ICD-10’s Impact Upon Physicians

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Founder and President, CDI

• American Health Information Management Association (AHIMA) certified coding specialist since 2001
• Association of Clinical Documentation Improvement Specialists (ACDIS) Advisory Board
• Multiple author on clinical aspects of ICD-10 and DRGs

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Goals

• Have a firm understanding of how CMS and the state of California evaluate physician/hospital quality
• Know the differences between the CDC’s ICD-9-CM and ICD-10-CM/PCS terminology
• Master challenging definitions impacting severity and risk adjustment
• Devise a plan to assure the integrity of their ICD-10-CM/PCS data measuring patient outcomes
ICD-10-CM/PCS is Like the Phone Book
Interesting Characters – Terrible Plot
ICD-10 Implementation Date
October 1, 2015

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

Note that clinical terms are assigned numbers which, if submitted, labels the patient with that condition.
ICD-10-CM/PCS Basics

• ICD-10-CM/PCS (and ICD-9-CM) are NOT clinical languages (like SNOMED)
  – ICD-9-CM and ICD-10-CM/PCS are useful for classifying healthcare data for administrative purposes, including reimbursement claims, health statistics, and other uses where data aggregation is advantageous

• ICD-10-CM/PCS is based ONLY on provider documentation of clinical language, not on a patient’s clinical characteristics that are abstracted by a data analyst (e.g. like STS, NCDR, or ATS databases)
  – The provider must use the magic words that drive ICD-10-CM/PCS code assignment based upon patient circumstances
Clinical vs. Administrative Disconnect

**Question:** If a physician documents heart failure with preserved ejection fraction (HFpEF), or heart failure with preserved systolic function, or alternatively heart failure with reduced ejection fraction (HFrEF), heart failure with low ejection fraction, heart failure with reduced systolic function, or other similar terms, can the coder assume the physician means “diastolic heart failure” or “systolic heart failure,” respectively, and apply the proper ICD-9-CM code based on the documented clinical circumstances?

**Answer:** No, the coder cannot assume either diastolic or systolic failure or a combination of both, based on these newer terms. Therefore, query the provider to clarify whether the patient has diastolic or systolic heart failure.
ICD-10-CM/PCS
Clinical vs. Administrative Disconnect

• In ICD-9-CM, “uncontrolled diabetes” inferred that a patient was hyperglycemic

• In ICD-10-CM, it doesn’t

Dear Dr. Kennedy:

This letter is in response to your request for clarification whether documentation of "uncontrolled diabetes" can be equated to "diabetes out of control" or "diabetes poorly controlled" in reference to diabetes with hyperglycemia.

Query the provider for clarification whether "diabetes uncontrolled" is considered diabetes with hyperglycemia so that the appropriate codes may be reported. It would be inappropriate for coders to assume a diagnosis without clarification from the provider. When the documentation is vague or unclear, the provider should be queried.

I trust this information will be of assistance to you.

Source: Coding Clinic for ICD-10-CM Central Office
US Modifications – ICD-10-CM and 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
What’s Old?
ICD-9-CM
What’s New
ICD-10-CM

- Alpha (Except U)
- 2 Always Numeric
  3-7 Numeric or Alpha
- Additional Characters
- S 3 2
- 0 1 0
- A
- Category
- Etiology, anatomic site, severity
- Added code extensions (7th character) for obstetrics, injuries, and external causes of injury
# ICD-9-CM and ICD-10-CM/PCS Diagnoses and Procedures

<table>
<thead>
<tr>
<th>Code Type</th>
<th>ICD-9-CM</th>
<th>ICD-10-CM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>14,567 codes</td>
<td>69,832 codes</td>
</tr>
<tr>
<td>Inpatient Procedures</td>
<td>3,878 codes</td>
<td>71,920 codes</td>
</tr>
</tbody>
</table>
Overall Changes

- 34,250 (50%) are related to the musculoskeletal system
- 17,045 (25%) are related to fractures
- 10,582 (62%) of fracture codes to distinguish ‘right’ vs. ‘left’
- \(\sim 25,000\) (36%) of all ICD-10 codes to distinguish ‘right’ vs. ‘left’
Clinical Changes
Expansions and Deletions

