Head and Neck Cancers

FCDS 2011/2012 Educational Webcast Series

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Updated for 2012 Requirements and CSv02.03.02

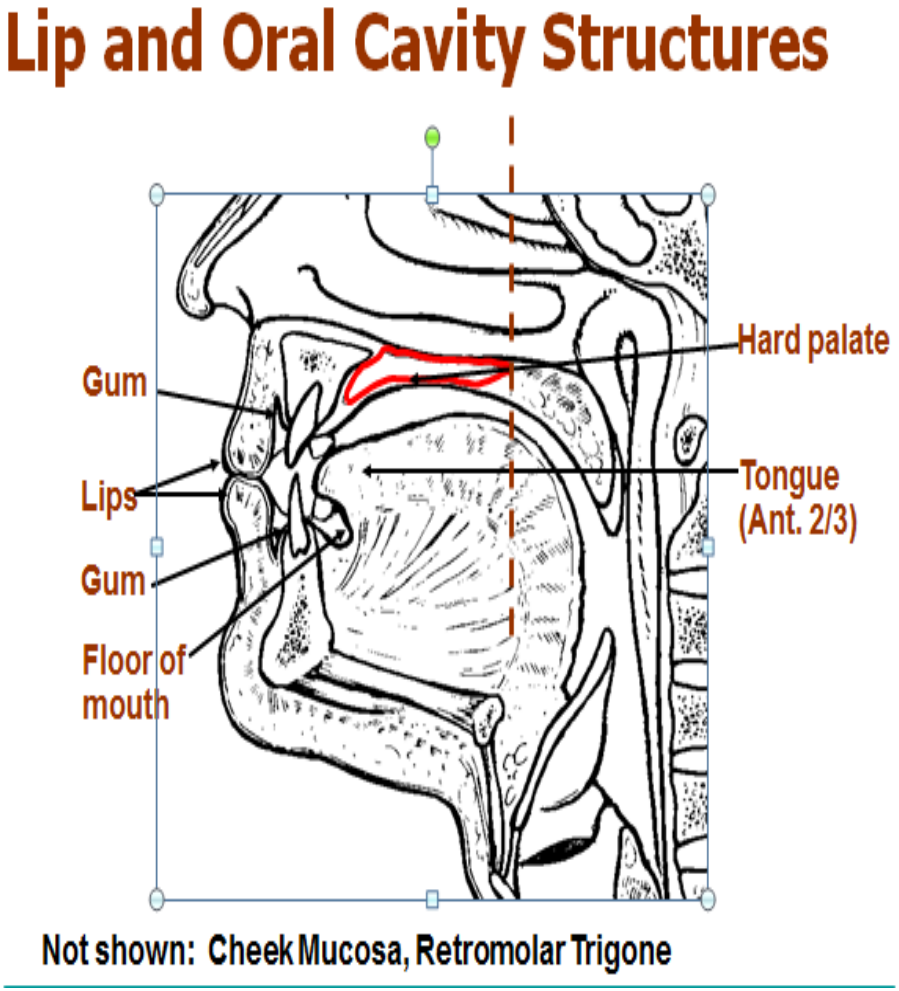
Presentation Outline

- Overview
- Anatomy of Head and Neck
- Multiple Primary and Histology Coding Rules Refresher
- Collaborative Stage Data Collection System
- C.S. Site Specific Factors
- Treatment Options
- Documentation

Overview

What is head and neck cancer?

- Head and Neck Cancer is a group of cancers that includes tumors in several areas above the collar bone.



Head and Neck: General Facts

- 2009 estimated US 35,720 new cases, ACS
  - Men > women
  - Age > 45
- 90 % of head and neck cancer are Squamous cell ca
- Originate from the mucosal lining (epithelium)
- Spread to Lymph nodes of the neck
- Lymph node of the neck often the first (and sometimes only) sign at diagnosis
- Environmental and lifestyle risk factors
  - Smoking, alcohol, virus (HPV & CMV), Hematopoieic stem cell transplantation (HSCT- Oral SCC)
    - Highly curable if detected early

http://www.cancer.org/Research/CancerFactsFigures/index

Leading Sites of New Cancer Cases and Deaths – 2011 Estimates*

Estimated New Cases*

Male	Female
Prostate 240,890 (29%)	Breast 230,480 (30%)
Lung & bronchus 115,060 (14%)	Lung & bronchus 106,070 (14%)
Colon & rectum 71,850 (9%)	Colon & rectum 69,360 (9%)
Urinary bladder 52,020 (6%)	Uterine corpus 46,470 (6%)
Melanoma of the skin 40,010 (5%)	Thyroid 36,550 (5%)
Kidney & renal pelvis 37,120 (5%)	Non-Hodgkin lymphoma 30,300 (4%)
Non-Hodgkin lymphoma 36,060 (4%)	Melanoma of the skin 30,220 (4%)
Oral cavity & pharynx 27,710 (3%)	Kidney & renal pelvis 23,800 (3%)
Leukemia 25,320 (3%)	Ovary 21,990 (3%)
Pancreas 22,050 (3%)	Pancreas 21,980 (3%)
All sites 822,300 (100%)	All sites 774,370 (100%)

*Excludes basal and squamous cell skin cancers and in situ carcinoma except urinary bladder.

Leading Sites of New Cancer Cases and Deaths among African Americans

Estimated New Cases*

Male	Female
Prostate 35,110 (40%)	Breast 26,840 (34%)
Lung & bronchus 12,930 (15%)	Lung & bronchus 10,290 (13%)
Colon & rectum 7,940 (9%)	Colon & rectum 8,710 (11%)
Kidney 4,210 (5%)	Uterine corpus 4,430 (6%)
Non-Hodgkin lymphoma 2,850 (3%)	Thyroid 3,040 (4%)
iver & intrahepatic bile duct 2,780 (3%)	Pancreas 2,990 (4%)
Oral cavity & pharynx 2,550 (3%)	Kidney 2,880 (4%)
Pancreas 2,490 (3%)	Non-Hodgkin lymphoma 2,380 (3%)
Urinary bladder 2,240 (3%)	Uterine cervix 2,170 (3%)
Leukemia 2,030 (2%)	Myeloma 1,940 (2%)
All sites 88,860	All sites 80,040

Risk Factors

- **Tobacco Products**
  - Smoking Tobacco
  - Cigarettes
  - Cigars
  - Pipes
  - Chewing Tobacco
  - Snuff

- **Ethanol Products**
  - Alcohol
  - Mouthwash containing alcohol
- **Chemicals**
  - Asbestos
  - Chromium
  - Nickel
  - Arsenic
  - Formaldehyde

Other Factors:

- Ionizing Radiation
- Plummer-Vinson Syndrome
- Epstein-Barr Virus
- Human Papilloma Virus
- Chronic irritation
- Diet (lack fruits, vegetables)
- Immunosuppressive medication
- Gender

Lifestyle

- Immigrants from Southeast Asia & East Indies :

paan (betel quid)

Oral cancer lip, mouth, tongue, and pharynx; and esophageal cancer

Paan: small pieces of areca nut are mixed with several other ingredients, sometimes including tobacco, wrapped in a betel leaf and chewed

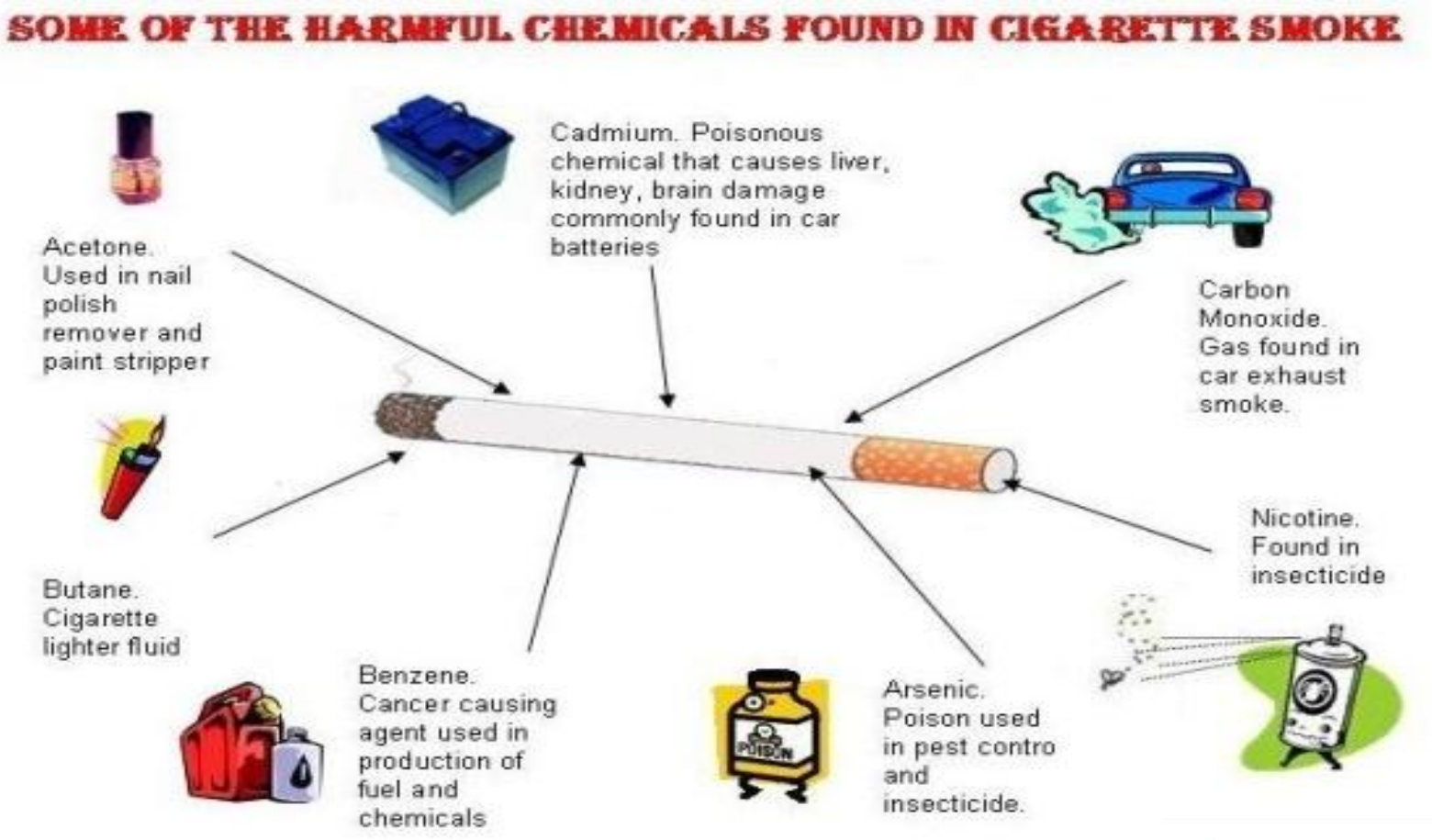
- South Americans,: mate, a tea-like beverage
  - Mouth, throat, esophagus, and larynx cancer

- Poor oral hygiene (ill-fitting bridgework, broken teeth, mucosa irritated by sharp or jagged teeth)

http://www.cancer.gov/cancertopics/factsheet/Sites-Types/head-and-neck

Mate. Photograph. *Encyclopædia Britannica Online*. Web. 29 Dec. 2011.

Tobacco Use



http://www.myquitsmokingsecrets.com/images/chemical.jpg

AMERICAN LUNG ASSOCIATION. IN FLORIDA

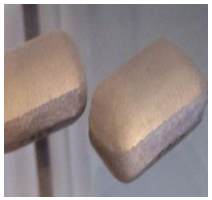
H&N Possible Occupational Risks

- Woodworking-
  - Wood dust as a "confirmed" human carcinogen
- Leather manufacturing-Shoe
  - Carcinogens such as polychlorophenols and their sodium salts and chromium (VI) compounds

http://www.flickr.com/photos/jeffmarcus/743212613/in/photostream/

- Nickel Refining

These include pulmonary and sino-nasal cancer from exposure to the dusts involved in certain, now obsolete, processes, dermatitis and nickel carbonyl poisoning



- Textile industry –
  - exposed to cotton dust, and in workers involved in spinning or weaving

RoboFoot

- Radium dial painting- Medical exposure

nickel briquettes. Photograph. *Encyclopædia Britannica Online*. Web. 29 Dec. 2011. <http://www.britannica.com/EBchecked/media/120839/Nickel

Head and Neck Signs & Symptoms

Signs

- Red or white patch in the mouth
- Oral ulceration, swelling, or loose tooth
- Lateral neck mass
- Rapidly growing thyroid mass
- Cranial nerve palsy
- Orbital mass
- Unilateral ear effusion, earache

Symptoms

- Sore throat
- Hoarseness
- Stridor
- Difficulty in swallowing
- Lump in neck
- Unilateral ear pain

Many are "silent"

- No pain or other symptoms until advanced stages

Head and Neck Presentations

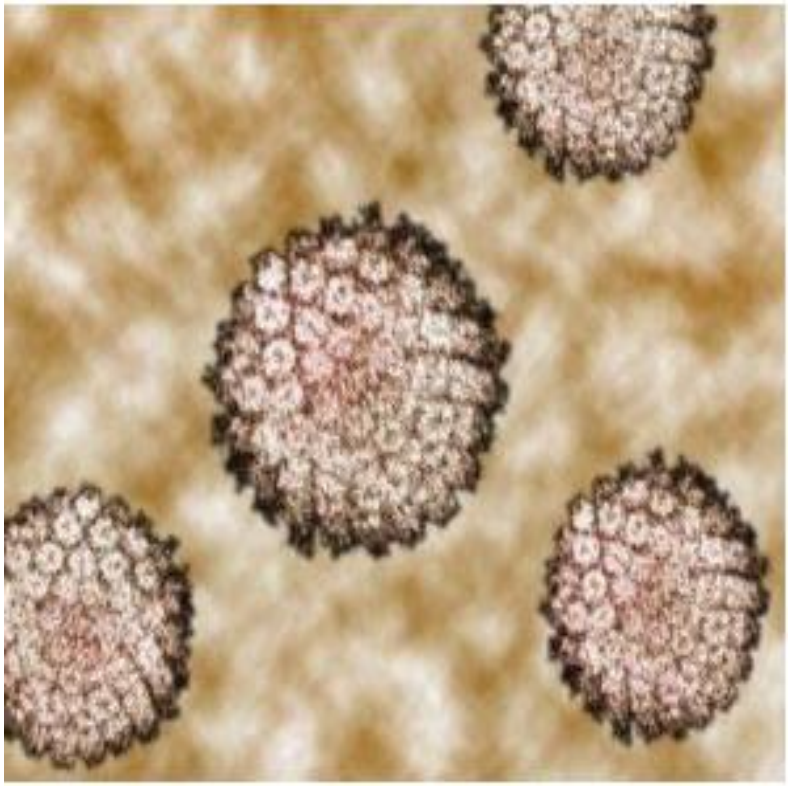
- Persistently enlarged neck nodes in younger patients (30-50 years)
- HPV
- Persistent unilateral otalgia with no signs of ear infection in patients over 30
- Recent onset wheeze in a patient over 40, usually a heavy smoker

Human Papillary Virus (HPV)
Courtesy of Dr. Steve Debbink
Dental Director, AIDS Resource Ctr of Wisconsin
http://www.hivdent.org/_picturegallery_/HPV1.htm

Human Papillomavirus (HPV)

- DNA virus
- Preferentially infect squamous epithelial cells
- >100 genotypes
- ≥40 genital HPV types

- The most common STD worldwide
- 80% sexually active adults in the US infected with at least one HPV type by age 50[1]
- Peak prevalence during adolescence and young adulthood
- Prevalence declines with age
- HPV 16 is the most common HR type



http://theholisticdentist.files.wordpress.com/2011/06/hpv.jpg

Centers for Disease Control and Prevention. Rockville, Md: CDC National Prevention Information Network; 2004

Cytomegalovirus (CMV)

- Oncovirus
- Most common salivary gland cancers

http://www.webdental.com/profiles/blogs/cytomegalovirus-cmv-confirmed-as-cause-of-salivary-gland-cancer

Head & Neck Diagnostic Workup

Physical Exam

- Head and Neck exam
- Mirror and fiberoptic examination as clinically indicated
- Dental Evaluation, including panorex
- HPV testing
- Nutrition, speech & swallowing evaluation/therapy and audiogram as indicated

Radiology

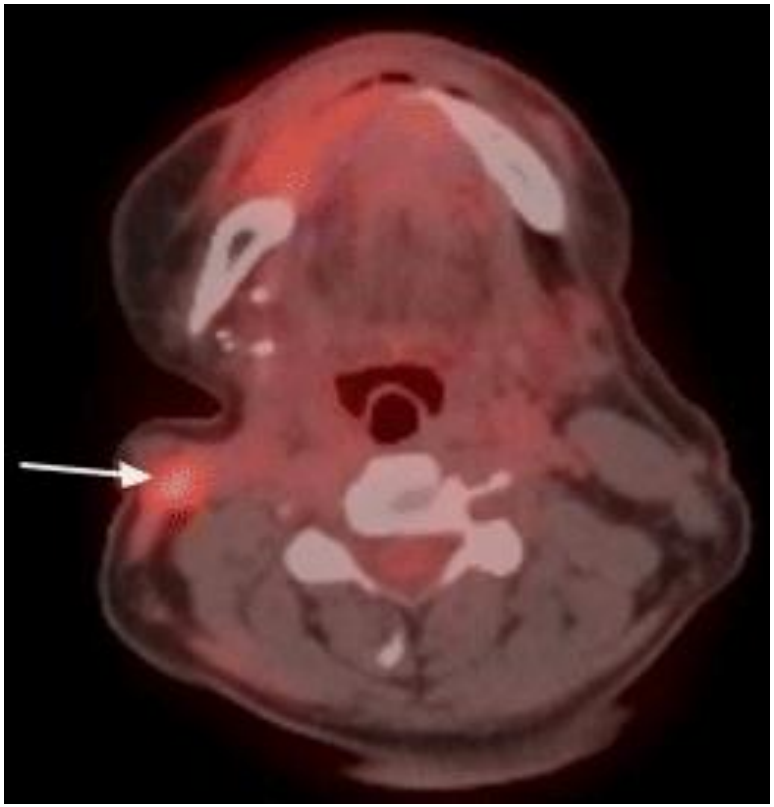
- Chest imaging
- Ct with contrast and/or MRI with contrast of primary and neck
- Consider PET-CT for stage III-IV disease

Panendoscopy

- Examination under anesthesia with endoscopy as indicated
- Preanestensia studies
- Biopsy
  - Brush
  - Excisional

Head & Neck Diagnostic Workup

- Investigations used for H&N Cancer
- Dental Exam
- Imaging
  - Computed tomography scanning (CT)
  - Positron emission tomography (PET)



Positron emission tomography-computed tomography scans showing: left Neck
http://www.bmj.com/content/341/bmj.c4684

Which Diagnostic Test?

CT scan	MRI	PET
•Rapid acquisition time •Patient tolerance •Superior bone detail	•Multiple planes assess tumor volume •Superior soft tissue resolution •No IV contrast	•Entire body •May delineate questionable findings from other scans
•IV contrast with allergy concerns •Poor soft tissue contrast •Metallic dental applicances interfere	•Patient movement distorts •Bone detail inferior •Longer time for patient •Any metal may preclude	•Cost •Availability •Equivocal results may not be helpful

NCCN Practice Guidelines Narrative Summary

PET and PET/CT

Head and Neck Cancers (v.2.2010)

- Occult primary: PET/CT (before biopsy) (diagnosis).
- Initial staging of cancer of the oral cavity, oropharynx, hypopharynx, glottic larynx, and supraglottic larynx: Consider PET/CT for stage III-IV disease (staging).
- Initial staging of mucosal melanoma: Chest imaging or consider PET scan to rule out metastatic disease.
- Initial staging of cancer of the nasopharynx: Imaging for distant metastases (chest, liver, bone) for WHO class 2-3/N2-3 disease (may include PET scan and/or CT) (staging).
- Post-treatment evaluation of cancers of the head and neck (minimum 12 weeks): PET/CT (suggest full dose CT with IV contrast). If PET/CT is performed and negative for suspicion of persistent cancer, further cross- sectional imaging is optional (restaging).

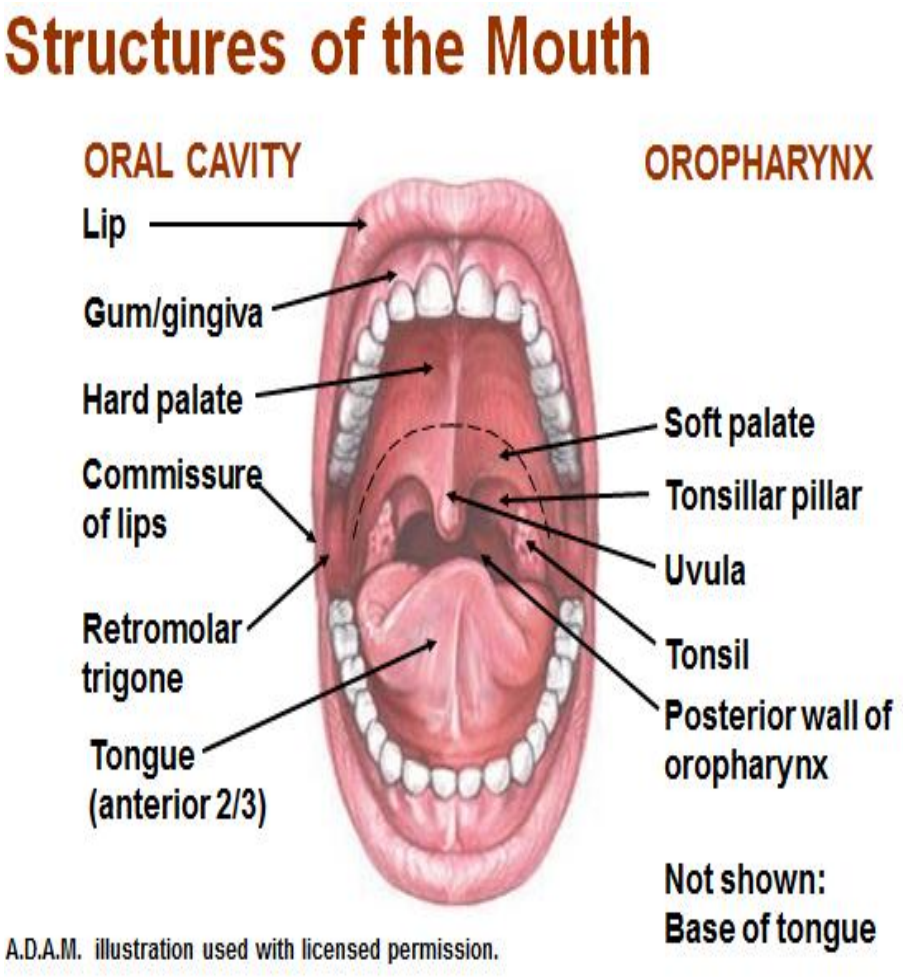
http://www.snm.org/docs/PET_PROS/NCCNPracticeGuidelinesII.pdf

ICD-O Topography Codes (Anatomic Site)

Site Group	ICD-O-3 Site	ICD-O-3 Histology (Type)
Oral Cavity and Pharynx		
Lip	C000-C009	excluding 9050-9055, 9140, 9590-9992
Tongue	C019-C029	
Salivary Gland	C079-C089	
Floor of Mouth	C040-C049	
Gum and Other Mouth	C030-C039, C050-C059, C060-C069	
Nasopharynx	C110-C119	
Tonsil	C090-C099	
Oropharynx	C100-C109	
Hypopharynx	C129, C130-C139	
Other Oral Cavity and Pharynx	C140, C142-C148	

Head and Neck Site Group

- Oral Cavity
- Lip and oral cavity (C00-C05.0)
  - Lip
  - Tongue
  - Gum and other mouth
  - Mouth Subsites
  - Salivary Glands (C07)
  - Tonsil
- Pharynx
  - Oropharynx (C05.1, C05.2, C10)
  - Nasopharynx (C11)
  - Hypopharynx C12.9, C13)
  - Other Pharynx



Head & Neck Histologic Type

- Depends on the location in the oral cavity and neck
- Squamous cell carcinoma
  - Most common: 90% Squamous cell ca of the oral cavity and oropharynx
    - more aggressive depending on the location of the tumor
    - Stage is critical factor for prognosis
- Melanoma mucosal 15-20%
- KS oral mucosa on the palate, gingiva and tongue
- Hodgkin Lymphoma, extranodal, rare, Walderyer ring, palatine tonsil
- Extramedullar myeloid sarcoma, gingiva, 3.5%

