Esophageal Cancer
Interactive Session

Marvin C. Borja, MD
STSAQO 2019
New Orleans, LA
DISCLOSURES

• Founder & CEO – MD Grand Rounds (Clinical Abstraction & Analytics Consulting LLC)

• Healthcare Informatics Consultant – GLG Consulting
WHY?
“You cannot IMPROVE what you cannot Measure”

- Registries **empower surgical teams** to work together to improve quality of care & to improve patient outcomes
Learning Health System

Christopher Chute, M.D.
“Big Data”
Johns Hopkins Health Sciences & Informatics
Please refer to the Esophageal Case Study Suppl.
A. HPI

• 61 yo WM
• CC of increasing episodes of dysphagia to solids x 1.5-2 yrs
• 25 pk/yr hx of smoking, chewing tobacco hx ; quit in 2000
• Presented to local gastroenterologist who performed EGD revealing ulcerating lesion extending from 37-43cm (including lwr esoph, GE jxn and gastric cardia. Bx revealed mod. diff. AdenoCA.

• PMH: incr. dysphagia, GERD, bradycardia
• PSH: Pacemaker implantation (Sick Sinus Synd)
B. Work-up

• Referred to JHH
  • Oncology Consult
  • Thoracic Surgery Consult

• Further Diagnostic evaluation
  • **EUS w/bx**: esoph mass extending 39-45cm. Lesion breaches muscularis propria (~T3). Evid of 6 paraesophageal malignant-appearing LNs.
  • **PET/CT**: +FDG avid mass extending lwr esophagus through GE jxn involving lesser curvature of stomach
  • **CT Chest**: Mass extends into mesentery, abutting the liver but not invading adj. organs
C. A/P

• Clinical Stage ?

• Treatment recommendations → neoadjuvant therapy w/chemoradiation + immunotherapy trial followed by surgical resection
C. Pre-Operative Evaluation

### Cancer History

<table>
<thead>
<tr>
<th>Coexisting Cancer</th>
<th>Yes</th>
<th>No</th>
<th>Same disease, ≤ 6 months PreopChemoCurWhen (710)</th>
</tr>
</thead>
</table>

#### Preoperative Chemotherapy / Immunotherapy

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Same disease, &gt; 6 months PreopChemoCurWhen (710)</th>
</tr>
</thead>
</table>

#### Preoperative Thoracic Radiation Therapy

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Same disease, ≤ 6 months PreopXRTDisWhen (730)</th>
</tr>
</thead>
</table>

Neoadjuvant chemoRT via the CROSS regimen

1 cycle of induction immunotherapy (nivolumab plus ipilimumab) prior to concurrent chemotherapy plus nivolumab, before surgical resection.

CRT = weekly carboplatin and paclitaxel for 5 weeks per the CROSS regimen.
C. Pre-Operative Evaluation

### Cancer History

<table>
<thead>
<tr>
<th>Coexisting Cancer</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>C 002 9 000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Preoperative Chemotherapy / Immunotherapy**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>If Yes →</th>
</tr>
</thead>
<tbody>
<tr>
<td>C 001 9 000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PreopChemoCur (700)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Preoperative Thoracic Radiation Therapy**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>If Yes →</th>
</tr>
</thead>
<tbody>
<tr>
<td>C 001 9 000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PreopXRT (720)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Neoadjuvant chemoRT via the CROSS regimen*

1 cycle of induction immunotherapy (vemurafenib plus ipilimumab) prior to concurrent chemoradiation plus vemurafenib before surgical resection.

- CRT = weekly carboplatin and paclitaxel for 5 weeks as per the CROSS regimen.
D. Diagnosis (Category of Disease) - Primary

**Procedure Title:**

**Procedure(s):**

ESOPHAGECTOMY THREE INCISION TOTAL PARTIAL IVOR LEWIS N/A

**Pre-Operative Diagnosis:**

Pre-Op Diagnosis Codes:

- Malignant neoplasm of esophagus, unspecified location [C15.9]

**Post-Operative Diagnosis:**

Post-Op Diagnosis Codes:

- Malignant neoplasm of esophagus, unspecified location [C15.9]

---

**Diagnostic Testing**

PET/CT Skull Base To Mid-thigh Initial Staging W/o Iv Contrast (Oct2018)

