Save a life: the dentist’s role in the early detection of oral cancer

Panel discussion at the VDDS Midwinter Clinic

30 November 2018
Westin Bayshore Vancouver
Overview

Moderator
• Dr. Meredith Moores, Acting Director of Professional Practice, CDSBC

Special Guest
• Balvir Dhadda

Panellists (in order of speaking)
• Dr. Alan Bates
• Dr. Ash Varma
• Dr. Catherine Poh
• Dr. Allan Hovan
Psycho-oncology of Oral Cancer

VDDS 2018 – Oral Cancer Panel

Alan Bates, MD, PhD
Provincial Lead, Psychiatry, BC Cancer
• Relationships with commercial interests:
  • Direct financial support: None
  • Clinical trials, studies, research: Unrestricted research grant from Pfizer through BC Cancer
  • Speaking or consulting fees: None
  • Real or potential gain from a product, information, or service: None
  • Income: BC Cancer, BC Psychiatric Association, UBC Psychiatry
Objectives

• Don’t spend too long on the Objectives slide
Thank you

• Thank you to Dr. Allan Hovan and other panel organizers
Anxiety

• Incidence up to 44% in cancer patients

• Adjustment disorder with anxiety is the most common diagnosis

• No consistent evidence of site of cancer or stage of illness affecting prevalence

• Long hospitalizations / ICU → PTSD

Levin & Alici, 2010
Depression

• Incidence in cancer up to 58% depending on the exact population/setting

• Pancreatic cancer (? related to inflammation/immune/cytokine models of depression)

• Head and Neck cancer (link thought to be substance use associated with premorbid mood disorder)
  • Incidence 20-50%

Miller & Massie, 2010; Pessin, Amakawa, & Breitbart, 2010
### Etiologies to rule out

<table>
<thead>
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<th>Depression</th>
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<tr>
<td>Pain</td>
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<td>Electrolyte imbalances</td>
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<td>Sepsis</td>
<td>Vitamin deficiencies (e.g. B1, B12)</td>
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<td>Thyroid abnormality</td>
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<td>Adrenal insufficiency</td>
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<td>Bronchodilators</td>
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Levin & Alici, 2010; Miller & Massie, 2010; Pessin, Amakawa, & Breitbart, 2010
Distress in times of transition

- Loss of “active” treatment
- Loss of contact with doctors and nurses
- Increased uncertainty in living from investigation to investigation
- Some family and friends may not have been supportive through treatments to-date
Suicide

- 2-3X increased risk for suicide in oncology settings compared to general population
  - May be higher in H&N compared to some other tumor sites

- Prevalence of suicidal ideation ranges from 1-16% depending on specific population/setting

Miller & Massie, 2010; Pessin, Amakawa, & Breitbart, 2010
Suicide

- Risk factors:
  - Depression, hopelessness, loss of control
  - Personal and family history
  - Pain, fatigue, delirium
  - Advanced illness, poor prognosis
  - Premorbid psychiatric illness/addiction
  - Isolation

Miller & Massie, 2010; Pessin, Amakawa, & Breitbart, 2010
Insomnia

• “Are you afraid to close your eyes at night because you’re worried you’ll never wake up?”
Psychotherapy for Existential Distress

- Breitbart’s Meaning Centered Psychotherapy
  - Based on work of Viktor Frankl
  - Sources of meaning:
    - Creativity: work, deeds, causes
    - Experience: nature, art, relationships
    - Attitude: attitude taken towards suffering
    - Legacy: individual, family, community history
• Randomized, double-blind trial of escitalopram (10 → 20mg) vs. placebo in 148 non-depressed patients starting treatment for H&N cancer

• 25% developed depression in the placebo group vs. 10% in the escitalopram group

Lydiatt et al., 2013
How do you diagnose depression?

