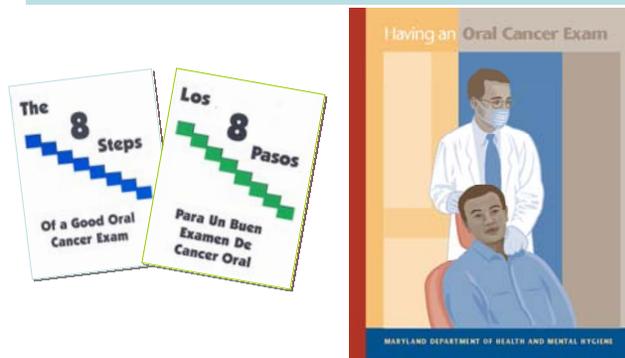
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Oral Cancer Literacy What Everyone Needs to Know

- Public, health care providers, policymakers and media
 - Risk assessment and risk reduction
 - Risk factors
 - Signs and symptoms
 - Behavior modification
 - Public to request oral cancer examination
 - Providers to incorporate adequate oral cancer examination into standard of care
 - Adequacy of oral cancer examination
 - Frequency of oral cancer examination

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Patient Education Materials



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Maryland Oral Cancer Legislation/Funding

- Cigarette Restitution Fund (CRF - tobacco settlement)
 - Approximately \$4.4 billion over 25 years
 - 5 out of 24 counties targeting oral cancer
- SB791/HB1184 (Prevent Oral Cancer Mortality)
 - Funding to the Office of Oral Health (OOH)
 - Oral Cancer Education, Public Awareness and Provider Training Grants

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Oral Cancer Prevention Initiative

- Kick-off event – Camden Yards at Oriole Park
- Governor proclaims annual week in June as “Oral Cancer Awareness Week” in Maryland
 - Eastern Shore Coalition
 - Statewide Oral Cancer Screenings
 - Public Service Announcements – print, TV, radio
- Public relations “Prevent Oral Cancer” campaign
 - Develop oral cancer prevention toolkit
- Public oral cancer education and awareness – PSA (Baltimore Orioles)

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Oral Cancer Prevention Initiative (Cont.)

- Training of health care providers – examinations
 - Develop oral cancer minimal clinical elements, flowcharts, screening, referral and consent forms
- Prevention/education oral cancer grants to Maryland counties:
 - Healthcare provider trainings
 - Public education and awareness
 - Oral cancer screenings

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Del Marva Shorebirds
Ballfield Poster Campaign

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The Maryland State Model for Oral Cancer Prevention

American Dental Association
2002 National Award

Meritorious Award in
Community Preventive Dentistry

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Maryland State Model for Oral Cancer Prevention National Outcome

STATE MODELS FOR ORAL CANCER PREVENTION AND EARLY DETECTION

Release Date: June 22, 2000

RFA: DE-00-005

National Institute of Dental and Craniofacial Research

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Oral Cancer Activities - Maryland

Phase III - Program Evaluation

- Review of State epidemiological data
- Surveys of health care providers and public
- Prepare publications/reports-disseminate
- Readjust educational interventions based on program evaluation
- Use findings for program revisions and for establishment of needed policies

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MARYLAND HEALTH IMPROVEMENT PLAN 2000-2010 Reducing Oral Cancer Mortality

- Objective 1 - By 2010, increase to at least 50% the proportion of oropharyngeal cancer lesions detected at Stage I (localized).
 - Baseline: 35.1%, detected at Stage I
- Objective 2 - By 2010, increase to at least 50% the number of adults, aged 40 years and older, who, in the past year, reported having had an oropharyngeal cancer examination.
 - Baseline: 20%, from 1995 data collected in Maryland by the National Institute of Dental and Craniofacial Research

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Maryland Oral Cancer Prevention Initiative: Office of Oral Health

- Statewide, prevention and education public health approach encompassing:
 - Oral cancer education for the public
 - Education/training of dental and non-dental health care providers
 - Screening and referral, if needed
 - Producing targeted health educational activities and materials
 - Creating didactic training program for health care providers throughout Maryland
 - Conducting an evaluation of the program and assess outcomes
 - Developing a statewide public relations oral cancer prevention campaign

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Maryland Oral Cancer Prevention Initiative Office of Oral Health (2007)