**Impression:**

1. Markedly FDG avid circumferential mass like thickening involving the lower esophagus that extends through the GE junction and involves the lesser curvature of the stomach with extension through the serosa into the adjacent mesentery compatible with biopsy proven adenocarcinoma. 2. 1.5 cm enlarged gastrohepatic lymph node which shows minimal increased activity. Additional 1.0 cm gastric hepatic lymph nodes are not fully evaluated due to overlapping cardiac metabolic activity, suspicious for lymph node metastases. 3. 6 mm right axillary lymph node which shows mildly increased FDG activity and is favored to represent dose infiltration.

**EUS w8x (Oct2018)**

**Impression:**

1. Necrotic esophageal mass consistent with known cancer with 6 paraseophageal malignant-appearing lymph nodes. Endoscopically the esophageal mass was encountered at 39cm and extended to 45 cm on the endoscope. The LES was at 42 cm. Research biopsies obtained all 8 passes. On EUS, the lesion breached beyond the muscularis propria layer (T3). Evidence of 6 paraseophageal malignant-appearing lymph nodes.

**SurgePath (Esophageal, Distal):**

MODERATELY DIFFERENTIATED ADENOCARCINOMA, DIGITAL ESOPHAGEAL MASS EXTENDING INTO Gastric CARDIA
D. Diagnosis (Category of Disease) - Primary

<table>
<thead>
<tr>
<th>Category of Disease</th>
<th>Description</th>
<th>Code 151.0</th>
<th>Code 151.9</th>
<th>Code 152.0</th>
<th>Code 152.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esophageal cancer, esophago gastric junction (cardia)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Esophageal cancer, upper third</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Esophageal cancer, middle third</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Esophageal cancer, lower third</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Diagnosis is based on final pathology report.

No Secondary Diagnosis

Training Manual v2.41

SeqNo: 1250
Long Name: Category of Disease - Primary

Intent/Clarification: Choose the primary diagnosis or reason for the procedure. Input should be based upon the final pathology report. If you entered a Category of Disease before final path, then you need to change it based on the final pathology.

Always code by the patient’s diagnosis and procedure in the medical record; not by the ICD 10 and CPT codes documented by the Coders and Billers.

Example: If you start with a diagnosis of “abnormal radiological finding”, a wedge resection is done and cancer is found, the diagnosis should be changed to cancer based upon the pathology report.
E. Operative – Primary Procedure

<table>
<thead>
<tr>
<th>Surgical Procedure for Lung Cancer or Suspected Lung Cancer? LungCancer (1580)</th>
<th>Yes</th>
<th>No</th>
<th>If yes, complete Section F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical Procedure for Esophageal Cancer? EsophCancer (1990)</td>
<td>Yes</td>
<td>No</td>
<td>If yes, complete Section G</td>
</tr>
<tr>
<td>Are you collecting data for Thymus / Mediastinal Mass Resection? ThymusMediastinalData (1600)</td>
<td>Yes</td>
<td>No</td>
<td>If yes, complete Section H</td>
</tr>
<tr>
<td>Are you collecting data for Tracheal Resection? TrachealData (1610)</td>
<td>Yes</td>
<td>No</td>
<td>If yes, complete Section I</td>
</tr>
<tr>
<td>Are you collecting data for Hiatal Hernia / GERD? HiatalHerniaData (1620)</td>
<td>Yes</td>
<td>No</td>
<td>If yes, complete Section J</td>
</tr>
</tbody>
</table>

