Abstracting Larynx Cancer Incidence & Treatment Data

- Estimated new cases and deaths from laryngeal cancer in the United States in 2008:
  - New cases: 12,250
  - Deaths: 3,670

Source: National Cancer Institute
www.cancer.org

Histology

- Squamous Cell Carcinoma
  - Keratinizing
  - Non-keratinizing and well-differentiated to poorly differentiated grade.
- Non squamous cell carcinoma

Source: National Cancer Institute
www.cancer.org
Anatomy

Image Source: SEER Training Website
Diagnosing Larynx Cancer

- Physical exam
- Laryngoscope
- MRI/CT Scans

2007 Multiple Primary and Histology Rules

Coding Primary Site

1. Tumor Board
   a. Specialty
   b. General
2. Staging physician’s site assignment
   a. AJCC staging form
   b. TNM statement in medical record
3. If neither 1 or 2 available, based on whether tumor was resected
Coding Primary Site

4. If total resection of primary tumor was done, code based on:
   a. Operative report – surgeon’s statement
   b. Final diagnosis on pathology report

Coding Primary Site

5. If total resection was NOT done code based on:
   a. Endoscopy
   b. Radiation oncologist
   c. Diagnosing physician
   d. Primary care physician

   Continued on next slide

Coding Primary Site

e. Other physician
f. Diagnostic imaging
   g. Physician statement based on clinical examination
Default Site Codes

- Point of origin cannot be determined
  - C02.8 Overlapping lesion of tongue
  - C08.8 Overlapping lesion of major salivary glands
  - C14.8 Overlapping lesion of lip, oral cavity, and pharynx.

Chart 1 – H&N Histology Groups and Specific Types

- Use this chart with the histology rules to code the most specific histologic term.
- The tree is arranged in descending order.
- Each branch is a histology group, starting with the NOS or group terms and descending into the specific types for that group.
- As you follow the branch down, the terms become more specific.
Multiple Primary Rules

- **Rule M1**
  - 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. *

- **Rule M2**
  - A single tumor is always a single primary. *
Multiple Primary Rules

Multiple Tumors

• Rule M3
  – Tumors on the right side and the left side of a paired site are multiple primaries. **

• Rule M4
  – Tumors on the upper lip (C000 or C003) and the lower lip (C001 or C004) are multiple primaries. **

• Rule M5
  – Tumors on the upper gum (C030) and the lower gum (C031) are multiple primaries. **

• Rule M6
  – Tumors in the nasal cavity (C300) and the middle ear (C301) are multiple primaries. **

• Rule M7
  – Tumors in sites with ICD-O-3 topography codes that are different at the second (Cxxx) and/or third (Cxxx) character are multiple primaries. **

• Rule M8
  – An invasive tumor following an in situ tumor more than 60 days after diagnosis is a multiple primary. **

• Rule M9
  – Tumors diagnosed more than five (5) years apart are multiple primaries. **
Multiple Primary Rules
Multiple Tumors

• Rule M10
  – Abstract as a single primary* when one tumor is:
    • 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

Multiple Primary Rules
Multiple Tumors

• Rule M11
  – Tumors with ICD-O-3 histology codes that are different at the first (xxxx), second (xxxx) or third (xxxx) number are multiple primaries.

• Rule M12
  – Tumors that do not meet any of the above criteria are abstracted as a single primary.

Histology Rules
Histology Rules

- **Rule H1**
  - Code the histology documented by the physician when there is no pathology/cytology specimen or the pathology/cytology report is not available.

- **Rule H2**
  - Code the histology from a metastatic site when there is no pathology/cytology specimen from the primary site.

- **Rule H3**
  - Code the histology when only one histologic type is identified.

- **Rule H4**
  - Code the invasive histologic type when a single tumor has invasive and in situ components.

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

- **Rule H6**
  - Code the histology with the numerically higher ICD-O-3 code.
Multiple Tumors Abstracted as a Single Primary

Histology Rules

- **Rule H7**
  - Code the histology documented by the physician when there is no pathology/cytology specimen or the pathology/cytology report is not available.