Reference: WHO, Pathology & Genetics, H&N Tumors, Tumor of oral cavity, 2005

Distribution by Site: Squamous Cell Carcinoma

General Location	Specific Location	Incidence
Tongue	Lateral surface Ventral surface	26%
Oral Pharynx	Soft palate Tonsillar pillars	23%
Lip	Vermilion surface	20%
Floor of Mouth	Floor of mouth	17%
Gingiva	Gingiva	9%
Buccal Mucosa	Buccal mucosa	3%
Hard Palate	Hard palate	2%

www.usc.edu/hsc/dental/opath/Chapters/Chapter13_Text.html

Head & Neck Histologic Type

- **Basaloid squamous cell carcinoma, Rare**
- **Keratinizing squamous cell carcinoma**
  - **Nasopharynx**
  - Also called WHO type 1
  - Minority of tumors
  - Often EBV-, older age group
- **Nonkeratinizing carcinoma-differentiated**
  - **Nasopharynx**
  - Also called WHO type 2
  - Rare in childhood

Reference: WHO, Pathology & Genetics, H&N Tumors, Tumor of oral cavity, 2005

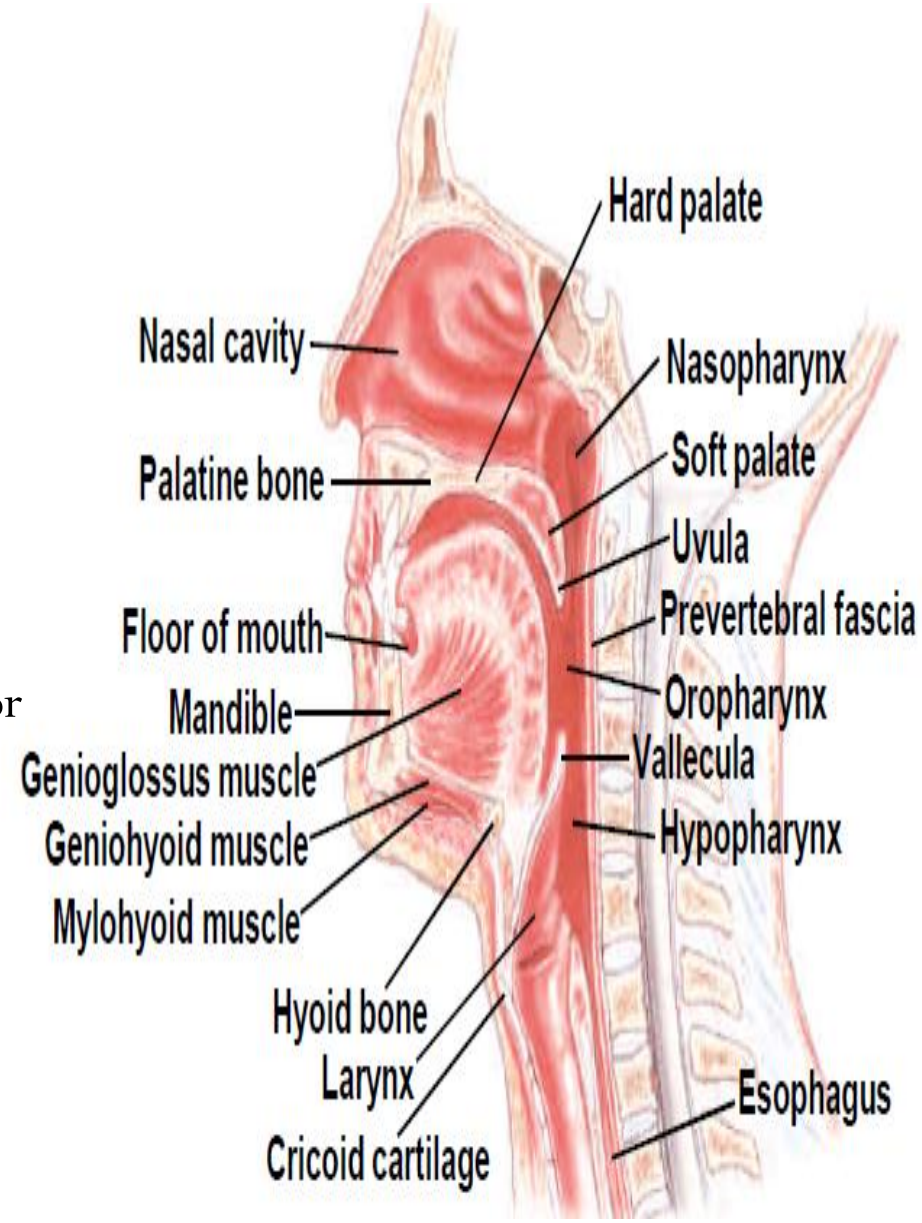
Head & Neck Histologic Type

- **Nonkeratinizing carcinoma-undifferentiated**
  - **Nasopharynx**
  - Also called WHO type 3
  - Very rare in US, common in Taiwan and China (EBV endemic area)
- **Papillary squamous cell carcinoma**
  - Rare; precursor lesion unknown
- **Spindle cell carcinoma**
  - Also called sarcomatoid carcinoma or carcinosarcoma
  - Uncommon in larynx; more common elsewhere in upper aerodigestive tract
- **Verrucous carcinoma**
  - Also called Ackerman's tumor
  - Occurs anywhere in upper aerodigestive tract

Reference: WHO, Pathology & Genetics, H&N Tumors, Tumor of oral cavity, 2005

Oral Cavity

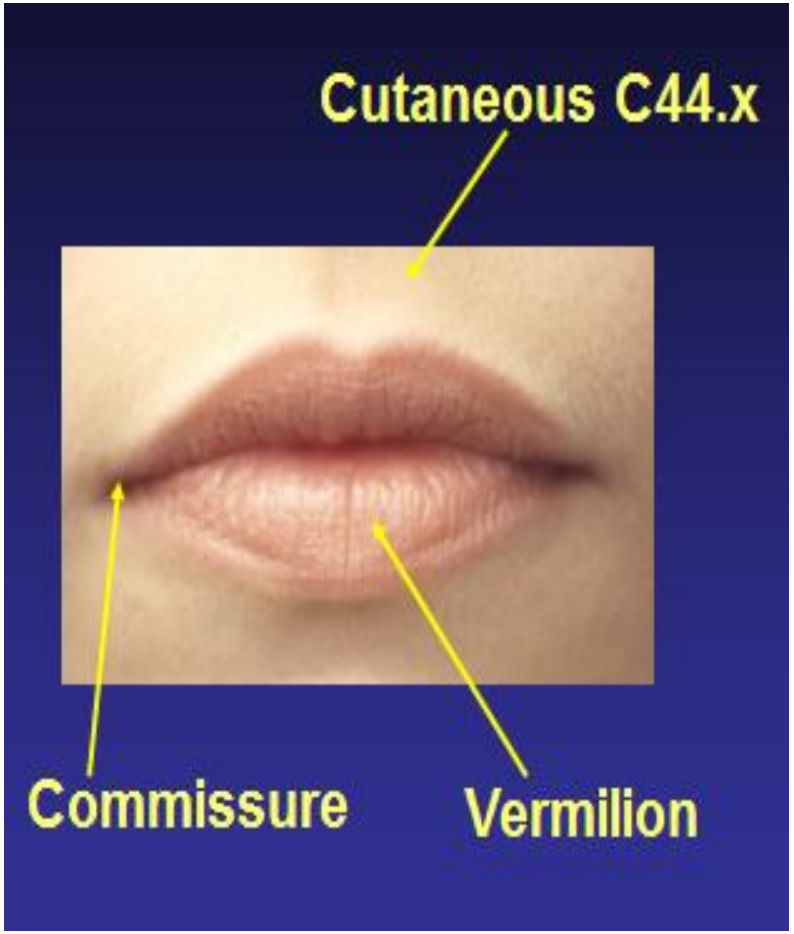
- Histology
- Squamous cell Carcinoma
  - Includes inner lip, tongue, floor of mouth, gingivae, hard palate
    - Associated with tobacco use, especially chewing tobacco or "dip" Heavy alcohol use



http://seer.cancer.gov/tools/ssm/headneck.pdf

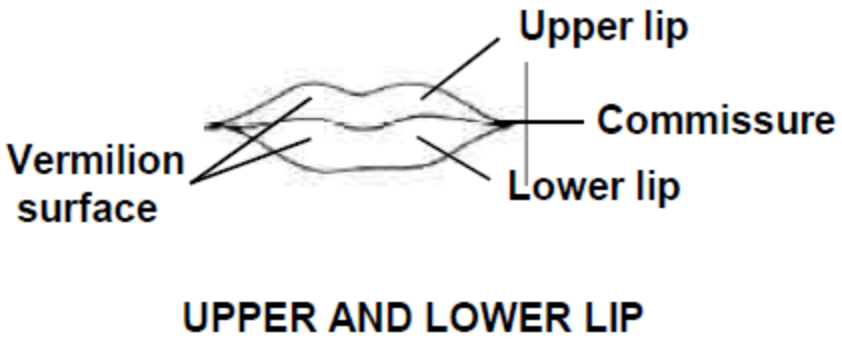
Lip (C00.0-C00.9)

- Parts: skin, vermilion border, mucosa, frenulum lip, commissure
  - Lower lip has better prognosis
  - C00.0, .1, .2 external
  - C00.3, .4, .5 mucosa
  - C00.6 commissure
  - C00.8 overlapping



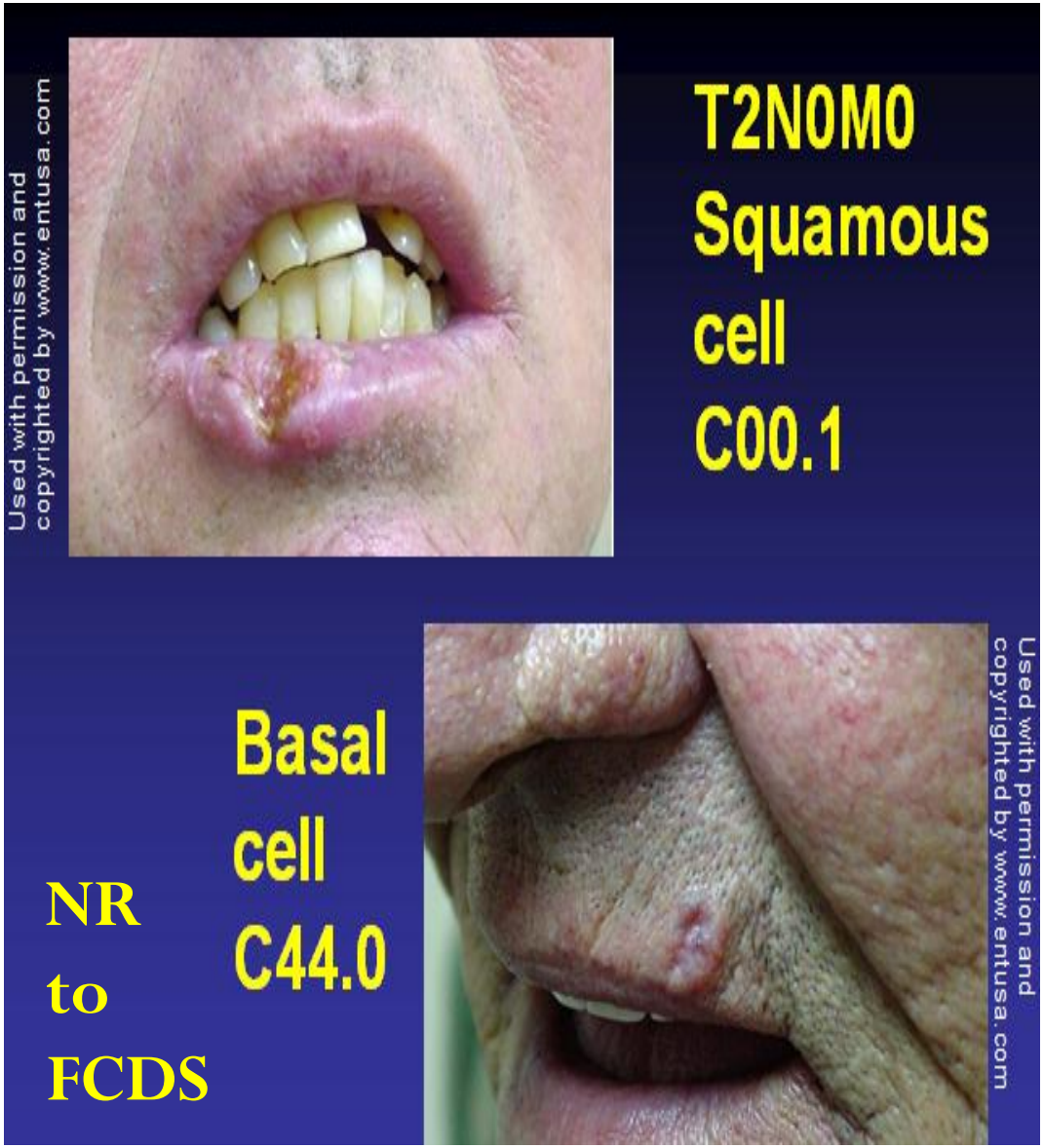
Lip

- 23% of oral cancer incidence
  - Lower lip > 90%
  - Upper lip 2-8%
  - Commissure 1-2%



UPPER AND LOWER LIP

- Most common oral cancer (42-45% of cases)
- Rest basal cell, salivary gland, melanoma
- 90% occur on lower lip, usually along vermillion border
- Symptoms: sore that won't heal, lump in lip
- **Risk factors:** chronic sunlight, pipe smoking, cigarette smoking, poor oral hygiene, fair complexion, organ transplant recipients
- Low risk of metastatic extranodal spread; early to adjacent skin, orbicular muscle; late to buccal mucosa, mandible, mental nerve



Question

Reportability/Primary Site--Head & Neck:

If a wedge resection/shield resection is performed on the lower lip for SCCA and the path report refers to "lip, NOS" with no mention of vermilion border, is this case reportable?

Answer

Review the operative and pathology reports, and the physical exam for mention of "mucosal surface" (reportable) or "skin" (not reportable).

If neither are mentioned, lip, NOS is reportable per the ICD-O-3 code of C009.

Question: 20051049

http://seer.cancer.gov/seerinquiry/index.php?page=view&id=20051049&type=q

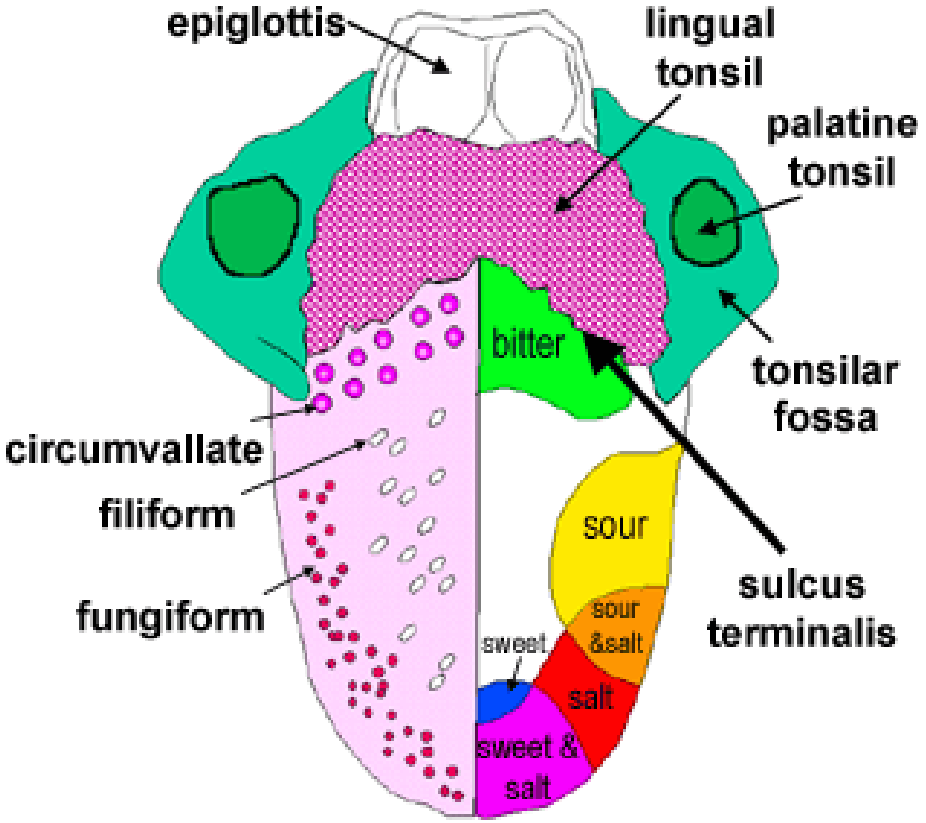
Tongue (C01.9 – C02.9)


Fig. 3 Leukoplakia

- 28% oral cancer incidence (2007 ACS)
- Est. 7,320 cases USA 2004 (0.3%)
  - China 34,954; India 28,662
- Parts: Tip, anterior 2/3 tongue, ventral & dorsal surface, frenulum linguae
- Symptoms and Diagnosis: Leukoplakia
- Histology: Squamous cell 90%Usually lateral aspect of middle third of tongue
- More likely to metastasize than other intraoral carcinomas (70% have metastases at presentation)
- Spread eventually to floor of mouth and root of tongue
- **Metastases:** ipsilateral subdigastric, submandibular, midjugular nodes; may spread directly to lower jugular nodes
- **Poor prognostic factors:** involvement of posterior third of tongue

http://www.advancedonc.com/tongue.htm

Anatomy around the Tongue



http://www.histology.leeds.ac.uk/oral/tongue.php

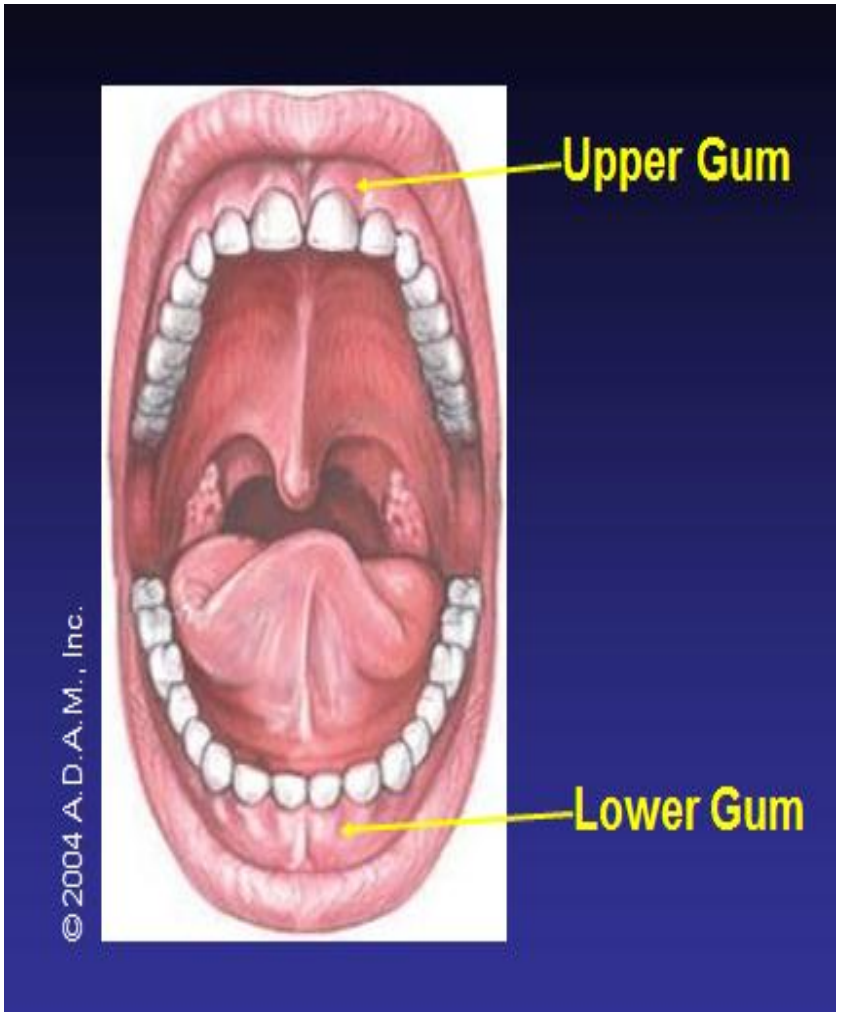
Squamous cell CA Tongue

/

http://www.gastrohep.com/images/image.asp?id=646

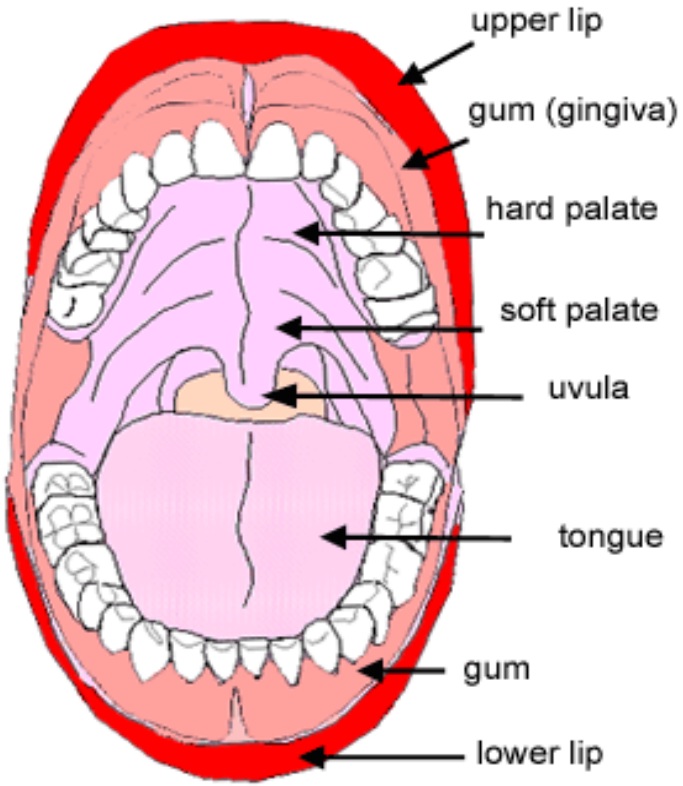
Gum (C03.0-C03.9)

- Parts: gingiva, alveolar ridge, periodontal
  - C03.0 upper
  - C03.1 lower
  - C03.9 NOS
- Snuff users 50 x risk (92% users male)
  - 2-3 times level of nicotine



Floor of Mouth (C04.0-C04.9)

- 16% of all oral cancers
- Symptoms
  - Lesion
  - Decreased tongue mobility
- < 50% local at diagnosis



http://www.histology.leeds.ac.uk/oral/mouth.php

http://www.azoncology.com/Internet/LinkClick.aspx?fileticket=9oFHT1c9Fm4%3D&tabid=127

http://www.cdc.gov/cancer/npcr/training/nets/module5/

Hard Palate (C05.0, C05.8, C05.9)

- Parts: Roof of mouth (NOT soft palate or uvula)
- Histology (74% malignant, 26% benign)