### Esophageal Resection

- **Transhiatal-Total esophagectomy, without thoracotomy, with cervical esophagogastrotomy (43107)**
- **Total esophagectomy, without thoracotomy, with colon interposition or small intestine reconstruction (43108)**
- **Three incision-Total esophagectomy with thoracotomy, with cervical esophagogastrotomy (43112)**
- **Total esophagectomy with thoracotomy, with colon interposition or small intestine reconstruction (43113)**
- **Partial esophagectomy, cervical, with free intestinal graft, including microvascular anastomosis (43116)**
- **Ivor Lewis-Partial esophagectomy, distal two-thirds, with thoracotomy and separate abdominal incision (43117)**
- **Partial esophagectomy, with thoracotomy and separate abdominal incision with colon interposition or small intestine (43118)**
- **Partial esophagectomy, distal two-thirds, with thoracotomy only (43121)**
- **Thoracoabdominal-Partial esophagectomy, thoracoabdominal approach (43122)**
- **Partial esophagectomy, thoracoabdominal with colon interposition or small intestine (43123)**
- **Total or partial esophagectomy, without reconstruction with cervical esophagogastrotomy (43124)**
- **Minimally invasive three incision esophagectomy (McKeown) (43288)**
- **Minimally invasive esophagectomy, Ivor Lewis approach (43287)**
- **Minimally invasive esophagectomy, Abdominal and neck approach (43286)**
### E. Operative – Primary Procedure

#### Surgical Procedure for Lung Cancer or Suspected Lung Cancer? (1560)
- Yes □ No □
  - If yes, complete Section F

#### Surgical Procedure for Esophageal Cancer? (1560)
- Yes □ No □
  - If yes, complete Section G

#### Esophageal Cancer (1560)
- Yes □ No □
  - If yes, complete Section H

#### Are you collecting data for Thymus / Mediastinal Mass Resection? Thymus/Mediastinal Data (1560)
- Yes □ No □
  - If yes, complete Section I

#### Are you collecting data for Tracheal Resection? Tracheal Data (1610)
- Yes □ No □
  - If yes, complete Section J

#### Are you collecting data for Hiatal Hernia / GERD? Hiatal Hernia Data (1620)
- Yes □ No □
  - If yes, complete Section J

### Esophagus Resection

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transhiatal-Total esophagectomy, without thoracotomy, with cervical esophagogastrostomy (43107)</td>
<td></td>
</tr>
<tr>
<td>Total esophagectomy without thoracotomy; with colon interposition or small intestine reconstruction (43108)</td>
<td></td>
</tr>
<tr>
<td>Three incision-Total esophagectomy with thoracotomy, with cervical esophagogastrostomy (43112)</td>
<td></td>
</tr>
<tr>
<td>Total esophagectomy with thoracotomy, with colon interposition or small intestine reconstruction (43113)</td>
<td></td>
</tr>
<tr>
<td>Partial esophagectomy, cervical, with free intestinal graft, including microneurovascular anastomosis (43114)</td>
<td></td>
</tr>
<tr>
<td>Ivor Lewis-Partial esophagectomy, distal two-thirds, with thoracotomy and separate abdominal incision (43117)</td>
<td></td>
</tr>
<tr>
<td>Partial esophagectomy, with thoracotomy and separate abdominal incision with colon interposition or small intestine (43118)</td>
<td></td>
</tr>
<tr>
<td>Partial esophagectomy, distal two-thirds, with thoracotomy and separate abdominal incision (43121)</td>
<td></td>
</tr>
<tr>
<td>Thoracoabdominal-Partial esophagectomy, thoracoabdominal approach (43122)</td>
<td></td>
</tr>
<tr>
<td>Partial esophagectomy, thoracoabdominal with colon interposition or small intestine (43123)</td>
<td></td>
</tr>
<tr>
<td>Total or partial esophagectomy, without reconstruction with cervical esophagogastrostomy (43124)</td>
<td></td>
</tr>
<tr>
<td>Ivor Lewis-Partial esophagectomy, distal two-thirds, with thoracotomy and separate abdominal incision (43117)</td>
<td></td>
</tr>
<tr>
<td>Minimally invasive three incision esophagectomy (McKown) (45286)</td>
<td></td>
</tr>
<tr>
<td>Minimally invasive esophagectomy, Ivor Lewis approach (43287)</td>
<td></td>
</tr>
<tr>
<td>Minimally invasive esophagectomy, Abdominal and neck approach (43286)</td>
<td></td>
</tr>
</tbody>
</table>

**Ivor-Lewis**

Commonly used approach for esophagectomy via laparotomy and right thoracotomy, with intrathoracic anastomosis.