- **Rule H8**
  - Code the histology from the metastatic site when there is no pathology/cytology specimen from the primary site.

Histology Rules

- **Rule H9**
  - Code the histology when only one histologic type is identified.

- **Rule H10**
  - Code the histology of the most invasive tumor.
Histology Rules

• **Rule H11** Code the most **specific** histologic term using Chart 1 when there are multiple histologies within the same branch. Examples of histologies within the same branch are:
  - 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

Histology Rules

• **Rule H12**
  - Code the histology with the **numerically higher** ICD-O-3 code.
Collaborative Staging

Larynx

Larynx

- Glottic, Larynx
  - C32.0 Glottis
- Supraglottic
  - C32.1 Supraglottis
- Subglottic
  - C32.2 Subglottis
- Overlapping or
  Larynx, NOS
  - C32.3 Laryngeal Cartilage
  - C32.8 Overlapping lesion
  - C32.9 Larynx, NOS

CS Tumor Size

- Use Standard Table
CS Extension

- **Supraglottic Larynx**
  - 10-Invasive tumor with normal vocal cord mobility confined to: Supraglottis (one subsite)

- **Glottic Larynx**
  - 10-Invasive tumor with normal mobility confined to glottis, NOS; Intrinsic larynx; laryngeal commissure (s) anterior, posterior; vocal cord (s), nos; true vocal cord (s), true cords.

CS Extension

- **Subglottic Larynx**
  - 10-Invasive tumor with normal vocal cord mobility confined to the subglottis.

Anatomical sites and subsites of the three regions of the larynx: supraglottis, glottis, and subglottis. Supraglottis (C32.1) subsites include suprathyroid epiglottis (I), aryepiglottic fold, laryngeal aspect (II), infrahyoid epiglottis (IV), and ventricular bands or false cords (V).
Larynx Cancer Surveillance Data Collection

Anatomy of the Larynx

Image Source: SEER Training Website


©American Joint Committee on Cancer.

Larynx

Anatomical sites and subsites of the supraglottis and glottis. Supraglottis (C32.1) subsites include suprahypoid epiglottis (i), aryepiglottic fold, laryngeal aspect (ii), arytenoids (iii), and ventricular bands or false cords (v). Glottis (C32.0) subsites include vocal cords (i), anterior commissure (ii), and posterior commissure (iii).

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Glottis

[Image of the larynx with anatomical labels]

2007-2008 NAACCR Central Registry
Webinar Series
Larynx Cancer Surveillance Data Collection

Larynx

- **T2 tumors of the glottis extend to supraglottis and/or subglottis, or with impaired vocal cord mobility.**

Larynx

- **CS Ext**
  - 30-Tumor involves adjacent regions(s) of larynx
  - Subglottis
  - Supraglottis
  - False vocal cord(s)
  - 35 Impaired vocal cord mobility
T3 tumors of the glottis are limited to the larynx with vocal cord fixation (shown), and/or invade paraglottic space, and/or minor thyroid cartilage erosion (e.g., inner cortex).

CS Ext

- **40 Tumor limited to larynx WITH vocal cord fixation**
  - Involvement of intrinsic muscle(s):
    - Aryepiglottic
    - Corniculate tubercle
    - Cuneiform tubercle
    - Arytenoid
    - Cricoarytenoid
    - Cricothyroid
    - Thyroepiglottic
    - Thyroarytenoid
    - Vocalis

CS Ext

- **51 Paraglottic space**
- **52 Minor thyroid cartilage erosion**
  (e.g., inner cortex)
Larynx Cancer Surveillance Data Collection

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Larynx

T4a tumors of the glottis invade through the thyroid cartilage and/or invade tissues beyond the larynx (e.g., trachea, soft tissues of neck including deep extrinsic muscle of the tongue, strap muscles, thyroid, or esophagus).

