ICD-10’s Impact Upon Physicians

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- American Health Information Management Association (AHIMA) certified coding specialist since 2001
- Association of Clinical Documentation Improvement Specialists (ACDIS) Advisory Board
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ICD-10’s Impact Upon Physicians

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CDI MD

Physician Champions

Goals

• Identify what is new or different in ICD-10
  – How it affects risk-adjustment and quality measures
  – Implementation date: October 1, 2014
• Review clinical aspects or definitions of selected new, revised, or deleted codes
• Outline St. Joseph’s ICD-10 documentation improvement strategies
# ICD-10 Implementation Date
October 1, 2014 – NO EXCEPTIONS

<table>
<thead>
<tr>
<th>Diagnoses</th>
<th>Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ICD-10-CM</strong> (Clinical Modification)</td>
<td><strong>ICD-10-PCS</strong> (Procedure Coding System)</td>
</tr>
<tr>
<td>Used by all covered entities:</td>
<td>Used by inpatient facilities ONLY</td>
</tr>
<tr>
<td>(providers &amp; facilities) for</td>
<td>• Includes outpatient facility</td>
</tr>
<tr>
<td>diagnoses</td>
<td>services rendered within the</td>
</tr>
<tr>
<td>To be used in all settings:</td>
<td>prior 72 hours of writing the</td>
</tr>
<tr>
<td>– Hospital inpatients</td>
<td>inpatient order</td>
</tr>
<tr>
<td>– Hospital outpatients</td>
<td>• Very different than ICD-9-CM or</td>
</tr>
<tr>
<td>– Physicians offices</td>
<td>CPT</td>
</tr>
<tr>
<td>– Emergency department</td>
<td></td>
</tr>
<tr>
<td>– Home health</td>
<td><strong>CPT</strong></td>
</tr>
<tr>
<td>– Long-term care</td>
<td>• Physician and outpatient/</td>
</tr>
<tr>
<td>– Rehabilitation facilities</td>
<td>observation facility services</td>
</tr>
<tr>
<td></td>
<td>still utilize CPT</td>
</tr>
<tr>
<td></td>
<td>• CPT does not change!!</td>
</tr>
</tbody>
</table>

*ICD-10 – Perfect Care. Perfect Code.*
International Classification of Disease Versions

• First edition, known as the International List of Causes of Death, was adopted by the International Statistical Institute in 1893

• WHO took in 1948 when the Sixth Revision, which included causes of morbidity for the first time, was published.
  • 1977 - ICD-9
  • 1993 - ICD-10
  • 2015 (tentative) - ICD-11
Releases of the US Modifications

• ICD-9
  • 1977 – Worldwide release
  • 1979 – US Modification - Clinical & Mortality

• ICD-10
  • 1993 – Worldwide release
  • 1999 – US adoption for death certificates
  • October 1, 2014 – Use of ICD-10-CM and ICD-10-PCS for clinical use

• ICD-11
  • 2015 - Tentative roll out worldwide
  • US adoption (ICD-11-CM and ICD-11-PCS) not likely before 2020
US Modifications – ICD-10-CM & PCS

The Cooperating Parties

• CDC
  • Responsible for diagnoses

• CMS
  • Responsible for inpatient procedures

• American Hospital Assn.
  • Responsible for interpreting ICD-9 or ICD-10 (Coding Clinic)

• American HIM Assn.
  • Provides input from coding community
ICD-10
Physician Revenue Cycle Impact

• Claim payment for ancillaries
  – “Medical necessity” for ordered services is based on an ICD-9-CM (ICD-10-CM code after October 1, 2014)
  – Since payers typically do not release what diagnosis codes support medical necessity, only through payer testing and denials management can revenue losses be mitigated
Note that codes for secondary hypercoagulable states are not included.

- More than likely, anticoagulants requiring protime monitoring are treating an active clot that must be documented and coded

http://tinyurl.com/CMSICD10LCDs

<table>
<thead>
<tr>
<th>ICD-9-CM</th>
<th>ICD-9 DX Description</th>
<th>ICD-10 CM</th>
<th>ICD-10 DX Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>289.81</td>
<td>Primary hypercoagulable state</td>
<td>D68.51</td>
<td>Activated protein C resistance</td>
</tr>
<tr>
<td>289.81</td>
<td>Primary hypercoagulable state</td>
<td>D68.52</td>
<td>Prothrombin gene mutation</td>
</tr>
<tr>
<td>289.81</td>
<td>Primary hypercoagulable state</td>
<td>D68.59</td>
<td>Other primary thrombophilia</td>
</tr>
<tr>
<td>289.81</td>
<td>Primary hypercoagulable state</td>
<td>D68.61</td>
<td>Antiphospholipid syndrome</td>
</tr>
<tr>
<td>289.81</td>
<td>Primary hypercoagulable state</td>
<td>D68.62</td>
<td>Lupus anticoagulant syndrome</td>
</tr>
<tr>
<td>415.11</td>
<td>Iatrogenic pulmonary embolism and infarction</td>
<td>I26.90</td>
<td>Septic pulmonary embolism without acute cor pulmonale</td>
</tr>
<tr>
<td>415.11</td>
<td>Iatrogenic pulmonary embolism and infarction</td>
<td>I26.99</td>
<td>Other pulmonary embolism without acute cor pulmonale</td>
</tr>
<tr>
<td>415.12</td>
<td>Septic pulmonary embolism</td>
<td>I26.01</td>
<td>Septic pulmonary embolism with acute cor pulmonale</td>
</tr>
<tr>
<td>415.12</td>
<td>Septic pulmonary embolism</td>
<td>I26.90</td>
<td>Septic pulmonary embolism without acute cor pulmonale</td>
</tr>
<tr>
<td>415.19</td>
<td>Other pulmonary embolism and infarction</td>
<td>I26.09</td>
<td>Other pulmonary embolism with acute cor pulmonale</td>
</tr>
<tr>
<td>415.19</td>
<td>Other pulmonary embolism and infarction</td>
<td>I26.99</td>
<td>Other pulmonary embolism without acute cor pulmonale</td>
</tr>
<tr>
<td>427.31</td>
<td>Atrial fibrillation</td>
<td>I48.0</td>
<td>Paroxysmal atrial fibrillation</td>
</tr>
<tr>
<td>427.31</td>
<td>Atrial fibrillation</td>
<td>I48.2</td>
<td>Chronic atrial fibrillation</td>
</tr>
<tr>
<td>427.31</td>
<td>Atrial fibrillation</td>
<td>I48.91</td>
<td>Unspecified atrial fibrillation</td>
</tr>
</tbody>
</table>
Medi-Cal ICD-10
Medical Necessity - Crosswalk

• Medi-Cal implementation of ICD-10?
  – Medi-Cal will be using a crosswalk solution in the legacy California Medicaid Management Information System (CA-MMIS).
    • Medi-Cal has mapped all ICD-10 codes to corresponding ICD-9 codes by starting with the General Equivalence Mappings (GEMs) provided by the Centers for Medicare & Medicaid Services (CMS) and modifying the mappings to align with existing Medi-Cal policy.
  – Claims will be run against the crosswalk to determine the ICD-9 value to process through the system.

• Will an ICD-10 to ICD-9 crosswalk be published?
  – Medi-Cal will not publish the crosswalk. However, the provider manuals will be updated with the ICD-10 codes as appropriate.
Hierarchical Conditions Classifications in ICD-10

- Used by CMS to:
  - Measure individual physician (Medicare Value-Based Purchasing Modifier) and system (CMS cost per beneficiary)
  - Fund ACOs, IPAs, and other physician integration strategies

- Based on documentation and coding of certain diagnosis codes within a calendar year
  - 2014 version much different than 2013
  - 2015 version based on ICD-10 has not yet been release
    - Will probably resemble the 2014 model
# CDI’s Challenge with HCCs

<table>
<thead>
<tr>
<th>Considerations</th>
<th>Minimal Coding (MW0V?)</th>
<th>Some conditions coded – Moderate level of specificity</th>
<th>All conditions coded appropriately – High level of specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic Interactions</td>
<td>76 year old female</td>
<td>0.457</td>
<td>76 year old female</td>
</tr>
<tr>
<td>Medicaid eligible (female 65+)</td>
<td>0.179</td>
<td>Medicaid eligible (female 65+)</td>
<td>0.179</td>
</tr>
<tr>
<td>No Diabetes Coded</td>
<td>X</td>
<td>Diabetes w/o complications 250.00 (HCC 19)</td>
<td>0.162</td>
</tr>
<tr>
<td>Chronic Diseases and Their Complications</td>
<td>No Vascular Disease Coded</td>
<td>X</td>
<td>Vascular disease w/o complications PVD 443.9 (HCC 105)</td>
</tr>
<tr>
<td>CHF not coded</td>
<td>X</td>
<td>CHF not coded</td>
<td>X</td>
</tr>
<tr>
<td>Disease-Disease Interactions</td>
<td>No Disease Interaction</td>
<td>X</td>
<td>No Disease Interaction</td>
</tr>
<tr>
<td><strong>Total RAF</strong></td>
<td><strong>0.636</strong></td>
<td><strong>Total RAF</strong></td>
<td><strong>1.114</strong></td>
</tr>
</tbody>
</table>
Need for Specificity

Examples

• Pneumonia
  – CAP or HCAP – no weight
  – Pneumococcal pneumonia – 0.200
  – Pneumonia due to GNR, MRSA, legionella, or aspiration – 0.672

• Bronchitis
  – By itself, acute, or asthmatic – no weight
  – Chronic bronchitis – 0.346

• Arm or Leg Weakness after stroke
  – As above – no weight
  – Monoparesis – 0.396
  – Hemiparesis – 0.581

• DVT
  – As documented – 0.299
  – Along with a hypercoagulable state – an additional 0.252
New Changes for 2014

Embrace CMS Provider Efficiency Models in Inpatient and Outpatient Documentation

Dear Colleagues:

One of the goals of the Patient Protection and Affordable Care Act (PPACA) is to encourage provider efficiency, defined by CMS as a ratio of observed to expected costs and outcomes for selected populations. To this end, CMS is developing efficiency measurement metrics that will influence our reimbursement and may be reported on its Physician Compare website (http://tinyurl.com/mnq8orh). These include:

- http://www.tinyurl.com/phzeljq

and deletions as well as relative weight changes.