- **Benefits:**
  - Less gastric tube needed
  - Avoid neck dissection and potential recurrent laryngeal nerve injury
  - Less aspiration risk
- **Risks:**
  - Intrathoracic leak can be more difficult to manage
### E. Operative – Secondary Procedures

<table>
<thead>
<tr>
<th>Miscellaneous</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Thoracoscopy, diagnostic pericardial sac, with biopsy (32604)</td>
<td>□ SVC resection and reconstruction (34502)</td>
</tr>
<tr>
<td>□ Thoracoscopy, surgical; with removal of clot or foreign body from pericardial sac (32658)</td>
<td>□ Ligation thoracic duct (38381)</td>
</tr>
<tr>
<td>□ Thoracoscopy, surgical; with creation of pericardial window or partial resection of pericardial sac for drainage (32659)</td>
<td>□ Intraoperative jejunostomy (44015)</td>
</tr>
<tr>
<td>□ Thoracoscopy, surgical; with total pericardiectomy (32660)</td>
<td>□ Omental flap (49904)</td>
</tr>
<tr>
<td>□ Thoracoscopy, surgical; with excision of pericardial cyst, tumor, or mass (32661)</td>
<td>□ Transthoracic thyroidectomy (60270)</td>
</tr>
<tr>
<td>□ Thoracoscopy, surgical; with thoracic sympathectomy (32664)</td>
<td>□ Removal substernal thyroid, cervical approach (60271)</td>
</tr>
<tr>
<td>□ Stereotactic radiosurgery (SRS) and stereotactic body radiotherapy (SBRT) surgeon participation (32701)</td>
<td>□ Application of wound vac (97605, 97606)</td>
</tr>
<tr>
<td>□ Tube pericardiotomy (33015)</td>
<td>□ Pericardial window (33025)</td>
</tr>
<tr>
<td>□ Other Minor Procedure</td>
<td>□ Other</td>
</tr>
</tbody>
</table>
G. Esophageal Cancer – Clinical Staging

**Diagnostic Testing**
- CT Chest w/ Contrast (Oct 2018)

**IMPRESSION:** Outside studies dated 9/2018 submitted for second opinion. CT chest 9/2018: 1. Mass involving the lesser curvature of the stomach and lower esophagus, measuring up to 7.5 cm, most compatible with a primary gastric carcinoma. The mass extends into the mesentery, abutting the liver, but not invading adjacent organs. 2. Multiple enlarged gastrohepatic lymph nodes are compatible with locoregional nodal disease spread. 3. An 8 mm solid pulmonary nodule is identified in the left lower lobe, indeterminate.

- CT Abdomen/pelvis w/ Contrast (Oct 2018)

**IMPRESSION:** 1. Redemonstration of mass-like thickening of the stomach and lower esophageal wall as described above. 2. Additional border line enlarged porta hepatic lymph nodes are identified in addition to previously seen mildly enlarged gastrohepatic nodes.

- PET/CT Skull Base To Mid-thigh Initial Staging W/o Iv Contrast (Oct 2018)

**IMPRESSION:** 1. Markedly FDG avid circumferential mass like thickening of the lower esophagus that extends through the GE junction and involves the lesser curvature of the stomach with extension through the serosa into the adjacent mesentry compatible with biopsy proven adenocarcinoma. 2. 1.5 cm enlarged gastrohepatic lymph node which shows minimal increased activity. Additional 1.0 cm gastrohepatic lymph nodes are not fully evaluated due to overlapping cardiac metabolic activity, suspicious for lymph node metastases. 3. 0.6 mm right axillary lymph node which shows mildly increased FDG activity and is favored to represent dose infiltration.

- EUS w/Bx (Oct 2018)

**IMPRESSIONS:** 1. Necrotic esophageal mass consistent with known cancer with 6 gastroesophageal malignant-appearing lymph nodes. Endoscopically the esophageal mass was encountered at 38 cm and extended to 47 cm on the esoscope. The LES was at 42 cm. Research biopsies obtained X8 passes. On EUS, the lesion breached beyond the muscularis propria layer (T3). Evidence of 6 gastroesophageal malignant-appearing lymph nodes.