- Grant funding to 9 counties
- Educational programs for healthcare providers
 - 349 healthcare providers
- Oral cancer screening
 - 1,143 adults screened
 - 36 with suspicious lesions of which 26 sent for biopsy
 - 3 cases of oral cancer detected
- Smoking cessation
 - 600 adults referred to programs

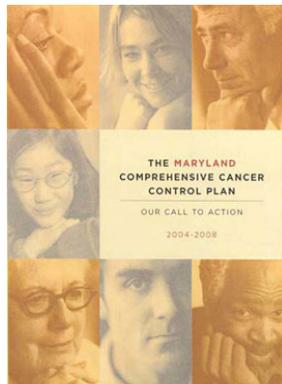
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Maryland Oral Cancer Program Information Center for Cancer Surveillance and Control

- Local Public Health Activities
 - Form local community health coalitions
 - Write local comprehensive cancer plans
 - Implement plans:
 - Educate the population
 - Screen those with low income and un- or under-insured
 - Treat or link to treatment
- 2 Maryland Counties targeting Oral Cancer
 - Baltimore County
 - Garrett County

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The Maryland Comprehensive Cancer Control Plan



- Includes a chapter on oral cancer

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Statewide Oral Cancer Program Information Outcomes to date – 1/2000 – 12/31/2007 Maryland Cigarette Restitution Fund

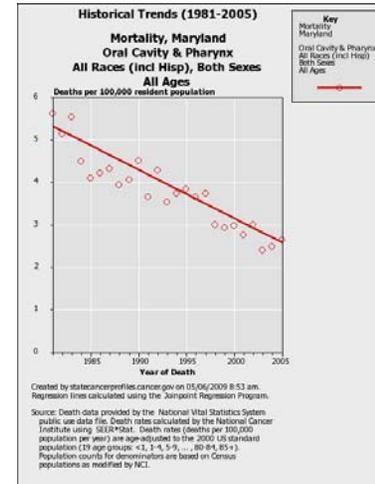
- 63,035 individuals educated about oral cancer (8 of 24 jurisdictions)
 - 55,333 general public
 - 5,111 health care professionals
 - 2,609 trainers
- 6,714 individuals screened for oral cancer
 - 117 with findings of cancer or possible cancer
 - 56 abnormal but work up unknown or complete
 - 2 cancers detected
 - 59 no cancer detected or suspected
- 3.3 million people potentially reached through media and resource materials

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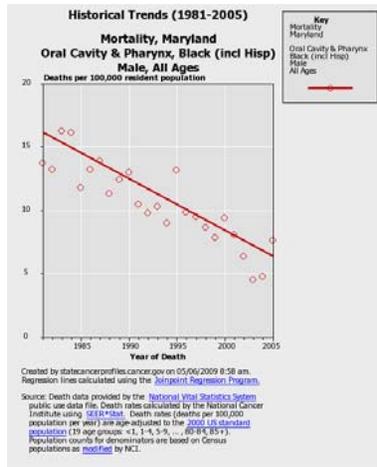
Oral Cancer Mortality in Maryland CDC/SEER 2001-2005

- Maryland ranks 25th in total age-adjusted mortality (2.7/100,000) among all states
 - Slightly higher than US average (2.6/100,000)
- Ranks 11th highest age-adjusted mortality rate in the US for males of all races (4.3/100,000)
 - Higher than US average (4.0/100,000)
- Ranks 41st highest age-adjusted mortality rate in the US for females of all races (1.4/100,000)
 - Lower than US average (1.5/100,000)

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Oral Cancer Rates in Maryland Maryland Cancer Report, 2008

- Annual age-adjusted incidence rate (2003) higher in Maryland (11.7) than national average (10.0)
 - 3.2% annual increase in white males (1999-2003)
 - Slight decrease for African-American males and all females (1999-2003)
- Stage of diagnosis (2003):
 - 47% - regional
 - 31.9% - local
- 37% of the public 40 years and older reported having an oral cancer exam in past year (2006)
 - 3% increase from 2004
 - Surpasses Healthy People 2010 target of 20%

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Toluidine Blue

- Fast and easy office procedure
- Stain suspected malignant tissue
 - When several surface abnormalities are present
- Tissue that stains blue indicates either dysplasia or malignancy
- Pending approval in U.S.