• Neurovegetative symptoms likely to be present with or without depression

• Ask the money questions:
  • Hopeless
  • Worthless
  • Guilty
  • Feeling like being punished
  • Suicidal ideation

Miller & Massie, 2010; Pessin, Amakawa, & Breitbart, 2010
How do you diagnose depression?

• Or, you know, just ask them:
  • “Have you been depressed most of the time for the past two weeks?”

• 100% sensitivity, 100% specificity in 197 patients with advanced cancer in a palliative care setting

• Better than Beck Depression Inventory in the same study

Chochinov et al., 1997
Treatment

- Correct reversible medical etiologies
- Psychotherapy works in this setting!
  - e.g. CBT, supportive, mindfulness
- Medications work in this setting!
  - CYP450 interactions

Holland et al., 1998; Levin & Alici, 2010
Treatment - Medications

• Pick medications where side effects are helpful

• SSRIs (e.g. sertraline, escitalopram)

• SNRIs (e.g. venlafaxine, duloxetine)
  • May help with pain

• Mirtazapine
  • May help with sleep, appetite, and nausea
Treatment - Medications

- Atypical antipsychotics
  - e.g. quetiapine or aripiprazole for depression
  - Olanzapine may help with sleep, nausea, and appetite
  - Olanzapine often used to counteract steroids

- PRN lorazepam for e.g. claustrophobia related to face mask for RT
  - Lorazepam can help with nausea

- Stimulant (e.g. methylphenidate) for depression
Depression

Median Survival:
57 months
39 months

$p < 0.001$
Risk factors and barriers in mental illness

- Poor diet
- Smoking and other substance abuse
- Medication side-effects (e.g. dry mouth)
- Poor oral hygiene
- Lack of income and dental insurance
- Mistrust of dental health providers
- Lack of knowledge about available resources
- No phone
- Lack of insight

Slack-Smith et al., 2016
• Pain is a complex experience
  • Affect, cognition, behaviour, neurobiology

• Comorbidities such as psychiatric illness or cognitive impairment can complicate diagnosis

• Strong interaction between emotional state and experience of pain
Anxiety and dental pain

- Anxious patients may require more time for breaks and extra explanations

- In a study of 62 patients who underwent 3rd molar extractions under IV anesthesia, post-operative pain was slower to resolve in patients with pre-morbid psychological distress

Filewich et al., 1981; Locker et al., 2001; Gonzalez-Martinez et al., 2016
Specific tips

- Ask the patient about anxiety
- Use a screening tool such as the GAD-7, Modified Dental Anxiety Scale, Dental Fear Survey
- Help the patient direct attention away from the pain
- Maintain open communication about symptoms and possible adverse effects
- Refer to Psychiatry, Psychology, Social Work, Counselor

Lin, 2013
• Referral to Psychiatry should be done in a thoughtful way
  • Something like “We can’t find anything wrong with you, so it’s probably psychological” won’t help your patient
  • Explaining that the experience of pain is complex and that different specialists can make different contributions to reducing their discomfort is generally a good approach
  • Earlier involvement is better
Name that syndrome

• Preoccupation with details, order, organization, schedules
• Perfectionism
• Devotion to work
• Overconscientious
• Reluctance to delegate important tasks
Reality vs. Expectation/Desire

• Any information/news that creates a strong negative contrast between reality and expectation
Support for healthcare providers

• We may experience feelings of sadness, isolation, inadequacy, and hopelessness

• Very important to seek support from colleagues, friends, family, professionals as needed
Email

alan.bates@bccancer.bc.ca
Save a life: the dentist’s role in the early detection of oral cancer

Panel discussion at the VDDS Midwinter Clinic

30 November 2018
Westin Bayshore Vancouver
Dr. Catherine Poh
Outline

1. How to assess an oral lesion at risk clinically?
2. How to do a proper biopsy?
3. How to submit a biopsy?
4. What is dysplasia?
A systemic approach

1. History of present illness
   - Onset, location, intensity, frequency and duration
   - Aggravating and/or relieving variables
   - Change over time - better, unchanged or worse