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CS Ext

- 60 Base of tongue
  - Hypopharynx, NOS
  - Pre-epiglottic tissues
  - Postcricoid area
  - Pyriform sinus
  - Vallecula
- 68 Extension to/through
  - Cricoid cartilage
  - Thyroid cartilage except minor erosion, see code 52

---

CS Ext

- 70 Extension to/through tissues beyond larynx:
  - Extrinsic (strap) muscles
  - Omohyoid
  - Sternohyoid
  - Sternothyroid
  - Thyrohyoid
  - Oropharynx
  - Skin
  - Soft tissue of neck
  - Thyroid gland
  - Trachea

CS Ext

- 71 Cervical esophagus
- 73 Deep extrinsic muscle(s) of tongue
- 80 Further contiguous extension, including:
  - Mediastinal structures
  - Prevertebral space
  - Tumor encases carotid artery

Lymph Nodes
CS Lymph Nodes

Note 1:
- For head and neck schemas, this field includes all lymph nodes defined as Levels I-VII and Other by AJCC. The complete definitions are provided in the General Instructions.

Note 2:
- For head and neck schemas, additional information about lymph nodes (size of involved nodes, extracapsular extension, and levels involved) is coded in Site-Specific Factors 1-6.

Note 3:
- If laterality of lymph nodes is not specified, assume nodes are ipsilateral. Midline nodes are considered ipsilateral.

Note 4:
- For head and neck cancers, if lymph nodes are described only as "supraclavicular", try to determine if they are in Level IV (deep to the sternocleidomastoid muscle, in the lower jugular chain) or Level V (in the posterior triangle, inferior to the transverse cervical artery) and code appropriately. If the specific level cannot be determined, consider them as Level V nodes.

Code 10
- Single positive ipsilateral regional node:
  - Level II
  - Level III
  - Level IV
  - Level VI
- Cervical, NOS
- Deep cervical, NOS
- Internal jugular NOS:
- Regional lymph node, NOS
- Stated as N1, NOS
CS Lymph Nodes

Code 11
- Single positive ipsilateral regional node:
  - Level I
  - Other groups
  - Retropharyngeal
  - Mandibular, NOS

CS Lymph Nodes

Code 12
- Single positive ipsilateral regional node:
  - Level V node
  - Level VII node
  - Upper mediastinum (for other mediastinal nodes see CS Mets at DX)
  - Other groups
  - Supraclavicular, NOS (See Note 4)

CS Lymph Nodes

30 Regional lymph nodes as listed in code 10:
- Positive ipsilateral node(s), not stated if single or multiple

31 Regional lymph nodes as listed in code 11:
- Positive ipsilateral node(s), not stated if single or multiple

32 Regional lymph nodes as listed in code 12:
- Positive ipsilateral node(s), not stated if single or multiple
CS Lymph Nodes

- 40 Regional lymph nodes as listed in code 10:
  - Positive bilateral or contralateral nodes
- 41 Regional lymph nodes as listed in code 11:
  - Positive bilateral or contralateral nodes
- 42 Regional lymph nodes as listed in code 12:
  - Positive bilateral or contralateral nodes

CS Lymph Nodes

- 50 Regional lymph nodes as listed in code 10:
  - Positive node(s), not stated if ipsilateral, or bilateral, or contralateral, AND not stated if single or multiple
- 51 Regional lymph nodes as listed in code 11:
  - Positive node(s), not stated if ipsilateral, or bilateral, or contralateral, AND not stated if single or multiple
- 52 Regional lymph nodes as listed in code 12:
  - Positive node(s), not stated if ipsilateral, or bilateral, or contralateral, AND not stated if single or multiple

Introduction to Head and Neck Sites

Schematic diagram indicating the location of the lymph node levels in the neck as described in the text.


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Introduction to Head and Neck Sites

Location of parotid, buccal, retroauricular and occipital nodes.

Location of retropharyngeal nodes.