  Squamous cell 53%

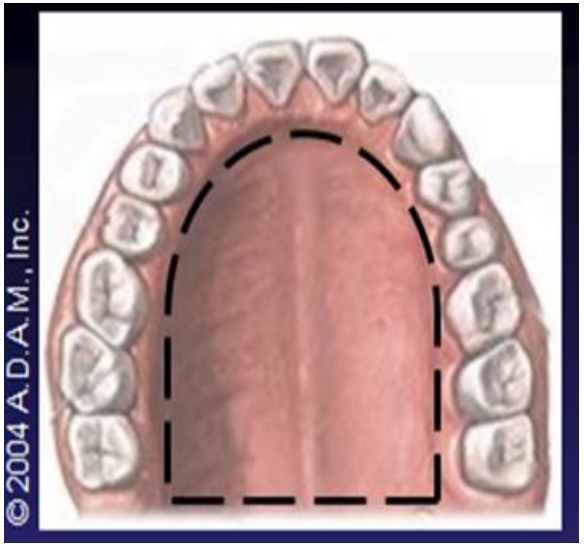
  Adenocarcinoma 4%

  Adenoid cystic 15%

  Anaplastic CA 4%

  Mucoepidermoid 10%

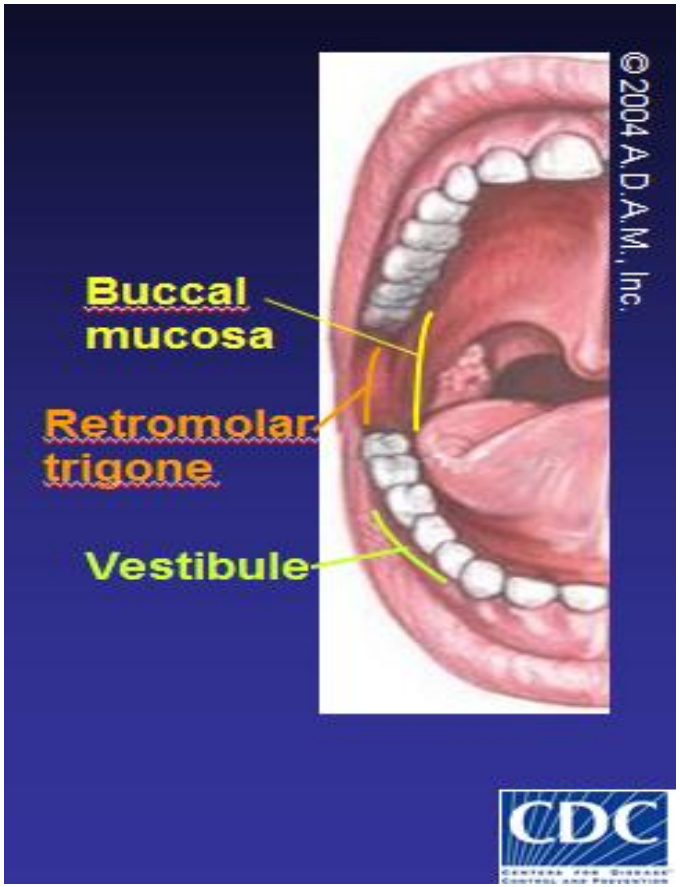
  Other 14%
- Reverse smoking
- 70% tumors extend beyond hard palate



http://www.cdc.gov/cancer/npcr/training/nets/module5/

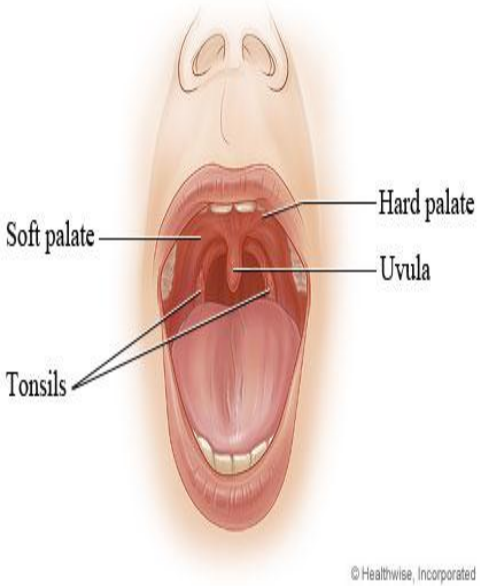
Cheek/Buccal Mucosa (C06.x)

- Parts: Cheek, vestibule, alveolar sulcus, retromolar trigone, minor salivary glands NOS
  - Page 33 ICD-O-3: Minor salivary gland tumors can be found anywhere in oral cavity & surrounding organs – code to specific site if noted, else code to C06.9 (NOS)



http://www.cdc.gov/cancer/npcr/training/nets/module5/

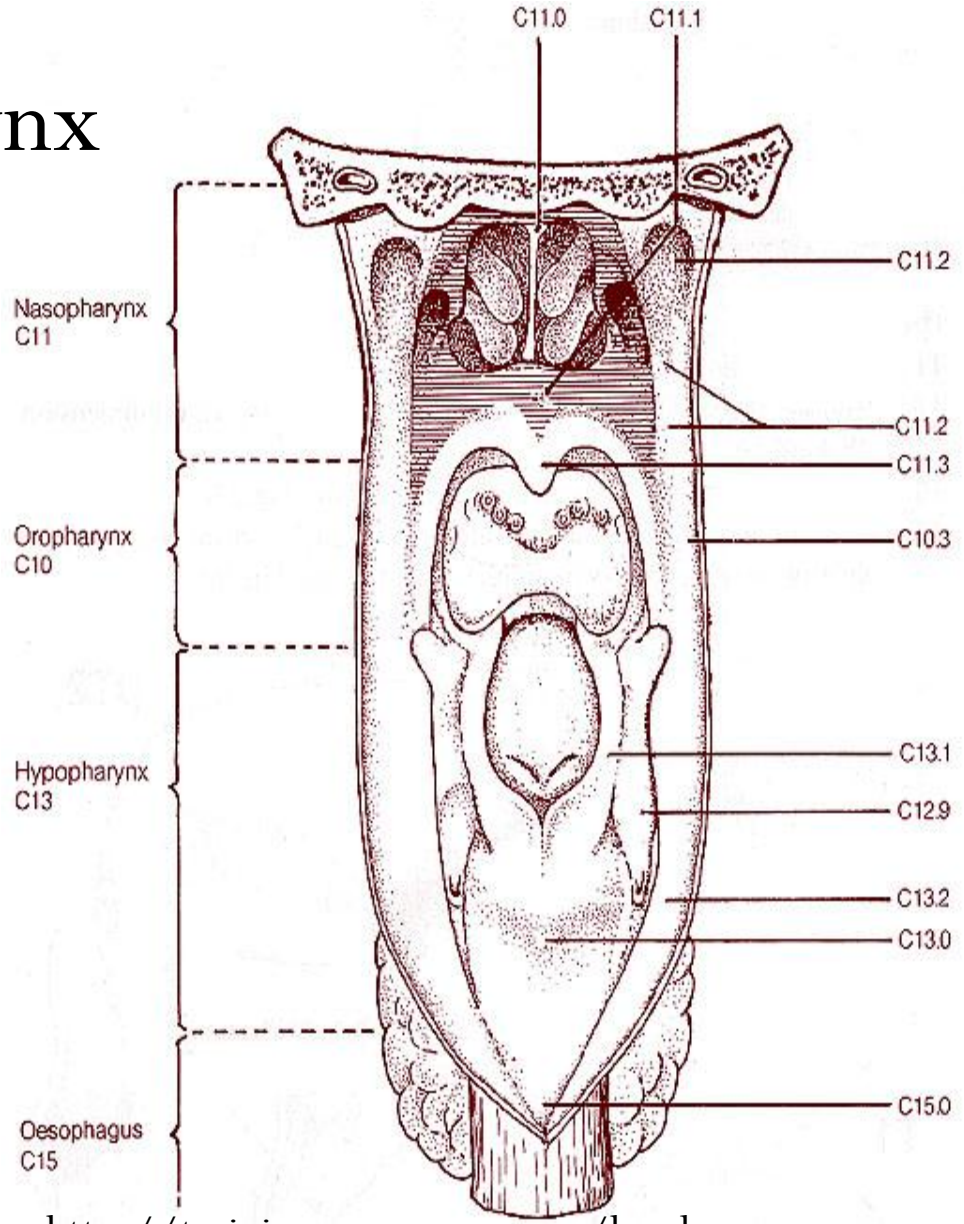
Soft Palate



- **Squamous cell carcinoma-palate**
- 5-6% of intraoral squamous cell carcinoma
- Most common malignancy of palate
- Usually soft palate, 60% male
- Usually involves adjacent tissues at diagnosis (hard palate tumors involve underlying bone)
- 1/3 have metastases to internal jugular, submandibular and retropharyngeal nodes at diagnosis; rarely bilateral
- Pathology report should describe involvement of underlying bone

3 Subsites of Pharynx

- **Nasopharynx** (upper part of the pharynx, behind the nose)
- **Oropharynx** (middle part of the pharynx, soft palate the back of the mouth, base of the tongue, and the tonsils
- **Hypopharynx** (lower part of the pharynx posterior pharyngeal wall, cricroid)



http://training.seer.cancer.gov/head-neck/anatomy/pharynx.html

Nasopharynx (C11.0-C11.9)

C11.0 superior wall

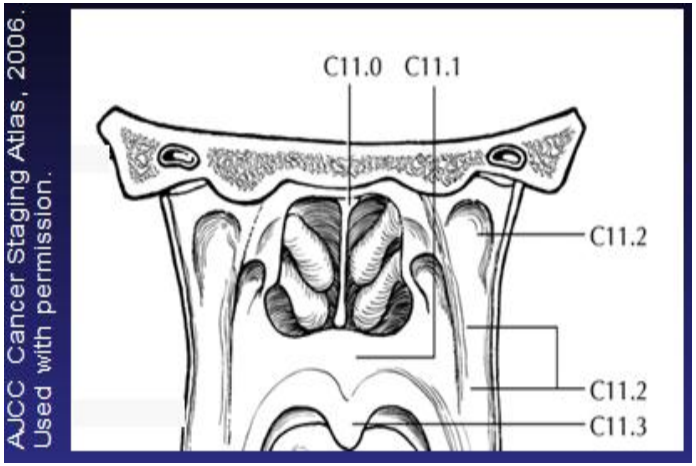
C11.1 posterior wall

C11.2 lateral wall

C11.3 anterior wall

C11.8 Overlapping lesion of nasopharynx

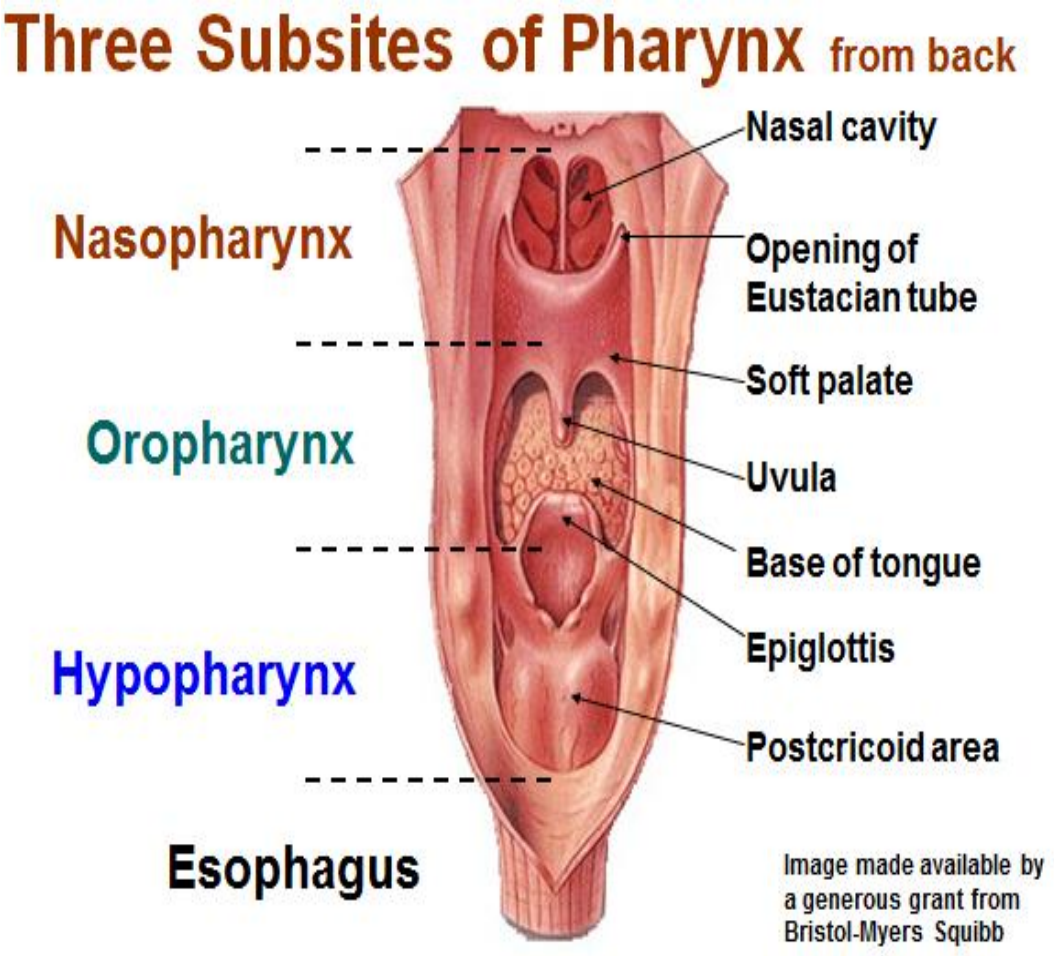
C11.9 Nasopharynx, **NOS**



- Swollen or tender lymph nodes
- Difficulty trouble opening the mouth, chewing and swallowing
- Ear infections
- Nasal obstruction or bleeding
- Noticeable nasal "twang" in the voice
- Epstein Barr Virus
- Nonkeratinizing SCC 50+%
- Keratinizing SCC 30%
- Lymphoepithelioma 25% (a variant of SCC)

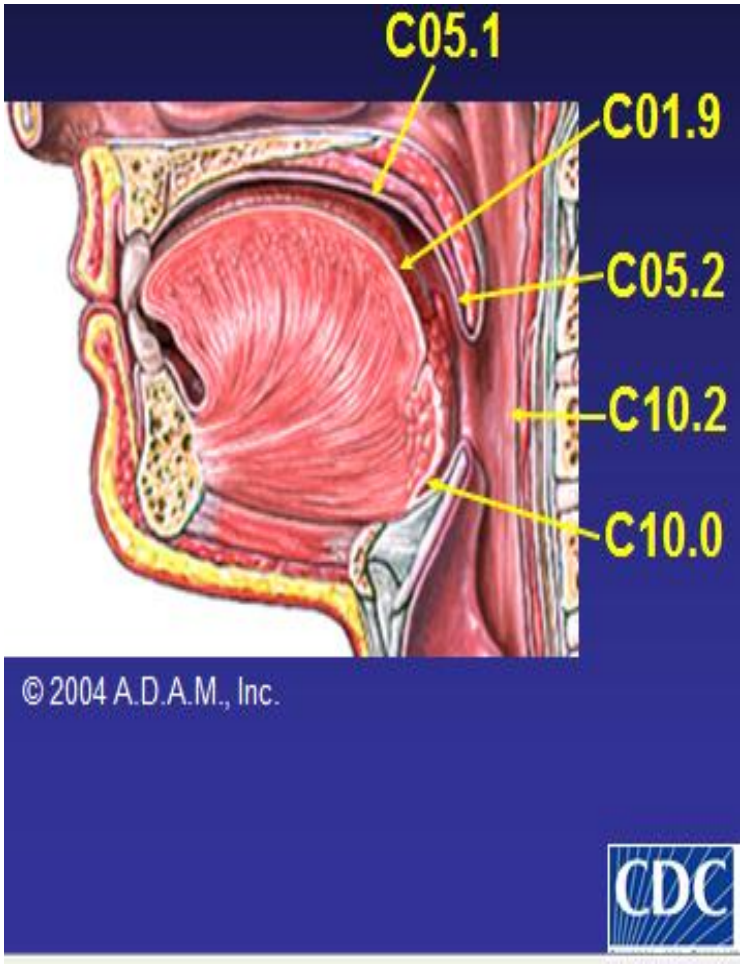
Nasopharynx

- Arises in the nasopharynx (region of nasal cavities
  - Eustachian tubes connect with the upper part of the throat
- Common to the HNSCC



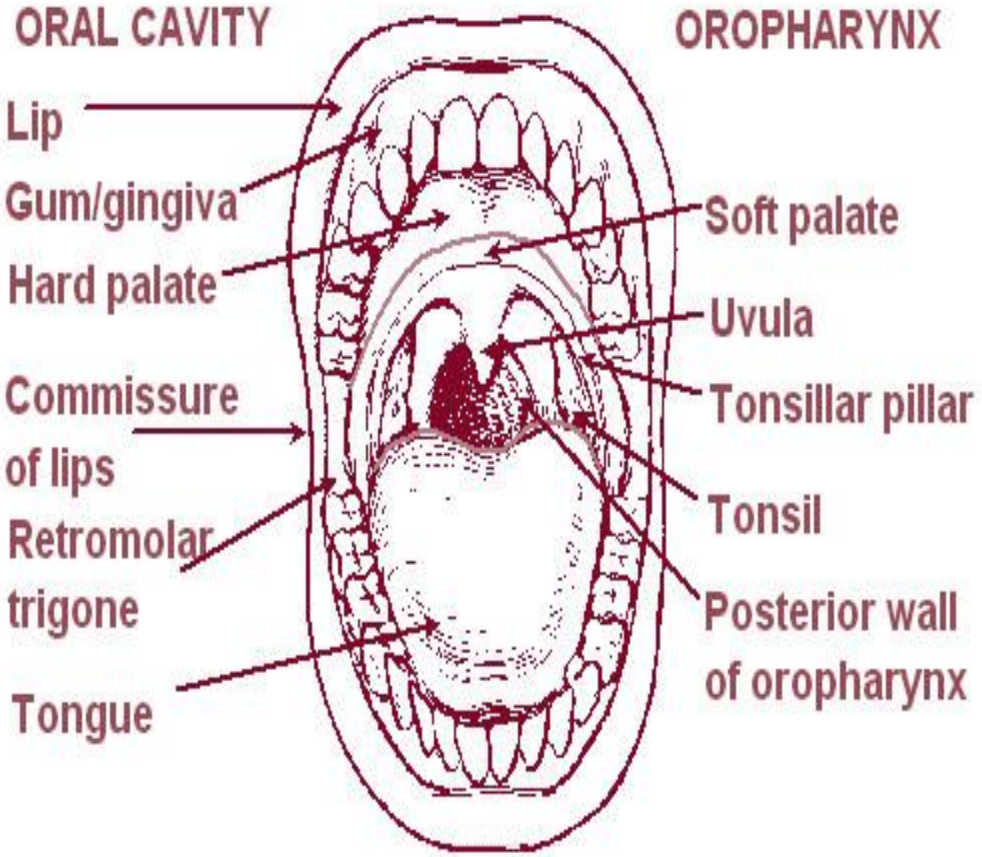
Parts of Oropharynx
(C01.9, C05.1, C05.2, C09.x, C10.x)

- **Subsites of Oropharynx**
  - **C01.9 Base of tongue**
  - **C05.1 Soft palate**
  - **C05.2 Uvula**
  - **C09.1 Tonsillar fossa**
  - **C09.2 Tonsillar pillar**
  - **C09.9 Tonsil, NOS**
  - **C10.0 Vallecula**
  - **C10.2 Lateral wall**
  - **C10.3 Posterior wall**
  - **C10.9 Oropharynx, NOS**
- NOTE C10.1 Anterior surface epiglottis



Oropharynx (C10.0-C10.9)

- Originate in the oropharynx, middle part of the throat that includes the soft palate, base of tongue, and tonsils
- Squamous cell carcinoma of the tonsils - HPV



http://training.seer.cancer.gov/head-neck/anatomy/mouth.html

Oropharynx

Symptoms

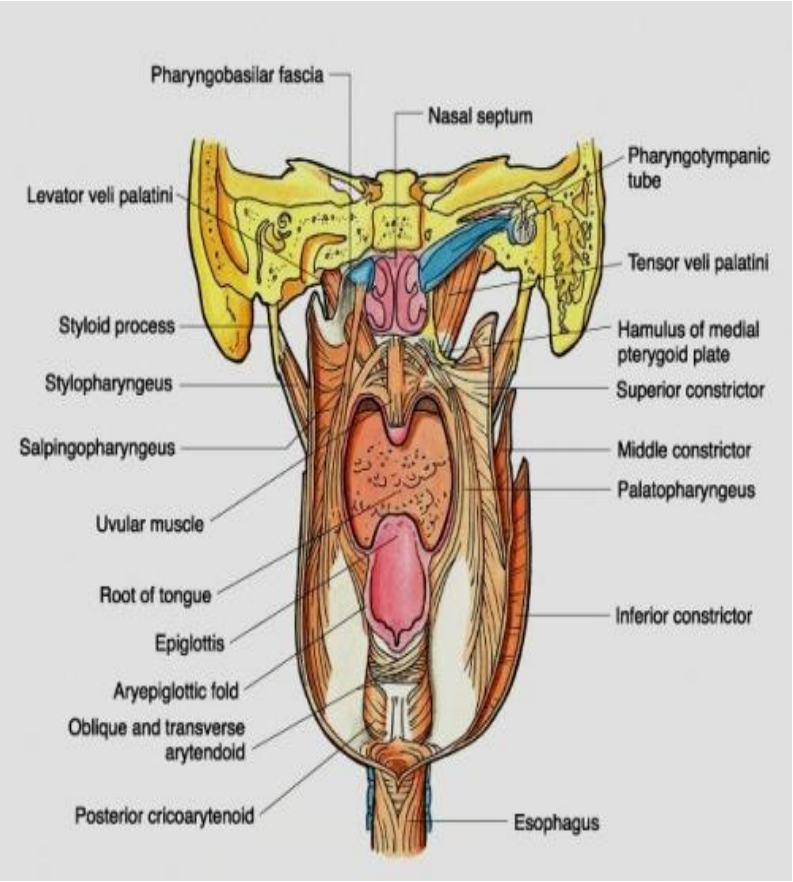
- Persistent sore throat or cough
- Hard or painful swallowing
- Unexpected weight loss
- Vocal changes
- Ear pain
- A lump in the throat, mouth or neck
- Dull chest pain

Risk Factors

- Smoking and chewing tobacco
- Heavy alcohol use
- Diet low in fruits and vegetables.
- Human papilloma virus (HPV) infection

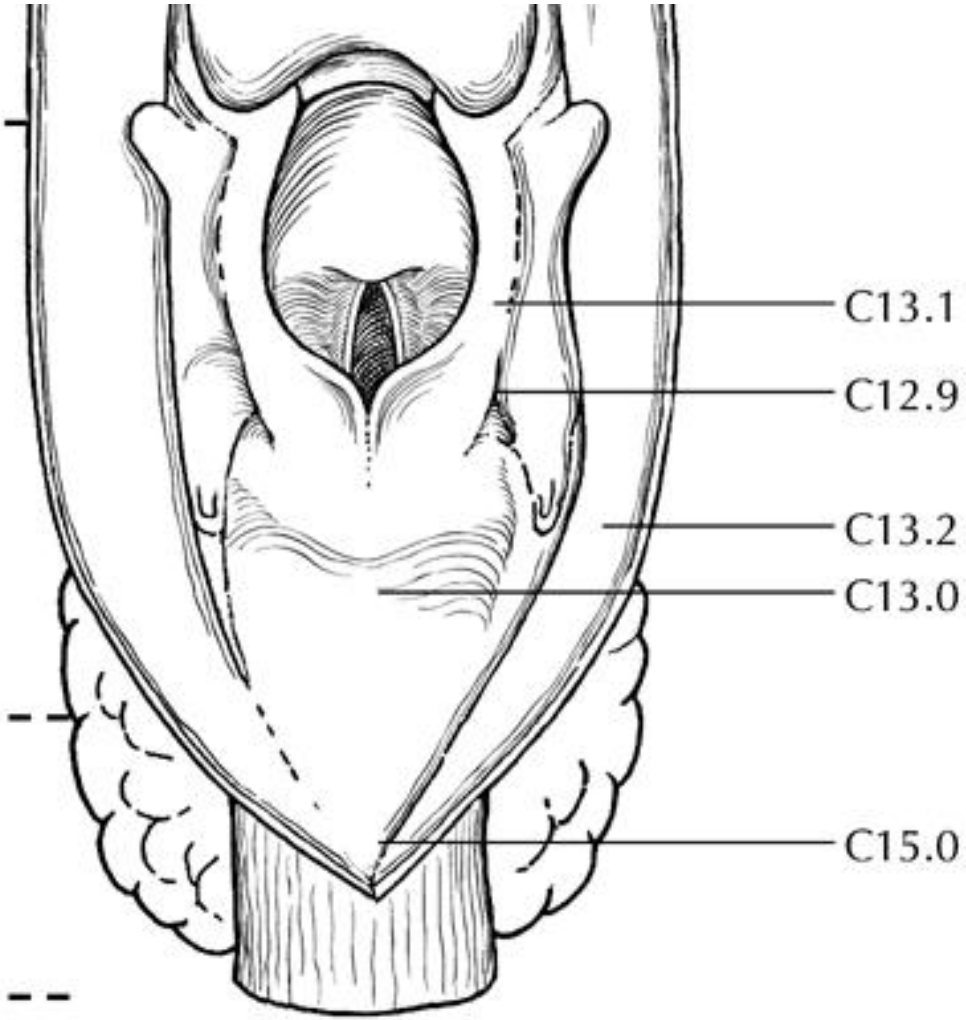
Hypopharynx (C12.9, C13.0-C13.9)

- Tumor in the pyriform sinuses (70%), posterior pharyngeal wall , and postcricoid area (15%).
- Usually frequenst Dx with advanced stage at Dx
- Metastasize early due to extensive lymphatic network around the larynx



http://www.rahulgladwin.com/medimages/index.php?level=picture&id=136

Parts of Hypopharynx (C12.9, C13.x)



- C12.9 Pyriform sinus (most common, most lethal)
- C13.0 Postcricoid
- C13.1 Hypo-pharyngeal aspect of aryepiglottic fold
- C13.2 Posterior wall
- C15.0 Esophagus