A systemic approach

2. Medical history – a whole person approach

- Medications, including drug allergies
- Review of systems – Skin, GI, Joints
- Medical conditions (hospitalization; chronic conditions)
- Risk factors: smoking/alcohol habits; betel nut or illicit drug usage (type, frequency and duration)
- Family history
Lichenoid lesion - Drug induced lichenoid reaction
Lichenoid lesion – Graft Versus Host Disease
3. Examination

- Extraoral head and neck examination
- Intraoral examination
A systemic approach – 3. Examination

Extraoral head and neck examination –
Visual examination and palpation for swelling, mass, or asymmetry
Importance of anatomy -

Upper jugular chain or jugulo-digastric area (posterior auricular nodes): metastasis from nasopharynx.

Posterior triangle (posterior triangle lymph nodes): metastasis from nasopharynx, posterior scalp, etc. Temporal bone, or skull base.

Submandibular triangle (submandibular group): metastasis from soft tissues of mouth, gums, mucosa of cheek.

Submental triangle (submental nodes): rarely involved early, except in metastasis from cancer of lip.

Lower jugular chain area (supradiglottic nodes): metastasis from thyroid, parotid sinuses, upper esophagus; rarely, from primary tumor below clavicle.

Megaular chain area (deep lateral cervical nodes): metastasis from any portion of oral cavity, pharynx, or larynx (especially from growths in Welmeyer’s tonsillar ring [nasopharynx, tonsil, base of tongue]).
A systemic approach – 3. Examination

Intraoral examination –
Visual examination and palpation for swelling, mass, or asymmetry
What are the difficult spots during the exam?

- Lingual to retromolar trigone (gutter area)
- Tonsillar area
- Floor of mouth

**Techniques:**
- Systemic approach
- Tongue pulling
- Bimanual palpation
- Ah....
A systemic approach

4. Differential Diagnosis
Differential diagnosis oral mucosal lesions (5 I’s)

1. Inherited or congenital
2. Infectious – bacteria, viral, fungal
3. Inflammatory
4. Iatrogenic
5. Idiopathic
1. Inherited, congenital, hereditary

White spongy nevus
2. Infectious - bacteria

Parulis or gum boil – tooth related
2. Infectious – low-risk human papillomavirus

- Squamous papilloma
- Heck’s disease
2. Infectious – Candidiasis
3. Inflammatory – vesiculo-bullous conditions
Is this Lichen Planus?

Contact lichenoid mucositis
Is this Lichen Planus?

Drug induced lichenoid reaction

Chronic graft-versus-host disease
4. Iatrogenic – trauma or oroparafuncts

Frictional hyperkeratosis from oro-parafuncts!
5. Idiopathic – neoplastic process?

Leukoplakia
Leukoplakia

WHO definition:
A white patch or plaque which does not rub off and which cannot be diagnosed clinically or pathologically as any specific disease (a clinical entity)
Leukoplakia – clinical entity

Leukoplakia

Erythroleukoplakia

Erythroplakia
How do we know if this lesion is at high risk?

Problems in clinical diagnosis

1. Reactive vs. Malignant potential (5 I’)
2. High-risk vs. low-risk (3 S’)
1. Medical history, smoking habit
drug information and general health
2. Be familiar with the presentation of common oral
mucosa conditions – Lichen planus, canker sore etc.
3. Culture – fungal swab/viral culture
4. Possible etiological factors – sharp tooth or prosthesis
High-risk vs. low-risk - 3 S’

• Site of the lesion
• Sign (Appearance) of the lesion
• Size and change over time
Site of the lesion

High-risk anatomical site

1. Floor of mouth
2. Ventrolateral tongue
3. Soft palate complex -
   • soft palate proper
   • tonsillar pillars
   • lingual aspect of retromolar trigone
Sign of the lesion - appearance

Discrete, homogenous leukoplakia

Diffuse, non-homogenous erythroleukoplakia
Sign of the lesion - appearance

Discrete, homogenous erythroplakia
Sign of the lesion

High-risk appearance:
- Color: red >> red and white >> white
- Diffuse >> discrete
- Appearance:
  - Non-homogenous >> homogenous
Size of the lesion

- ↑ size → ↑ risk
- ↑ number of lesion → ↑ risk
- Changes over time - indicating the speed of the progression
Low-risk or High-risk?