Regional lymph node (N) classification for all head and neck cancer sites except nasopharynx and thyroid cancers.
Distant Mets

- Common only for patients who have bulky regional lymphadenopathy
  - Lung is the most common site
  - Skeletal and Hepatic less often
  - Mediastinal lymph nodes are considered distant mets

### CS Site-Specific Factor 1
### Size of Lymph Nodes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>No involved regional nodes</td>
</tr>
<tr>
<td>001-988</td>
<td>Exact size in millimeters</td>
</tr>
<tr>
<td>989</td>
<td>989 mm or larger</td>
</tr>
<tr>
<td>990</td>
<td>Microscopic focus</td>
</tr>
<tr>
<td>991</td>
<td>Described as less than 1 cm</td>
</tr>
<tr>
<td>992</td>
<td>Described as less than 2 cm or greater than 1 cm or between 1 cm and 2 cm</td>
</tr>
</tbody>
</table>
### CS Site-Specific Factor 1
**Size of Lymph Nodes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>993</td>
<td>Described as less than 3 cm or greater than 2 cm or between 2 cm and 3 cm</td>
</tr>
<tr>
<td>994</td>
<td>Described as less than 4 cm or greater than 3 cm or between 3 cm and 4 cm</td>
</tr>
<tr>
<td>995</td>
<td>Described as less than 5 cm or greater than 4 cm or between 4 cm and 5 cm</td>
</tr>
<tr>
<td>996</td>
<td>Described as less than 6 cm or greater than 5 cm or between 5 cm and 6 cm</td>
</tr>
<tr>
<td>997</td>
<td>Described as more than 6 cm</td>
</tr>
<tr>
<td>999</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

### CS Site-Specific Factor 2
**Extracapsular Extension**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>No extracapsular extension</td>
</tr>
<tr>
<td>001</td>
<td>Extracapsular extension clinically</td>
</tr>
<tr>
<td>005</td>
<td>Extracapsular extension pathologically</td>
</tr>
<tr>
<td>888</td>
<td>Not applicable; no lymph node involvement</td>
</tr>
<tr>
<td>999</td>
<td>Unknown</td>
</tr>
</tbody>
</table>
CS Site-Specific Factors 3-6

- One digit represents lymph nodes of a single level
  - 0 = lymph nodes not involved
  - 1 = lymph nodes involved
  - 9 = unknown
- Code unknown lymph node as 999
- Code regional nodes, NOS, as 000

CS Site-Specific Factor 3

- Record involvement or non-involvement of levels I, II, and III lymph nodes

CS Site-Specific Factor 4

- Record involvement or non-involvement of levels IV, V, and retropharyngeal (RP) lymph nodes
### CS Site-Specific Factor 5

- Record involvement or non-involvement of levels VI, VII, and facial (F) lymph nodes

<table>
<thead>
<tr>
<th></th>
<th>VI</th>
<th>VII</th>
<th>F</th>
</tr>
</thead>
</table>

### CS Site-Specific Factor 6

- Record involvement or non-involvement of parapharyngeal (PP), parotid (PA), and suboccipital (S) lymph nodes

<table>
<thead>
<tr>
<th></th>
<th>PP</th>
<th>PA</th>
<th>S</th>
</tr>
</thead>
</table>

### CS Site-Specific Factors 1-6

**Example 11:** Path from radical neck dissection for parotid gland primary: 2 metastatic submandibular nodes with extracapsular extension to one node; 3 metastatic posterior cervical nodes, largest malignant node 2.5 cm in diameter.  
Primary site: C07.9 Parotid gland

<table>
<thead>
<tr>
<th>SSF1:025</th>
<th>SSF2:005</th>
<th>SSF3:100</th>
<th>SSF4:010</th>
<th>SSF5:000</th>
<th>SSF6:000</th>
</tr>
</thead>
</table>

---

---
CS Site-Specific Factors 1-6

*Example 12:* Tonsillectomy path – 1 cm squamous cell carcinoma of tonsillar fossa. CT scan head/neck – swelling to cervical nodes, probably malignant, less than 2 cm in size.

Primary site: C09.0 Tonsillar fossa

SSF1: 992
SSF2: 000
SSF3: 000
SSF4: 000
SSF5: 000
SSF6: 000

CS Site-Specific Factors 3-6

- One digit represents lymph nodes of a single level
  - 0 = lymph nodes not involved
  - 1 = lymph nodes involved
  - 9 = unknown
- Code unknown lymph node as 999
- Code regional nodes, NOS, as 000

CS Site-Specific Factor 3

- Record involvement or non-involvement of levels I, II, and III lymph nodes

_________ _______ _______
I II III
Introduction to Head and Neck Sites

Schematic diagram indicating the location of the lymph node levels in the neck as described in the text.