• Marked expansion of codes
  – Trauma, overdoses, or complications treatment phases
  – Office encounters
  – Asthma
  – Diabetes mellitus
  – Obstetrics (trimesters)
  – Non-pressure ulcer staging
  – Myocardial infarction timing and vessel involvement
  – Open fractures staging
  – Cerebral hemorrhage location
  – Ischemic stroke vessel involvement
  – Coma (Glasgow Coma Scale)
  – Atrial flutter and fibrillation
  – Drug underdosing

• Deletion of MD language, such as:
  – Urosepsis
    • Must say “sepsis due to UTI”
  – SIRS due to infection
    • Must say “sepsis” or “severe sepsis”
  – Accelerated or malignant hypertension
    • Must describe the organ dysfunction caused by hypertension to measure severity

MD progress notes and DC summaries must use ICD-10-CM’s language (Index or Table) as to defend the assigned code
# Differences from ICD-9-CM to ICD-10-CM

<table>
<thead>
<tr>
<th></th>
<th>ICD-9-CM Diagnosis Codes</th>
<th>ICD-10-CM Diagnosis Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Laterality</strong></td>
<td>No Laterality</td>
<td>Laterality – Right or Left account for 35-40% of codes</td>
</tr>
<tr>
<td><strong>Code Construction</strong></td>
<td>3-5 digits</td>
<td>7 digits</td>
</tr>
<tr>
<td></td>
<td>First digit is alpha (E or V) or numeric</td>
<td>Digit 1 is alpha; Digit 2 is numeric</td>
</tr>
<tr>
<td></td>
<td>Digits 2-5 are numeric</td>
<td>Digits 3–7 are alpha or numeric</td>
</tr>
<tr>
<td></td>
<td>Decimal is placed after the third character</td>
<td>Decimal is placed after the third character</td>
</tr>
<tr>
<td><strong>Placeholders</strong></td>
<td>No placeholder characters</td>
<td>“X” placeholders</td>
</tr>
<tr>
<td><strong># of Codes</strong></td>
<td>14,000 codes</td>
<td>69,000 codes</td>
</tr>
<tr>
<td><strong>Severity</strong></td>
<td>Limited Severity Parameters</td>
<td>Extensive Severity Parameters</td>
</tr>
<tr>
<td><strong>Combination</strong></td>
<td>Limited Combination Codes</td>
<td>Extensive Combination Codes</td>
</tr>
<tr>
<td><strong>Excludes Notes</strong></td>
<td>1 type of Excludes Notes</td>
<td>2 types of Excludes Notes</td>
</tr>
</tbody>
</table>
New Changes
Excludes Notes

**Excludes1** - A type 1 Excludes note is a pure excludes.
   - It means 'NOT CODED HERE!'
   - An Excludes1 note indicates that the code excluded should never be used at the same time as the code above the Excludes1 note.
   - An Excludes1 is used when two conditions cannot occur together, such as a congenital form versus an acquired form of the same condition.

**Excludes2** - A type 2 excludes note represents 'Not included here'.
   - An excludes2 note indicates that the condition excluded is not part of the condition it is excluded from but a patient may have both conditions at the same time.
   - When an Excludes2 note appears under a code it is acceptable to use both the code and the excluded code together.
Excludes1 and Excludes2 Examples

K22  Other diseases of esophagus
    Excludes2: esophageal varices (I85.-)

K22.0  Achalasia of cardia
    Achalasia NOS
    Cardiospasm
    Excludes1: congenital cardiospasm (Q39.5)

K22.1  Ulcer of esophagus
    Barrett’s ulcer
    Erosion of esophagus
    Fungal ulcer of esophagus
    Peptic ulcer of esophagus
    Ulcer of esophagus due to ingestion of chemicals
    Ulcer of esophagus due to ingestion of drugs and medicaments
    Ulcerative esophagitis
    Code first: poisoning due to drug or toxin, if applicable (T36-T65 with fifth or sixth character 1-4 or 6)
    Use additional code for adverse effect, if applicable, to identify drug (T36-T50 with fifth or sixth character 5)
    Excludes1: Barrett’s esophagus (K22.7-)