1.5 cm, discrete, homogenous Leukoplakia at the right mandibular buccal gingiva/vestibule

3 cm, diffuse, non-homogenous Erythroleukoplakia at the left lateral tongue
A case – 55 y/o F Nonsmoker; non-drinker; Hx of asymptomatic lesion at left anterior tongue
Visual aids used routinely in the clinic

1. Digital Images
2. Fluorescence Visualization
3. Toluidine blue
1. Clinical images –
A good picture is better than a thousand words!

High resolution digital clinical images
2. Toluidine Blue (TB)—
a metachromatic, acidophilic stain (Tolonium Chloride)

High affinity to nucleic acid
3. Fluorescence Visualization (FV) - Blue light and tissue autofluorescence

**FVR**
*fluorescence visualization retained*

- Fluorescence due to FAD/NADH (cellular level)
- Fluorescence due to collagen cross-links & elastin (in the subtending stroma)

**FVL**
*fluorescence visualization loss*

- ↑ Micro-Vascularization
- ↑ Metabolic Activity (↑ FADH/NAD)
- Decomposition (or restructuring) of the of Collagen Matrix
- ↑ Nuclear Scattering
- Epithelial Thickening
Clinically not-apparent change

Poh *et al.*, Head and Neck, 2007
FV in oral cancer surgical margin decision

Carcinoma

Severe dysplasia

No dysplasia

Carcinoma

No dysplasia

Clin Can Res, 12(22), 6716-22, 2006
FV-guided surgery appears to reduce local recurrence

Recurrence-free survival for 230 patients enrolled in a British Columbia study and have at least 12-month follow-up. For SCC, 3-year recurrence rate reduces from 36% to 5%. For severe dysplasia and CIS, 3-year recurrence rate reduces from 32% to 9%.
Masking by Inflammation

Lichen planus
Outline

1. How to assess an oral lesion at risk clinically?
2. How to do a proper biopsy?
3. How to submit a biopsy?
4. What is dysplasia?
Gold standard for risk assessment
- Presence and Degree of dysplasia

- Incision or excision
- How many biopsies
- Where to biopsy
- Size of the biopsy
Incision vs. excisional biopsy

**Incisional biopsy**: is aimed to take a representative sample of the lesion with or without normal adjacent tissue for **diagnostic** purposes

**Excisional biopsy**: is aimed at the complete surgical removal of the lesion for **diagnostic and therapeutic** purposes
How many and where?

Rule of thumb – purpose, representativeness, and level of confidence
Example of punch biopsy technique
1. Cold knife, not laser please!
Cauterizing artefact – Not diagnostic!
Key Issues of a Successful Biopsy Sample

2. Be Gentle to the Tissue

Crushing artefact - not diagnostic!
3. Enough Depth

Must include connective tissue (~1mm)
Key Issues of a Successful Biopsy Sample

4. Let it rest for 20-30 seconds on a piece of paper

   To avoid tangentially cut
Key Issues of a Successful Biopsy Sample

1. Cold knife, not laser please!
2. Be gentle to the tissue
3. Enough depth
4. Let is rest

➤ Put it into fixative (10% neutral formalin)
BCDA on Demand

Oral Cancer and Precancer 1-2-3
A New Paradigm for Oral Care Providers

Dr. Samson Ng
BSc(Pharm), MSc, DMD, FRCD(C), FDSRCSed, Dip. ABOM, Dip. ABOMP
Certified Specialist in Oral Medicine & Pathology
Clinical Associate Professor, University of British Columbia

Dr. Catherine Poh
DDS, PhD, FRCD(C), Dip. ABOMP
Certified Specialist in Oral & Maxillofacial Pathology
Professor, University of British Columbia
Senior Scientist, BC Cancer Agency
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BC Oral Biopsy Service Go Live!
May 2018~

iOBS (https://iobs@dentistry.ubc.ca)
Registration  https://iobs.dentistry.ubc.ca

Please Sign In

Email Address

Password

Remember me

Sign in  Request account

Forgot your password?