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CS Site-Specific Factor 4

- Record involvement or non-involvement of levels IV, V, and retropharyngeal (RP) lymph nodes

<table>
<thead>
<tr>
<th></th>
<th>IV</th>
<th>V</th>
<th>RP</th>
</tr>
</thead>
</table>

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Introduction to Head and Neck Sites

CS Site-Specific Factor 5
- Record involvement or non-involvement of levels VI, VII, and facial (F) lymph nodes

VI  VII  F

Schematic diagram indicating the location of the lymph node levels in the neck as described in the text.
CS Site-Specific Factor 6

- Record involvement or non-involvement of parapharyngeal (PP), parotid (PA), and suboccipital (S) lymph nodes

PP  PA  S

Introduction to Head and Neck Sites

Location of parotid, buccal, retroauricular and occipital nodes.

First Course Treatment

Larynx Gland
First Course Treatment

- Intended to affect tumor by
  - Modification
  - Control
  - Removal
  - Destruction
- Includes curative and palliative treatment

Treatment: Stage I

- Supraglottis
  - External-beam radiation therapy alone.
  - Supraglottic laryngectomy.
- Glottis
  - Radiation therapy
  - Cordectomy
  - Partial or hemilaryngectomy or total laryngectomy
  - Laser excision
- Subglottis
  - Radiation therapy
  - Surgery

Source: National Cancer Institute
www.cancer.org

Treatment: Stage II

- Supraglottis
  - External-beam radiation therapy
  - Supraglottic laryngectomy or total laryngectomy,
    - Postoperative radiation therapy is indicated for positive or close surgical margins.
- Glottis
  - Radiation therapy
  - Partial or hemilaryngectomy or total laryngectomy
  - Laser microsurgery
- Subglottis
  - Radiation therapy

Source: National Cancer Institute
www.cancer.org
### Treatment: Stage III

#### Supraglottis
- Surgery with or without postoperative radiation therapy.
- Definitive radiation therapy with surgery for salvage of radiation failures.
- Chemotherapy administered concomitantly with radiation therapy
- Laryngectomy

#### Glottis
- Surgery with or without postoperative radiation therapy
- Definitive radiation therapy with surgery for salvage of radiation failures
- Chemotherapy administered concomitantly with radiation therapy
- Laryngectomy

#### Subglottis
- Laryngectomy plus isolated thyroidectomy and tracheoesophageal node dissection usually followed by postoperative radiation therapy.
- Radiation therapy alone

Source: National Cancer Institute

[www.cancer.org](http://www.cancer.org)
## Treatment: Stage IV

<table>
<thead>
<tr>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Supraglottis** | - Total laryngectomy with postoperative radiation therapy.  
- Definitive radiation therapy with surgery for salvage of radiation failures.  
- Chemotherapy administered concomitantly with radiation therapy |
| **Glottis**      | - Total laryngectomy with postoperative radiation therapy.  
- Definitive radiation therapy with surgery for salvage of radiation failures.  
- Chemotherapy administered concomitantly with radiation therapy |
| **Subglottis**   | - Laryngectomy plus total thyroidectomy and bilateral tracheoesophageal node dissection usually followed by postoperative radiation therapy.  
- Treatment by radiation therapy alone is indicated for patients who are not candidates for surgery. |
Surgery

- Hemilaryngectomy (30)
  - Left or right half of larynx including thyroid cartilage, false cord, ventricle, and true vocal cord.
- Partial laryngectomy (30)
  - Part of thyroid cartilage and corresponding portions of laryngeal mucosa.
- Supraglottic laryngectomy (33)
  - Part of larynx superior to the true vocal cord (transection through the ventricles).
- Total laryngectomy (41)
  - Entire larynx.

Treatment

- Radiation Therapy
  - Beam Radiation
  - Preferred therapy for early stage disease
- Chemotherapy
- Hormone Therapy
- Other Therapy

Questions?