**SurgPath** (Esophagus, Distal): MODERATELY DIFFERENTIATED ADENOCARCINOMA. DISTAL ESOPHAGUS MASS EXTENDING INTO GASTRIC CARDIA
G. Esophageal Cancer – Clinical Staging

**Clinical Staging:**
- **cT3,N2,M0**

**Diagnosis of Widespread Disease:**
- CT Chest/Wall Contrast (Oct2018)
- IMPRESSION: Observable studies dated 9/2018 submitted for second opinion. CT chest 9/2018: 1. Mass involving the lesser curvature of the stomach and lower esophagus, measuring up to 7.5 cm, most compatible with a primary gastric carcinoma. The mass extends into the mesentery, abutting the liver, but **not invading adjacent organs.** 2. Multiple enlarged gastrohepatic lymph nodes are compatible with locoregional nodal disease spread. 3. An 8 mm solid pulmonary nodule is identified in the left lower lobe, indeterminate.

**CT Abdomen/Pelvis W/ Contrast (Oct2018)**
- IMPRESSION: 1. Medial demonstration of mass-like thickening of the stomach and lower esophagus wall as described above. 2. Additional borderline enlarged porta hepatitis lymph nodes are identified in addition to previously seen mildly enlarged gastrohepatic nodes.

**PET/CT Skull Base To Mid-thigh Initial Staging W/o Iv Contrast (Oct2018)**
- IMPRESSION: 1. Markedly FDG avid circumferential mass-like thickening involving the lower esophagus that extends through the GE junction and involves the lesser curvature of the stomach with extension through the serosa into the adjacent mesentery compatible with biopsy proven adenocarcinoma. 2. 1.5 cm enlarged gastrohepatic lymph node which shows minimal increased activity. Additional 1.0 cm gastrohepatic lymph nodes are not fully evaluated due to overlapping cardiac metabolic activity, suspicious for lymph node metastases. 3. 6 mm right axillary lymph node which shows mildly increased FOG activity and is favored to represent true infiltration.

**EUS w/o (Oct2018)**
- IMPRESSION: 1. Necrotic esophageal mass consistent with known cancer with 6 parasphragical malignant appearing lymph nodes. Endoscopically the esophageal mass was encountered at 30 cm and extended to 45 cm on the endoscope. The LES was at 42 cm. Research biopsies obtained of masses. On EUS, the lesion extended beyond the muscularis propria layer (T3). Evidence of 6 parasphragical malignant appearing lymph nodes.

**SurePath:**
- Esophageal, Distal: **MODERATELY DIFFERENTIATED ADENOCARCINOMA, DISTAL ESOPHAGEAL MASS EXTENDING INTO GASTRIC CARCINOSIS, cT3,N2,M0**
### G. Esophageal Cancer – Pathological Staging

<table>
<thead>
<tr>
<th>Pathological Staging - Esophagus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Esophagus</strong> to be completed if esophageal cancer documented AND esophageal resection performed (Pre-Operative Evaluation – Esophageal Cancer – Yes, 6th Edition)</td>
</tr>
<tr>
<td><strong>Esophageal Cancer Results</strong> ClinStageEsophResul (2230)</td>
</tr>
<tr>
<td>□ No cancer found, benign tumor</td>
</tr>
<tr>
<td>□ Esophageal cancer present</td>
</tr>
</tbody>
</table>

**Esophageal Tumor:** PathStageEsopHT (2230)

- □ T0: Tumor cannot be assessed
- □ T1: Tumor invades lamina propria or muscularis mucosa
  - □ T1a: Tumor invades lamina propria
  - □ T1b: Tumor invades submucosa
- □ T2: Tumor invades muscularis propria
- □ T3: Tumor invades adventitia
  - □ T3a: Tumor invades pleura, pericardium, azygos vein, diaphragm, or pericardium
- □ T4: Tumor invades other adjacent structures such as aorta, vertebral body, or airway
  - □ T4a: Tumor invades pleura, pericardium, azygos vein, diaphragm, or pericardium
  - □ T4b: Tumor invades other adjacent structures such as aorta, vertebral body, or airway

**Esophageal CA Nodes:** PathStageEsopHN (2240)

- □ N0: No regional lymph node metastases
- □ N1: Metastases in 1 to 2 regional nodes
- □ N2: Metastases in 3 to 6 regional lymph nodes
- □ N3: Metastases in 7 or more regional lymph nodes