New 2014 HCC additions worth noting

New conditions qualifying as HCCs in 2014, their relative weights (RW), and my understanding of their definitions include:

- Morbid obesity (RW 0.365). A BMI of 40 or more, requiring a code 278.01, morbid obesity, or V85.4, BMI > 40.0, defines this condition.

Note: ICD-9-CM or ICD-10 does not allow the BMI coding using nursing or dietician documentation unless a provider (e.g., medical doctor, doctor of...
Current HCC Tables

• Available for download at: http://www.tinyurl.com/2014HCCs
Bundled Payments for Care Improvement (BPCI) Initiative: General Information

On January 31, 2013, the Centers for Medicare & Medicaid Services (CMS) announced the health care organizations selected to participate in the Bundled Payments for Care Improvement initiative, an innovative new payment model. Under the Bundled Payments for Care Improvement initiative, organizations will enter into payment arrangements that include financial and performance accountability for episodes of care. These models may lead to higher quality, more coordinated care at a lower cost to Medicare.

Traditionally, Medicare makes separate payments to providers for each of the individual services they furnish to beneficiaries for a single illness or course of treatment. This approach can result in fragmented care with minimal coordination across providers and health care settings. Payment rewards the quantity of services offered by providers rather than the quality of care furnished. Research has shown that bundled payments can align incentives for providers—hospitals, post-acute care providers, physicians, and other practitioners—allowing them to work closely together across all specialties and settings.
Impact on Physicians
Patient Protection and Affordable Care Act

• Bundled Payments
  – Hospitals and Physicians paid out of the same payment for current admissions and all care within 30 days of discharge
  – Places physicians at risk for efficient hospital resource utilization

“(g) IMPLEMENTATION PLAN.—
“(1) IN GENERAL.—Not later than January 1, 2016, the Secretary shall submit a plan for the implementation of an expansion of the pilot program if the Secretary determines that such expansion will result in improving or not reducing the quality of patient care and reducing spending under this title.

“(h) ADMINISTRATION.—Chapter 35 of title 44, United States Code, shall not apply to the selection, testing, and evaluation of models or the expansion of such models under this section.”
<table>
<thead>
<tr>
<th>Services Lines Under Current Study</th>
<th>...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute myocardial infarction</td>
<td>Major bowel</td>
</tr>
<tr>
<td>Amputation</td>
<td>Major cardiovascular procedure</td>
</tr>
<tr>
<td>Atherosclerosis</td>
<td>Major joint replacement of the lower extremity</td>
</tr>
<tr>
<td>Automatic implantable cardiac defibrillator generator or lead</td>
<td>Major joint upper extremity</td>
</tr>
<tr>
<td>Back and neck except spinal fusion</td>
<td>Medical non-infectious orthopedic</td>
</tr>
<tr>
<td>Cardiac arrhythmia</td>
<td>Medical peripheral vascular disorders</td>
</tr>
<tr>
<td>Cardiac defibrillator</td>
<td>Nutritional and metabolic disorders</td>
</tr>
<tr>
<td>Cardiac valve</td>
<td>Other knee procedures</td>
</tr>
<tr>
<td>Cellulitis</td>
<td>Other respiratory</td>
</tr>
<tr>
<td>Cervical spinal fusion</td>
<td>Other vascular surgery</td>
</tr>
<tr>
<td>Chest pain</td>
<td>Pacemaker Device replacement or revision</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease, bronchitis/asthma</td>
<td>Pacemaker</td>
</tr>
<tr>
<td>Combined anterior posterior spinal fusion</td>
<td>Percutaneous coronary intervention</td>
</tr>
<tr>
<td>Complex non-Cervical spinal fusion</td>
<td>Red blood cell disorders</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>Removal of orthopedic devices</td>
</tr>
<tr>
<td>Coronary artery bypass graft surgery</td>
<td>Renal failure</td>
</tr>
<tr>
<td>Diabetes</td>
<td>Revision of the hip or knee</td>
</tr>
<tr>
<td>Double joint replacement of the lower extremity</td>
<td>Sepsis</td>
</tr>
<tr>
<td>Esophagitis, gastroenteritis and other digestive disorders</td>
<td>Simple pneumonia and respiratory infections</td>
</tr>
<tr>
<td>Fractures femur and hip/pelvis</td>
<td>Spinal fusion (non-Cervical)</td>
</tr>
<tr>
<td>Gastrointestinal hemorrhage</td>
<td>Stroke</td>
</tr>
<tr>
<td>Gastrointestinal obstruction</td>
<td>Syncope and collapse</td>
</tr>
<tr>
<td>Hip and femur procedures except major joint</td>
<td>Transient ischemia</td>
</tr>
<tr>
<td>Lower extremity and humerus procedure except hip, foot, femur</td>
<td>Urinary tract infection</td>
</tr>
</tbody>
</table>
Bundled Payment Possibilities
Routine Obstetrics

• IHA is Oakland-based
• Bundled payments could be DRG based
  – APR-DRG for Medi-CAL
  – MS-DRGs for others
Bundled MS-DRG Options

Pneumonia

- **MS-DRG 193–195** – Healthcare Associated Pneumonia (HCAP)
  - w/o comorbidity/complication (w/o CC/MCC) - 0.6997  ($6,997)
  - w/comorbidity/complication (CC) - 0.9771  ($9,771)
  - w/major comorbidity/complication (MCC) - 1.4550  ($14,550)

- **MS- DRG 177–179** – Pneumonia prob 2˚ GNR, MRSA, or aspiration justifying Zosyn and vancomycin (documented in the record)
  - w/o comorbidity/complication (w/o CC/MCC) - 0.9741  ($9,741)
  - w/comorbidity/complication (w/CC) - 1.3955  ($13,955)
  - w/major comorbidity/complication (w/MCC) - 1.9934  ($19,934)

- **MS-DRG 871** – Sepsis due to pneumonia - 1.8803  ($18,803)

Relative weights by base rate (e.g., $10,000) to get reimbursement
# Neurosurgery Bundled Payments

## Impact of MCCs and CCs

<table>
<thead>
<tr>
<th>MS-DRG</th>
<th>MS-DRG Title</th>
<th>Weights</th>
<th>Bundled Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>453</td>
<td>COMBINED ANTERIOR/POSTERIOR SPINAL FUSION W MCC</td>
<td>10.5952</td>
<td>$158,928</td>
</tr>
<tr>
<td>454</td>
<td>COMBINED ANTERIOR/POSTERIOR SPINAL FUSION W CC</td>
<td>7.7979</td>
<td>$116,969</td>
</tr>
<tr>
<td>455</td>
<td>COMBINED ANTERIOR/POSTERIOR SPINAL FUSION W/O CC/MCC</td>
<td>5.8705</td>
<td>$88,058</td>
</tr>
<tr>
<td>459</td>
<td>SPINAL FUSION EXCEPT CERVICAL W MCC</td>
<td>6.5390</td>
<td>$98,085</td>
</tr>
<tr>
<td>460</td>
<td>SPINAL FUSION EXCEPT CERVICAL W/O MCC</td>
<td>3.8783</td>
<td>$58,175</td>
</tr>
<tr>
<td>471</td>
<td>CERVICAL SPINAL FUSION W MCC</td>
<td>4.7075</td>
<td>$70,613</td>
</tr>
<tr>
<td>472</td>
<td>CERVICAL SPINAL FUSION W CC</td>
<td>2.8041</td>
<td>$42,062</td>
</tr>
<tr>
<td>473</td>
<td>CERVICAL SPINAL FUSION W/O CC/MCC</td>
<td>2.1254</td>
<td>$31,881</td>
</tr>
<tr>
<td>490</td>
<td>BACK &amp; NECK PROC EXC SPINAL FUSION W CC/MCC OR DISC DEVICE/NEUROSTIM</td>
<td>1.8154</td>
<td>$27,231</td>
</tr>
<tr>
<td>491</td>
<td>BACK &amp; NECK PROC EXC SPINAL FUSION W/O CC/MCC</td>
<td>1.0354</td>
<td>$15,531</td>
</tr>
</tbody>
</table>

**Base Rate - $15,000**
# MS-DRG CC/MCC Table

<table>
<thead>
<tr>
<th>Not a CC</th>
<th>CC</th>
<th>MCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altered mental status</td>
<td>Delirium 2° Stated Cause</td>
<td>Toxic/Metabolic Encephalopathy</td>
</tr>
<tr>
<td>Unresponsive</td>
<td></td>
<td>Coma or Unconscious</td>
</tr>
<tr>
<td>Hypoxemia</td>
<td>Chronic resp. failure</td>
<td>Acute on chronic respiratory failure</td>
</tr>
<tr>
<td>Hypercapnia</td>
<td>Status asthmaticus</td>
<td></td>
</tr>
<tr>
<td><strong>SIRS 2° UTI</strong></td>
<td><strong>UTI or Acute Cystitis</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Urosepsis (no code)</strong></td>
<td><strong>Bacteremia</strong></td>
<td>Sepsis or Severe Sepsis due to UTI</td>
</tr>
<tr>
<td>Angina or CAD</td>
<td>Unstable Angina</td>
<td>NSTEMI</td>
</tr>
<tr>
<td>“Troponin leak”</td>
<td>Demand Ischemia</td>
<td></td>
</tr>
<tr>
<td>Chronic or Permanent</td>
<td>Persistent Atrial</td>
<td></td>
</tr>
<tr>
<td>Atrial Fibrillation</td>
<td>Fibrillation</td>
<td></td>
</tr>
</tbody>
</table>
# MS-DRG CC/MCC Table

<table>
<thead>
<tr>
<th>Not a CC</th>
<th>CC</th>
<th>MCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedridden status</td>
<td></td>
<td>Complete Immobility due to Frailty</td>
</tr>
<tr>
<td>Cervical Incompetence w/Pregnancy</td>
<td>(Hemorrhagic) Shock</td>
<td>Cervical Incompetence w/Pregnancy</td>
</tr>
<tr>
<td>No trimester stated</td>
<td></td>
<td>Trimester stated</td>
</tr>
<tr>
<td>Elevated lactate with poor capillary refill</td>
<td>Tubo-Ovarian Abscess</td>
<td>Hypovolemic, Septic, or Cardiogenic Shock</td>
</tr>
<tr>
<td>Midline shift</td>
<td></td>
<td>Sepsis due to Tubo-Ovarian Abscess</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brain Herniation</td>
</tr>
</tbody>
</table>
St. Joseph’s ICD-10 Strategy - CDI

Physician

CDI Team

ICD-10 Coder
ICD-10 Prep
How do we do it?