BC Oral Biopsy Service
Manage Patients

Welcome to Your OBS Dashboard

- Manage My Patient »
  - Create or Manage Patients
  - Manage Biopsy History
  - View Pathology Reports

- Make a Referral »
  - Refer patients with:
    - Oral cancer
    - Oral dysplasia

- Manage My Profile »
  - Account details
  - Clinics
Biopsy Location and Description
<table>
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<tr>
<th>Biopsy Code</th>
<th>Biopsy Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L. Middle dorsal tongue</td>
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</table>

**Symptoms**
- No Symptoms
- Discomfort
- Painful

**Duration**
- For Unknown Duration
- Months
- Years

**Lesion Size (the largest dimension)**
- < 1 cm
- 1 - 2 cm
- 2 - 3 cm
- > 3 cm

**Colour**
- Mainly red
- Mainly white

**Clinical Appearance**
- Polyp / Lump / Bump
- Ulcerated
- Rough-surface / Verrucous
- Smooth
- Others

**Additional Information**
- [ ] No additional information

**Provisional Diagnosis**
Example of Requisition Form

### Oral Mucosal Biopsy

**Vancouver Coastal Health**

**Patient:** BBB, aaa

**Date of Birth:** 1945-01-20

**Sex:** Female

**Ethnic Origin:** East-South / East Asian

**PHN:** 9451193408

**Date of Biopsy:** 2018-08-02

**Image:** Yes - Mail in hard copy

#### Clinical History

**(2918080214)** 73 y/o with no previous biopsy history

**Tobacco:** Smokes 20 cigarettes per day for 1 year, quit for 0 years ago  
**Alcohol:** No

**Biopsy A:** R. Middle lateral tongue, No Symptoms, Clinical Size 1 ~ 2 cm, Mainly white, Appears Ulcerated, For 60 Months 1 Year(s)  
**Clinical Diagnosis:** Lichen planus, r/o dysplasia

**Biopsy B:** L. Middle buccal mucosa, No Symptoms, Clinical Size 0 ~ 1 cm, Mainly white, Appears Ulcerated, For 1 Month(s) 1 Year(s)  
**Clinical Diagnosis:** Lichen planus

#### Additional Comments:

**Submitting Physician:**

<table>
<thead>
<tr>
<th>Dr. Submitting Dentist</th>
<th>College ID:</th>
<th>Signature:</th>
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Dr. Test Monday (01002) 7 th Floor, 2775 Laurel Street, Vancouver, BC, VSZ 1M9, Tel: 604-875-4006, Fax: 604-875-5493

**Copy To:**

Oral Biopsy Service Registry  
Dr. Catherine Poh, Oral Medicine / Pathology (College ID: 12345)
### Patient Biopsy History – Search Function

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Search by any of the following fields:
## Access Pathology Report Online

### My Patient > Patient-Biopsy List

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1234567890, 1955-05-12, Male, Caucasian

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Showing 1 to 2 of 2 entries
1. Remember to sign the form
2. Tighten the lid of the specimen container – make sure the specimen is in the container
3. Label the container with patient’s name and biopsy site
4. Check the outdoor temperature before shipping
5. Ship it to:

BC ORAL BIOPSY SERVICE
Vancouver General Hospital
Room 1400 JPPN1 910 West 10th Avenue
Vancouver, BC, V5Z 1M9
BC Oral Biopsy Service

1. Over 35 years history (1980 ~)
2. Serving BC’s residents through dental practitioners
3. Currently we have ~6000 cases per year for the past 5 yrs
4. Consulting service to medical pathology colleagues
5. Education hub for the Oral Medicine & Pathology Hospital Residency
1. How to assess an oral lesion at risk clinically?
2. How to do a proper biopsy?
3. How to submit a biopsy?
4. What is dysplasia?
What is dysplasia?