Salivary Glands (C07.9-C08.9)

The Major Salivary Glands

- Parotid: serous, most common
- Submandibular: mucous & serous
- Sublingual tumors are rare and may be difficult to distinguish from minor salivary gland primary tumors of anterior floor of mouth

The Minor Salivary Glands

Symptoms

- Swelling under the chin or jawbone
- Numbness or paralysis in facial muscles
- Persistent face, chin or neck pain

- **Regional lymph nodes:** nodal metastases usually evident on initial clinical evaluation; low grade tumors rarely metastasize to regional nodes, high grade tumors often do; nodal involvement tends to be orderly from intraglandular to adjacent nodes to upper and midjugular nodes, and occasionally to retropharyngeal nodes; bilateral nodal involvement is rare
- **Metastases:** usually to lungs

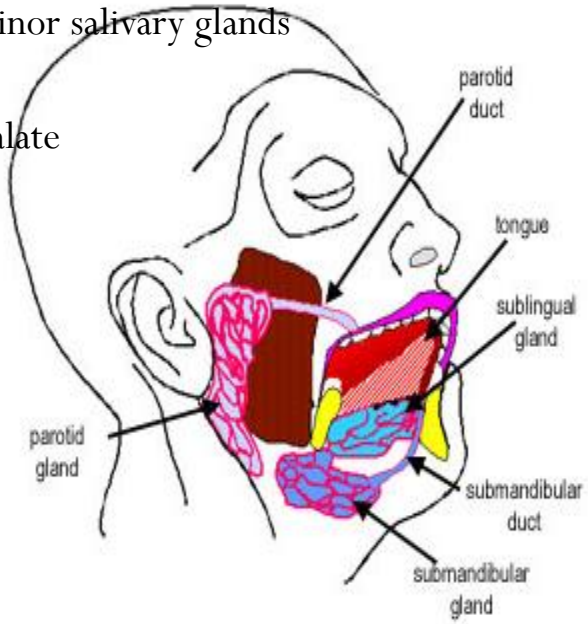
Risk Factors

- Smoking and chewing tobacco
- Heavy alcohol use

http://www.histology.leeds.ac.uk/oral/salivary.php

Salivary Gland Histologic Type

- Acinic cell 1-3% of salivary gland tumors #2 childhood salivary gland malignancy after mucoepidermoid carcinoma
- Adenocarcinoma Usually not in glottis May arise from surface epithelium
- Adenoid Cystic : Most common in submandibular, sublingual or minor salivary glands
- Malignant mixed
- Mucoepidermoid **Most common** 2/3 occur in parotid gland& palate
- Squamous Cell
- Schwannoma
  - May arise from facial nerve and present as salivary gland tumor
  - Gross: encapsulated
- Basal cell adenocarcinoma also called basaloid carcinoma
- 1-2% of salivary gland carcinomas
- Cystadenocarcinoma
- Papillary adenocarcinoma <3% of parotid tumors



Children: pleomorphic adenoma most common, but more often malignant; most common malignant tumors are mucoepidermoid carcinoma, adenoid cystic carcinoma, acinic cell carcinoma

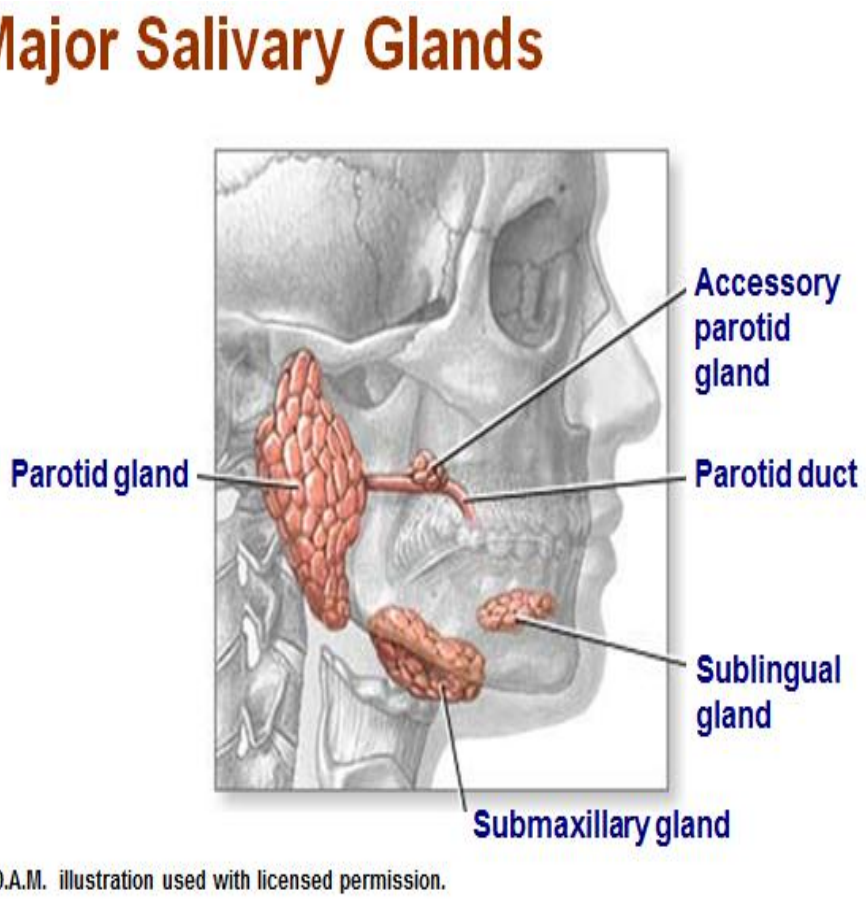
Cancer of the Head and Neck, 4th ed., 2003, pg 483

Parotid Gland Anatomy (C07.9)

- Largest salivary gland
- Lies between the mandible and sternomastoid and over both
- Lymphatics: Paraparotid & Intraparotid nodes & Superficial & Deep Cervical nodes

Signs & Symptoms

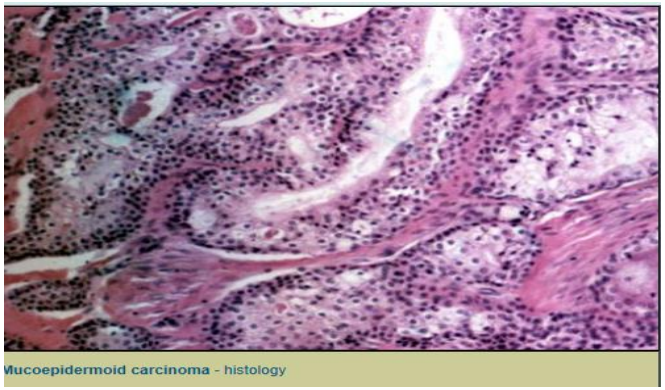
- Facial nerve paralysis
- Pain or facial paresis



A.D.A.M. illustration used with licensed permission.

Parotid Gland – Histologic Type

- Mucoepidermoid carcinoma 30%
  - 2/3 occur in parotid gland
  - Wide age range, mean 49 years, range 15-86 years, no gender predominance
  - Low grade: 15% recur, 5 year survival 90-98%; usually stage I
  - High grade: 25% recur, 5 year survival 50-56%; deaths usually within first 5 years

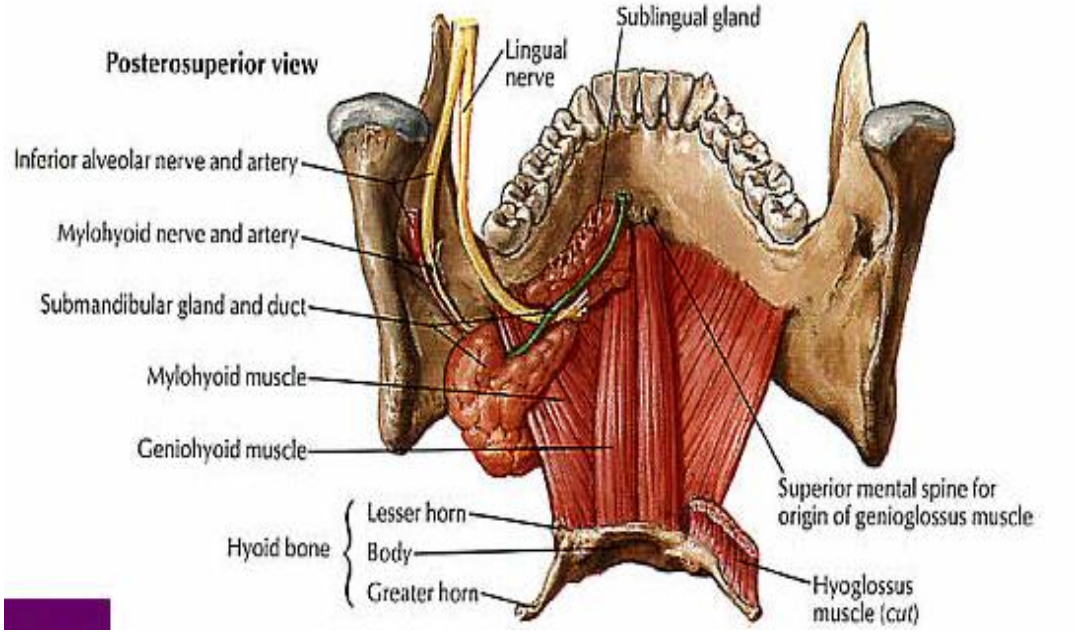


- Adenocarcinoma
- Malignant pleomorphic adenoma, rare
- Adenoid cystic carcinoma
- Sebaceous carcinoma, rare
- Papillary adenocarcinoma <3% of parotid tumors
- Salivary duct carcinoma
- Carcinosarcoma
- Squamous cell carcinoma, **rare**
  - Most tumors of parotid gland are metastases to intraparotid lymph nodes from primaries in oral cavity, upper aerodigestive tract or skin
  - May represent malignant component of malignant mixed tumor or high grade mucoepidermoid carcinoma
  - Rapid growth with infiltration of surrounding structures, regardless of origin

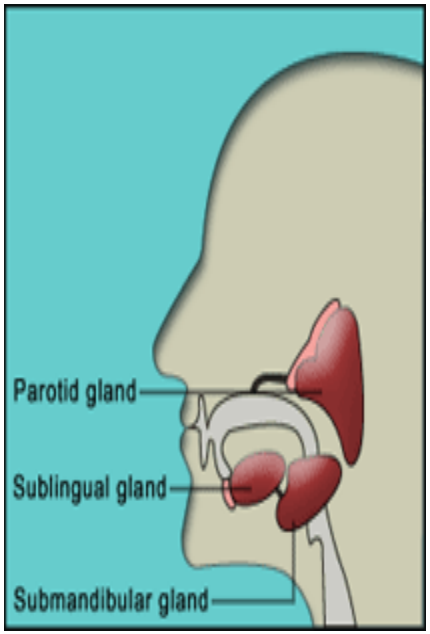
http://emedicine.medscape.com/article/1289616-overview#aw2aab6b4

Submandibular Gland: Anatomy

- Large superficial lobe, small deep lobe, size of walnuts (10g.)
- Connect around the mylohyoid
- Superficial lobes lies at the angle of the Jaw



http://www.glandessalivaires.com/images/p-photos/sub.html



ddarling.info/images/salivary_glands.gif

Sublingual Gland: Anatomy (C08.1)

- Smallest of the major salivary glands, almond shape
- Lies just deep to the floor of mouth mucosa between the mandible & Genioglossus muscle
- No capsule
- Ducts of Rivinus +/- Bartholin's duct
- Sialogram not possible
- Bounded inferiorly by the mylohoid muscle
- Artery/Vein: Sublingual branch of Lingual & Submental branch of Facial
- Lymphatics: Submandibular nodes

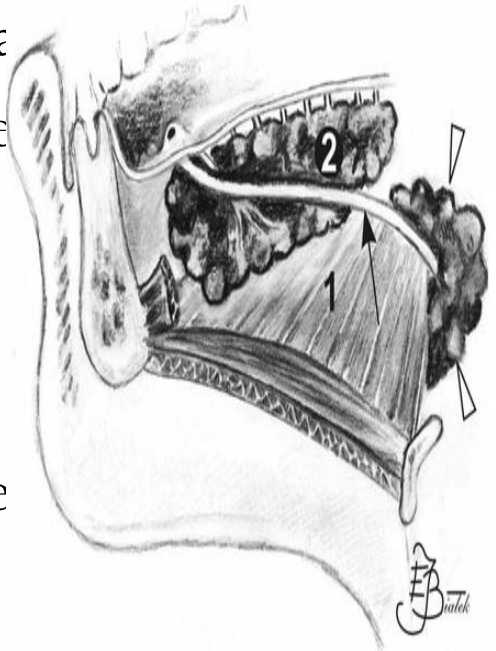
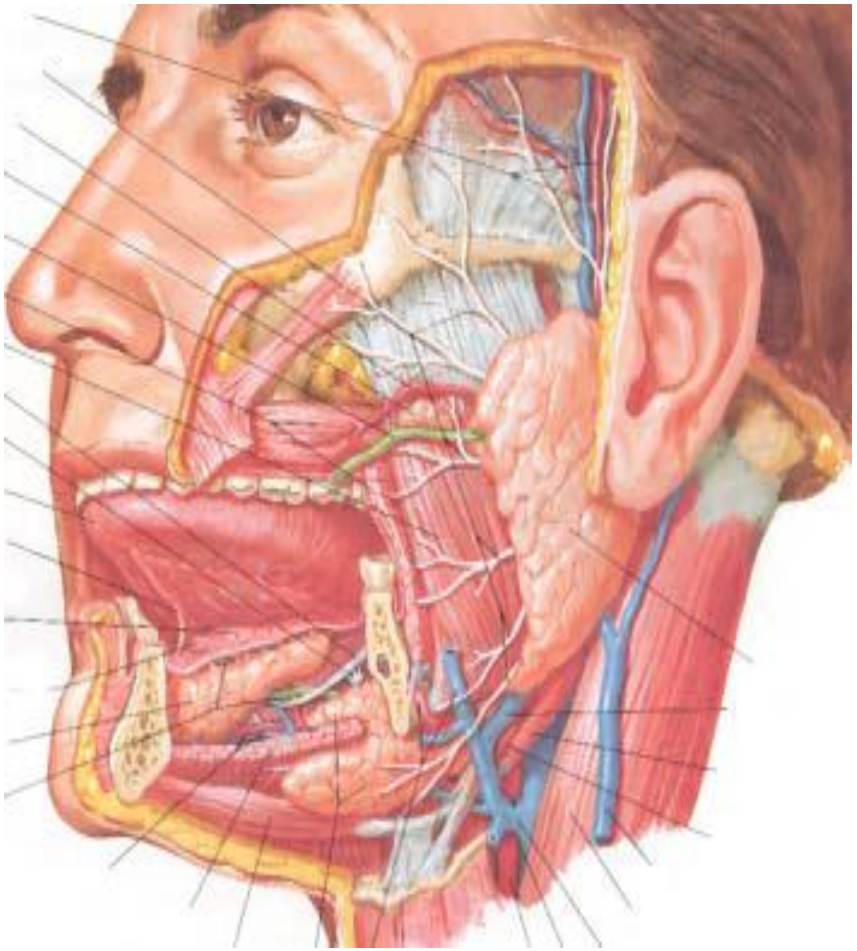


Figure 10b. (a) US image shows a nondilated Wharton duct (arrow) in a slim patient. Arrowheads = submandibular gland, *1* = mylohyoid muscle. (b) Diagram shows the course of the Wharton duct (arrow). Arrowheads = submandibular gland, *1* = mylohyoid muscle, *2* = sublingual gland.

http://radiographics.rsna.org/content/26/3/745/F16.expansion.html

Minor Salivary Glands: Anatomy

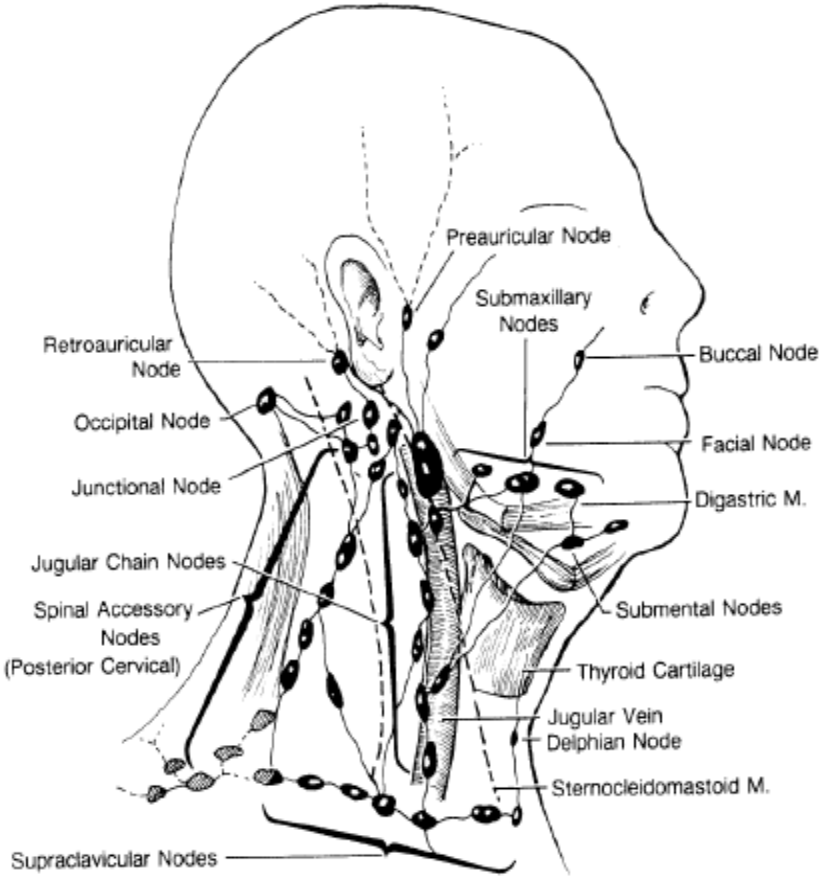
- Unlike the major salivary gland, 500-1,000 approx
- Each salivary unit has it own simple ducts
- Salivary glands in Buccal, Labial, Palatal, Lingual regions
- Tumor sites: Palate, upper lip, cheek



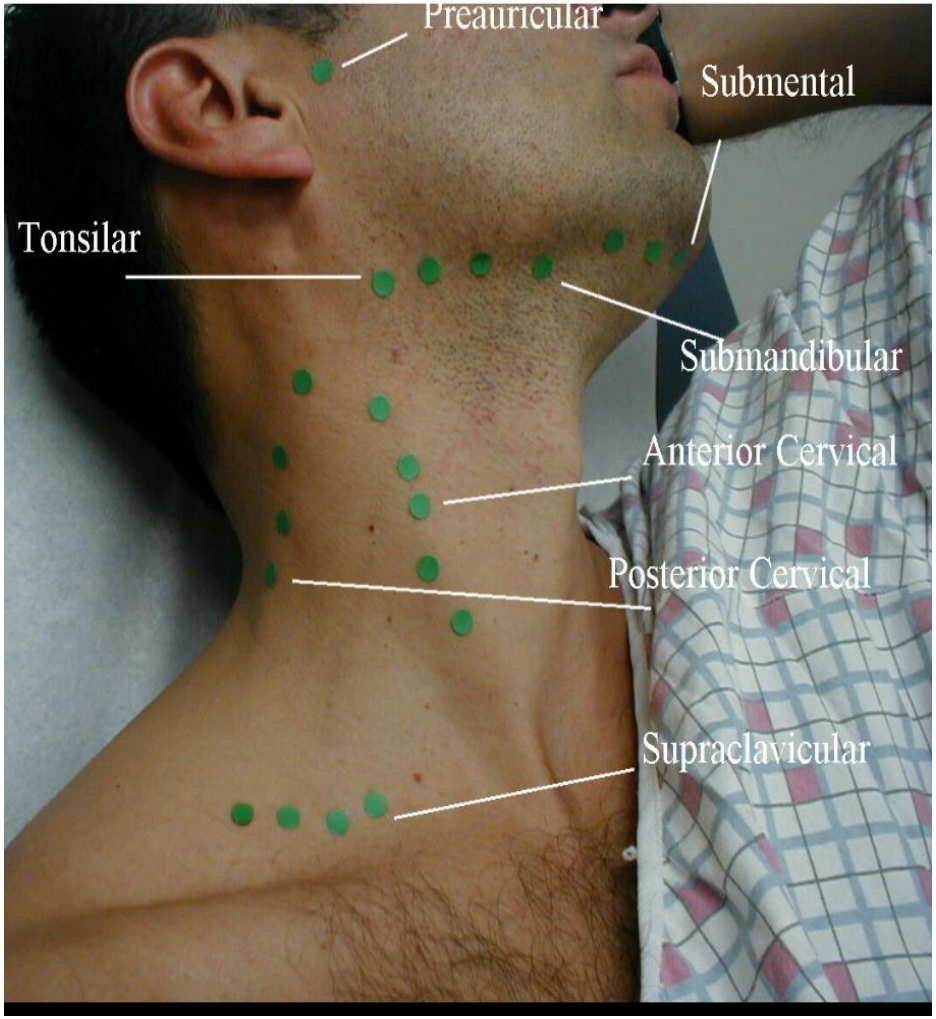
http://www.utmb.edu/otoref/grnds/Salivary-Gland-2001-01/Salivary-gland-2001-01-ppt.pdf

Lymph Nodes

- Head and Neck cancer often spreads to lymph node rich regions in the head, neck, and face



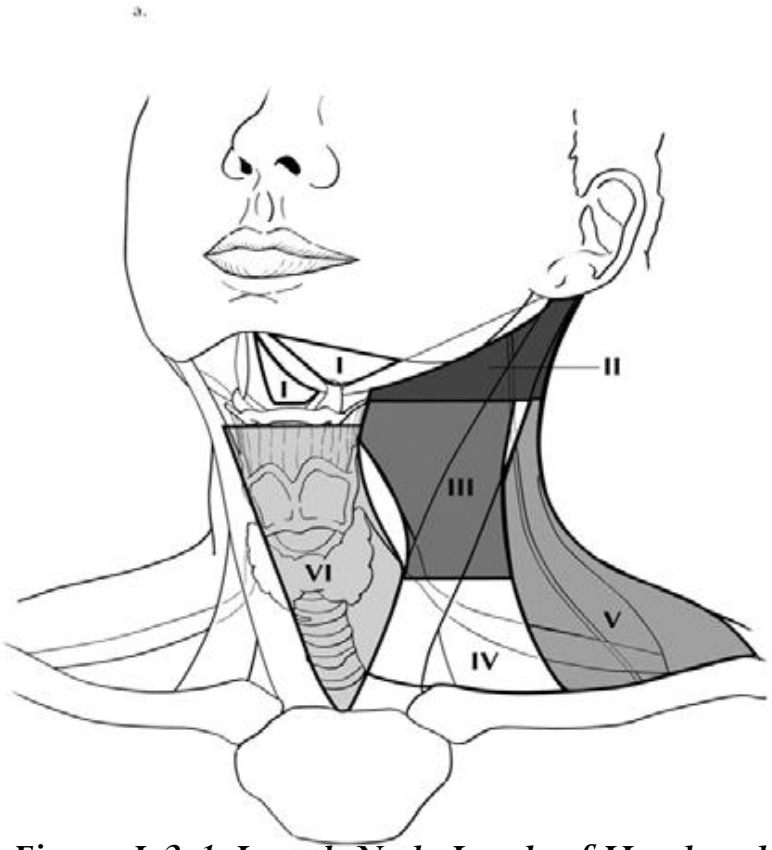
Head and Neck Lymph Nodes Exam



- **Ant Cervical** Throat, tonsils, post pharynx, thyroid
- **Post Cervical** Back of skull
- **Tonsillar** Tonsils, posterior pharynx
- **Sub-Mandibular -** Floor of mouth
- **Sub-Mental-**Teeth
- **Supra-Clavicular-** Thorax
- **Pre-Auricular-**Ear

http://meded.ucsd.edu/clinicalmed/pe_headneckexam.pdf

Lymph Node Level of Head and Neck



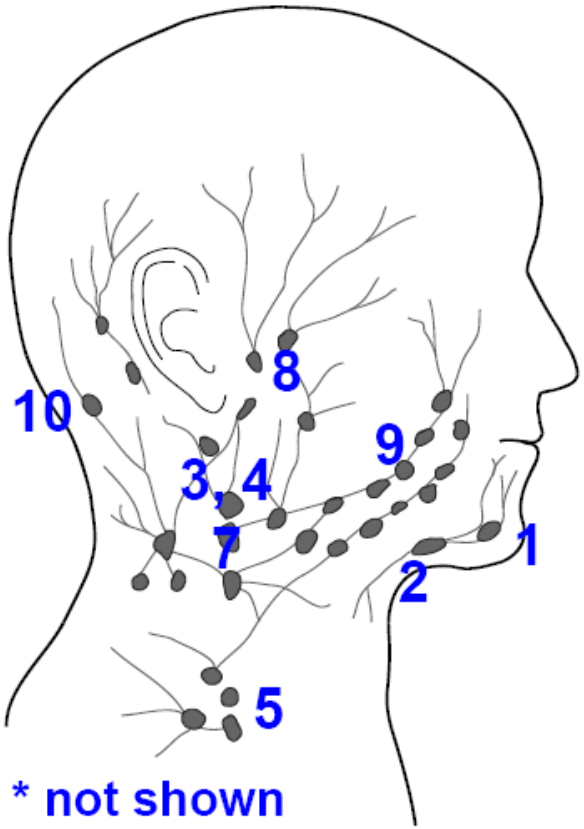
Level Description

- I Submental, submandibular
- II Upper deep cervical
- III Middle deep cervical
- IV Lower deep cervical
- V Posterior triangle
- VI Anterior compartment
- VII Superior mediastinal
- NOTE: See further information on lymph node levels below.