• The best way to get ready for ICD-10 is to do ICD-9-CM correctly and then negotiate the differences
  – A team effort of which St. Joseph is willing and ready to assist
Descriptions of St. Joseph Resources

• Precyse – E-learning ICD-10 Modules
  – Accessible through your St. Joseph physician portal
  – CMEs available

• ICD-10 DocTips
  – Specialty specific
  – Available through the SJH Pulse – mobile Apple/Android APP

• Regional ICD-10 Coordinators
  – Sue Mets – (626) 372-5201 - sue.mets@stjoe.org
  – Available for one-on-one specialty –specific consultation upon request

• Ongoing support of your documentation improvement and coding teams
What’s Old?
ICD-9-CM

Numeric or Alpha (E or V) → Category
Numeric

Etiology, anatomic site, manifestation

4 1 4

0 0
What’s New
ICD-10-CM

S 3 2
Category

0 1 0
Etiology, anatomic site, severity

A
Additional characters

Alpha (Except U)

2 Always Numeric
3-7 Numeric or Alpha
ICD-10-CM Diagnosis Changes

- Major expansions in coding primary care encounters, external causes of injury, mental disorders, neoplasms, and preventative health
  - Addition of new conditions since last revision
  - New categories for postprocedural disorders
  - Addition of laterality (right, left, bilateral)
  - Expansion of diabetes and injury codes
  - New combination codes
  - Greater specificity for current conditions
  - Inclusion of trimester in pregnancy codes
  - More space to accommodate expansion
## ICD-9-CM vs. ICD-10-CM

### Appendicitis with peritonitis

#### ICD-9-CM

- **540.0** With generalized peritonitis
  - Appendicitis (acute) with: perforation, peritonitis (generalized), rupture:
    - fulminating
    - gangrenous
    - obstructive
    - Cecitis (acute) with: perforation, peritonitis (generalized), rupture
    - Rupture of appendix
  - Excludes: acute appendicitis with peritoneal abscess (540.1)
- **540.1** With peritoneal abscess
  - Abscess of appendix
    - With generalized peritonitis
- **540.9** Without mention of peritonitis
  - Acute:
    - appendicitis without mention of perforation, peritonitis, or rupture:
    - Fulminating
    - gangrenous
    - inflamed
    - obstructive
  - Cecitis without mention of perforation, peritonitis, or rupture

#### ICD-10-CM

- **K35.2** Acute appendicitis with generalized peritonitis
  - Appendicitis (acute) with generalized (diffuse) peritonitis following rupture or perforation of appendix
  - Perforated appendix NOS
  - Ruptured appendix NOS
- **K35.3** Acute appendicitis with localized peritonitis
  - Acute appendicitis with or without perforation or rupture NOS
  - Acute appendicitis with or without perforation or rupture with localized peritonitis
  - Acute appendicitis with peritoneal abscess
- **K35.8** Other and unspecified acute appendicitis
  - **K35.80** Unspecified acute appendicitis
    - Acute appendicitis NOS
    - Acute appendicitis without (localized) (generalized) peritonitis
  - **K35.89** Other acute appendicitis
## Bundled Payments

### Appendicitis

<table>
<thead>
<tr>
<th>MS-DRG</th>
<th>MS-DRG Title</th>
<th>Weights</th>
<th>GM LOS</th>
<th>Bundled Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>338</td>
<td>APPENDECTOMY W COMPLICATED PRINCIPAL DIAG W MCC</td>
<td>3.2008</td>
<td>8.3</td>
<td>$32,008</td>
</tr>
<tr>
<td>339</td>
<td>APPENDECTOMY W COMPLICATED PRINCIPAL DIAG W CC</td>
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<td>5.4</td>
<td>$18,675</td>
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<tr>
<td>340</td>
<td>APPENDECTOMY W/O COMPLICATED PRINCIPAL DIAG W/O CC/MCC</td>
<td>1.2024</td>
<td>3.0</td>
<td>$12,024</td>
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<tr>
<td>341</td>
<td>APPENDECTOMY W/O COMPLICATED PRINCIPAL DIAG W MCC</td>
<td>2.3116</td>
<td>4.8</td>
<td>$23,116</td>
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<tr>
<td>342</td>
<td>APPENDECTOMY W/O COMPLICATED PRINCIPAL DIAG W CC</td>
<td>1.3516</td>
<td>2.9</td>
<td>$13,516</td>
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<tr>
<td>343</td>
<td>APPENDECTOMY W/O COMPLICATED PRINCIPAL DIAG W/O CC/MCC</td>
<td>0.9547</td>
<td>1.6</td>
<td>$9,547</td>
</tr>
</tbody>
</table>

Localized or generalized peritonitis with appendicitis count as “complicated principal diagnoses”
2012 Diagnostic Criteria for Sepsis
Infection, documented or suspected & “some” of the following:

• **General variables**
  – Fever (> 38.3° C or 101° F)
  – Hypothermia (core temperature < 36° C)
  – Heart rate > 90/min or more than two SD above the normal value for age
  – Tachypnea
  – Altered mental status
  – Significant edema or positive fluid balance (> 20 mL/kg over 24 hr)
  – Hyperglycemia (plasma glucose > 140 mg/dL or 7.7 mmol/L) in the absence of diabetes

• **Inflammatory variables**
  – Leukocytosis (WBC count > 12,000/μL)
  – Leukopenia (WBC count < 4000/μL)
  – Normal WBC count with greater than 10% immature forms
  – Plasma C-reactive protein > two or SD above the normal value
  – Plasma procalcitonin > two or SD above the normal value

• **Hemodynamic variables**
  – Arterial hypotension (SBP < 90 mm Hg, MAP < 70 mm Hg, or an SBP decrease >40 mm Hg in adults or less than two SD below normal for age)

• **Organ dysfunction variables**
  – Arterial hypoxemia (Pao2/Fio2 < 300)
  – Acute oliguria (urine output < 0.5 mL/kg/hr for at least 2 hrs despite adequate fluid resuscitation)
  – Creatinine increase > 0.5 mg/dL or 44.2 μmol/L
  – Coagulation abnormalities (INR > 1.5 or aPTT > 60 s)
  – Ileus (absent bowel sounds)
  – Thrombocytopenia (platelet count < 100,000/μL)
  – Hyperbilirubinemia (plasma total bilirubin > 4 mg/dL or 70 μmol/L)
  – Tissue perfusion variables
  – Hyperlactatemia (> 1 mmol/L)
  – Decreased capillary refill or mottling

2005 Clinical Indicators of Sepsis in Pediatrics

Table 2. Definitions of systemic inflammatory response syndrome (SIRS), infection, sepsis, severe sepsis, and septic shock

**SIRS**

The presence of at least two of the following four criteria, one of which must be abnormal temperature or leukocyte count:

- Core temperature of \( >38.5^\circ C \) or \( <36^\circ C \).
- Tachycardia, defined as a mean heart rate \( >2 \) SD above normal for age in the absence of external stimulus, chronic drugs, or painful stimuli; or otherwise unexplained persistent elevation over a 0.5- to 4-hr time period OR for children <1 yr old: bradycardia, defined as a mean heart rate <10th percentile for age in the absence of external vagal stimulus, \( \beta \)-blocker drugs, or congenital heart disease; or otherwise unexplained persistent depression over a 0.5-hr time period.
- Mean respiratory rate \( >2 \) SD above normal for age or mechanical ventilation for an acute process not related to underlying neuromuscular disease or the receipt of general anesthesia.
- Leukocyte count elevated or depressed for age (not secondary to chemotherapy-induced leukopenia) or \( >10\% \) immature neutrophils.

**Infection**

A suspected or proven (by positive culture, tissue stain, or polymerase chain reaction test) infection caused by any pathogen OR a clinical syndrome associated with a high probability of infection. Evidence of infection includes positive findings on clinical exam, imaging, or laboratory tests (e.g., white blood cells in a normally sterile body fluid, perforated viscus, chest radiograph consistent with pneumonia, petechial or purpuric rash, or purpura fulminans)

**Sepsis**

SIRS in the presence of or as a result of suspected or proven infection.

**Severe sepsis**

Sepsis plus one of the following: cardiovascular organ dysfunction OR acute respiratory distress syndrome OR two or more other organ dysfunctions. Organ dysfunctions are defined in Table 4.

**Septic shock**

Sepsis and cardiovascular organ dysfunction as defined in Table 4.
# Sepsis vs. SIRS

## ICD-9-CM vs. ICD-10-CM Table of Diseases

<table>
<thead>
<tr>
<th>ICD-9-CM</th>
<th>ICD-10-CM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SIRS (systemic inflammatory response syndrome)</strong> 995.90</td>
<td>Syndrome, systemic inflammatory response</td>
</tr>
<tr>
<td>due to infectious process 995.91</td>
<td>NO CODE FOR SIRS DUE TO INFECTION (aka sepsis) or SEPSIS SYNDROME</td>
</tr>
<tr>
<td>with acute organ dysfunction 995.92</td>
<td>of non-infectious origin (without organ dysfunction) R65.10</td>
</tr>
<tr>
<td>non-infectious process 995.93</td>
<td>-- with acute organ dysfunction R65.11</td>
</tr>
<tr>
<td>with acute organ dysfunction 995.94</td>
<td></td>
</tr>
</tbody>
</table>

**PHYSICIAN MUST SAY “SEPSIS”, NOT “SIRS due to INFECTION”, TO GET “SEPSIS” IN ICD-10**
# Sepsis due to Acute Cholecystitis with Open Cholecystectomy