Criteria often used for dysplasia (at cellular level):

- Irregular stratification or loss of polarity of the cells in the epithelium
- Increased mitoses
- Nuclear hyperchromatism
- Increased nuclear/cytoplasmic ratio
- Polymorphism of cells
- Abnormal keratinization...
What is dysplasia?

Criteria often used for dysplasia (at architectural level):

- Irregular stratification or loss of polarity of the cells in the epithelium
- Increased mitoses
- Nuclear hyperchromatism
- Increased nuclear/cytoplasmic ratio
- Polymorphism of cells
- Abnormal keratinization...
Mild Dysplasia

Dysplastic cells involving basal and parabasal cells (lower 1/3)
Moderate Dysplasia

Dysplastic cells involving the lower half of the epithelial cells
Severe Dysplasia

Dysplastic cells involving the **lower 2/3** of the epithelial cells
Carcinoma *in situ* (CIS)

Dysplastic cells involving all the epithelial layers (bottom to top)
Invasive Squamous Cell Carcinoma

Basement membrane is disrupted by the dysplastic cells
Histological progression model

Hyperplasia → Mild Dysplasia → Moderate Dysplasia → Severe Dysplasia/CIS → Invasive SCC

High risk? Low risk? High risk
What to do next?
Roger Ebert
(1942-2013)
Late stage diagnosis remains a problem for a significant percentage of oral and oropharyngeal cancers in BC, resulting in poor 5-year survival rates.
Oral Cancers in BC

- 42% were diagnosed in an advanced stage

BCCA Report, 2012
## Five Year Survival Rates

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Cancers</strong></td>
<td>50%</td>
<td>54%</td>
<td>66%</td>
</tr>
<tr>
<td>Prostate</td>
<td>69%</td>
<td>76%</td>
<td>99%</td>
</tr>
<tr>
<td>Thyroid</td>
<td>93%</td>
<td>94%</td>
<td>97%</td>
</tr>
<tr>
<td>Breast</td>
<td>75%</td>
<td>79%</td>
<td>89%</td>
</tr>
<tr>
<td>Hodgkin's Disease</td>
<td>74%</td>
<td>79%</td>
<td>86%</td>
</tr>
<tr>
<td>Larynx</td>
<td>67%</td>
<td>66%</td>
<td>64%</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td><strong>53%</strong></td>
<td><strong>55%</strong></td>
<td><strong>60%</strong></td>
</tr>
<tr>
<td>Colon</td>
<td>52%</td>
<td>59%</td>
<td>65%</td>
</tr>
<tr>
<td>Non-Hodgkins lymphoma</td>
<td>48%</td>
<td>53%</td>
<td>65%</td>
</tr>
<tr>
<td>Leukemia</td>
<td>35%</td>
<td>42%</td>
<td>51%</td>
</tr>
<tr>
<td>Multiple myeloma</td>
<td>26%</td>
<td>29%</td>
<td>35%</td>
</tr>
<tr>
<td>Lung</td>
<td>13%</td>
<td>13%</td>
<td>16%</td>
</tr>
</tbody>
</table>
Problem Statement #2

• Many cancer patients (H&N and others) are referred to Oral Oncology @ BC Cancer prior to initiating cancer care

• Once cancer therapy is complete, we refer the patient back to their community-based dentist for ongoing care

• Dentists report that they lack the knowledge to competently and safely treat cancer patients in their practice.
Even Worse...
Oral Cancer Risk Factors
Recent Changes in Epidemiology

young non-smokers
non-drinkers
There's growing evidence that the virus that causes cervical cancer in women is also linked to cancers in men, leading health professionals to call for an HPV vaccination program for boys.