**Esophageal CA Metastasis:** PathStageEsopHM (2240)

- □ M0: No distant metastases
- □ M1: Distant metastases

**Esophag Histopathologic Type:** PathStageEsopHT (2260)

- □ Other

**Esophageal CA Histologic Grade:** PathStageEsopHG (2270)

- □ C: Grade cannot be assessed
- □ G1: Well differentiated
- □ G2: Moderately differentiated
- □ G3: Poorly differentiated

**Total # of Lymph Nodes sampled/harvested:** EsoCtNodes (2280)

**Esophageal CA Resection Margins Positive:** Yes □ No □

### Surgical pathology exam: Routine:

- **Status:** Final result: Visible to patient: Yes (MyChart Next appointment at 01:00 PM in Radiology (BMC CT ROOM 2) TSH Component

  **Diagnosis**
  1. Esophagus: Proximal Esophageal Margin (Excision):
     - Portion of esophagus with unremarkable squamous mucosa. **Negative for carcinoma** and negative for Barrett’s esophagus.
  4. Left Gastric Lymph Node (Excision):
     - Benign fibrous tissue. No lymphoid tissue present.
  5. Lymph Node: Level 9R lymph node (Excision):
     - One (1) lymph node and associated fibrous tissue. **Negative for tumor.**
  6. Lymph Node, Level 7L lymph node (Excision):
     - Three (3) lymph nodes and associated fibrous tissue. **Negative for tumor.**
  7. Esophagus: True esophageal margin (Excision):
     - Portion of esophagus with unremarkable squamous mucosa. **Negative for carcinoma** and negative for Barrett’s esophagus.
  8. Stomach, Gastric ring (Biopsy):
     - Portion of stomach with reactive epithelial changes. **Negative for tumor.**
  9. Stomach and Esophagus (Esophagogastrectomy):
     - **Negative for residual adenocarcinoma.**
     - Gastroesophageal junction and portions of stomach with submucosal fibrosis, edema, and pigment-laden macrophages consistent with treated tumor bed. No residual viable adenocarcinoma present.

  **Note:** The specimen was reviewed and the soft tissue necrotic node has been entirely submitted with no residual viable tumor identified. This node mostly represents treated tumor as either an entirely replaced lymph node or as a soft tissue deposit, however there is no residual tumor present. Additional sections of the lesser curvature of the stomach have been submitted with no viable residual tumor identified.

**These findings are consistent with stage ypT0 ypN0.**
G. Esophageal Cancer – Pathological Staging

Pathological Staging - Esophagus

If cancer present —

- TX: Tumor can't be assessed
- T1a: Tumor invades mucosa
- T3: Tumor invades adventitia

Path stage:
- (2240)

Pathologic stage:
- Pathologic stage Esophagus (2260)

Histologic grade:
- H1: Squamous Carcinoma
- H2: Adenocarcinoma
- Other

Well differentiated:
- G1
- Moderately differentiated:
- G2
- Poorly differentiated:
- G3

Total # of Lymph Nodes sampled/harvested: 17

Esophageal CA Resection Margins Positive:
- Yes
- No

New Synoptic Report

Standard Test Result
K. Disposition

- Clarification = Pt must go to lower level acuity floor then require higher level care
  - ICU → OR → ICU  Does not Count
  - ICU → floor → ICU  Count
L. Post-Operative Events

- POD 6 Significant MS changes
- POD 13: N/V, discomfort → ROR for Pyloric Stenosis (s/p balloon bilation)

Clarification
- LOS 10 Days = include all events up to POD 30
- LOS 90 Days = include all events up to POD 90
## L. Post-Operative Events

Indicate all adverse events that occurred within 1 month of surgery if discharged from the hospital or those that occur during the same admission, regardless of the length of stay.

### Postoperative Events?
- Yes □ No □ If Yes, select all that occurred: □

### Gastrointestinal

<table>
<thead>
<tr>
<th>Event</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ileus</td>
<td>□</td>
<td>Yes □</td>
</tr>
<tr>
<td>(Ileus (3610))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduit Necrosis</td>
<td>□</td>
<td>Yes □</td>
</tr>
<tr>
<td>Requiring Surgery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CondNecSurg (3640)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clostridium Difficile infection</td>
<td>□</td>
<td>Yes □</td>
</tr>
<tr>
<td>CDiff (3660)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anastomotic leak</td>
<td>□</td>
<td>Yes □</td>
</tr>
<tr>
<td>requiring medical treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>only AnastoMed (3620)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delayed conduit emptying</td>
<td>□</td>
<td>Yes □</td>
</tr>
<tr>
<td>requiring intervention (pyloric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dilatation or botox) or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maintenance of NG drainage</td>
<td>□</td>
<td>Yes □</td>
</tr>
<tr>
<td>&gt; 7 days post op</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DelayCondEmp (3650)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other GI event</td>
<td>□</td>
<td>Yes □</td>
</tr>
<tr>
<td>OtherGI (3670)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Neurology