<table>
<thead>
<tr>
<th>MS-DRG</th>
<th>MS-DRG Title</th>
<th>Wgts</th>
<th>GM LOS</th>
<th>Bundled Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>414</td>
<td>CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W MCC</td>
<td>3.5643</td>
<td>9.0</td>
<td>$35,643</td>
</tr>
<tr>
<td>415</td>
<td>CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W CC</td>
<td>2.0728</td>
<td>6.0</td>
<td>$20,728</td>
</tr>
<tr>
<td>416</td>
<td>CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W/O CC/MCC</td>
<td>1.3354</td>
<td>3.7</td>
<td>$13,354</td>
</tr>
<tr>
<td>853</td>
<td>INFECTIOUS &amp; PARASITIC DISEASES W O.R. PROCEDURE W MCC</td>
<td>5.3431</td>
<td>11.3</td>
<td>$53,431</td>
</tr>
<tr>
<td>854</td>
<td>INFECTIOUS &amp; PARASITIC DISEASES W O.R. PROCEDURE W CC</td>
<td>2.5583</td>
<td>7.3</td>
<td>$25,583</td>
</tr>
<tr>
<td>855</td>
<td>INFECTIOUS &amp; PARASITIC DISEASES W O.R. PROCEDURE W/O CC/MCC</td>
<td>1.5331</td>
<td>3.5</td>
<td>$15,331</td>
</tr>
</tbody>
</table>

Acute cholecystitis **w/o** sepsis requiring open cholecystectomy – MS-DRG 416  
Acute cholecystitis **with** sepsis requiring open cholecystectomy – MS-DRG 854
# Asthma: Severities of Illness

<table>
<thead>
<tr>
<th>Component of Severity</th>
<th>Age (years)</th>
<th>Intermittent</th>
<th>Persistent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptoms</strong></td>
<td>All</td>
<td>&lt;= 2 day/week</td>
<td>&gt; 2 days/week but not daily</td>
</tr>
<tr>
<td></td>
<td>0-4</td>
<td>0</td>
<td>1-2x/month</td>
</tr>
<tr>
<td><strong>Night Awakenings</strong></td>
<td>&gt;=5</td>
<td>&lt;= 2x/month</td>
<td>3-4x/month</td>
</tr>
<tr>
<td><strong>SABA use for symptom control</strong></td>
<td>All</td>
<td>&lt;=2 days/week</td>
<td>&gt; 2 days/week but not daily</td>
</tr>
<tr>
<td><strong>Interference with normal activity</strong></td>
<td>All</td>
<td>None</td>
<td>Minor limitation</td>
</tr>
<tr>
<td><strong>Lung Function:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEV1 (predicted) or PEF (personal best)</td>
<td>&gt;=5</td>
<td>Normal FEV1</td>
<td>Normal FEV1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>between exacerbations</td>
<td>between exacerbations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;80%</td>
<td>&gt;80%</td>
</tr>
<tr>
<td>FEV1/FVC</td>
<td>5-11</td>
<td>&gt;85%</td>
<td>&gt;80%</td>
</tr>
<tr>
<td></td>
<td>&gt;=12</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td><strong>Risk</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exacerbations requiring oral corticosteroids</td>
<td>0-4</td>
<td>&lt;=1x/year</td>
<td>≥ 2x in 6 months or ≥ 4 wheezing episodes/year lasting &gt; 1 day AND risk factors for persistent asthma</td>
</tr>
<tr>
<td></td>
<td>5-11</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;=12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: UMichHS Asthma Quality Improvement Steering Committee
New ICD-10-CM 
Asthma Specificity

• Clinical classifications:
  – Mild Intermittent
  – Mild Persistent
  – Moderate Persistent
  – Severe Persistent

• Each of the above is further categorized as:
  – “uncomplicated”
  – With acute exacerbation
  – With status asthmaticus

Use additional code to identify:
- exposure to environmental tobacco smoke (Z77.22)
- history of tobacco use (Z87.891)
- occupational exposure to environmental tobacco smoke (Z57.31)
- tobacco dependence (F17.-) 
- tobacco use (Z72.0)

“Smoker in withdrawal”
“Nicotine withdrawal” = MS-DRG CC
Reactive Airways Disease (RAD)

- RAD codes in ICD-9-CM and ICD-10-CM to unspecified asthma
  - Usually not the intent of most pediatricians
- Avoid the term RAD!

- Use the most specific diagnosis known
  - RSV or human metapneumovirus bronchiolitis
  - Asthma if one means asthma (plus the previously mentioned specificities)
- Otherwise just document applicable symptoms
  - wheezing
  - acute bronchospasm
New Conditions
COPD Acuity

J44.0 Chronic obstructive pulmonary disease with acute lower respiratory infection
Use additional code to identify the infection

J44.1 Chronic obstructive pulmonary disease with (acute) exacerbation
Decompensated COPD
Decompensated COPD with (acute) exacerbation
Excludes2: chronic obstructive pulmonary disease [COPD] with acute bronchitis (J44.0)

J44.9 Chronic obstructive pulmonary disease, unspecified
Chronic obstructive airway disease NOS
Chronic obstructive lung disease NOS

Use additional code to identify:
- exposure to environmental tobacco smoke (Z77.22)
- history of tobacco use (Z87.891)
- occupational exposure to environmental tobacco smoke (Z57.31)
- tobacco dependence (F17-)
- tobacco use (Z72.0)

Nicotine dependence, with withdrawal, is a CC in MS-DRGs
Acute Respiratory Failure
Now with hypercapnia or hypoxemia

Physicians must state that acute or chronic respiratory failure exists AND document hypoxia or hypercapnia exists to gain the additional specificity. Coders may not interpret abnormal blood gases or clinical circumstances.

Acute respiratory failure is inferred if the patient is in a life-threatening circumstances

Chronic respiratory failure is supported if on chronic oxygen or with chronic hypercapnia

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>J96.0</td>
<td>Acute respiratory failure</td>
</tr>
<tr>
<td></td>
<td>J96.00  Acute respiratory failure, unspecified</td>
</tr>
<tr>
<td></td>
<td>J96.01  with hypoxia</td>
</tr>
<tr>
<td></td>
<td>J96.02  with hypercapnia</td>
</tr>
<tr>
<td>J96.1</td>
<td>Chronic respiratory failure</td>
</tr>
<tr>
<td></td>
<td>J96.10  Chronic respiratory failure, unspecified</td>
</tr>
<tr>
<td></td>
<td>J96.11  with hypoxia</td>
</tr>
<tr>
<td></td>
<td>J96.12  with hypercapnia</td>
</tr>
<tr>
<td>J96.2</td>
<td>Acute and chronic respiratory failure</td>
</tr>
<tr>
<td></td>
<td>J96.20  Acute and chronic respiratory failure</td>
</tr>
<tr>
<td></td>
<td>J96.21  unspecified whether with hypoxia or</td>
</tr>
<tr>
<td></td>
<td>J96.22  hypercapnia</td>
</tr>
<tr>
<td>J96.9</td>
<td>Respiratory failure, unspecified</td>
</tr>
<tr>
<td></td>
<td>J96.90  unspecified, unspecified whether</td>
</tr>
<tr>
<td></td>
<td>J96.91  with hypoxia</td>
</tr>
<tr>
<td></td>
<td>J96.92  with hypercapnia</td>
</tr>
</tbody>
</table>
New Categories for Postprocedural Disorders

• Crucial to determine if any of these are “integral to” or “inherent to the normal recovery” of surgical procedures as to properly classify these conditions as “complications”
Postop “Resp Failure” After MVR
Is it Unexpected or Out of the Routine?

On 5/3/2012, the patient underwent Redo MVR. Patient was extubated within 24 hours postoperatively. Patient has been placed on coumadin for his mitral valve prosthesis. Patient is to remain on coumadin for 6 weeks with an INR goal of 2.0-3.0. Patient has been instructed to have his INR checked 2x a week, and follow up with his cardiologist to determine his coumadin dose.

Patient has had an otherwise uneventful postoperative course and is stable for discharge home.
# AHRQ PSI 11
Postoperative Respiratory Failure

## Acute respiratory failure diagnosis codes

<table>
<thead>
<tr>
<th>ICD-9-CM</th>
<th>Description</th>
<th>ICD-10-CM</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>518.51</td>
<td>Acute respiratory failure following trauma and surgery</td>
<td>J95.821</td>
<td>Acute postprocedural respiratory failure</td>
</tr>
<tr>
<td>518.53</td>
<td>Acute and chronic respiratory failure following trauma and surgery</td>
<td>J95.822</td>
<td>Acute and chronic postprocedural respiratory failure</td>
</tr>
</tbody>
</table>

## Mechanical ventilation for 96 consecutive hours or more procedure codes

<table>
<thead>
<tr>
<th>ICD-9-CM</th>
<th>Description</th>
<th>ICD-10-PCS</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>96.72</td>
<td>Continuous invasive mechanical ventilation for 96 consecutive hours or more</td>
<td>5A1955Z</td>
<td>Respiratory Ventilation, Greater than 96 Consecutive Hours</td>
</tr>
</tbody>
</table>

## Mechanical ventilation for less than 96 consecutive hours (or undetermined) procedure codes

<table>
<thead>
<tr>
<th>ICD-9-CM</th>
<th>Description</th>
<th>ICD-10-PCS</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>96.70</td>
<td>Continuous invasive mechanical ventilation of unspecified duration</td>
<td>None of the ICD-10-CM codes apply to this concept. ICD-10-CM does not have information on the specific duration whereas the original ICD-9-CM code is expressly non-specific.</td>
<td></td>
</tr>
<tr>
<td>96.71</td>
<td>Continuous invasive mechanical ventilation for less than 96 consecutive hours</td>
<td>5A1935Z</td>
<td>Respiratory Ventilation, Less than 24 Consecutive Hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5A1945Z</td>
<td>Respiratory Ventilation, 24-96 Consecutive Hours</td>
</tr>
</tbody>
</table>
Differentiation Between Post-op Respiratory Insufficiency and Failure

- Difficult differentiation from respiratory failure
  - Postoperative pulmonary insufficiency has, in the past, meant “conditions that only require supplemental oxygen or intensified observation”
  - Should have documentation of hypoxemia or a severe lung disease or other convincing reason for additional observation
- When hypoxemic or hypercapnic respiratory failure is present, please document it and its underlying causes (e.g. ARDS, exacerbations of COPD or status asthmaticus)
Intraoperative vs. Postoperative Events

J95.4 Chemical pneumonitis due to anesthesia
Mendelson’s syndrome
Postprocedural aspiration pneumonia