Image source: Introduction to Head and Neck Sites. In: Greene, F.L., Compton, C.C., Fritz, A.G., et al., editors. AJCC Cancer Staging Atlas. New York: Springer, 2006: 13-18. ©American Joint Committee on Cancer

Figure I-2-1. Lymph Node Levels of Head and Neck

Head and Neck Regional Nodes I



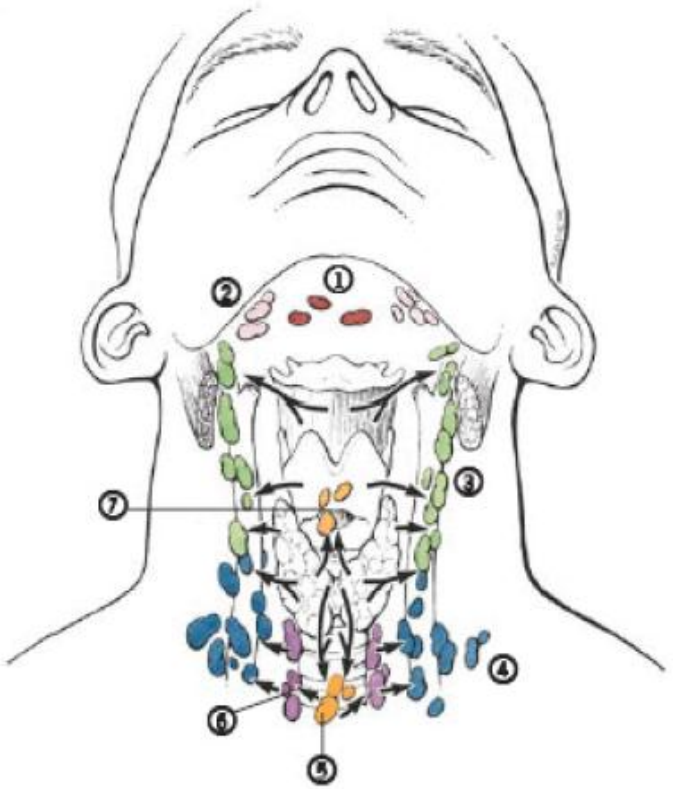
1. Submental
2. Submandibular
3. Jugular (deep cervical)
4. Superficial cervical
5. Supraclavicular
6. Prelaryngeal* and paratracheal*
7. Retropharyngeal
8. Parotid
9. Buccal
10. Retroauricular and occipital

Head and Neck Regional Nodes II

1 Submental
2 Submandibular
3 Upper jugular
4 Lower jugular
5 Pretracheal
6 Paratracheal
7 Prelaryngeal

Not shown:
Parapharyngeal
Retropharyngeal

Adapted from MediClip,
Grant's Atlas Images 4: Head, Neck and Cranial Nerves.
Williams and Wilkins, 1998.



Relationship Primary to Nodes

Lymphatic drainage	Likely primary sites
level I: Includes Submental/Submandibular Submental	Lower lip, chin, anterior oral cavity (including anterior one-third of the tongue and floor of the mouth)
Level I: Submandibular	Upper and lower lips, oral tongue, floor of mouth, facial skin, Maxillary sinus, nasal cavity, oral cavity, submandibular gland
Level II: Includes the superior jugular chain nodes extending from the mandible down to the carotid bifurcation and posterior border of the sternocleidomastoid muscle	Oral cavity and pharynx (including soft palate, base of tongue, and pyriform sinus) Nasal cavity, parotid gland
Level III: Consists of the jugular nodes from the carotid bulb inferiorly to the omohyoid muscle	Oral cavity, pharynx, hypopharynx, larynx, and thryoid
Level IV: Continues from the omohyoid muscle inferiorly to the clavicle	Larynx, hypopharynx, thyroid, cervical esophagus, and trachea
Level V: Represents the posterior border of the sternocleidomastoid anteriorly, the anteior border of the trapezius posteriorly, and the clavicle inferiorly	Nasopharynx, oropharynx

http://www.cancernetwork.com/cancer-management/head-and-neck/article/10165/1802498

Lymph Node Mets at Diagnosis

- Pyriform sinus – 70%
- Postcricoid area – 40%
- Posterior hypopharynx – 50%
- Nasopharynx – 75%
- Tonsil – 70%
- Base of tongue – 70%
- Soft palate – 30-65%
- Pharyngeal wall – 30-65%
- Paranasal sinuses – 20%
- Medullary ca of thyroid – 50%

COLLABORATIVE STAGE DATA COLLECTION SYSTEM USER DOCUMENTATION AND CODING INSTRUCTIONS

Collaborative Stage Work Group
of the American Joint Committee on Cancer

Part I – General Instructions
Version 02.03.02

SECTION 2
Lab Tests and Tumor Markers
Site-Specific Factor Notes

Definitions of Levels for H & N Sites

The definitions of the levels and the lymph node chains included in each level are as follows:

Level I (First digit of SSF 3) contains the submental and submandibular triangles bounded by the anterior and posterior bellies of the digastric muscle, and the hyoid bone inferiorly, and the body of the mandible superiorly. Lymph node chains at this level:

Submandibular Submaxillary Submental

Level II (Middle digit of SSF3) contains the upper jugular lymph nodes and extends from the level of the

skull base superiorly to the hyoid bone inferiorly. Lymph node chains at this level:

Jugulodigastric (subdigastric Upper deep cervical Upper jugular

Level III (Last digit of SSF3) contains the middle jugular lymph nodes from the hyoid bone superiorly to

the level of the lower border of the cricoid cartilage inferiorly. Lymph node chains at this level:

Middle deep cervical Mid-jugular

Level IV (First digit of SSF4) contains the lower jugular lymph nodes from the level of the cricoid

cartilage superiorly to the clavicle inferiorly. Lymph node chains at this level:

Jugulo-omohyoid

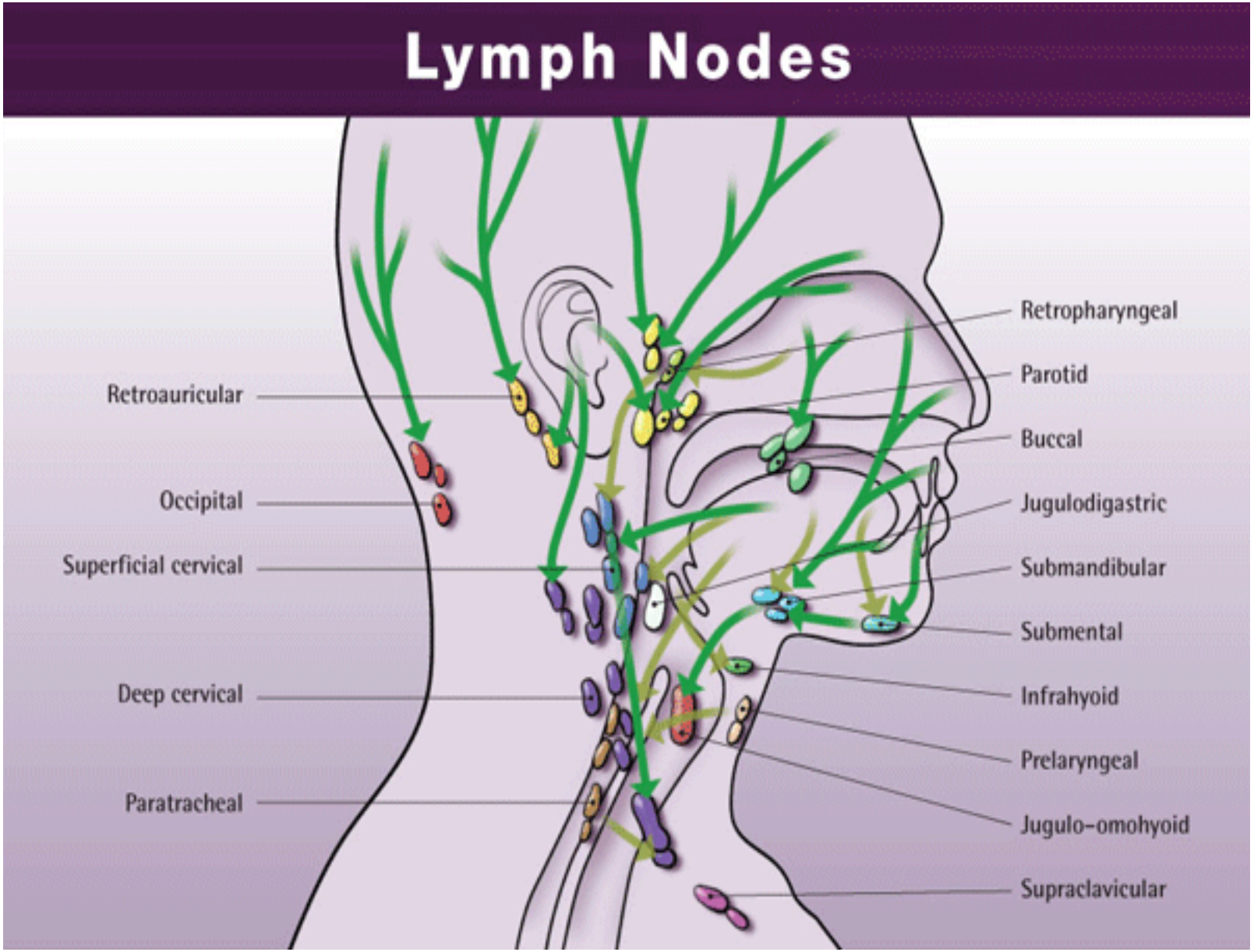
(supraomohyoid)

Lower deep cervical Lower jugular

Level V (Middle digit of SSF4) contains the lymph nodes in the posterior triangle bounded by the anterior

border of the trapezius muscle posteriorly, the posterior border of the sternocleidomastoid muscle

anteriorly, and the clavicle inferiorly. For descriptive purposes, Level V may be further subdivided into



http://fitnesscares.blogspot.com/2011/04/lymph-nodes-of-head-and-neck.html

Metastasis Site of H&N

- Lymph nodes in the upper part of the neck (Occult Primary)
- Patients with cervical lymph node metastases histologically related to a previously treated primary tumor and patients with lymphomas and adenocarcinoma are excluded
- Most epidermoid carcinomas metastatic to lymph nodes of the upper half of the neck will originate from a head and neck primary site
- Squamous carcinomas metastatic to the lower neck may represent a primary site in the head and neck, esophagus, lung, or genitourinary tract
- Check Metastatic disease Lung, Liver, or bone

http://www.cancer.gov/cancertopics/pdq/treatment/metastatic-squamous-neck/HealthProfessional

Multiple Primary Rules
Histology Coding Rules

MPH – Priority order

Documenting the Primary Site Priority of order

1. Tumor board determination (specialty; general)
2. Staging physician's site assignment (staging form; TNM statement in record)
3. Total resection of primary tumor (physician's statement; final diagnosis from pathology report)
4. No resection—use documentation from
   - Endoscopy; Radiation oncologist; Diagnosing MD; Primary care MD; Other MD; Radiologist-imaging; MD-PE

Equivalent Terms (for MP/H rules ONLY)

- Tumor = Mass = Lesion = Neoplasm
- In situ = noninvasive = intraepithelial
- Continuous = contiguous
- Squamous cell carcinoma = squamous cell epithelioma = epidermoid carcinoma
- Type = Subtype = Predominantly = With features of = Major = With _____ differentiation

MP/H Rules: Single Primary

- **M1** Unsure Multiple vs Single Tumor – Unknown number
  - When it is not possible to determine if there is a single tumor or multiple tumors, opt for a single tumor and abstract as a single primary. Prepare as one abstract.
    - Tumor not described as metastasis
- **M2** Single Tumor- One tumor
  - A single tumor is always a single primary.
    - Might be overlapping
    - Tumor not described as metastasis
    - Combination of in situ and invasive

MP/H Rules: Multiple Primaries

- **M3** Paired sites – Tumors on **right** and **left** sides are **multiple** primaries (Table 1)

Column 1: Paired Sites	Column 2: Code
Parotid Glands	C079
Major Salivary Glands	C080; C081
Tonsils	C090; C091; C098, C099
Nasal Cavity	C300
Accessory Sinuses	C310; C312
Middle Ear	C301

- **M4** Lip – Tumors on **UPPER lip** and **LOWER lip** are **multiple** primaries (C00.x)
- **M5** Gum – Tumors on **UPPER gum** and **LOWER gum** are **multiple** primaries (C03.x)
- **M6** – Tumors in **nasal cavity** and **middle ear** are **multiple** primaries (C30.x)

MP/H Rules: Multiple Primaries

- **M7** – Tumors with ICD-O-3 topography codes different at 2nd (C**x**xx) or 3rd (Cx**x**x) character are **multiple** primaries

  Example
  - C02.1 Tip of tongue
  - C10.0 Vallecula

  Example
  - C06.0 Cheek mucosa
  - C07.9 Parotid gland

Timing Rules

- **M8** - An ***invasive*** tumor following an ***in situ*** tumor more than ***60 days*** after diagnosis is a **multiple** primary

- **M9** - Tumors diagnosed more than ***five (5) years apart*** are **multiple** primaries

MP/H Rules: Multiple Primaries

- **M10** – when histology notes **generic** description WITH more **specific** description it is **SINGLE** primary
  - Cancer/malignant neoplasm, NOS (8000) and another is a specific histology or
  - Carcinoma, ***NOS*** (8010) ***and*** another is a ***specific*** carcinoma or
  - Adenocarcinoma, ***NOS*** (8140) ***and*** another is a ***specific*** adenocarcinoma or
  - Squamous cell carcinoma, ***NOS*** (8070) ***and*** another is ***specific*** squamous cell carcinoma or
  - Melanoma, ***NOS*** (8720) ***and*** another is a ***specific*** melanoma
  - Sarcoma, ***NOS*** (8800) ***and*** another is a ***specific*** sarcoma

MP/H Rules: Multiple Primaries

- **M11** - Tumors with ICD-O-3 histology codes that are different at the first (**x**xxx), second (x**x**xx) or third (xx**x**x) number are **multiple** primaries.

- **M12** - Tumors that ***do not meet*** any of the above criteria are abstracted as a single primary.
  - *Note 1:* When an invasive tumor follows an in situ tumor ***within 60 days***, abstract as a single primary.
  - *Note 2:* All cases covered by Rule M12 have the ***same first 3 numbers*** in ICD-O-3 histology code.

    Sample: Multifocal tumors in floor of mouth

    Sample: In situ following invasive > 60 days apart

Case Scenario: Multiple Primaries

87-year-old female

Tumor on tongue and right floor mouth (extends onto anterior tonsillar pillar)

Needs commando procedure

http://www.cdc.gov/cancer/npcr/training/nets/module5

MPH: Histology

Reminder

Read general rules AND site-specific rules

Look for equivalent terms

Most representative specimen

MP/H Rules:Histology Single Tumor

H1 **No** path/cytology done or **available**?

- Priority
  - Documentation that refers to path
  - Physician's reference to type of cancer
  - CT, PET or MRI
- Code specific term when documented
- Code 8000 or 8010 as stated by physician

H2 **No** path/cytology of **primary** site

- Code info from metastatic site
- Behavior code /3 at primary site

MP/H Rules: Histology Single Tumor

H3 **One** histologic **type**? – code that

- Do NOT code terms that are not there
- EX: Squamous cell carcinoma = 8070 (NOT nonkeratinizing 8072)

- Do not code 8072 (squamous cell carcinoma non-keratinizing) unless the words "non-keratinizing" actually appear in the diagnosis.

H4 **Invasive** AND **in situ** = invasive only

H5 Code the most ***specific*** histologic term using Chart 1 when there are multiple histologies within the same branch

- Use Chart 1
- Cancer/malignant neoplasm, NOS (8000) and a more specific histology or
- Carcinoma, NOS (8010) and a more specific carcinoma or
- Squamous cell carcinoma, NOS (8070) and a more specific squamous carcinoma or
- Adenocarcinoma, NOS(8140) and a more specific adenocarcinoma or
- Melanoma, NOS (8720) and a more specific melanoma or
- Sarcoma, NOS (8800) and a more specific sarcoma

H6 Code to the **highest** number ICD-O-3 code

Paired Sites (Chart 1) and Other Multiple Primaries

Head and Neck Equivalent Terms, Definitions, Charts, Tables and Illustrations C000-C148, C300-C329

Table 1 –Paired Sites

Table Instructions: Use this table to determine multiple primary status for sites listed in Column 1.

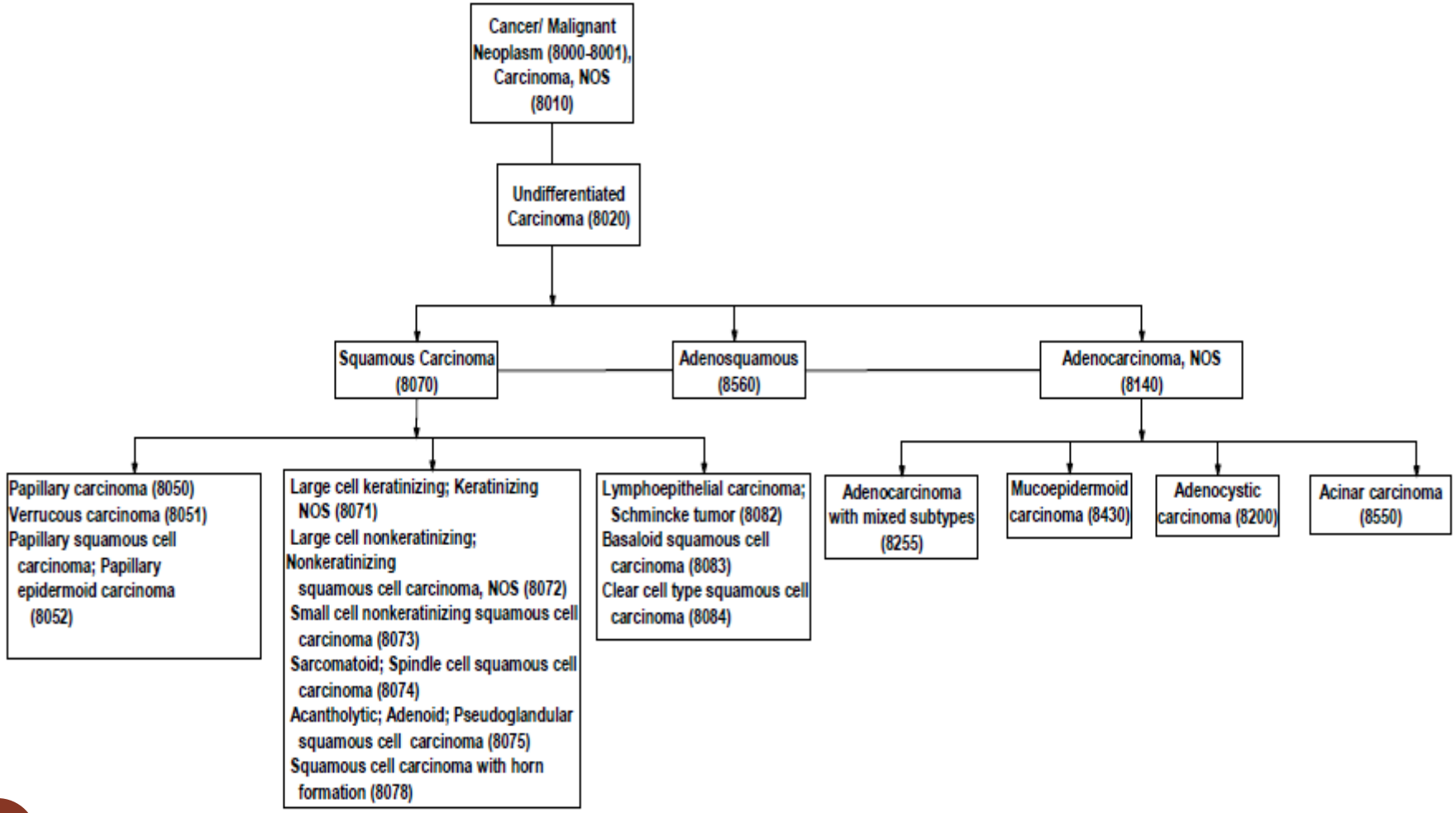
Column 1: Paired Sites	Column 2: Code
Parotid Glands	C079
Major Salivary Glands	C080; C081
Tonsils	C090; C091; C098, C099
Nasal Cavity	C300
Accessory Sinuses	C310; C312
Middle Ear	C301

Table 2 – Changes to Previous SEER Site Grouping Table

Previous to 2007, tumors in sites on the same row were abstracted as a single primary.