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Chemiluminescent Light

- A liquid similar to diluted vinegar is applied to the area of the mouth to be screened
- Under the special light, the liquid causes pre-cancerous or cancerous cells to glow
- Approved for use in the United States but not yet widely available



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Brush Biopsy

- Uses small stiff-bristled brush to collect mucosal epithelial cells from a suspicious site
 - Apply firm pressure with the brush to the suspected area
 - Brush is then rotated five to ten times until pinpoint bleeding occurs
- Immediately place and fix the tissue on a slide
- Slide is subsequently sent to a laboratory for computer analysis
 - Results sent back to the practitioner within a week



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Oral Cancer Examination



- Can be performed by:
 - Dentist
 - Dental Hygienist
 - Physician
 - Physician's Assistant
 - Family Nurse Practitioner
 - Nurse

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Clinical Oral Cancer Exam



- Extraoral examination – observe face, head, and neck noting any asymmetry, color change, and growths
- Conduct bilateral palpation to detect enlarged nodes
- Begin perioral and intraoral soft tissue examination by assessing lips

NIH, NIDCR, March 1996

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Clinical Oral Cancer Exam



- With patient's mouth partially open, inspect labial mucosa of maxillary and mandibular vestibules
- Observe for changes in color, texture and any swelling or other abnormality

NIH, NIDCR, March 1996

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Clinical Oral Cancer Exam



- Retract the buccal mucosa on both right and left sides extending from the labial commissure to the anterior tonsillar pillar
- Note any changes in color, pigmentation, texture, mobility and other abnormalities

NIH, NIDCR, March 1996

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Clinical Oral Cancer Exam



- With teeth in occlusion, assess the buccal and labial aspects of the gingiva and alveolar ridges going from maxillary right posterior to left posterior and then to mandibular gingiva
- Assess palatal and lingual aspects with mouth open
- With patient's tongue at rest and mouth partially open, inspect dorsum of tongue for any abnormalities including pattern of the papillae

NIH, NIDCR, March 1996

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Clinical Oral Cancer Exam



- The patient should protrude tongue and with a 2x2 gauze, the examiner should inspect from side to side to note any abnormalities
 - Can use a mouth mirror to inspect the right and lateral tongue margins
- Should palpate tongue while in grasp

NIH, NIDCR, March 1996

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Clinical Oral Cancer Exam



- Have patient lift tongue to inspect ventral surface
- With tongue still raised, inspect floor of the mouth for changes and abnormalities

NIH, NIDCR, March 1996

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Clinical Oral Cancer Exam

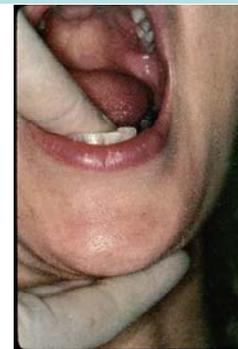


- With patient's mouth open, depress base of tongue with mouth mirror or tongue depressor to inspect tonsillar and oropharyngeal areas
- At same time, inspect hard and soft palatal areas

NIH, NIDCR, March 1996

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Clinical Oral Cancer Exam



- Perform bimanual intraoral palpation on the floor of the mouth
- Also palpate:
 - Tongue
 - Lips
 - Other soft tissues

NIH, NIDCR, March 1996

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Oral Cancer Signs and Symptoms American Cancer Society

Early

- Sore in the mouth that does not heal (most common)
- White or red patch on gums, tongue, tonsil, or soft tissue

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Oral Cancer Signs and Symptoms American Cancer Society (Cont.)

Late

- A lump or thickening in the cheek and/or neck
- 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 causing dentures to fit poorly
- Loosening of the teeth or pain around the teeth or jaw
- Voice changes
- Weight loss

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Oral Cancer Signs and Symptoms

Pain is not
an early
finding

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Questions??



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Minority Outreach and Technical Assistance
Updates

Truemenda Green

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University of Maryland Statewide Health
Network Update

Shiraz I. Mishra

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National Association of Counties Prescription
Drug Discount Card

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The Role of Lay Health Care Workers in
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Administrative/Grants/Budget and related
Fiscal Issues

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