Use additional code for adverse effect, if applicable, to identify drug (T41.- with fifth or sixth character 5)

Excludes1: aspiration pneumonitis due to anesthesia complicating labor and delivery (O74.0)
          aspiration pneumonitis due to anesthesia complicating pregnancy (O29)
          aspiration pneumonitis due to anesthesia complicating the puerperium (O89.01)

J95.5 Postprocedural subglottic stenosis

J95.6 Intraoperative hemorrhage and hematoma of a respiratory system organ or structure complicating a procedure

Excludes1: intraoperative hemorrhage and hematoma of a respiratory system organ or structure due to accidental puncture and laceration during procedure (J95.7-)

J95.61 Intraoperative hemorrhage and hematoma of a respiratory system organ or structure complicating a respiratory system procedure

J95.62 Intraoperative hemorrhage and hematoma of a respiratory system organ or structure complicating other procedure

If clinically significant, a complication
If documented as not clinically significant, not a complication
• Paroxysmal - If the recurrent AF terminates spontaneously
• Persistent – when AF is sustained beyond 7 days.  
  – Termination with pharmacological therapy or direct-current cardioversion does not change the designation.
• Permanent (chronic) – NSR cannot be sustained after cardioversion of AF or when the patient and physician have decided to allow AF to continue without further efforts to restore sinus rhythm.
I25.1 Atherosclerotic heart disease of native coronary artery
Atherosclerotic cardiovascular disease
Coronary (artery) atheroma
Coronary (artery) atherosclerosis
Coronary (artery) disease
Coronary (artery) sclerosis

Use additional code, if applicable, to identify:
coronary atherosclerosis due to calcified coronary lesion (I25.84)
coronary atherosclerosis due to lipid rich plaque (I25.83)

Excludes2: atheroembolism (I75.-)
atherosclerosis of coronary artery bypass graft(s) and transplanted heart (I25.7-)

I25.10 Atherosclerotic heart disease of native coronary artery without angina pectoris
Atherosclerotic heart disease NOS

I25.11 Atherosclerotic heart disease of native coronary artery with angina pectoris

I25.110 Atherosclerotic heart disease of native coronary artery with unstable angina pectoris
Excludes1: unstable angina without atherosclerotic heart disease (I20.0)

I25.111 Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm
Excludes1: angina pectoris with documented spasm without atherosclerotic heart disease (I20.1)

I25.118 Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris
Excludes1: other forms of angina pectoris without atherosclerotic heart disease (I20.8)

I25.119 Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris
Atherosclerotic heart disease with angina NOS
Atherosclerotic heart disease with ischemic chest pain
## Coronary Artery Disease

### Stable vs. Unstable Angina/NSTEMI

<table>
<thead>
<tr>
<th>ICD-9-CM</th>
<th>Title</th>
<th>HCC Hier</th>
<th>Title</th>
<th>RW</th>
</tr>
</thead>
<tbody>
<tr>
<td>41081</td>
<td>Acute myocardial infarction of other specified sites, initial episode of care</td>
<td></td>
<td>Acute Myocardial Infarction</td>
<td>0.359</td>
</tr>
<tr>
<td>4111</td>
<td>Intermediate Coronary Syndrome</td>
<td></td>
<td>Unstable Angina and Other Acute Ischemic Heart Disease</td>
<td>0.284</td>
</tr>
<tr>
<td>412</td>
<td>Old myocardial infarction</td>
<td></td>
<td>Angina Pectoris/Old Myocardial Infarction</td>
<td>0.244</td>
</tr>
<tr>
<td>4130</td>
<td>Angina decubitus</td>
<td></td>
<td>Angina Pectoris/Old Myocardial Infarction</td>
<td>0.244</td>
</tr>
<tr>
<td>4131</td>
<td>Prinzmetal angina</td>
<td></td>
<td>Angina Pectoris/Old Myocardial Infarction</td>
<td>0.244</td>
</tr>
<tr>
<td>4139</td>
<td>Other and unspecified angina pectoris</td>
<td></td>
<td>Angina Pectoris/Old Myocardial Infarction</td>
<td>0.244</td>
</tr>
<tr>
<td>41400</td>
<td>Coronary atherosclerosis of unspecified type of vessel, native or graft</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For IPA or HMO billing, a physician must differentiate:

- CAD w/o angina
- CAD with stable angina or old MI
- Accelerated or unstable angina
- New acute MI (abrupt troponin elevations above 99th URL in setting of ischemic symptoms, ECG, or X-ray findings)
Myocardial Necrosis vs. Myocardial Infarction
Third Universal Definition of MI

Kristian Thygesen, Joseph S. Alpert, Allan S. Jaffe, Maarten L. Simoons, Bernard R. Chaitman and Harvey D. White

Definition of myocardial infarction

The term acute myocardial infarction (MI) should be used when there is evidence of myocardial necrosis in a clinical setting consistent with acute myocardial ischaemia. Under these conditions any one of the following criteria meets the diagnosis for MI:

- Detection of a rise and/or fall of cardiac biomarker values [preferably cardiac troponin (cTn)] with at least one value above the 99th percentile upper reference limit (URL) and with at least one of the following:
  - Symptoms of ischaemia.
  - New or presumed new significant ST-segment–T wave (ST–T) changes or new left bundle branch block (LBBB).
  - Development of pathological Q waves in the ECG.
  - Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality.
  - Identification of an intracoronary thrombus by angiography or autopsy.

Published online on August 24, 2012
Localization of MI

**Emergency Physician**

- **Nature**
  - ST elevation (default) or
  - Non-ST elevation (not default)
- **Regional (by ECG)**
  - Anterior
  - Posterior
  - Inferior
  - Lateral

  "acute inferior ST elevation MI"

**Cardiologist**

- **Vessel Nature**
  - Native artery
  - Graft
- **Actual vessel involved**

![Cardiac Image]
I21.0  ST elevation (STEMI) myocardial infarction of anterior wall
   I21.01  ST elevation (STEMI) myocardial infarction involving left main coronary artery
   I21.02  ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery
   I21.09  ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall
           Acute transmural myocardial infarction of anterior wall
           Anteropical transmural (Q wave) infarction (acute)
           Anterolateral transmural (Q wave) infarction (acute)
           Anteroseptal transmural (Q wave) infarction (acute)
           Transmural (Q wave) infarction (acute) (of) anterior (wall) NOS

I21.1  ST elevation (STEMI) myocardial infarction of inferior wall
   I21.11  ST elevation (STEMI) myocardial infarction involving right coronary artery
           Inferoposterior transmural (Q wave) infarction (acute)
   I21.19  ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall
           Acute transmural myocardial infarction of inferior wall
           Inferolateral transmural (Q wave) infarction (acute)
           Transmural (Q wave) infarction (acute) (of) diaphragmatic wall
           Transmural (Q wave) infarction (acute) (of) inferior (wall) NOS
           Excludes2: ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery
                    (I21.21)

I21.2  ST elevation (STEMI) myocardial infarction of other sites
   I21.21  ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery
           ST elevation (STEMI) myocardial infarction involving oblique marginal coronary artery
   I21.29  ST elevation (STEMI) myocardial infarction involving other sites
           Acute transmural myocardial infarction of other sites
           Apical-lateral transmural (Q wave) infarction (acute)
           Basal-lateral transmural (Q wave) infarction (acute)
           High lateral transmural (Q wave) infarction (acute)
           Lateral (wall) NOS transmural (Q wave) infarction (acute)
           Posterior (true) transmural (Q wave) infarction (acute)
While clinicians differentiate MI as “Type 1”, “Type 2”, and the like, ICD-10 classifies MI as STEMI or non-STEMI.
Demand MI

- If the terms “NSTEMI”, “subendocardial”, or “non-Q-wave” MI is omitted, ICD-10 assumes the MI to be a STEMI
MI: “New” vs. “Subsequent”

• Myocardial infarction, acute
  – Specified as acute or with a stated duration of 4 weeks (28 days) or less from onset
  – Code acute MIs as acute for 4 weeks

• Subsequent MI
  – Acute MI occurring within four weeks (28 days) of a previous acute MI

• Old MI
  – Any patient with a myocardial infarction over 28 days from the current encounter
Heart Failure
Clinical Pearls

• Differentiate cardiogenic vs. noncardiogenic pulmonary or peripheral edema states
  – Not all of these are cardiogenic in nature (e.g. fluid overload due to ESRD noncompliance)
  • Impacts heart failure quality measures
• If the EF is known in a patient with true HF
  – if low (e.g. <40%), please state “systolic”
  – If normal or high, please state “diastolic”
• If the troponin is above the 99th URL, comment specifically on any indicators suggestive of acute myocardial infarction
• Capture all consequences, particularly acute respiratory failure or acute kidney injury (presumed rise of the serum creatinine of over 50% within the previous 7 days), or shock
Role of Troponins in Predicting Acute CHF Mortality

What diagnosis should be assigned with “troponin bumps” in CHF? ICD-10 Sequencing matters - Should the admission be in the HF or the MI bucket?