K22.10  Ulcer of esophagus without bleeding
    Ulcer of esophagus NOS

K22.11  Ulcer of esophagus with bleeding
    Excludes2: bleeding esophageal varices (I85.01, I85.11)

Note that Barrett’s esophagus and esophageal ulcer cannot be coded at the same time, even if the ulcer is unrelated to the Barrett’s esophagus.
Requirement for Documentation on Each Record

- Each encounter’s codes must be based on the physician’s documentation (not the problem list) for that encounter
  - Coders are prohibited from using previous documentation to support the specificity of a code from the current encounter
Coding Based On Current Documentation

• The ICD-10-CM Official Guidelines state that “Patients previously diagnosed with any HIV illness (B20) should never be assigned to R75 or Z21, Asymptomatic human immunodeficiency virus [HIV] infection status”

• HOWEVER, If the physician only documents “positive HIV” on a codeable encounter, the coder must use the Z21 code rather than B20
  – This is because the Cooperating Parties want each record to stand on its own for coding purposes, even if the resultant code doesn’t make sense
Put the MEAT in your Documentation At Least Once A Year

• **M**onitor—signs, symptoms, disease progression, disease regression
  – “Diabetes, well controlled w/diet”; “Alcohol dependence in remission, got 20 year chip”; “Toe amputation status, no evidence of complications”

• **E**valuate—test results, medication effectiveness, response to treatment
  – “Hypertension, well controlled w/Rx”

• **A**ssess/Address—ordering tests, discussion, review records, counseling
  – “HIV Disease w/lymphadenopathy, check CD4 count”

• **T**reat—medications, therapies, other modalities
  – “Thrush, treat with oral nystatin”
Conditions Interdependencies (M.U.S.I.C.)

• **Manifestation**
  – e.g., sepsis, heart failure, chest pain, angina

• **Underlying cause or pathology**
  – e.g., UTI, alcoholic cardiomyopathy, GERD, coronary atherosclerosis

• **Severity or specificity**
  – e.g., severe sepsis, diabetes out of controlled, systolic or diastolic heart failure

• **Instigating or precipitating cause**
  – Indwelling foley cath, NSAID use, carbon monoxide poisoning

• **Complications or consequences**
  – Septic shock, diabetic neuropathy

When given a diagnosis, place it one of these categories and then look for the other four, linking them with terms such as “due to,” “resulting in,” and the like.
Coding Rules for Hospitals Only
Uncertain Diagnoses

• If the diagnosis documented at the time of discharge is qualified as “probable”, “suspected”, “likely”, “questionable”, “possible”, or “still to be ruled out”, or other similar terms indicating uncertainty, code the condition as if it existed or was established.
  – The bases for these guidelines are the diagnostic workup, arrangements for further workup or observation, and initial therapeutic approach that correspond most closely with the established diagnosis.

• Note: This guideline is applicable only to inpatient admissions to short-term, acute, long-term care and psychiatric hospitals.

Source: ICD-10-CM Official Guidelines for Coding and Reporting
General Coding Rules for Physicians (Even Inpatient Physicians)

- **ICD-10-CM code for the diagnosis, condition, problem, or other reason for encounter/visit**
  - List first the ICD-10-CM code for the diagnosis, condition, problem, or other reason for encounter/visit shown in the medical record to be chiefly responsible for the services provided.
    - In some cases the first-listed diagnosis may be a symptom when a diagnosis has not been established (confirmed) by the physician
  - List additional codes that describe any coexisting conditions.

- **H. Uncertain diagnosis**
  - Do not code diagnoses documented as “probable,” “suspected,” “questionable,” “rule out,” or “working diagnosis” or other similar terms indicating uncertainty. Rather, code the condition(s) to the highest degree of certainty for that encounter/visit, such as symptoms, signs, abnormal test results, or other reason for the visit.
  - Please note: This differs from the coding practices used by short-term, acute care, long-term care and psychiatric hospitals.