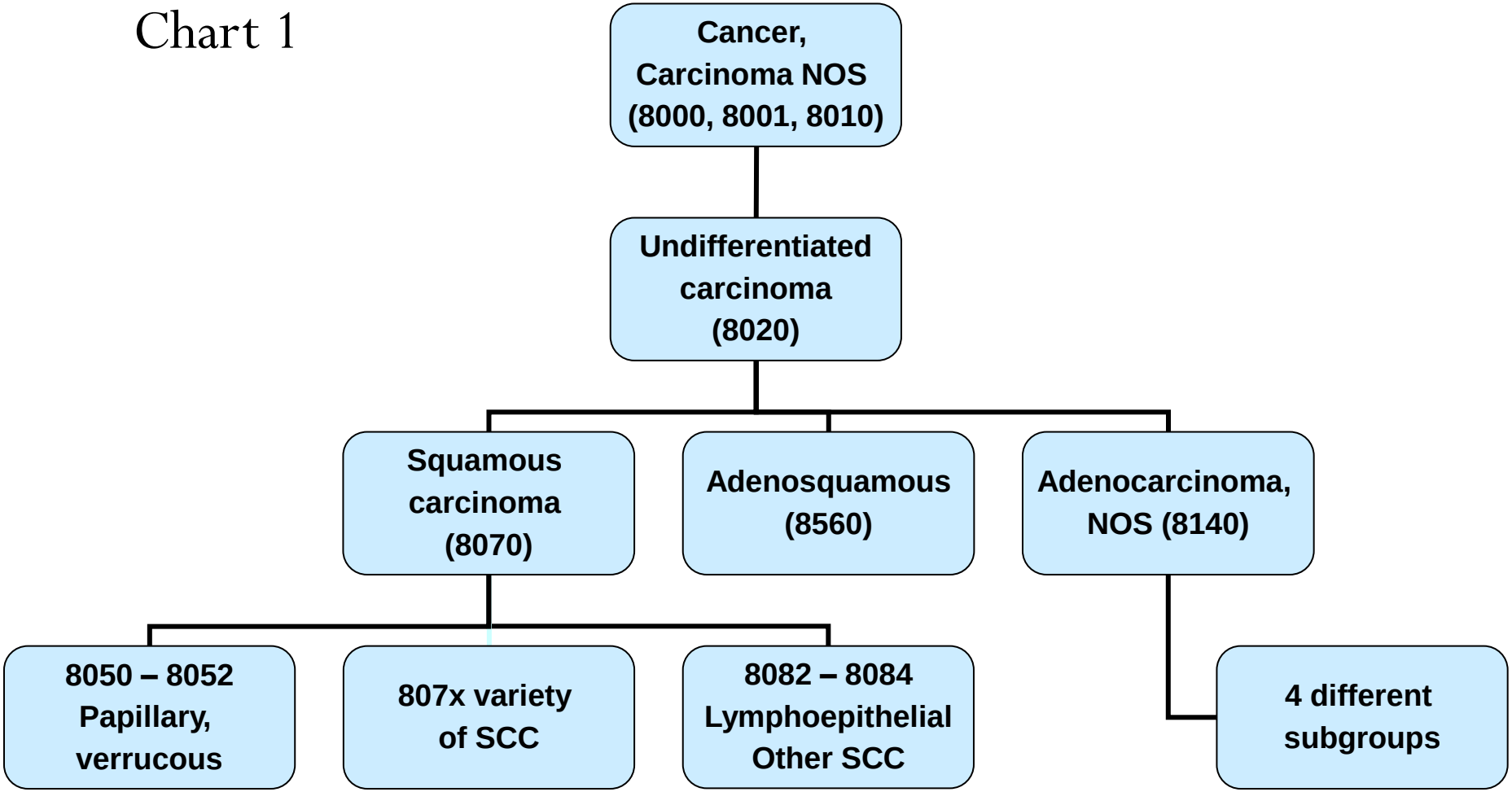
Code	Site Groupings
C01 C02	Base of tongue Other and unspecified parts of tongue
C05 C06	Palate Other and unspecified parts of mouth
C07 C08	Parotid gland Other and unspecified major salivary glands
C09 C10	Tonsil Oropharynx
C12 C13	Pyriform sinus Hypopharynx
C30 C31	Nasal cavity and middle ear Accessory sinuses

Head and Neck Histology Rules (Chart 1)



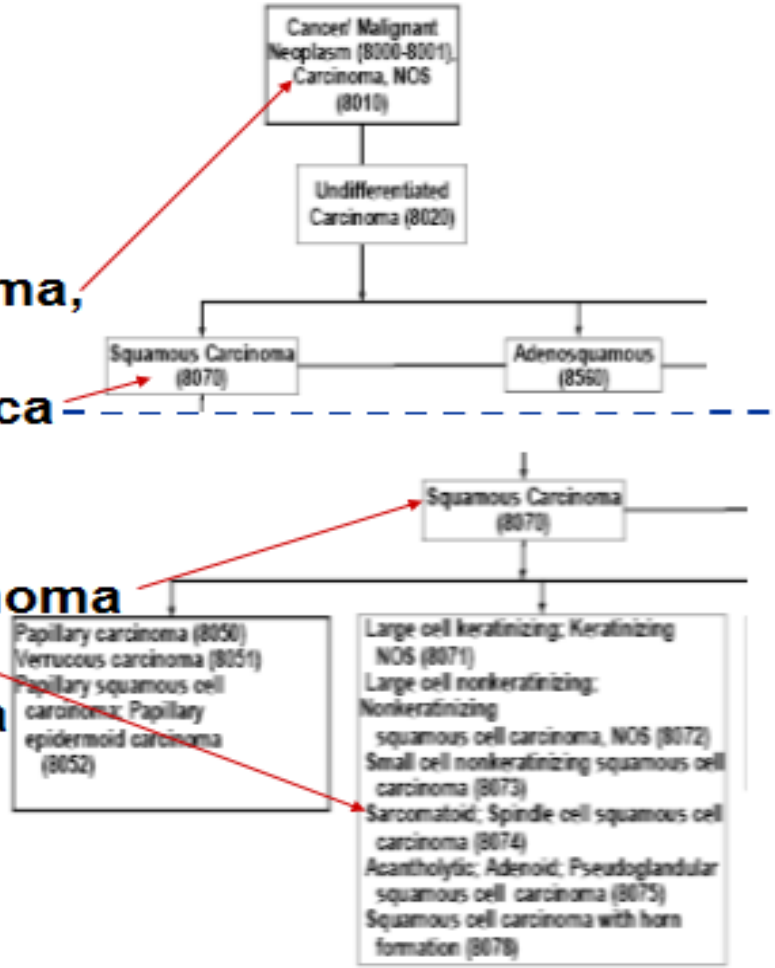
MP/H Rules:Histology Single Tumor

Chart 1



Code Most Specific Term

- **Most specific code is toward bottom of chart**
- **Example 1**
  - **Buccal cytology: carcinoma, NOS**
  - **Excision: squamous cell ca**
  - **Use code 8070**
- **Example 2**
  - **Biopsy: squamous carcinoma**
  - **Resection: spindle cell squamous cell carcinoma**
  - **Use code 8074**

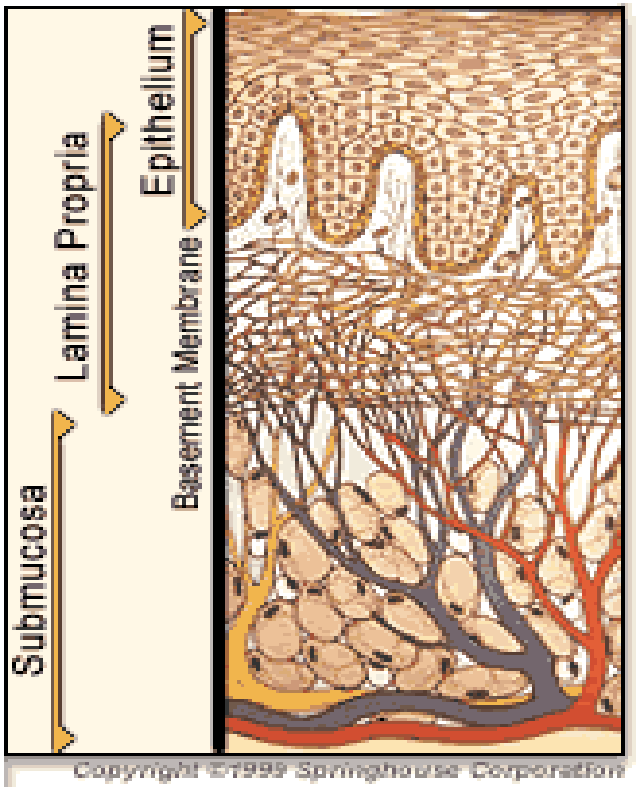


Definition – Most Invasive Tumor

- Definition: tumor with greatest continuous extension
  - Invasive > in situ
  - If all are invasive, highest stage

- Layers of squamous tissue (least to most invasive)
  - Eptithelium (in situ)
  - Lamina propria*
  - Submucosa*
  - Muscularis propria*

    *except gum and hard palate



http://www.geocities.com/romaniandentistry/images/pacienti/mucosa.gif

MPH Rules: Histology
Multiple Tumors/Single Tumor

H7 – same as H1 (no path available)

Code the histology documented by the physician when there is **no pathology/cytology specimen** or the **pathology/cytology** report is **not available**.

H8 – same as H2 (code from mets tissue)

Code the histology from the **metastatic** site when there is **no pathology/cytology specimen from the primary site**.

H9 – same as H3 (code one if only one listed)

Code the histology when only **one histologic type** is identified.

H10 – same as H4 (code invasive when in situ + invasive)

Code the histology of the **most Invasive** tumor.

H11 – same as H5 (use Chart 1)

Code the most **specific** histologic term using Chart 1 when there are multiple histologies within the same branch

H12 – same as H6 (none of the above)

Code the histology with the **numerically higher** ICD-O-3 code.

Abstracting Issues

Determine the correct primary site

Overlapping Lesions

Unknown Site with positive lymph node

Many staging schemas

Abstracting Issues

ICD-O-3 – C14.8

- What is the primary site?

Very Important to determine the correct primary site

- Overlapping Lesions
- DO NOT USE **C76.0**

Head and Neck Terms and Definitions

When the point of origin cannot be determined, use a topography for overlapping sites:

- C02.8 Overlapping lesion of tongue
- C08.8 Overlapping lesion of major salivary glands
- **C14.8** Overlapping lesion of lip, oral cavity, and pharynx

Head and Neck Equivalent Terms, Definitions, Charts, Tables and Illustrations C000-C148, C300-C329 (Excludes lymphoma and leukemia – M-9590 – 9989 and Kaposi sarcoma M9140) page 18

H&N SEER Inquiry

Question 20110089

Primary site--Head & Neck: What is the correct topography code for squamous cell carcinoma diagnosed from lymph node and deemed to be a head and neck primary but specific site could not be identified? Code C148 or C760?

Discussion

Code C148 is based on note in ICD-O-3 indicating it should be used when a code between C000 and C142 cannot be assigned. Previous SINQ and I&R answers indicated it should be coded to C760.

Answer

Assign code C148

Last Updated
08/08/11

http://seer.cancer.gov/seerinquiry/index.php?page=view&id=20110089&type

Unknown Site & Positive Lymph node

What to do when H&N site is **unknown** and there is a

Supraclavicular lymph node positive

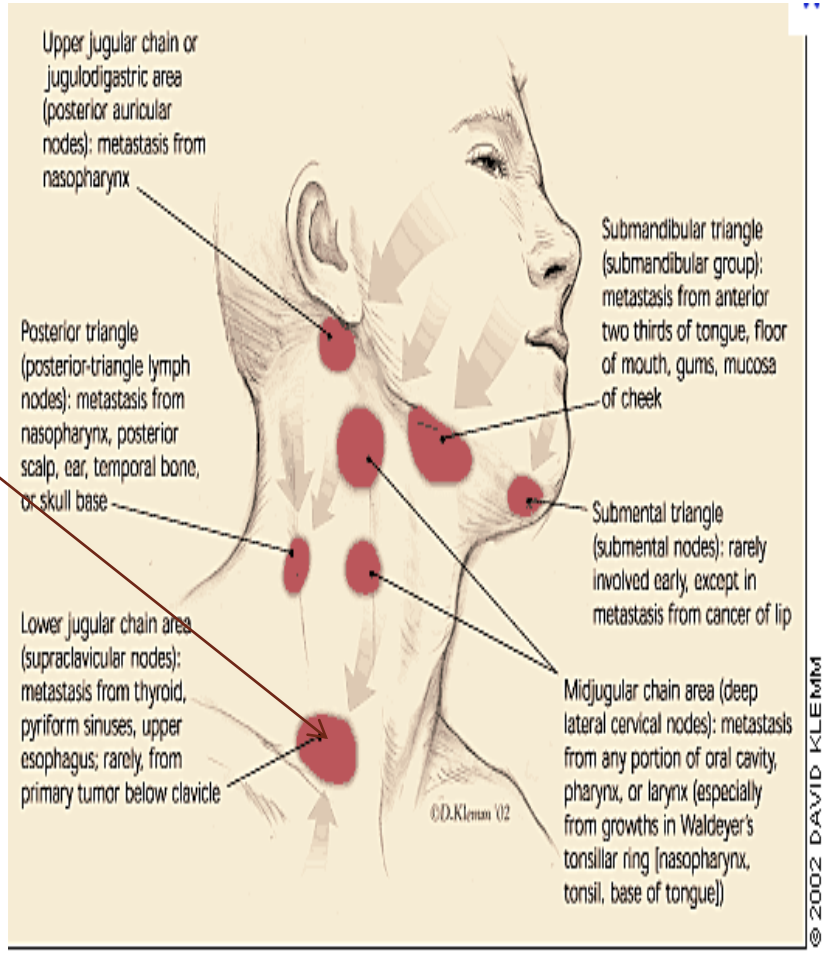
Or

Infraclavicular

It can be from any site in the head and neck

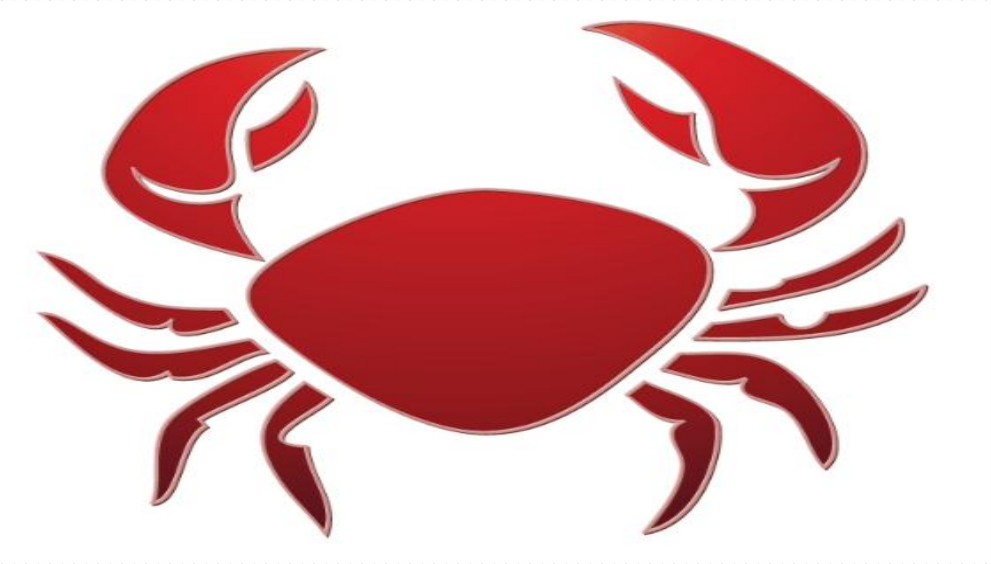
Should be coded to H & N if site is unknown use **C14.8**

http://seer.cancer.gov/seerinquiry/index.php?page=view&id=20110089&type



http://www.aafp.org/afp/2002/0901/p831.html

CSv2 Coding Instructions,CSv02.03.02

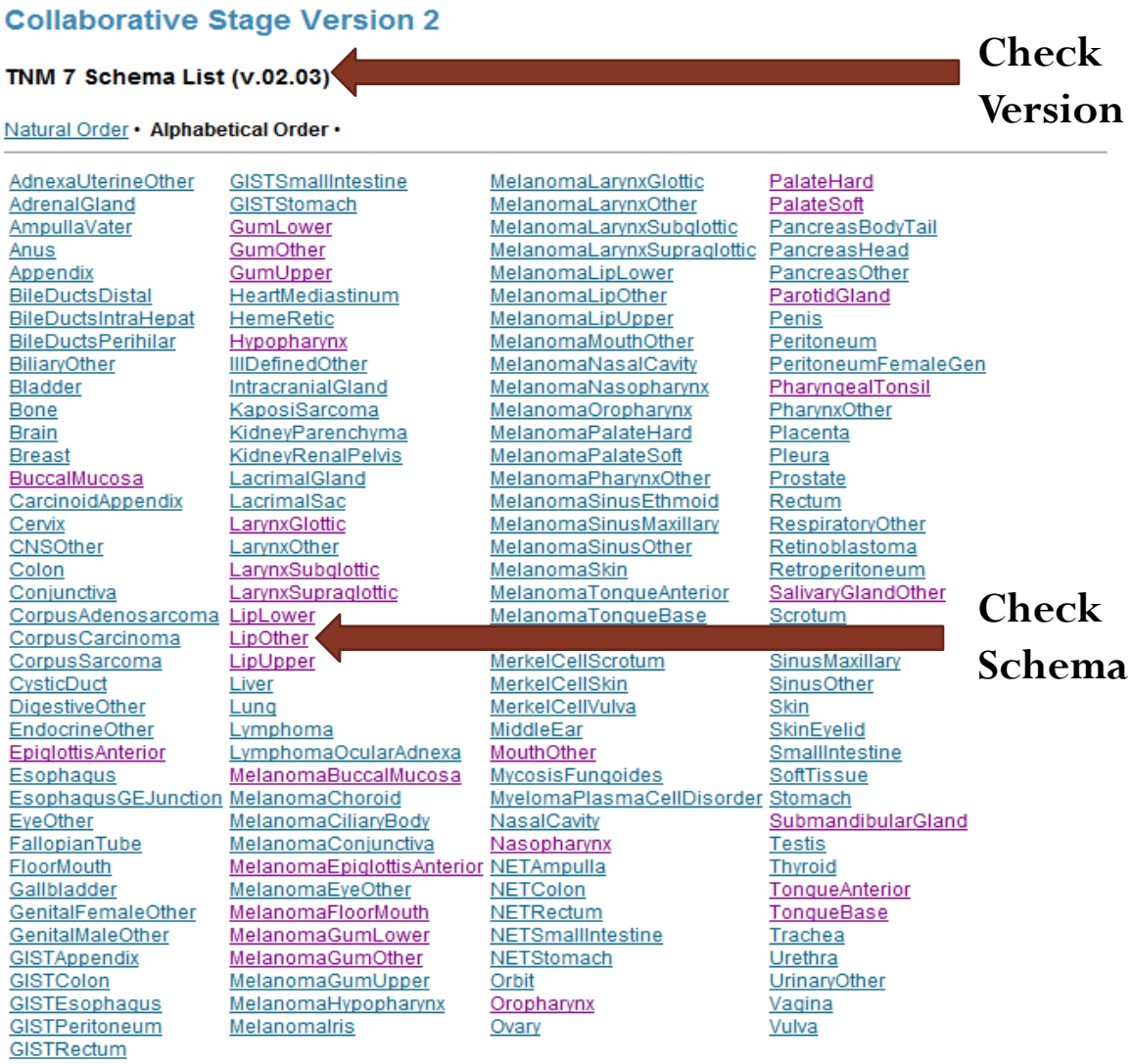


COLLABORATIVE STAGE DATA COLLECTION SYSTEM

Schema Selection

http://www.cancerstaging.org/cstage/index.html

- Look for Schema Site
- Click on Site Specific Schema tab on the left
- Select the H&N Schema
- All Florida Cases are coded in CSv02.03.02



Head and Neck – CS

CS Fields

- Tumor Size—standard
- Extension
- TS/Ext Eval—standard
- Lymph Nodes
- LN Eval—standard
- LN Pos—standard
- LN Exam—standard
- Mets at Dx
- Mets Eval—standard

(Refer to the CS Extension table for instructions on coding extension.)

CS Tumor Size

Lip • Upper • Lower • Other	**Other Mouth** Buccal Mucosa Salivary Glands • Parotid • Submandibular • Other Salivary
Tongue • Base • Anterior	**Pharynx** • Oropharynx • Anterior
Gum • Upper • Lower • Other	**Epiglottis** • Nasopharynx • Hypopharynx • Other Pharynx
Floor of Mouth **Palate** • Hard • Soft	Code the specific tumor size as stated in the medical record. Use code 992 or 994 if the physician's statement about T value is the ONLY information available about the size of the tumor

Head and Neck – CS Extension & Eval

General format

- 000 In situ
- 100 Lamina propria/submucosa
- 300 Localized, NOS
- 400-590 Adjacent structures (T3)
- 600-690 Mixed T3-T4 (site specific)
- 700-800 Adjacent structures (T4)
- 950 No evidence of primary tumor (T0)

CS Eval

- General structure
- 0 clinical only
- 1 invasive techniques, no bx; or needle bx
  - does not meet criteria for pathologic T or N
- 2 autopsy (known or suspected dx)
- 3 pathology
- 5 pre-op tx, clinical eval
- 6 pre-op tx, path eval
- 8 autopsy (dx not suspected)
- 9 unknown, not assessed

SITE SPECIFIC FACTORS - SSF's

Head and Neck – Carcinoma and melanoma

Lymph nodes

- Lymph Nodes Levels
- Upper/Lower Cervical
- Extracapsular Extension

HPV status

Thickness/depth

Schema discriminator

SSF's Head and Neck Sites

- **SSF1 Size of Lymph Nodes – FCDS Required**
  - **Except Schema Pharynx other**
- SSF2 OBSOLETE - Extracapsular Extension, Lymph Nodes
- SSF3 Levels I-III, Lymph Nodes
- SSF4 Levels IV-V and Retropharyngeal Lymph Nodes
- SSF5 Levels VI-VII and Facial Lymph Nodes
- SSF6 Parapharyngeal, Parotid, and Suboccipital/Retroauricular Lymph Nodes
- SSF7 Upper and Lower Cervical Node Levels
- SSF8 Extracapsular Extension Clinically, Lymph Nodes
- SSF9 Extracapsular Extension Pathologically, Lymph Nodes
- SSF10 HPV (Human Papilloma Virus) Status
- SSF11 Measured Thickness (Depth)

SSF's Head and Neck Sites

Schema Number	Schema Name	TNM/SS Required	FCDS Required	CoC Additional Required
25	BuccalMucosa	1	**1**	3,4,5,6,9,11
32	EpiglottisAnterior	1	**1**	3,4,5,6,9
17	FloorMouth	1	**1**	3,4,5,6,9,11
13	GumLower	1	**1**	3,4,5,6
15	GumOther	1	**1**	3,4,5,6
11	GumUpper	1	**1**	3,4,5,6
37	Hypopharynx	1	**1**	3,4,5,6
82	LarynxGlottic	1	**1**	3,4,5,6.9
88	LarynxOther	1	**1**	3,4,5,6.9
86	LarynxSubglottic	1	**1**	3,4,5,6.9
84	LarynxSupraglottic	1	**1**	3,4,5,6.9
3	LipLower	1	**1**	3,4,5,6,9,11
5	LipOther	1	**1**	3,4,5,6,9,11
1	LipUpper	1	**1**	3,4,5,6,9,11
23	MouthOther	1	**1**	1,3,4,5,6,9,11
34	Nasopharynx	1,25	**1,25**	1,3,4,5,6,9,10
30	Oropharynx	1	**1**	1,3,4,5,6,9,10
19	PalateHard	1	**1**	1,3,4,5,6,9,11
21	PalateSoft	1	**1**	1,3,4,5,6,9,10
36	PharyngealTonsil	1,25	**1,25**	1,3,4,5,6,9,10
39	PharynxOther	None	**None**	1,3,4,5,6,9,10
29	SalivaryGlandOther	1	**1**	3,4,5,6,9
28	SubmandibularGland	1	**1**	3,4,5,6,9
9	TongueAnterior	1	**1**	3,4,5,6,9,11
7	TongueBase	1	**1**	3,4,5,6,9,10

Site-Specific Factor 1
Size of Involved Node - Note

- Required by FCDS & COC
- Code size of NODE, not size of metastasis
- Code largest diameter measured clinically or pathologically
- Code regional nodes only
- Size format same as tumor size with extra choices
- 996 Described as less than 6 cm
- 997 Described as more than 6 cm

Treatment

Head and Neck Multidisciplinary Approach

- Treatment depends on:
- Site
- Location
- Histology
- Stage
- Node Status

- Competence
- Convenience
- Cost
- Compliance
- Complications

Head & Neck Cancer: A Multidisciplinary Approach, 2nd ed., pg 275

Treatment Strategies

- **Surgery**
  - First choice when possible, but often limited by disfigurement and preservation of organ function such as speech and swallowing
- **Radiation**
  - Most head and neck cancer is sensitive to radiation while preserving organ function
    - Daily treatment lasts for 6-8 weeks
    - Side effects can be severe; permanent dry mouth, oral ulcers,
    - osteoradionecrosis of the mandible, altered taste, weight loss, and tooth decay
- **Chemotherapy**
  - Can have dramatic response to treatment, but is often not a durable response
  - Side effects can also be severe; decreased blood counts, anemia, infections, weight loss, nausea, vomiting, and hair loss.
  - Newer targeted therapies have lower side effects

Treatment options for Head and Neck Cancer

Disease Extent	**Treatment**
T1N0-1 or T2 N0	Surgery or RT
T2N1 or T3-4 or N2-3	Combined modality
Recurrent or M1	Surgery and/or RT
Early stages: Surgery or RT	Combined modality
Advanced Stages: Chemo/RT or surgery followed by RT/Chemorx	Chemotherapy
Very Advanced: RT and Chemorx	Clinical Trials

Common Treatment by Site

Primary	Early	Advanced
• Lip	R/S	R
Oral Cavity		
• Oral tongue	S/R	R or S+R
• Floor of mouth	S/R	R or S+R
• Gingiva	S	S+R
• Hard Palate	S	S+R
• Buccal mucosa	S/R	S+R
• Retromolar trigone	S	S+R

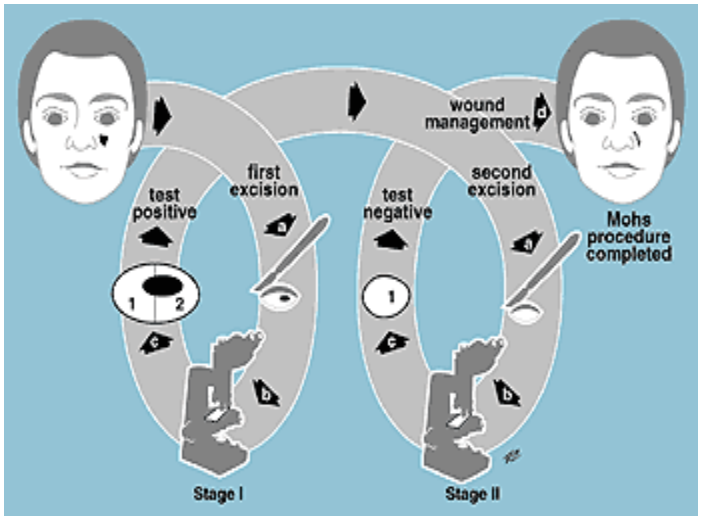
Common Treatment by Site

Primary	Early	Advanced
Oropharynx		
• Soft palate	R	R
• Tonsillar fossa	S/R	S+R
• Ant. tonsillar pillar	S/R	S+R
• Pharyngeal tongue	S/R	R
• Pharyngeal wall	R	S+R
Hypopharynx		
• Pyriform sinus	S/R	R or S+R
• Posterior pharynx	R	R