<table>
<thead>
<tr>
<th>Event</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>New central neurological</td>
<td>□</td>
<td>Yes □</td>
</tr>
<tr>
<td>event CentrNeuroEvt (3770)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recurrent laryngeal nerve</td>
<td>□</td>
<td>Yes □</td>
</tr>
<tr>
<td>paresis - unexpected</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LaryngealNerve (3780)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other neurological event</td>
<td>□</td>
<td>Yes □</td>
</tr>
<tr>
<td>OtherNeuro (3800)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delirium</td>
<td>□</td>
<td>Yes □</td>
</tr>
<tr>
<td>Delirium (3790)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
M. Discharge

Readmitted 3 wks later

S/S: intermittent fevers 101 F, pain, poor PO intake and N/V, sm. b/l pleural effusions, pericardial effusion, adrenal insufficiency

RX: s/p thoracocentesis, high-dose steroids, bactrim

DX: suspected immunotherapy sequelae
M. Discharge

Readmitted 3 wks later with

S/S: intermittent fevers 101 F, pain, poor PO intake and N/V, sm. b/l pleural effusions, pericardial effusion, adrenal insufficiency

RX: s/p thoracocentesis, high-dose steroids, bactrim

DX: suspected immunotherapy sequelae
Follow Up

SeqNo: 3960
Long Name: Date of Last Follow-Up
Short Name: LFUDate
Definition: Indicate the date on which the last follow-up was made. If patient dies in the hospital, this value will be the same as the date of death. If no follow-up is made after patient is discharged, this value will be the same as the discharge date.

Intent/Clarification: This field is for those patients diagnosed and surgically treated for Lung CA and Esophageal CA. Need to track patients for five (5) years from the date of the original surgery. Work with your cancer registry people for assistance with this information. Any contact with any provider is acceptable.

Update at least once per year. Does not need to be exactly one year; most recent visit closest to one year.
Novel Resources for Follow-Up Mortality

Addressing the Challenges of Longitudinal Follow-Up in The Society of Thoracic Surgery (STS) Registries:
Novel use of an EMR Query Tool to Ascertaint Post-Discharge Patient Vital Status

Diane Alejo, Joseph D’Incerti, Joseph Caner, Marvin Borja, Kimberly Behrens, Mayuri Machado Alvarez, Kathryn Maloneey, Stephen Broderick, Glenn Whitman, Marshall Jacobs
Johns Hopkins University School of Medicine, Department of Surgery, Division of Cardiac and Thoracic Surgery

Standardized Text Messages Improve 30-Day Patient Follow-Up for ACS NSQIP Pediatric Cases

Stephanie Taylor, RN, BSN, Jenna Meyer, RN BSN, Armando Selim Munoz-Abraham, MD, MBEE,
Kawar Chatoorgoon, MD
SSM Health Cardinal Glennon Children’s Hospital
Saint Louis University School of Medicine
Coding Questions??

• Refer to your Training Manual

• Phone a friend – Surgeon Champion

• Submit questions to STS Clinical Question Request Form
  Participate in Eddie’s Monthly Thoracic Calls

• Join Discussion Boards/Forums
Abstraction Pearls

• Create an internal **data map** for **Source Documents** (update & share with your team)

• Be **consistent** with abstraction methods

• **Clinical Documentation issues** – work with your surgical teams to IMPROVE

• Implement an **IRR audit** process

• Create “**consistency checks**” within your vendor registry software

• Discourage “targeted search” coding
Thank You - Questions

Contact Information
Marvin C. Borja, M.D.
Johns Hopkins Hospital
Department of Surgery
Baltimore, MD 21287
mborja1@jhmi.edu
443-287-0334