Recent research found more than half of some oral cancers in men are associated with the HPV. While many Canadian provinces fund programs to vaccinate girls against HPV to prevent cancer, there are none for boys.

However, while cervical cancer is the second most common cancer in women, oral cancers linked to HPV are estimated to affect a relatively small number of men — hundreds a year in Canada.

Health Canada has not approved the HPV vaccine for boys or men. But the company that makes Gardasil is testing it on men now.
## Changes in Cancer Incidence 2004-2008 (United States)

<table>
<thead>
<tr>
<th>Year</th>
<th>New Cases</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>all cancers</td>
<td>HNC</td>
<td>tongue</td>
<td>pharynx</td>
</tr>
<tr>
<td>2004</td>
<td>1,368,030</td>
<td>28,260</td>
<td>7,320</td>
<td>8,250</td>
</tr>
<tr>
<td>2005</td>
<td>1,372,910</td>
<td>29,370</td>
<td>7,660</td>
<td>8,590</td>
</tr>
<tr>
<td>2006</td>
<td>1,399,790</td>
<td>30,990</td>
<td>9,040</td>
<td>8,950</td>
</tr>
<tr>
<td>2007</td>
<td>1,444,920</td>
<td>34,360</td>
<td>9,800</td>
<td>11,800</td>
</tr>
<tr>
<td>2008</td>
<td>1,437,180</td>
<td>35,310</td>
<td>10,140</td>
<td>12,410</td>
</tr>
<tr>
<td>total</td>
<td>7,022,830</td>
<td>158,290</td>
<td>43,960</td>
<td>50,000</td>
</tr>
<tr>
<td>5-year ↑</td>
<td>69,150</td>
<td>7,050</td>
<td>2,820</td>
<td>4,160</td>
</tr>
<tr>
<td>% ↑</td>
<td>5.1%</td>
<td><strong>24.9%</strong></td>
<td><strong>38.5%</strong></td>
<td><strong>50.4%</strong></td>
</tr>
</tbody>
</table>

ACS Cancer Statistics 2008
Why NOW?
Times Have Changed
Squamous Papilloma (HPV 6/11)
HPV Tonsillar Cancer
Proposed Solution

With our centralized cancer care model in British Columbia and a highly engaged dental community, we have a tremendous opportunity to develop a comprehensive strategy to address these two issues.
Training the Clinicians of the Future
Undergraduate Curriculum UBC

• Provided for first time in Fall 2017 to 3rd Year Dental Students @ UBC Faculty of Dentistry

• Twelve 2-hour Oncology lecture series with focus on managing cancer patients in general practice
Evidence-Based Guidelines

Based on the work of the Oral Care Study Group of MASCC/ISOO

Extensive literature review of 9 most common oral side-effects of cancer therapy, including:

- Xerostomia/Salivary Gland Hypofunction
  - Oral Mucositis
    - Dysgeusia
    - Trismus
  - Fungal Infections
  - Viral Infections
  - Oral Graft-vs-Host Disease (GVHD)
    - Osteoradionecrosis (ORN)
  - Medication-Related Osteonecrosis of the Jaw (MRONJ)
Xerostomia
Grade 4 Mucositis
“Radiation Caries”
Fungal Infections

(note: clinical presentation can vary)
Viral Infections
Osteoradionecrosis (ORN)
Osteochemonecrosis (MRONJ)
15 Gy # - Day 0 – 28 (rat model)
## Prevalence of Oral Complications

<table>
<thead>
<tr>
<th>Oral complication</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CT only = 56.3%</td>
</tr>
<tr>
<td>Dysgeusia</td>
<td>RT only = 66.5%</td>
</tr>
<tr>
<td></td>
<td>Combined CT and RT = 76%</td>
</tr>
</tbody>
</table>

MASCC/ISOO Oral Care Study Group  
Systematic Reviews. Support Care Cancer 2010;18 (8)
Dysphagia (altered swallowing)

• Persistent dysphagia reported in up to 50% of head-and-neck CRT patients (defined by need for instrumental swallowing assessment – MBS, FEES)

• Patients may lose oropharyngeal swallow integrity 2º XRT or surgery-induced fibrosis (tongue ROM, decreased glottic closure, decreased cricopharyngeal relaxation, etc)

• Risk for aspiration-related complications….fear of eating, social isolation, depression…. 