Surgery

Lip

- Surgical removal of tissue
  - Moh's procedure
- Frozen section and cutting using H&E
- Reconstructive surgery (reconstruct surgical defect)
- Chemo/Raduatuib if needed
- Rarely neck dissection



http://www.uwhealth.org/files/uwhealth/images/img/img_patients_mohs_method.gif

Surgery: Oral Cavity

Key:
X = complete
* = partial
o = optional

Tissues Removed

Types of Surgery	Tumor Destruction	Tumor Only	Organ	Lymph Nodes	Other Organs
Cryosurgery	*				
Electrocautery (without specimen)	*				
Laser surgerywithout specimen	*				
Laser surgerywith specimen		*/X			
Excisional biopsy			*		
Local surgical excision examples: hemiglossectomy, tonsillectomy, alveolectomy			X		
Radical excision examples: total glossectomy		X	o		o
Local or radical excisionwith radical neck dissection examples: en bloc resection, commando procedure		X	X		o
Radical neck dissection only				X	
Surgery of regional/distant sites/nodes only					o

http://training.seer.cancer.gov/head-neck/treatment/surgery/oral.html

Salivary Gland Treatment Decisions

	T1, T2 Low grade	T1, T2 High grade	T3	T4
Parotid gland	Complete resection	Resection Neck dissect.; RT if LN pos	Resection Neck dissect.; RT if LN pos	Resection Resection of other organs Neck if pos
Subman-dibular	Complete resection	Wide excision RT	Wide excision, nerves if pos RT	Excision of involved areas RT

Hypopharynx & Nasopharynx RX

- Surgery
- Combination Radiation & Chemotherapy
- Regular screening

- Surgery
- Combination Radiation & Chemotherapy
- Regular screening

Chemotherapy

Classical chemotherapy is directed at metabolic sites essential to cell replication

- Tumor cells replicate more frequently than normal cells
- However, standard chemotherapy does not specifically recognize cancer cells
- Highest morbidities in rapidly dividing cells: bone marrow, GI mucosa, and hair cells

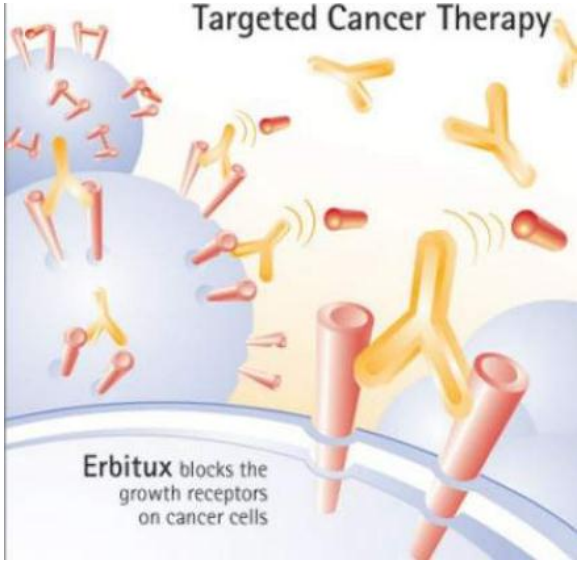
Chemotherapy on H&N (MACH-NC) Results

Meta-Analysis of Chemotherapy on H&N MACH-NC Results

Timing of Chemotherapy	Risk Reduction	P-value	Absolute Benefits (5yrs)
Adjuvant	-6%	NS	-2%
Induction	4%	NS	2%
Concomitant	19%	<0.00001	8%
Total	12%	<0.00001	5%

NCCN: Lancet 2000; 355:949

Chemotherapy



- Single
- Targeted Cetuximab (Erbitux)
- Combinations
- NCCN Guidelines
- New Treatments
- Targeted Chemotherapy: A specific receptor on the surface of common head and neck cancer cells is called Epidermal Growth Factor Receptor (EGFR)
  - EGFR levels increase in in advanced stage tumors and in poorly differentiated tumors
  - Cetuximab is an antibody against the EGFR receptor which can stop cell cycle progression and induce cell death.

http://www.azoncology.com/internet/

Types of Chemotherapy

Single drugs

- Bleomycin
- Camptosar (Ifosfamide)
- Carboplatin
- Cisplatin
- Docetaxel (Taxotere)
- 5FU
- Irinotecan
- Methotrexate
- Paclitaxel (Taxol)
- Vinorelbine (Navelbine)

Combinations

- **5FU/Cisplatin**
- Docetaxel/Platinum
- Docetaxel/5FU
- Docetaxel/5FU/ Platinum
- Erbitux (cetuximab) – combined with radiation – FDA approved February 2006

http://www.medscape.com/viewarticle/753061

Chemo-XRT

Theoretical Benefits of Chemo-XRT

- Inhibiting repair of lethal and sublethal damage induced by radiotherapy
- Radiosensitizing hypoxic cells
- Reducing tumor burden, leading to an improved blood supply
- Redistributing tumor cells to a more radiosensitive cell cycle phase
- Inducing apoptosis

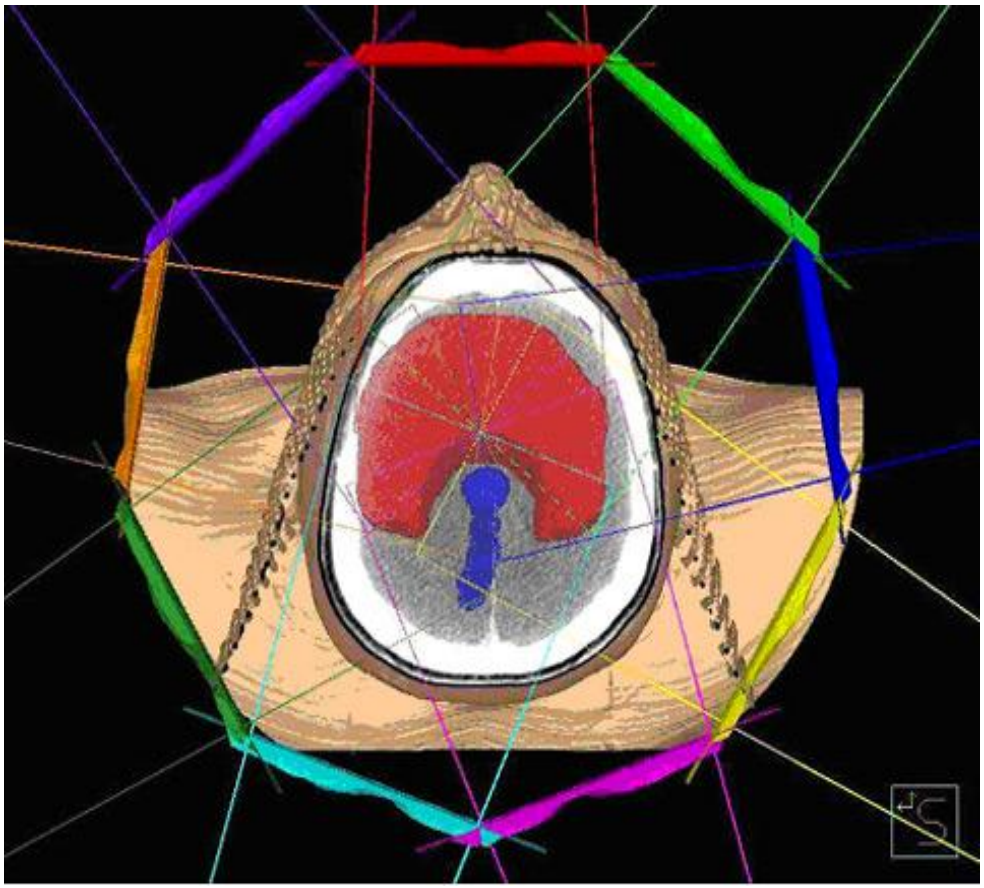
Radiation Therapy

- Standard Radiation
- Hyperfractionated, accelerated
- Intensity-Modulated Radiotherapy (IMRT)
- Brachytherapy- Not widely used for H&N cancers

IMRT Head & Neck

Intensity **M**odulated **R**adiation **T**herapy means that the intensity of the radiation beam in a given treatment field is varied via multiple multileaf blocking arrangements called segments.

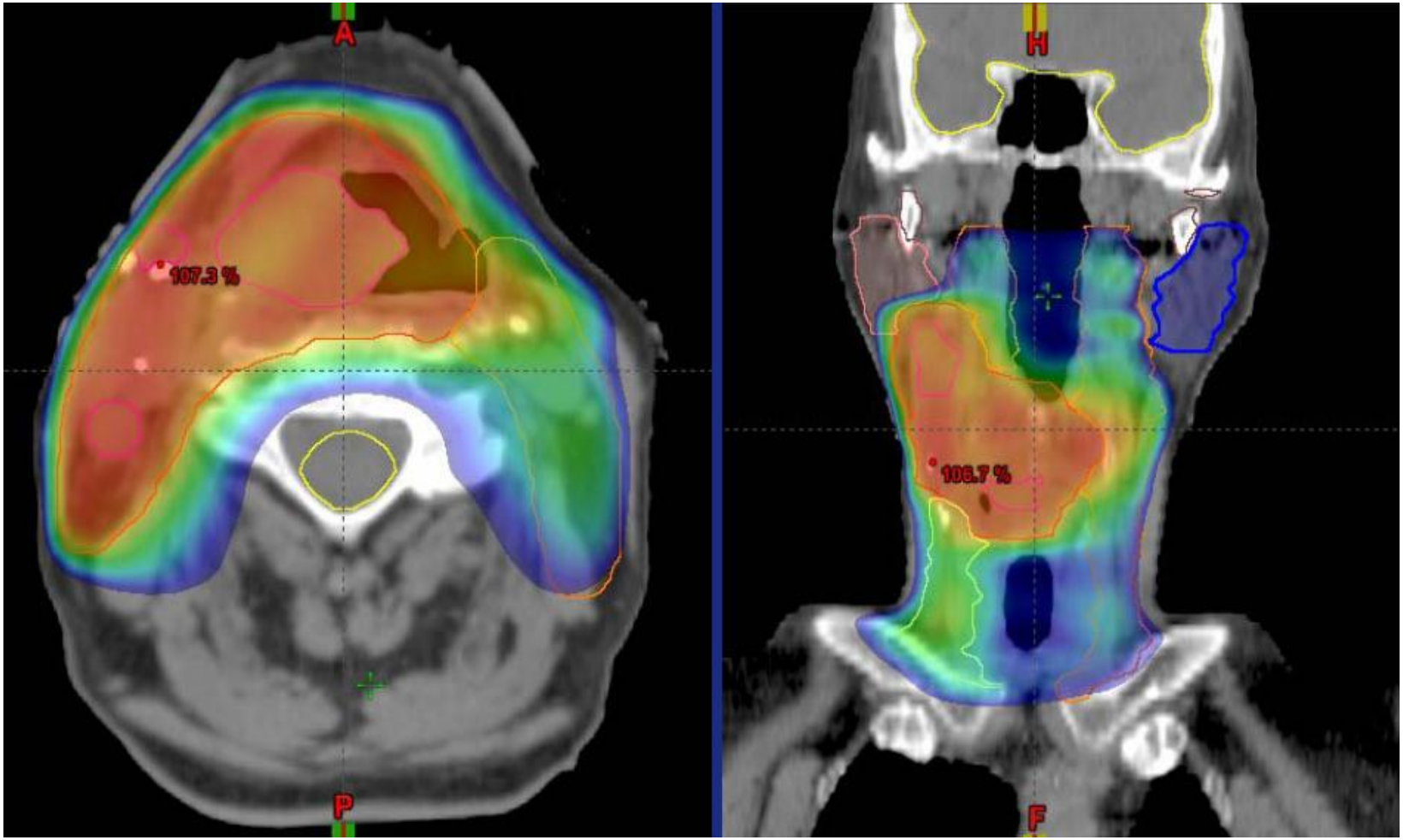
- Intensity modulation combined with multiple fields (radiation beam angles) or arcs allows for conformal radiotherapy (ie high radiation isodose lines conform to the target volume and spare normal tissues).



http://www.centracare.com/specialty_centers/cancer/images/imrt_head_neck.jpg

http://www.azoncology.com/internet/

IMRT - Hypopharynx



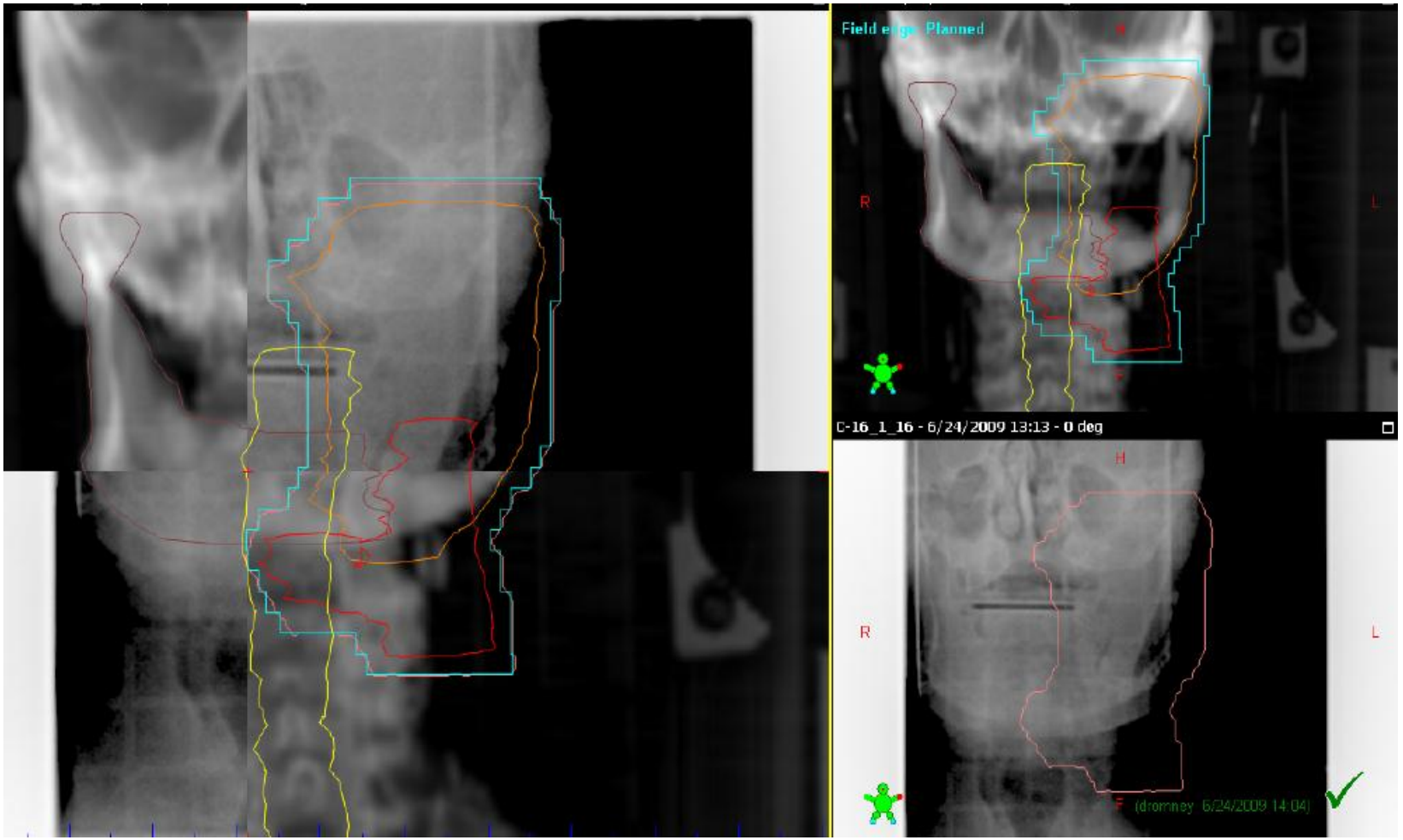
http://www.azoncology.com/internet/

IGRT – Image Guided Radiation Therapy

- Daily X-rays or CT scans are performed and overlaid with the planning CT
- Millimeter adjustments are made with automatic couch position shifts
- Treatment becomes more accurate and consequently smaller target volumes will result in less side effects

http://www.azoncology.com/internet/

IGRT – MV X-rays



http://www.azoncology.com/internet/

National Comprehensive Cancer Network®

NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines™)

Head and Neck Cancers

Version 2.2011

NCCN.org

PRINCIPLES OF SYSTEMIC THERAPY

The choice of chemotherapy should be individualized based on patient characteristics (performance status, goals of therapy).

Squamous Cell Cancers

Lip, Oral Cavity, Oropharynx, Hypopharynx, Glottic larynx, Supraglottic larynx, Ethmoid Sinus, Maxillary Sinus, Occult Primary:

Primary Systemic Therapy + concurrent RT

- Cisplatin alone (preferred) (category 1)
- Cetuximab (category 1)
- 5-FU/hydroxyurea
- Cisplatin/paclitaxel
- Cisplatin/infusional 5-FU
- Carboplatin/infusional 5-FU
- Carboplatin/paclitaxell (category 2B)

Postoperative Chemoradiation

- Cisplatin alone (category 1 for high risk)

Induction*/Sequential chemotherapy

- Docetaxel/cisplatin/5-FU (category 1 if induction is chosen)
- Following induction, agents to be used with concurrent chemoradiation typically include weekly platinums, weekly taxanes, or cetuximab.

*Induction chemotherapy should only be done in a tertiary setting.

CHEM-A

National Comprehensive Cancer Network®

NCCN Guidelines™ Version 1.2011
Very Advanced Head and Neck Cancer

PRINCIPLES OF RADIATION THERAPY

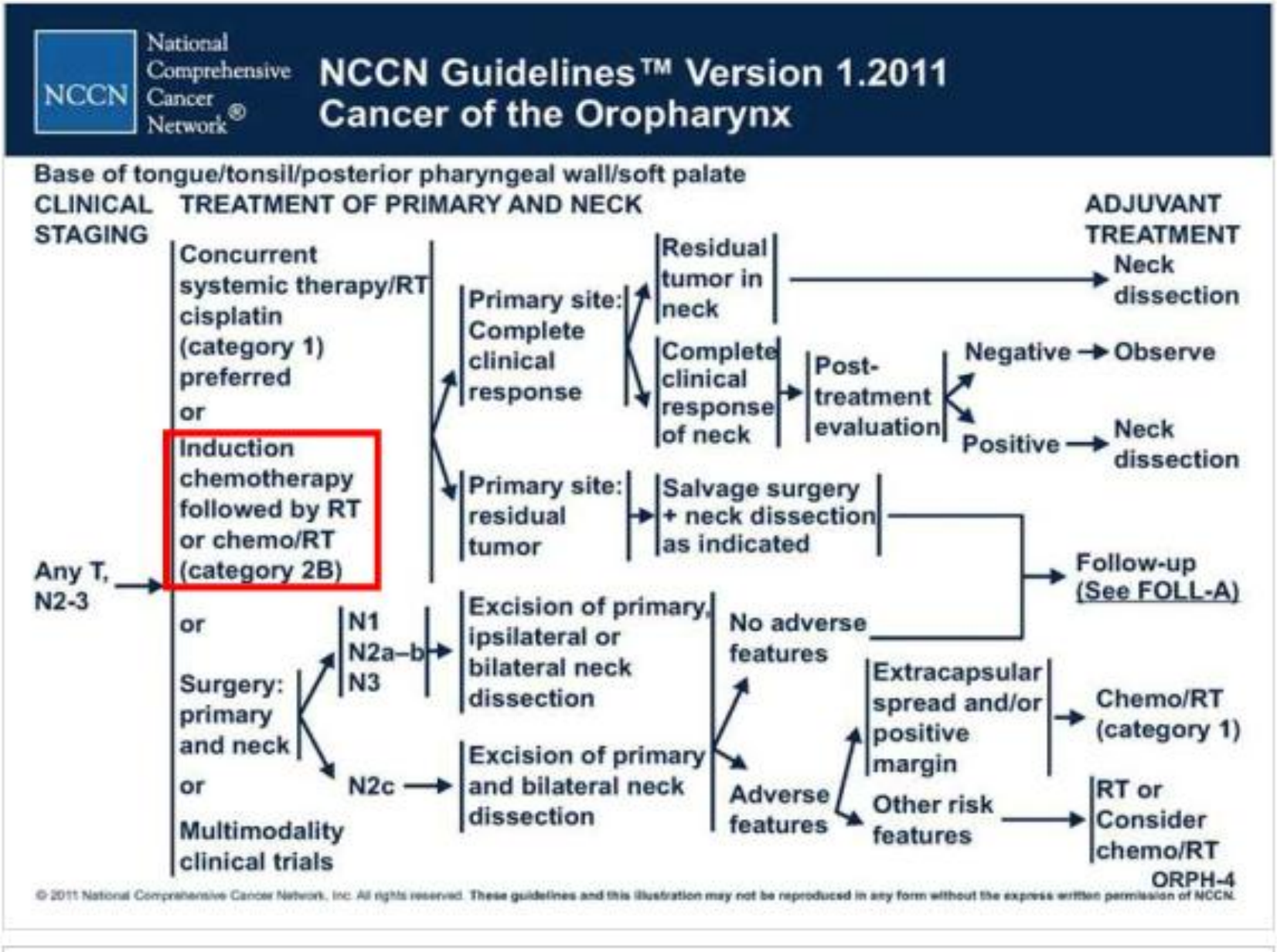
Concurrent chemoradiation (preferred)
Conventional fractionation:
- Primary and gross adenopathy: ≥ 70 Gy (2.0 Gy/fraction)
- Neck
  - Uninvolved nodal stations:
    44-64 Gy (1.6-2.0 Gy/fraction)

Chemoradiation
Based on published data, concurrent chemoradiation most commonly uses conventional fractionation at 2.0 g per fraction to ≥ 70 Gy in 7 wks with single agent cisplatin given every 3

Other fraction sizes (eg, 1.8 Gy, conventional), multiagent chemotherapy, other dosing schedules of cisplatin; altered fractionation with chemotherapy are efficacious, and there is no consensus on the optimal approach.

concurrent chemoradiation carries a high toxicity burden; altered fractionation or multiagent chemotherapy will likely further increase the toxicity burden. For any chemoradiation approach, close attention should be paid to published reports for the specific chemotherapy agent, dose, and schedule of administration. Chemoradiation should be performed by an experienced team and should include substantial supportive care.