Source: ICD-10-CM Official Guidelines for Coding and Reporting
Personal and Family History

History (of)

• There are two types of history Z codes, personal and family.
  – Personal history codes explain a patient’s past medical condition that no longer exists and is not receiving any treatment, but that has the potential for recurrence, and therefore may require continued monitoring.
  – Family history codes are for use when a patient has a family member(s) who has had a particular disease that causes the patient to be at higher risk of also contracting the disease.

• A history of an illness, even if no longer present, is important information that may alter the type of treatment ordered.
  – Consequently, important to document and code whenever present
ICD-10-CM - Current malignancy vs. personal history of malignancy

• When a primary malignancy has been excised but further treatment, such as an additional surgery for the malignancy, radiation therapy or chemotherapy is directed to that site, the primary malignancy code should be used until treatment is completed
  – For liquid cancers, indicate whether the malignancy is active, in remission, or in relapse
  – For solid cancers, any patient receiving adjuvant treatment should be documented as being active, not a “history of malignancy”

• When a primary malignancy has been previously excised or eradicated from its site, there is no further treatment (of the malignancy) directed to that site, and there is no evidence of any existing primary malignancy, a code from category Z85, Personal history of malignant neoplasm, should be used to indicate the former site of the malignancy.

Source: ICD-10 Official Guidelines for Coding and Reporting
Send Your Own Questions to Coding Clinic Advisor

Anyone can send in questions and do it online – They are now accepting ICD-10-CM/PCS questions

http://www.codingclinicadvisor.com

It’s FREE, so physicians should ask questions!
ICD-10
Physician Revenue Cycle Impact

• Ancillary claim payment
  – “Medical necessity” is currently based on an ICD-9-CM
    • ICD-10 codes after October 1, 2014
  – Payers typically release diagnosis codes supporting “medical necessity” through provider bulletins

• ICD-10 Payer Transition
  – Starts with the CMS General Equivalence Mappings
  – Additional modifications added according to their policies
  – Results often published on the web or in their bulletins
  • Hard to find
### CMS National Coverage Determinations

**Home PT Monitoring**

<table>
<thead>
<tr>
<th>NCD:</th>
<th>190.11</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCD Title:</td>
<td>Home Prothrombin Time/International Normalized Ratio (PT/INR) Monitoring for Anticoagulation Management</td>
</tr>
</tbody>
</table>

<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>I26.09</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>415.19</td>
<td>Other pulmonary embolism and infarction</td>
<td>I26.99</td>
<td>Other pulmonary embolism with 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>

- Note that codes for secondary hypercoagulable states are not included.

[http://tinyurl.com/CMSICD10LCDs](http://tinyurl.com/CMSICD10LCDs)
Q2. What happens if I use the wrong ICD-10 code, will my claim be denied?

A1. While diagnosis coding to the correct level of specificity is the goal for all claims, for 12 months after ICD-10 implementation, Medicare review contractors will not deny physician or other practitioner claims billed under the Part B physician fee schedule through either automated medical review or complex medical record review based solely on the specificity of the ICD-10 diagnosis code as long as the physician/practitioner used a valid code from the right family. **However, a valid ICD-10 code will be required on all claims starting on October 1, 2015.** It is possible a claim could be chosen for review for reasons other than the specificity of the ICD-10 code and the claim would continue to be reviewed for these reasons. This policy will be adopted by the Medicare Administrative Contractors, the Recovery Audit Contractors, the Zone Program Integrity Contractors, and the Supplemental Medical Review Contractor.

“Family of Codes”

• “Family of codes” is the same as the ICD-10 three-character category.
  – Codes within a category are clinically related and provide differences in capturing specific information on the type of condition.
  – For instance, category H25 (Age-related cataract) contains a number of specific codes that capture information on the type of cataract as well as information on the eye involved.
    • Examples include: H25.031 (Anterior subcapsular polar age-related cataract, right eye), which has six characters; H25.22 (Age-related cataract, morgagnian type, left eye), which has five characters; and H25.9 (Unspecified age-related cataract), which has four characters.