Labs must report 99th percentile Upper Reference Limit
CHF - 2012
Actual vs. Expected

Actual vs. Expected Mortality Rate
MS-DRG Group: CHF

[CMS MedPAR, 2011 Q4 - 2012 Q3]

© 2013 Compassion Medical Analytics, Inc.
Prognostic Value of an Elevated Lactate Level

FIGURE 2. Elevated lactate levels (>4 mmol/L) in different diseases and its association with in-hospital mortality. The mortality in post-cardiac arrest shown here is calculated based on data from Cocchi et al and not specified in the original article. ED = emergency department.
# Elevated Lactate

**TABLE 3. Clinical Checklist: Evaluation of Elevated Lactate Levels**

- Evaluate for tissue hypoperfusion and restore adequate perfusion
  - Shock (distributive, cardiogenic, hypovolemic, and obstructive), post-cardiac arrest syndrome
  - Tissue hypoperfusion should be initially assumed/considered until proved otherwise
  - Treatment is variable based on shock etiology

- Evaluate for local tissue ischemia and treat accordingly
  - Mesenteric ischemia, limb ischemia, burns, trauma, compartment syndrome, necrotizing soft-tissue infections
  - Consider early surgical consultation as appropriate

- Stop/reverse potential offending agents
  - Pharmacological agents: linezolid, nucleoside reverse transcriptase inhibitors, metformin, valproate, theophylline, epinephrine, propofol, isoniazid, and salicylates
  - Drugs and toxins: cocaine, alcohols, carbon monoxide, and cyanide poisoning
  - Consider a toxicology consultation or poison control involvement

- Cessation of exposure and removal of agent (ie, dialysis) when appropriate (Table 2)

- Consider thiamine deficiency and treat if suspected
  - Patient with malnutrition of any cause, often (but not exclusively) alcoholics
  - Intravenous thiamine should be given

- Consider current or recent anaerobic muscle activity as etiology
  - Heavy exercise, seizures, excessive work of breathing
  - Consider other etiologies, especially if rapid clearance is not seen when the inciting problem is treated (ie, should rapidly clear after cessation of seizure activity)

- Consider other metabolic derangements
  - Diabetic ketoacidosis
  - Mitochondrial disease
  - Liver dysfunction

Source: Mayo Clinic Proceedings, 10/2013
Shock

- Shock is a MCC if an underlying cause is specified
  - Unspecified shock is only a CC
  - While hemorrhagic shock coded to hypovolemic shock in ICD-9-CM, the same is not true in ICD-10

- Interpretations of elevated lactate levels is crucial
  - Documentation of poor capillary refill or other physical findings compatible with shock in light of reasonable clinical circumstances

Clinical Criteria of Acute Kidney Injury

• Any of the following:
  – Increase in SCr by $> 0.3$ mg/dl ($> 26.5$ mcmol/L) within in 48 hours; or
  – Increase in SCr by $> 1.5$ times baseline, which is known or presumed to have occurred within the prior 7 days
  – Urine volume $< 0.5$ ml/kg/h for 6 hours

• Note all underlying pre-renal, renal, and post-renal causes

Published 2012
• “TIA” – brief cerebral, spinal, or retinal ischemia without acute infarction
  – No time limit (e.g., 1 hour or 24 hour) in definition, given that the MRI can be positive within 24 hours
  – Cerebral embolus or thrombus W/O INFARCTION are usual underlying causes
Table 3. Frequency of DWI Abnormality in Patients With Transient Neurological Episodes of Different Durations: Pooled Data From 10 MRI Studies Enrolling 818 Patients

<table>
<thead>
<tr>
<th>Duration of Symptoms, h</th>
<th>DWI Hyperintensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–1</td>
<td>33.6</td>
</tr>
<tr>
<td>1–2</td>
<td>29.5</td>
</tr>
<tr>
<td>2–3</td>
<td>39.5</td>
</tr>
<tr>
<td>3–6</td>
<td>30.0</td>
</tr>
<tr>
<td>6–12</td>
<td>51.1</td>
</tr>
<tr>
<td>12–18</td>
<td>50.0</td>
</tr>
<tr>
<td>18–24</td>
<td>49.5</td>
</tr>
</tbody>
</table>
Stroke
2013 Clinical Indicators

• CNS infarction is brain, spinal cord, or retinal cell death attributable to ischemia, based on:
  – Pathological, imaging, or other objective evidence of cerebral, spinal cord, or retinal focal ischemic injury in a defined vascular distribution; or
  – Clinical evidence of cerebral, spinal cord, or retinal focal ischemic injury based on symptoms persisting ≥24 hours or until death, and other etiologies excluded.

• Silent CNS infarction: Imaging or neuropathological evidence of CNS infarction, without a history of acute neurological dysfunction attributable to the lesion.

http://stroke.ahajournals.org/content/44/7/2064.full
Stroke
Differentiation from TIA

- Focal Arterial Ischemia
  - Symptoms
    - YES
    - NO
      - <24 h
      - >24 h
  - NO
    - Pathological/Imaging Evidence of infarction
      - YES
      - NO (or not done)

- Silent CNS Infarction (CNS Infarction)
- Ischemic Stroke (CNS Infarction)
- TIA
- Ischemic Stroke (CNS Infarction)
ICD-10 Enhances Specificity
Intracerebral Hemorrhage

ICD-9-CM

• 431 Intracerebral hemorrhage
  • Hemorrhage (of):
    – basilar
    – bulbar
    – cerebellar
    – cerebral
    – cerebromeningeal
    – cortical
    – internal capsule
    – intrapontine
    – pontine
    – subcortical
    – ventricular
  • Rupture of blood vessel in brain

Expansion from one code to 9 codes

ICD-10-CM

• I61 Nontraumatic intracerebral hemorrhage
  • I61.0 Nontraumatic intracerebral hemorrhage in hemisphere, subcortical
    » Deep intracerebral hemorrhage (nontraumatic)
  • I61.1 Nontraumatic intracerebral hemorrhage in hemisphere, cortical
    » Cerebral lobe hemorrhage (nontraumatic)
    » Superficial intracerebral hemorrhage (nontraumatic)
  • I61.2 Nontraumatic intracerebral hemorrhage in hemisphere, unspecified
  • I61.3 Nontraumatic intracerebral hemorrhage in brain stem
  • I61.4 Nontraumatic intracerebral hemorrhage in cerebellum
  • I61.5 Nontraumatic intracerebral hemorrhage, intraventricular
  • I61.6 Nontraumatic intracerebral hemorrhage, multiple localized
  • I61.8 Other nontraumatic intracerebral hemorrhage
  • I61.9 Nontraumatic intracerebral hemorrhage, unspecified
Stroke Specificity in ICD-10

• Vessel involvement
  – Carotid – right or left
  – Cerebral – right of left
    • Anterior
    • Middle
    • Posterior
  – Vertebral – right of left
  – Basilar

• Mechanism
  – Embolus
  – Thrombus

• Consequences
  – Weakness ≠ monoparesis or hemiparesis
    • Right of left
    • Dominant or non-dominant side
  – Aphasias
  – Dysarthrias
  – Dysphagias
  – Dementia
Stroke or Hematoma
Consequences

10% of anterior circulation strokes will have large mass effects (malignant infarctions)

• Cerebral edema
  – NIHSS scores > 15 in right brain & > 20 in left brain within 6 hrs. of Sx
  – Predicted by hypodensity of the affected territory, loss of gray/white junction, or a hyperdense MCA sign on CT less than 6 hours from stroke onset
  – Demonstrated by mass effect with compression of the lateral ventricle and midline shift and reduction of level of consciousness after 24 hours

• Cerebral herniation

Cerebral Edema, Cerebral Herniation

- Decadron treats the edema, not the malignancy
- Note any cerebral herniation or compression
  - Not “mid-line shift”
New acuity requirements

- Acute, subacute, vs. chronic nontraumatic subdural hematomas

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I6200</td>
<td>Nontraumatic subdural hemorrhage, unspecified</td>
</tr>
<tr>
<td>I6201</td>
<td>Nontraumatic <strong>acute</strong> subdural hemorrhage</td>
</tr>
<tr>
<td>I6202</td>
<td>Nontraumatic <strong>subacute</strong> subdural hemorrhage</td>
</tr>
<tr>
<td>I6203</td>
<td>Nontraumatic <strong>chronic</strong> subdural hemorrhage</td>
</tr>
</tbody>
</table>

- Physicians must define and specify these in their documentation
  - Coders cannot code from inpatient X-ray reports
Case Study

Does the patient have an acute, subacute, or chronic subdural hematoma?

Is there a subfalcine herniation?

Operative Report

PREOPERATIVE DIAGNOSES  Large mixed blood product age, right subdural hematoma, and left hemiplegia

POSTOPERATIVE DIAGNOSES  Large mixed blood product age, right subdural hematoma, and left hemiplegia

PROCEDURES  
1. Right-sided craniotomy for evacuation of subdural hematoma
2. Complex reconstruction of cranial bone flap with Lorenz plating system, greater than 5 cm
ICD-10-CM: Laterality, Localization

<table>
<thead>
<tr>
<th>ICD-10 Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3430</td>
<td>Malignant neoplasm of lower lobe, unspecified bronchus or lung</td>
</tr>
<tr>
<td>C3431</td>
<td>Malignant neoplasm of lower lobe, right bronchus or lung</td>
</tr>
<tr>
<td>C3432</td>
<td>Malignant neoplasm of lower lobe, left bronchus or lung</td>
</tr>
<tr>
<td>C3480</td>
<td>Malignant neoplasm of overlapping sites of unspecified bronchus and lung</td>
</tr>
<tr>
<td>C3482</td>
<td>Malignant neoplasm of overlapping sites of left bronchus and lung</td>
</tr>
<tr>
<td>C3490</td>
<td>Malignant neoplasm of unspecified part of unspecified bronchus or lung</td>
</tr>
<tr>
<td>C3491</td>
<td>Malignant neoplasm of unspecified part of right bronchus or lung</td>
</tr>
<tr>
<td>C3492</td>
<td>Malignant neoplasm of unspecified part of left bronchus or lung</td>
</tr>
</tbody>
</table>

- Note that right and left individual and “overlapping” lobes now have codes
  - While there are codes for non-specific documentation, thus should be used only if more specific information is not known
Pressure Ulcer Location and Staging
Same as in ICD-9-CM

- Requires documentation of location and pressure sore stage
  - Stage 1 = non-blanchable erythema

- Crucial to note if present on admission (time of IP order)
  - If a hospital acquired condition (HAC), the additional costs of this diagnosis will not be reimbursed

<table>
<thead>
<tr>
<th>ICD-10 Code</th>
<th>Description</th>
<th>CMS MCC/CC</th>
<th>CMS HAC</th>
<th>APR-DRG SOI</th>
<th>APR-DRG ROM</th>
</tr>
</thead>
<tbody>
<tr>
<td>L89521</td>
<td>Pressure ulcer of left ankle, stage 1</td>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>L89522</td>
<td>Pressure ulcer of left ankle, stage 2</td>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>L89523</td>
<td>Pressure ulcer of left ankle, stage 3</td>
<td>CMS MCC</td>
<td>HAC</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>L89524</td>
<td>Pressure ulcer of left ankle, stage 4</td>
<td>CMS MCC</td>
<td>HAC</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>L89529</td>
<td>Pressure ulcer of left ankle, unspecified stage</td>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
New in ICD-10-CM
Chronic Non-Pressure Ulcer Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L97111</td>
<td>Non-pressure chronic ulcer of right thigh limited to breakdown of skin</td>
</tr>
<tr>
<td>L97112</td>
<td>Non-pressure chronic ulcer of right thigh with fat layer exposed</td>
</tr>
<tr>
<td>L97113</td>
<td>Non-pressure chronic ulcer of right thigh with necrosis of muscle</td>
</tr>
<tr>
<td>L97114</td>
<td>Non-pressure chronic ulcer of right thigh with necrosis of bone</td>
</tr>
<tr>
<td>L97119</td>
<td>Non-pressure chronic ulcer of right thigh with unspecified severity</td>
</tr>
</tbody>
</table>