ADV-A


National Comprehensive Cancer Network
NCCN Guidelines™ Version 1.2011
Cancer of the Oropharynx
Base of tongue/tonsil/posterior pharyngeal wall/soft palate
CLINICAL STAGING
TREATMENT OF PRIMARY AND NECK
ADJUVANT TREATMENT
Any T, N2-3
Concurrent systemic therapy/RT cisplatin (category 1) preferred
or
Induction chemotherapy followed by RT or chemo/RT (category 2B)
or
Surgery: primary and neck
or
Multimodality clinical trials
Primary site: Complete clinical response
Residual tumor in neck
Neck dissection
Complete clinical response of neck
Post-treatment evaluation
Negative
Observe
Positive
Neck dissection
Primary site: residual tumor
Salvage surgery + neck dissection as indicated
Follow-up (See FOLL-A)
N1
N2a–b
N3
Excision of primary, ipsilateral or bilateral neck dissection
N2c
Excision of primary and bilateral neck dissection
No adverse features
Adverse features
Extracapsular spread and/or positive margin
Chemo/RT (category 1)
Other risk features
RT or Consider chemo/RT
ORPH-4
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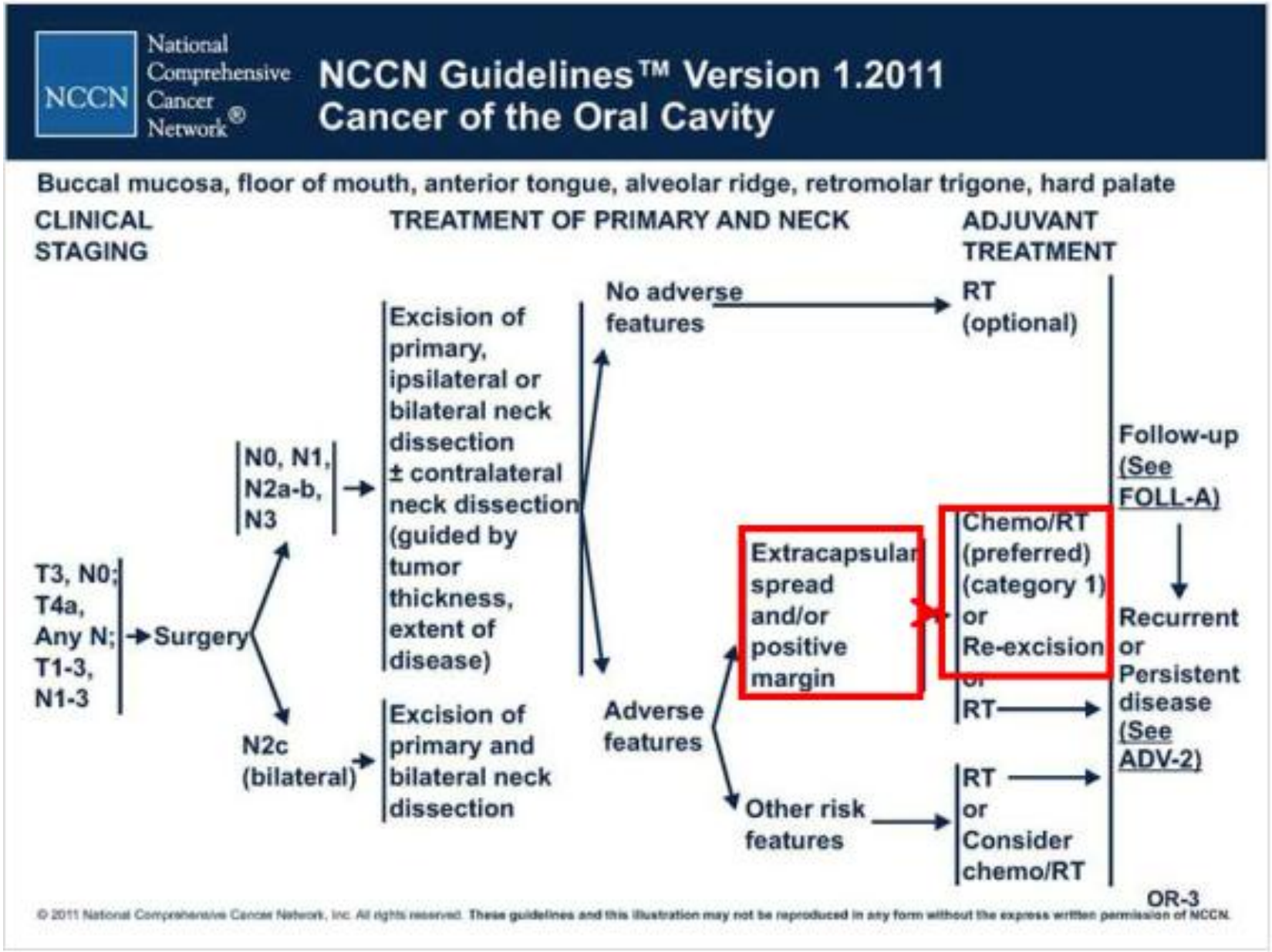
National Comprehensive Cancer Network
NCCN Guidelines™ Version 1.2011
Cancer of the Oral Cavity
Buccal mucosa, floor of mouth, anterior tongue, alveolar ridge, retromolar trigone, hard palate
CLINICAL STAGING
TREATMENT OF PRIMARY AND NECK
ADJUVANT TREATMENT
T3, N0; T4a, Any N; T1-3, N1-3
Surgery
N0, N1, N2a-b, N3
N2c (bilateral)
Excision of primary, ipsilateral or bilateral neck dissection ± contralateral neck dissection (guided by tumor thickness, extent of disease)
Excision of primary and bilateral neck dissection
No adverse features
Adverse features
RT (optional)
Extracapsular spread and/or positive margin
Chemo/RT (preferred) (category 1) or Re-excision
RT
Other risk features
RT or Consider chemo/RT
Follow-up (See FOLL-A)
Recurrent or Persistent disease (See ADV-2)
OR-3
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NCCN Guidelines™ Version 1.2011
Very Advanced Head and Neck Cancer

PRINCIPLES OF RADIATION THERAPY

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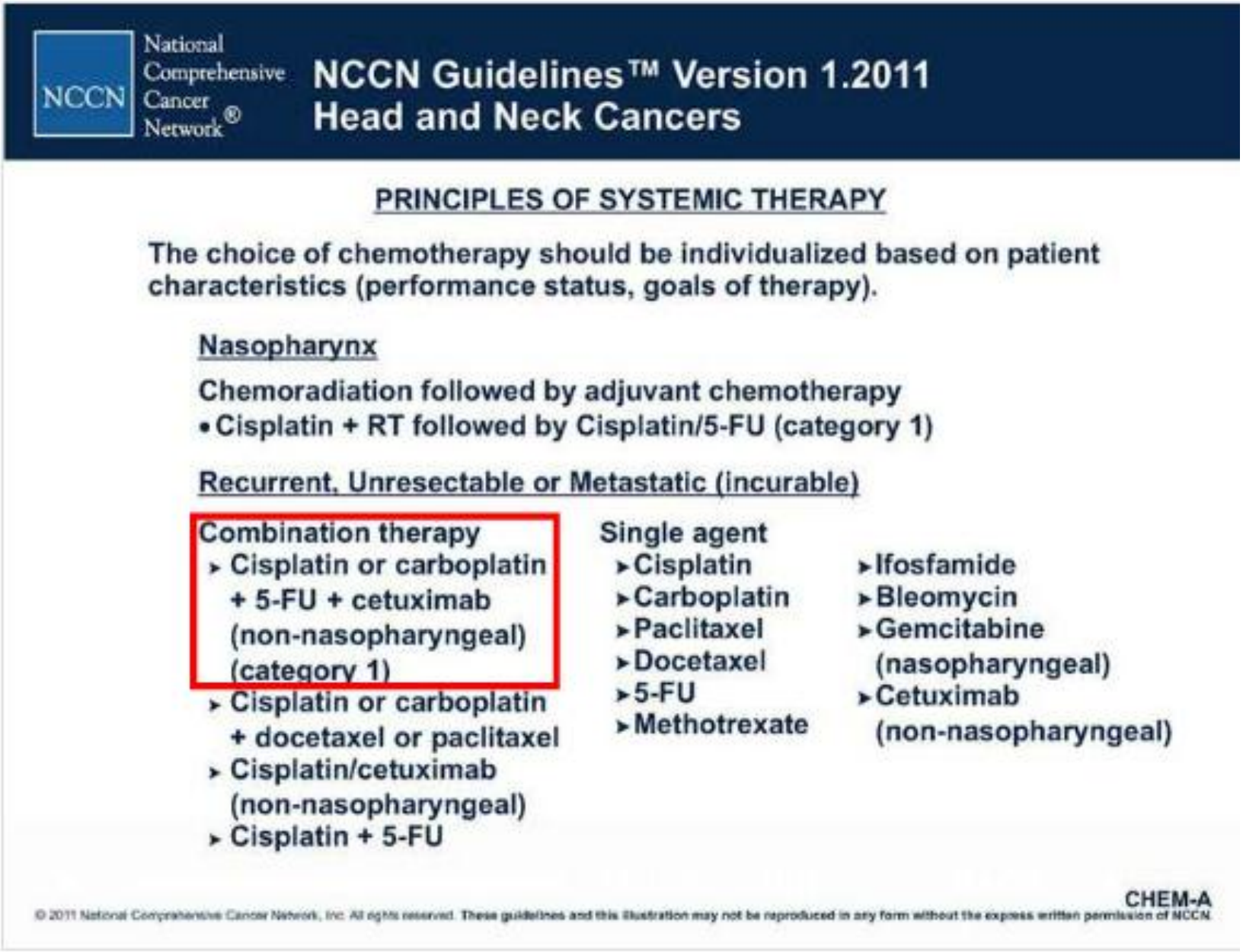
- **Neck**
  - **Uninvolved nodal stations: 44-64 Gy (1.6-2.0 Gy/fraction)**

Chemoradiation

Based on published data, concurrent chemoradiation most commonly uses conventional fractionation at 2.0 g per fraction to ≥ 70 Gy in 7 wks with single agent cisplatin given every 3 wks at 100 mg/m^2 x 3 doses. Other fraction sizes (eg, 1.8 Gy, conventional), multiagent chemotherapy, other dosing schedules of cisplatin; altered fractionation with chemotherapy are efficacious, and there is no consensus on the optimal approach. In general, the use of concurrent chemoradiation carries a high toxicity burden; altered fractionation or multiagent chemotherapy will likely further increase the toxicity burden. For any chemoradiation approach, close attention should be paid to published reports for the specific chemotherapy agent, dose, and schedule of administration. Chemoradiation should be performed by an experienced team and should include substantial supportive care.

ADV-A


National Comprehensive Cancer Network®
NCCN Guidelines™ Version 1.2011
Head and Neck Cancers
PRINCIPLES OF SYSTEMIC THERAPY
The choice of chemotherapy should be individualized based on patient characteristics (performance status, goals of therapy).
Nasopharynx
Chemoradiation followed by adjuvant chemotherapy
• Cisplatin + RT followed by Cisplatin/5-FU (category 1)
Recurrent, Unresectable or Metastatic (incurable)
Combination therapy
▸ Cisplatin or carboplatin + 5-FU + cetuximab (non-nasopharyngeal) (category 1)
▸ Cisplatin or carboplatin + docetaxel or paclitaxel
▸ Cisplatin/cetuximab (non-nasopharyngeal)
▸ Cisplatin + 5-FU
Single agent
▸ Cisplatin
▸ Carboplatin
▸ Paclitaxel
▸ Docetaxel
▸ 5-FU
▸ Methotrexate
▸ Ifosfamide
▸ Bleomycin
▸ Gemcitabine (nasopharyngeal)
▸ Cetuximab (non-nasopharyngeal)
CHEM-A
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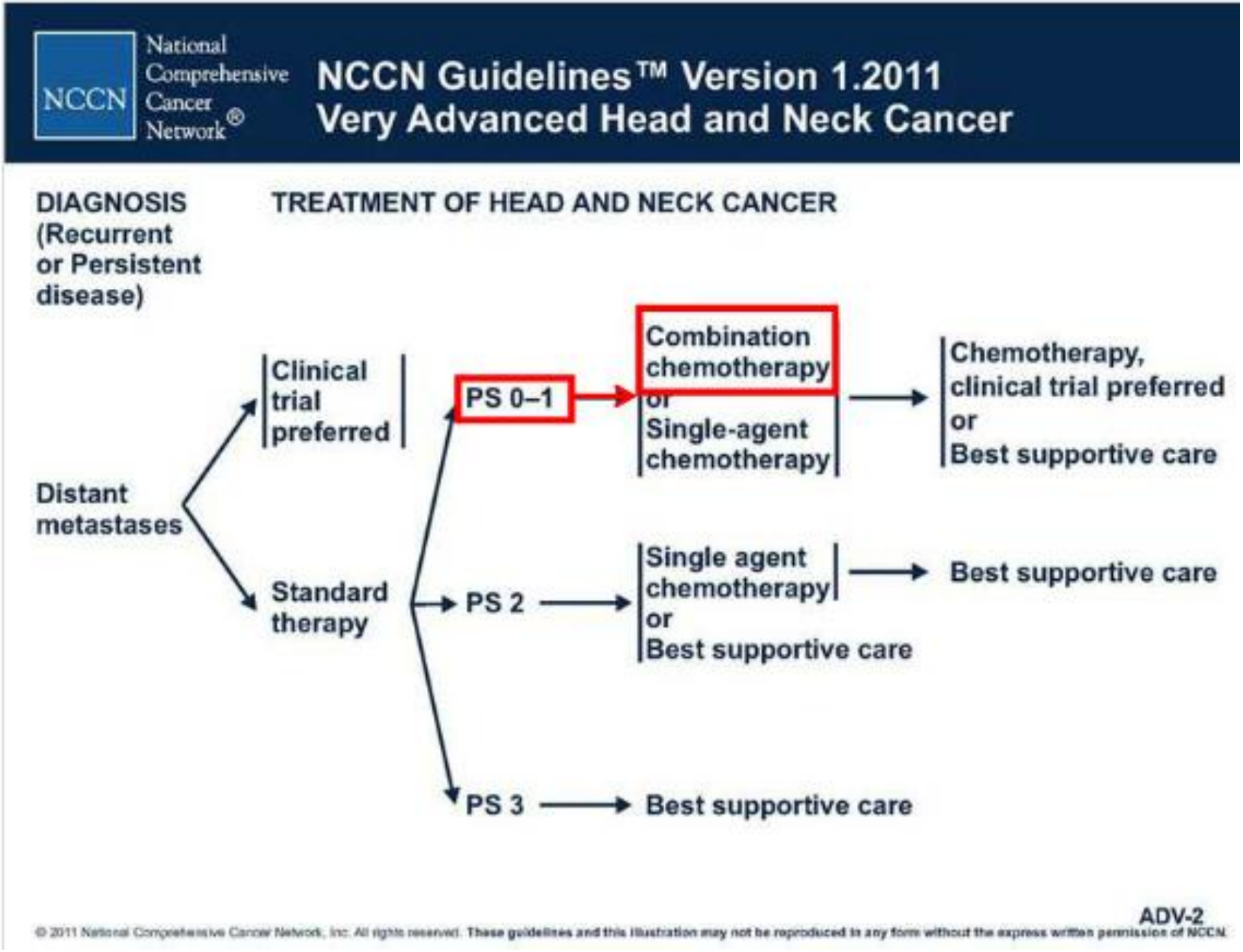
National Comprehensive Cancer Network®
NCCN Guidelines™ Version 1.2011
Very Advanced Head and Neck Cancer
DIAGNOSIS (Recurrent or Persistent disease)
TREATMENT OF HEAD AND NECK CANCER
Distant metastases
Clinical trial preferred
Standard therapy
PS 0–1
PS 2
PS 3
Combination chemotherapy
or
Single-agent chemotherapy
Single agent chemotherapy
or
Best supportive care
Chemotherapy, clinical trial preferred
or
Best supportive care
Best supportive care
Best supportive care
ADV-2
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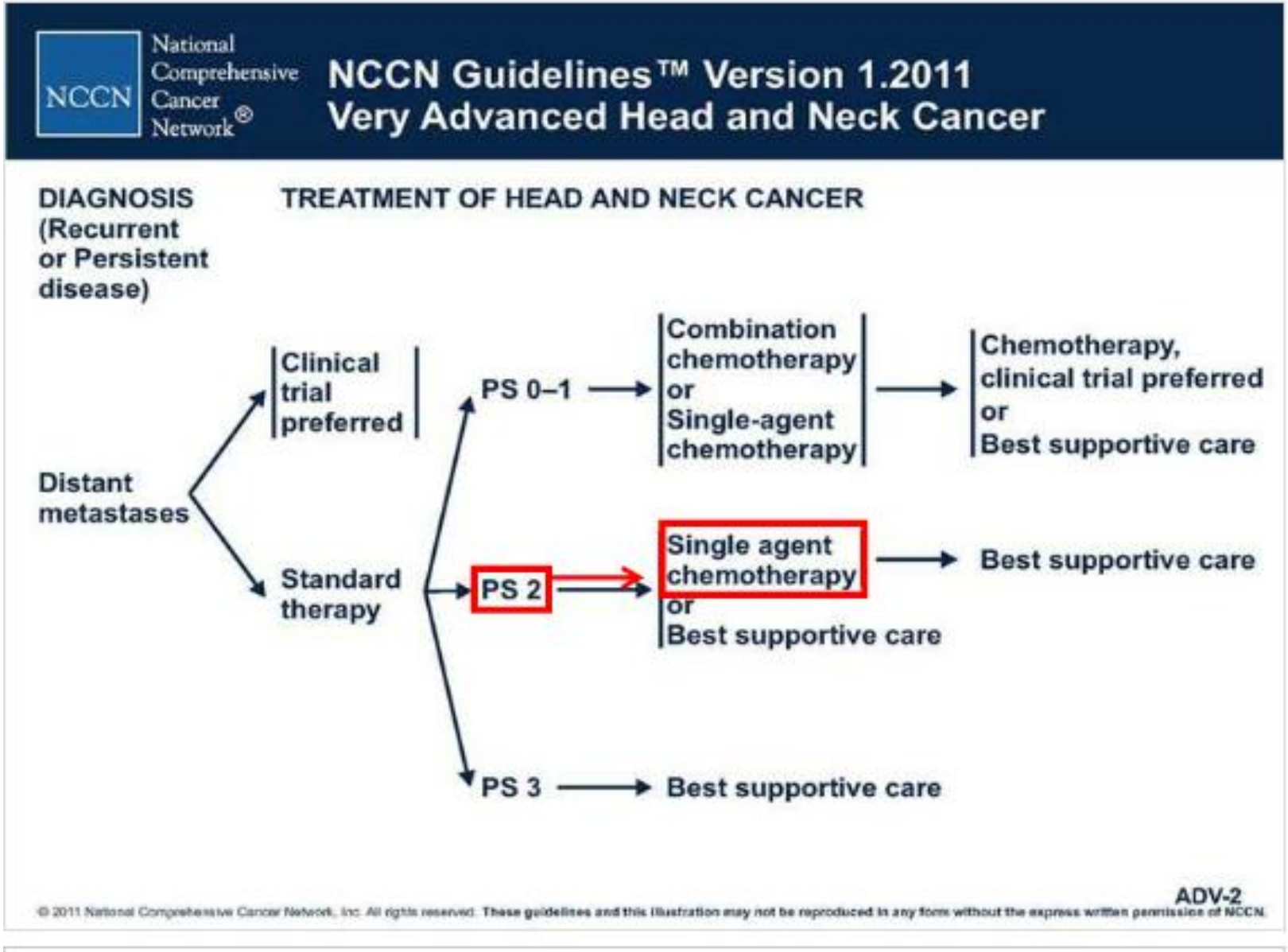
National Comprehensive Cancer Network®
NCCN Guidelines™ Version 1.2011
Very Advanced Head and Neck Cancer
DIAGNOSIS (Recurrent or Persistent disease)
TREATMENT OF HEAD AND NECK CANCER
Distant metastases
Clinical trial preferred
Standard therapy
PS 0–1
PS 2
PS 3
Combination chemotherapy or Single-agent chemotherapy
Chemotherapy, clinical trial preferred or Best supportive care
Single agent chemotherapy or Best supportive care
Best supportive care
Best supportive care
ADV-2
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Clinical Trials

- Oral Cancer Adjuvant Therapy (OCAT) Trial – Phase III Mouth Neoplasms
- Erlotinib Prevention of Oral Cancer (EPOC)
- Excision Limits of Oral Cavity Tumor by Narrow Band Imaging
- TPF-Induction Chemotherapy of Oropharyngeal and Cavity of the Mouth Cancer
- Lyophilized Black Raspberries in Preventing Oral Cancer in High-Risk Patients Previously Diagnosed With Stage I-IV or In Situ Head and Neck Cancer
- Rapamycin Therapy in Head and Neck Squamous Cell Carcinoma
- Cetuximab Plus Radiotherapy Versus Cisplatin Plus Radiotherapy in Locally Advanced Head and Neck Cancer (CTXMAB+RT)
- IMRT Plus Cisplatin Versus Conventional Radiotherapy Plus Cisplatin in Stage III-IV HNSCC

http://clinicaltrials.gov/search/open/condition=%22Mouth+Neoplasms%22

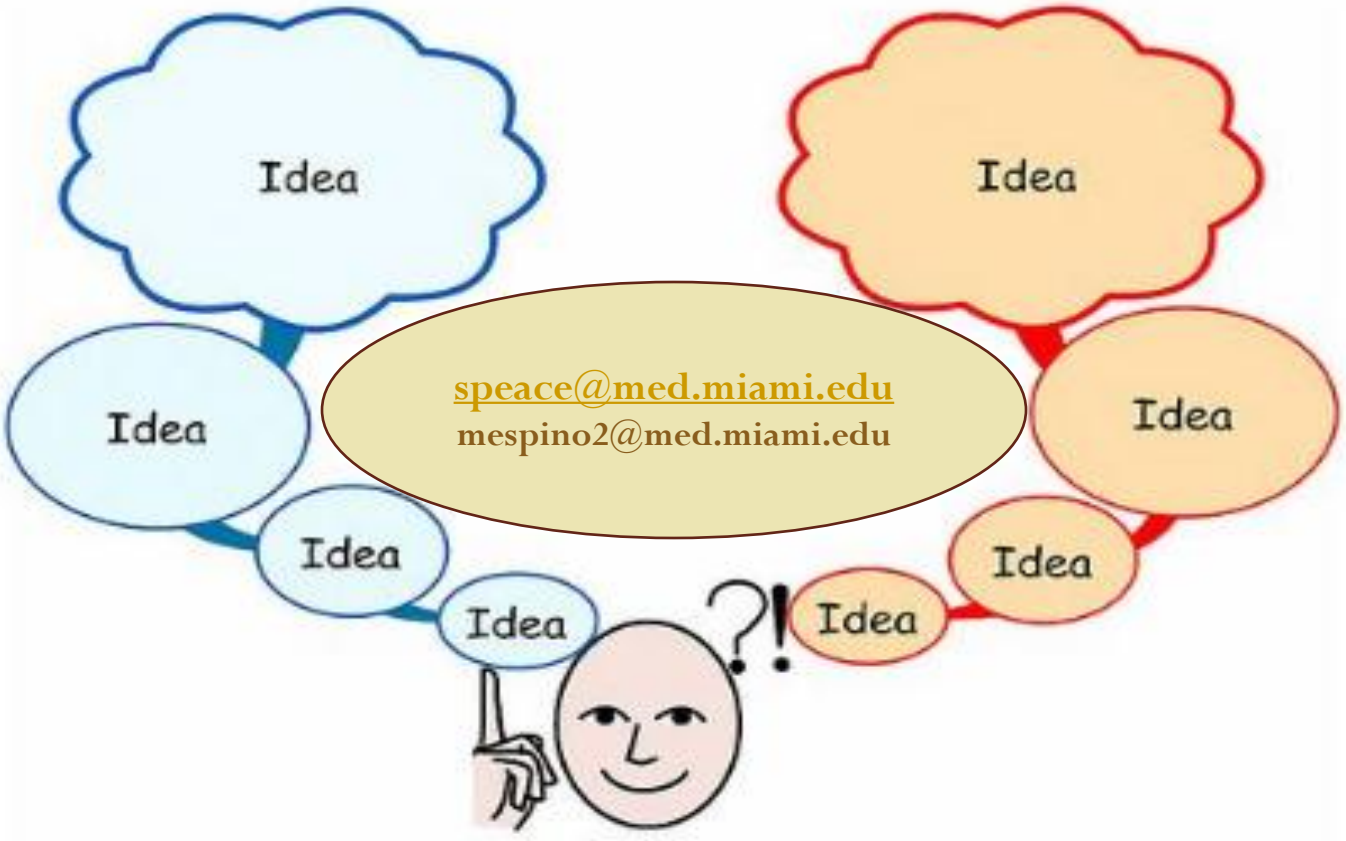
TEXT DOCUMENTATION

DEFENSIVE ABSTRACTING

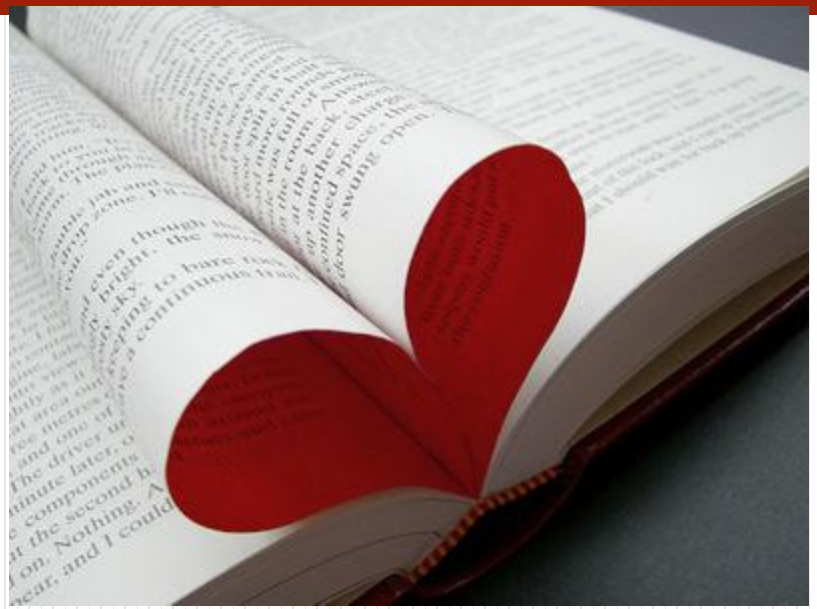
CYA-Cover your abstract

Support all codes and dates with supplemental text - primary, histology, staging workup, Ext of Disease, First course of RX

Any Questions?



Happy Valentines



NEXT WEBCAST: To be announced