• Aggravated by inability to masticate, lubricate or mobilize food bolus
Trismus

- Occasionally seen in patients whose RT field includes the TMJ and muscles of mastication

- Treatment includes passive stretching of muscles / physio

- May need to reduce vertical dimension
## Prevalence of Oral Complications

<table>
<thead>
<tr>
<th>Oral complication</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional RT</td>
<td>$25.4%$</td>
</tr>
<tr>
<td>IMRT</td>
<td>$5%$</td>
</tr>
<tr>
<td>Combined RT and CT</td>
<td>$30.7%$</td>
</tr>
</tbody>
</table>

MASCC/ISOO Oral Care Study Group  
Systematic Reviews. Support Care Cancer 2010;18 (8)
Oral GVHD
(pre-malignant potential?)
Guiding Principles Document
(part of Oral Care Manual)

Answering FAQs commonly asked by dentists/physicians when treating cancer patients in their practice:

• Timing of elective procedures relative to chemo?
• Antibiotic Coverage with central or peripheral lines?
  • Blood Values of Relevance to Dental Work?
• Implants/Dental Extractions in Irradiated Jaws?
• Prosthesis care (obturators, dentures, etc.)?
  • What Is/Isn’t Covered for Patients?
  • Chemo Brain, etc
Oral Care Manual

BC Cancer
Oral Oncology – Dentistry

March 2018
3 Key Components

At the request of the College of Dental Surgeons of British Columbia, this guideline has been written by a working group of the BC Oral Cancer Prevention Program, which is a multidisciplinary team composed of clinicians and scientists from the BC Cancer Agency. This guideline is intended to provide guidance about the appropriate use of oral cancer screening techniques and to help dentists make informed decisions about screening for oral cancer in practice. It should be used to facilitate clinical decision-making.

Due to the importance of ongoing research related to oral cancer screening, this guideline will be updated on a regular basis with multidisciplinary input.

- Oral cancer is a common cancer of global concern, it is known to be a devastating disease of tremendous consequence to the individual, its family and to society.
- This year 3,200 people will be diagnosed with oral or oropharyngeal cancer in Canada. Of these, it is estimated that about 2,000 (64 per cent) could potentially be detected by a dentist.
- The five-year survival rate is approximately 62 per cent.
- Early detection has the potential to significantly reduce oral cancer deaths and morbidity.
- Known risk factors include tobacco and alcohol consumption, together responsible for about 75 per cent of oral cancers in developed countries.
- Most oral pre-cancerous lesions and cancers should be detectable at the time of a comprehensive oral examination.
- These lesions often present as a white patch or les frequently, a red patch. Progression from pre-cancerous lesions to cancer usually occurs over years.
Roll-Out

• UBC Undergraduate Curriculum - In place

• Oral Care Manual – Pacific Dental Conference March, 2018

• Early Detection Guideline Update – November 2018

• Website/SHOP Launch – Early 2019

• ASCO Adoption of Guidelines (MRONJ, Mucositis)
What Can We Do As Dentists?

• Ask about any usual symptoms (nasal stuffiness, sore throat, voice change, dysphagia, blood in sputum, paresthesias, lumps and bumps, etc.)

• Do a proper H&N exam (see BCDA website)

• Do a thorough intra-oral exam

• If in doubt, refer
More Importantly........
Thank You
Early detection of oral cancer can save a life.

Dentists have an excellent opportunity to screen for oral cancer. The responsibility lies with both general practitioners and specialists alike.

Questions?