- Requires dynamic staging much like pressure ulcers
  - Different methodology
  - Note if present on admission
ICD-10-CM

Expanded Diabetes Codes

<table>
<thead>
<tr>
<th>ICD-10 Code</th>
<th>Description</th>
<th>MS-DRG CC/MCC</th>
<th>HAC</th>
<th>APR-DRG SOI</th>
<th>APR-DRG ROM</th>
</tr>
</thead>
<tbody>
<tr>
<td>E11641</td>
<td>Type 2 diabetes mellitus with hypoglycemia with coma</td>
<td>MCC</td>
<td>4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>E11649</td>
<td>Type 2 diabetes mellitus with hypoglycemia without coma</td>
<td></td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICD-10 Code</th>
<th>Description</th>
<th>MS-DRG CC/MCC</th>
<th>HAC</th>
<th>APR-DRG SOI</th>
<th>APR-DRG ROM</th>
</tr>
</thead>
<tbody>
<tr>
<td>E11621</td>
<td>Type 2 diabetes mellitus with foot ulcer</td>
<td></td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>E11622</td>
<td>Type 2 diabetes mellitus with other skin ulcer</td>
<td></td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**Particularly important with skin ulcers**

<table>
<thead>
<tr>
<th>ICD-10 Code</th>
<th>Description</th>
<th>MS-DRG CC/MCC</th>
<th>HAC</th>
<th>APR-DRG SOI</th>
<th>APR-DRG ROM</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1100</td>
<td>Type 2 diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC)</td>
<td>MCC</td>
<td>HAC</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>E1101</td>
<td>Type 2 diabetes mellitus with hyperosmolarity with coma</td>
<td>MCC</td>
<td>HAC</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

ICD-10-CM assumes that a patient with “poorly controlled” or “out of control” diabetes has hyperglycemia unless stipulated otherwise.
# Ulcers

Please specify (circle and initial) the nature of the described ulcer(s):

<table>
<thead>
<tr>
<th>Site</th>
<th>Laterality</th>
<th>Nature or Cause</th>
<th>Depth (Non-Pressure Stage (Pressure))</th>
<th>Present on Admission?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Right</td>
<td>Pressure</td>
<td>Non-Pressure</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Left</td>
<td>Diabetes w/neuropathy w/vasculopathy</td>
<td>Skin breakdown</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Bilateral</td>
<td>Infection (Specify)</td>
<td>Exposed Fat</td>
<td>Unknown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other (Specify)</td>
<td>Muscle necrosis</td>
<td>Cannot be Determined</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bone necrosis</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Unstagable</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cannot Be Determined</td>
<td></td>
</tr>
</tbody>
</table>

• Unless this specificity is in the chart, a query will likely be rendered
Debridement
Non-Excisional vs. Excisional vs. FB Removal

• Debridement
  – Tissue removal with wet-to-dry = extraction
  – Tissue removal with scalpel or scissors = excision
  – Foreign body removal = extirpation

Excisional debridement is double the weight of the other non-excisional debridement

If excision is not documented, coder will query and, if no answer, will assume it is non-excisional

• Note depth of excision
  – Skin
  – Subcutaneous Tissue
  – Fascia
  – Muscle
  – Bone
Please clarify the type, site and depth of the debridement associated with this documentation. In responding to this query please exercise your independent judgment. The fact that a query is asked, does not imply that any particular answer is desired or expected.

___ EXTRACTION (Non-excisional) – Pulling or stripping out or off all or a portion of a body part by the use of force (e.g. whirlpool or VersaJet)

___ EXCISIONAL – Cutting out or off, without replacement, a portion of a body part using a sharp instrument, such as scissors, cautery tip, scalpel, wire, or bone saw

___ EXTIRPATION – Taking or cutting out solid matter (e.g. foreign body) from a body part

___ IRRIGATION ONLY – No tissue was removed

___ OTHER - ___________________  _____ - Cannot be Clinically Determined

Please provide the greatest depth of debridement and/or the type of tissue operated on:

___ SKIN
___ SUBCUTANEOUS TISSUE
___ FASCIA
___ MUSCLE
___ TENDON
___ OTHER

___ UNABLE TO CLINICALLY DETERMINE

PHYSICIAN’S SIGNATURE: ___________________  DATE: ______________

FAX BACK TO: ___________________
Episodes of Care
Trauma and Medication-Related Events

• **Initial encounter**: receiving active treatment for an injury or illness.
  – Fx care: Emergency physician, orthopedist, radiologist, etc.
  – Empyema: EP, hospitalist, radiologist, internist, etc.

• **Subsequent encounter**: care during a period of healing or recovery.
  – Fx care: Cast change, suture removal, etc.
  – Empyema: office f/u

• **Sequela**: After the healing process is complete.
  – Fx care: Arthritis remotely after trauma, etc.
  – Empyema: Restrictive lung disease, due to scarring
Trauma - Fractures
LEO C. FAUR

- **Location and Laterality**
  - Proximal, mid, or distal shaft
  - Laterality (right vs. left)

- **Episode of care (NEW in ICD-10)**
  - “initial encounter”
    - Immediate treatment for new injury
  - “subsequent encounter”
    - e.g. cast change, f/u visit
    - During healing process
  - “sequela”
    - Long-standing consequence
    - After healing is complete

- **Open vs. closed**

- **Classifications, such as**
  - Salter classifications
  - Guistilo-Anderson classification for open fractures (NEW in ICD-10)

- **Fracture patterns, such as**
  - greenstick, oblique, spiral, comminuted

- **Alignment**
  - Displaced or nondisplaced
  - Angled, distracted, over-riding

- **Underlying bone diseases**
  - Healthy bone
  - Stress or Fatigue
  - “Fragility fracture” (NEW in ICD-10)
    - or pathological bone, such as those with osteoporosis, malignancies, Paget’s

- **Results (NEW in ICD-10)**
  - Routine or delayed healing
  - Union or nonunion

Source: AAOS
## Fracture – Office Encounter Form

<table>
<thead>
<tr>
<th>Nature of Fracture</th>
<th>Location and Other Specifics (e.g. open)</th>
</tr>
</thead>
<tbody>
<tr>
<td>______ Normal Bone – traumatic assumed</td>
<td>GA Score (if applicable) ____________</td>
</tr>
<tr>
<td>______ Stress   ______ Fatigue</td>
<td></td>
</tr>
<tr>
<td>______ Pathological or Fragility Fracture</td>
<td></td>
</tr>
<tr>
<td>A pathological or fragility fracture is defined as a fracture sustained due to trauma no more severe than a fall from standing height, with the break occurring under circumstances that would not cause a fracture in a normal, healthy bone</td>
<td></td>
</tr>
<tr>
<td>______ Other</td>
<td></td>
</tr>
<tr>
<td>______ Cannot be determined – traumatic assumed</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Underlying Cause or Relationship</th>
<th>Encounter</th>
</tr>
</thead>
<tbody>
<tr>
<td>______ Age</td>
<td>____ Initial encounter</td>
</tr>
<tr>
<td>______ Drug - ____________________________</td>
<td>____ Subsequent encounter with routine healing</td>
</tr>
<tr>
<td>______ Malignancy:</td>
<td>____ Subsequent encounter with delayed healing</td>
</tr>
<tr>
<td>Type ____________________________</td>
<td>____ Subsequent encounter with nonunion</td>
</tr>
<tr>
<td>______ Osteoporosis      ______ Osteomalacia</td>
<td>____ Subsequent encounter with malunion</td>
</tr>
<tr>
<td>______ Following insertion orthopedic implant</td>
<td>____ Sequalae</td>
</tr>
<tr>
<td>Location:</td>
<td></td>
</tr>
<tr>
<td>______ Other</td>
<td></td>
</tr>
<tr>
<td>______ Cannot be determined</td>
<td></td>
</tr>
</tbody>
</table>
Encounter Information
Medication-related events

T36  Poisoning by, adverse effect of and underdosing of systemic antibiotics

Excludes1: antineoplastic antibiotics (T45.1-)
locally applied antibiotic NEC (T49.0)
topically used antibiotic for ear, nose and throat (T49.6)
topically used antibiotic for eye (T49.5)

The appropriate 7th character is to be added to each code from category T36
A - initial encounter
D - subsequent encounter
S - sequela

T36.0  Poisoning by, adverse effect of and underdosing of penicillins

T36.0X  Poisoning by, adverse effect of and underdosing of penicillins

T36.0X1  Poisoning by penicillins, accidental (unintentional)
          Poisoning by penicillins NOS

T36.0X2  Poisoning by penicillins, intentional self-harm

T36.0X3  Poisoning by penicillins, assault

T36.0X4  Poisoning by penicillins, undetermined

T36.0X5  Adverse effect of penicillins

T36.0X6  Underdosing of penicillins
ICD-10 Changes
Poisonings

• Emphasize circumstances:
  – If taken as prescribed
  – Accidental
    • Includes drug interactions with alcohol or other non-prescribed drugs (e.g. cocaine, marijuana)
  – Intentional – self harm
  – Intentional – assault from another individual

• Emphasize all consequences
  – Toxic encephalopathy
  – Acute respiratory failure
  – Unconsciousness
    • Codes to coma
  – Many others
ICD-10 Changes
Medication Underdosing

• If a patient’s condition is due to underdosing of prescribed medications
  – Seizures due to subtherapeutic medication level
  – Hypothyroidism due to inadequate Synthroid compliance
  – Hyperglycemia in diabetic due to inadequate insulin administration

• Further divided into:
  – Intentional, such as due to financial hardship or willful noncompliance
  – Unintentional, such as due to age-related debility or other defined reasons