• **One must report a valid code and not a category number.** In many instances, the code will require more than 3 characters in order to be valid.
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.
Note how ICD-10-CM combined benign, malignant, and unspecified HTN into one code, I10 - HTN
Potential Problems with GEMS:

• A single ICD-9-CM code may now be represented by multiple ICD-10-CM codes
  • One to many
• Multiple ICD-9-CM codes may map to only one ICD-10 code
  • Many to one
• An ICD-10 code cannot be arbitrarily chosen from the GEM
  • A code may not represent the complexity of the illness (e.g. unspecified code) – this could result in underpayments
  • A code may overstate the complexity of the illness – this could result in audits and retrospective recovery of payments

ALWAYS VERIFY CODES IN THE ICD-10-CM BOOK PRIOR TO CLAIM SUBMISSION.
DO NOT RELY ON ANY GEM TOOL ALONE
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
What’s Old?
ICD-9-CM

```
Numeric or Alpha (E or V) -> 414

Category
```

```
Numeric -> 00

Etiology, anatomic site, manifestation
```
What’s New
ICD-10-CM

- Alpha (Except U)
- 2 Always Numeric 3-7 Numeric or Alpha
- Additional Characters

**S32010A**

- Category
- Etiology, anatomic site, severity
- Added code extensions (7th character) for obstetrics, injuries, and external causes of injury
Clinical Changes
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  – Office encounters
  – Asthma
  – Diabetes mellitus
  – Obstetrics (trimesters)
  – Non-pressure ulcer staging
  – Myocardial infarction timing and vessel involvement
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  – Drug underdosing

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  – Accelerated or malignant hypertension
    • Must describe the organ dysfunction caused by hypertension to measure severity

MD progress notes and DC summaries must use ICD-10-CM’s language (Index or Table) as to defend the assigned code
# New Specificity in ICD-10-CM

<table>
<thead>
<tr>
<th>ICD9</th>
<th>ICD9 Title</th>
<th>ICD10</th>
<th>ICD-10 Title</th>
<th>Mapping Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>0723</td>
<td>Mumps pancreatitis</td>
<td>B263</td>
<td>Mumps pancreatitis</td>
<td>Exact match</td>
</tr>
<tr>
<td>5770</td>
<td>Acute pancreatitis</td>
<td>B252</td>
<td>Cytomegaloviral pancreatitis</td>
<td>I10 combines 2 or more I9 codes</td>
</tr>
<tr>
<td>5770</td>
<td>Acute pancreatitis</td>
<td>K850</td>
<td>Idiopathic acute pancreatitis</td>
<td>Approximate match</td>
</tr>
<tr>
<td>5770</td>
<td>Acute pancreatitis</td>
<td>K851</td>
<td>Biliary acute pancreatitis</td>
<td>Approximate match</td>
</tr>
<tr>
<td>5770</td>
<td>Acute pancreatitis</td>
<td>K852</td>
<td>Alcohol induced acute pancreatitis</td>
<td>Approximate match</td>
</tr>
<tr>
<td>5770</td>
<td>Acute pancreatitis</td>
<td>K853</td>
<td>Drug induced acute pancreatitis</td>
<td>Approximate match</td>
</tr>
<tr>
<td>5770</td>
<td>Acute pancreatitis</td>
<td>K858</td>
<td>Other acute pancreatitis</td>
<td>Approximate match</td>
</tr>
<tr>
<td>5770</td>
<td>Acute pancreatitis</td>
<td>K859</td>
<td>Acute pancreatitis, unspecified</td>
<td>Approximate match</td>
</tr>
<tr>
<td>5771</td>
<td>Chronic pancreatitis</td>
<td>K860</td>
<td>Alcohol-induced chronic pancreatitis</td>
<td>Approximate match</td>
</tr>
<tr>
<td>5771</td>
<td>Chronic pancreatitis</td>
<td>K861</td>
<td>Other chronic pancreatitis</td>
<td>Approximate match</td>
</tr>
</tbody>
</table>