While these codes currently do not impact reimbursement or profiling, they can play a role if patient responsibility becomes a factor in provider quality assessment.
# Underdosing

<table>
<thead>
<tr>
<th>ICD-10 Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T383X6A</td>
<td>Underdosing of insulin and oral hypoglycemic [antidiabetic] drugs, initial encounter</td>
</tr>
<tr>
<td>T383X6D</td>
<td>Underdosing of insulin and oral hypoglycemic [antidiabetic] drugs, subsequent encounter</td>
</tr>
<tr>
<td>T383X6S</td>
<td>Underdosing of insulin and oral hypoglycemic [antidiabetic] drugs, sequela</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICD-10 Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T384X6A</td>
<td>Underdosing of oral contraceptives, initial encounter</td>
</tr>
<tr>
<td>T384X6D</td>
<td>Underdosing of oral contraceptives, subsequent encounter</td>
</tr>
<tr>
<td>T384X6S</td>
<td>Underdosing of oral contraceptives, sequela</td>
</tr>
</tbody>
</table>
ICD-9-CM
Complications of Pregnancy

<table>
<thead>
<tr>
<th>COMPLICATIONS MAINLY RELATED TO PREGNANCY (640-649)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Includes: the listed conditions even if they arose or were present during labor, delivery, or the puerperium</td>
</tr>
<tr>
<td>The following fifth-digit subclassification is for use with categories 640-649 to denote the current episode of care:</td>
</tr>
<tr>
<td>0 unspecified as to episode of care or not applicable</td>
</tr>
<tr>
<td>1 delivered, with or without mention of antepartum condition</td>
</tr>
<tr>
<td>Antepartum condition with delivery</td>
</tr>
<tr>
<td>Delivery NOS (with mention of antepartum complication during current episode of care)</td>
</tr>
<tr>
<td>Intrapartum</td>
</tr>
<tr>
<td>Obstetric condition (with mention of antepartum complication during current episode of care)</td>
</tr>
<tr>
<td>Pregnancy, delivered (with mention of antepartum complication during current episode of care)</td>
</tr>
<tr>
<td>2 delivered, with mention of postpartum complication</td>
</tr>
<tr>
<td>Delivery with mention of puerperal complication during current episode of care</td>
</tr>
<tr>
<td>3 antepartum condition or complication</td>
</tr>
<tr>
<td>Antepartum obstetric condition, not delivered during the current episode of care</td>
</tr>
<tr>
<td>4 postpartum condition or complication</td>
</tr>
<tr>
<td>Postpartum or puerperal obstetric condition or complication following delivery that occurred:</td>
</tr>
<tr>
<td>during previous episode of care</td>
</tr>
<tr>
<td>outside hospital, with subsequent admission for observation or care</td>
</tr>
</tbody>
</table>
ICD-10-CM Complications of Pregnancy

• ICD-10-CM obstetrical codes are reported by trimesters based on the gestational age
  • Trimester or weeks ust be documented by the provider
  • ICD-10-CM counts trimesters the same way most obstetricians count them, from the first day of the last menstrual period
    • 1st Trimester – less than 14 weeks, 0 days
    • 2nd Trimester – 14 weeks to less than 28 weeks, 0 days
    • 3rd Trimester – 28 weeks 0 days to delivery
Consequences for Lack of Trimester Documentation

• Some diagnoses lose relative weight if the trimester (or the weeks supporting the trimester designation) is omitted

O31.30  Maternal care for cervical incompetence, unspecified trimester  Not a CC or MCC
O31.31  Maternal care for cervical incompetence, first trimester  MCC
O31.32  Maternal care for cervical incompetence, second trimester  MCC
O31.33  Maternal care for cervical incompetence, third trimester  MCC

Note: Coders may translate documented weeks of gestation into trimesters
Complications

Trimester Assignment

• In instances when a patient is admitted to a hospital for complications of pregnancy during one trimester and remains in the hospital into a subsequent trimester — the trimester character for the antepartum complication code should be assigned on the basis of the trimester when the complication developed, not the trimester of the discharge.

• If the condition developed prior to the current admission/encounter or represents a pre-existing condition — the trimester character for the trimester at the time of the admission/encounter should be assigned.
Pregnancy Change of Early vs. Late Pregnancy

• Definition of early vs. late pregnancy changed to 20 weeks (from 22 weeks)
  – Emphasized with hyperemesis gravidarum
    • Must differentiate mild from severe HG and describe what metabolic disturbances or hypovolemia occurs
  – Emphasized with abortions and fetal deaths
  – Emphasized with hemorrhage
### Hyperemesis

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>O210</td>
<td>Mild hyperemesis gravidarum</td>
</tr>
<tr>
<td>O211</td>
<td>Hyperemesis gravidarum with metabolic disturbance</td>
</tr>
<tr>
<td>O212</td>
<td>Late vomiting of pregnancy</td>
</tr>
<tr>
<td>O218</td>
<td>Other vomiting complicating pregnancy</td>
</tr>
<tr>
<td>O219</td>
<td>Vomiting of pregnancy, unspecified</td>
</tr>
</tbody>
</table>

- Specify the metabolic disturbance
  - Hypovolemia
  - Hyponatremia (CC)
  - Acute renal failure (CC)
  - Hypokalemia
Diabetes Classifications in Pregnancy

• Classifications
  – Gestational
  – Preexisting Type 1
  – Preexisting Type 2
  – Other primary diabetes
  – Due to underlying diseases
    • e.g., Cushing’s syndrome, pancreatitis, cystic fibrosis,
  – Due to drug or chemical e.g., steroid-induced

• Necessary documentation
  – Diabetes type (e.g. gestational, type 1, type 2, or other etiologies)
  – If currently with hyperglycemia or hypoglycemia
  – All acute or chronic complications (e.g. DKA, neuropathies)
  – Any effect on the fetus
ICD-10-PCS Change
Inpatient Procedures

• ICD-9-CM

• ICD-10-PCS
ICD-10-PCS

Inpatient Procedures

• Only for inpatient facility (hospital) coding
  – Procedures performed at one facility within 72 hours of an inpatient admission to the same facility are included in the inpatient admission
  • These cases will be coded by the facility using ICD-10-PCS, not CPT

• Physicians and outpatient facilities continue to use CPT for their billing
ICD-10-PCS - Structure
Inpatient Procedures

1. Section
2. Body System
3. Root Operation
4. Body Part
5. Approach
6. Device
7. Qualifier
Coder’s Requirement to Learn Anatomy
Adhesions in 2\textsuperscript{nd} Cardiac Procedures

- 15-20% of open heart procedures commonly have adhesions

- Requires tedious lysis of adhesions, typically lasting around an hour

- Incidental injuries are common
“Freeing of a Body Part”
Anatomy Specifics

- ICD-9-CM Volume 3 had a listing for adhesiolysis of heart or pericardium
- ICD-10-PCS requires the surgeon to state right or left atrium or right or left ventricle

<table>
<thead>
<tr>
<th>Section</th>
<th>Body System</th>
<th>Operation</th>
<th>Approach</th>
<th>Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Coronary Vein</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Atrial Septum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6</strong></td>
<td>Atrium, Right</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Atrium, Left</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Conduction Mechanism</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Chordae Tendineae</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Papillary Muscle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Aortic Valve</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Mitral Valve</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Pulmonary Valve</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Tricuspid Valve</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>K</strong></td>
<td>Ventricle, Right</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>L</strong></td>
<td>Ventricle, Left</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Release: Freeing a body part from an abnormal physical constraint by cutting or by the use of force.
DRG Consequences
Difficult Lysis of Cardiac Adhesions w/CABG

No documentation of extensive lysis of adhesions adherent to right/left atrium or ventricle
- PDX - I25.110 - Atherosclerotic heart disease of native coronary artery with unstable angina pectoris
- PProc – 021009W – for the CABG

MS-DRG 236 – Coronary Bypass w/o Cardiac Cath – w/o MCC – 3.7777

Documentation of extensive lysis of adhesions adherent to right/left atrium and ventricle
- PDX - I25.110 - Atherosclerotic heart disease of native coronary artery with unstable angina pectoris
- PProc – 021009W for the CABG
- SDx – I31.0 – Chronic adhesive pericarditis
- SProc – 4 codes (L/R atr, L/R ventr)
  - 02N(6,7,K,L)0ZZ
  - Codeable only if the physician describes the exact anatomy that is being released

MS-DRG 229 – Other Cardiothoracic Procedures with CC – 4.6279
Other Requirements for Anatomy Specificity

- The surgeon must specify what part of the omentum is operated on or else the record cannot be coded
  - Coders are not allowed to assume anatomic details
  - If not documented, a query is required
Breast Surgery

- A 40 yo lady with a proportionally large left breast mass with calcifications on mammography presents for surgery.
  - An open biopsy indicates high-grade carcinoma without clear margins, thus a complete mastectomy with a “sentinel node” biopsy was performed.
  - Frozen section of the lymph node shows cancer, thus further axillary lymph node dissection was carried out.
Axillary Dissection

• Root operations
  – Resection – removal of all of a body part
  – Excision – removal of part of a body part

• Excision or resection?
  – All of the axillary lymph nodes?
  – Some of the axillary lymph nodes?
Axillary Lymph Nodes

• Vary from 20-30
  – Brachial (or "lateral")
  – Pectoral (or "anterior")
  – Subscapular (or "posterior")
  – Central
  – Apical (or "medial" or "subclavicular")

• Were all lymph nodes removed to be a resection?
Surgical Staging of Axilla in Breast Cancer Treatment

• “Axillary dissection provides prognostic information about axillary node status and also plays a therapeutic role in removing axillary tumor in patients with positive nodes.”

• If an excision
  – O7B60ZX – diagnostic?
  – O7B60ZZ – nondiagnostic?

• If this is a resection
  – O7T0ZZZ
    • No option for diagnostic

Summary
Clinical Documentation Integrity

• Critical that your patient’s diagnoses are classified correctly
  – Coders are not allowed to clinically interpret
  – If you don’t write it down, they cannot code it
  – If they cannot code it, you cannot get credit for that part of your patient’s severity of illness
    • Lower Relative Weights
    • Lower Reimbursements
    • Look worse that you should in comparison with peers
Questions?