ICD-10-CM, the term “hyperbilirubinemia” does not code to jaundice
The physician must say “jaundice”
### Diagnosis Present on Admission

<table>
<thead>
<tr>
<th>Qualifiers</th>
<th>Chronicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancreatitis type</td>
<td></td>
</tr>
<tr>
<td>Qualified Code</td>
<td></td>
</tr>
<tr>
<td>Problem Specific A/P</td>
<td></td>
</tr>
<tr>
<td>Support Text</td>
<td></td>
</tr>
</tbody>
</table>

#### Pancreatitis

- **Chronicity**
  - [ ] Yes
  - [ ] No

- **Type**
  - acute
  - chronic
  - alcohol induced
  - biliary
  - drug induced
  - idiopathic
  - other
  - unspecified pancreatitis type
American College of Gastroenterology Guideline: Management of Acute Pancreatitis

Scott Tenner, MD, MPH, FACP\(^1\), John Baillie, MB, ChB, FRCP, FACP\(^2\), John DeWitt, MD, FACP\(^3\) and Santhi Swaroop Vege, MD, FACP\(^4\)

Table 4. Clinical findings associated with a severe course for initial risk assessment

<table>
<thead>
<tr>
<th>Patient characteristics</th>
<th>Laboratory findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &gt;55 years (53,57)</td>
<td>BUN &gt;20 mg/dl (63)</td>
</tr>
<tr>
<td>Obesity (BMI &gt;30 kg/m(^2)) (68)</td>
<td>Rising BUN (63)</td>
</tr>
<tr>
<td>Altered mental status (69)</td>
<td>HCT &gt;44% (62)</td>
</tr>
<tr>
<td>Comorbid disease (53)</td>
<td>Rising HCT (62)</td>
</tr>
</tbody>
</table>

The systemic inflammatory response syndrome (SIRS) (6,53,54,70,71)

Presence of >2 of the following criteria:

- Pulse >90 beats/min
- Respirations >20/min or PaCO\(_2\) >32 mmHg
- Temperature >38°C or <35°C
- WBC count >12,000 or <4,000 cells/mm\(^3\) or >10% immature neutrophils (bands)

Radiology findings

- Pleural effusions (73)
- Pulmonary infiltrates (53)
- Multiple or extensive extrapancreatic collections (67)

« Note the SIRS criteria »
Code for Acute Pancreatitis Does Not Account for Necrosis

K85  Acute pancreatitis

Includes: abscess of pancreas
          acute necrosis of pancreas
          acute (recurrent) pancreatitis
          gangrene of (gangrenous) pancreas
          hemorrhagic pancreatitis
          infective necrosis of pancreas
          subacute pancreatitis
          suppurative pancreatitis

• SIRS with or without organ dysfunction due to pancreatitis does
# 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>SIRS (systemic inflammatory response syndrome)</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</td>
</tr>
<tr>
<td>with acute organ dysfunction 995.92</td>
<td>(aka sepsis) or SEPSIS SYNDROME</td>
</tr>
<tr>
<td>non-infectious process 995.93</td>
<td>of non-infectious origin</td>
</tr>
<tr>
<td>with acute organ dysfunction 995.94</td>
<td>(without organ dysfunction)</td>
</tr>
<tr>
<td>R65.10</td>
<td>-- with acute organ dysfunction R65.11</td>
</tr>
</tbody>
</table>

**PHYSICIAN MUST SAY “SEPSIS”, NOT “SIRS due to INFECTION”, TO GET “SEPSIS” IN ICD-10**
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

**Sepsis in Meditech 5.67**

<table>
<thead>
<tr>
<th>Diagnosis Present on Admission</th>
<th>Sepsis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualifiers</td>
<td></td>
</tr>
</tbody>
</table>

### Sepsis type
- puerperal sepsis
- Candida
- Escherichia coli
- Escherichia coli, in newborn
- Haemophilus influenzae
- methicillin resistant Staphylococcus aureus
- methicillin susceptible Staphylococcus aureus
- Pneumococcus
- Pseudomonas
- Salmonella
- Streptococcus group A
- Streptococcus group B
- Streptococcus group B, in newborn
- sepsis during labor
- other Streptococcus
- unspecified Streptococcus
- sepsis due to unspecified organism

### Qualified Code

### Problem Specific A/P

### Support Text
### Severity of Pancreatitis

- Note the presence of organ failure as indicators of severe pancreatitis.

| Table 3. Definitions of severity in acute pancreatitis: comparison of Atlanta and recent revision |
|---|---|
| **Atlanta criteria (1993)** | **Atlanta Revision (2013)** |
| **Mild acute pancreatitis** | **Mild acute pancreatitis** |
| Absence of organ failure | Absence of organ failure |
| Absence of local complications | Absence of local complications |
| **Severe acute pancreatitis** | **Moderately severe acute pancreatitis** |
| 1. Local complications **AND/OR** | 1. Local complications **AND/OR** |
| 2. Organ failure | 2. Transient organ failure (<48h) |
| GI bleeding (>500 cc/24 hr) | **Severe acute pancreatitis** |
| Shock – SBP ≤ 90 mm Hg | Persistent organ failure >48 h
| PaO 2 ≤ 60 % | |
| Creatinine ≥ 2 mg/dl | |
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.\(^9\)\(^{-11}\),\(^40\) The mortality in post–cardiac arrest shown here is calculated based on data from Cocchi et al\(^40\) and not specified in the original article. ED = emergency department.
Definitions of Shock

Hemodynamic monitoring in shock and implications for management


Massimo Antonelli
Mitchell Levy
Peter J. D. Andrews
Jean Chastre
Leonard D. Hudson
Constantine Manthous
G. Umberto Meduri
Rui P. Moreno
Christian Putensen
Thomas Stewart
Antoni Torres
Recommendation 1

- We recommend that shock be defined as a life-threatening, generalized maldistribution of blood flow resulting in failure to deliver and/or utilize adequate amounts of oxygen, leading to tissue dysoxia
  - Inadequate oxygen delivery typically results from poor tissue perfusion but occasionally may also be caused by an increase in metabolic demand
  - Signs of inadequate tissue perfusion on physical examination are required to define shock
Recommendation 2

• We recommend that hypotension [SBP < 90 mmHg, SBP decrease of 40 mmHg from baseline, or mean arterial pressure (MAP) < 65 mmHg], while commonly present, should not be required to define shock

  – Signs of inadequate tissue perfusion on physical examination are required to define shock
Recommendations 3 and 4

• In the absence of hypotension, when shock is suggested by history and physical examination, we recommend that a marker of inadequate perfusion be measured (decreased ScvO$_2$, SvO$_2$, increased blood lactate, increased base deficit, perfusion related low pH)

  – Apart from lactate and base deficit, current evidence does not support the routine use of bio-markers for diagnosis or staging of shock
Goal-Directed Resuscitation for Patients with Early Septic Shock

The ARISE Investigators and the ANZICS Clinical Trials Group*

• Eligibility criteria
  – a suspected or confirmed infection, two or more criteria for a systemic inflammatory response, and
  – evidence of refractory hypotension OR hypoperfusion.
    • Refractory hypotension was defined as a systolic blood pressure of < 90 mm Hg or a mean arterial pressure of < 65 mm Hg after an intravenous fluid challenge of 1000 ml or more administered within a 60-minute period.
    • Hypoperfusion was defined as a blood lactate level of 4.0 mmol per liter or more.
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 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

KIDNEY DISEASE | IMPROVING GLOBAL OUTCOMES
Acute Kidney Injury in Meditech 5.67

- **Acute kidney insufficiency**
  - Qualifiers:
    - Yes
    - No

- **Acute kidney failure**
  - Qualifiers:
    - Yes
    - No
    - with acute renal cortical necrosis
    - with acute tubular necrosis
    - with renal medullary necrosis
    - with other specified pathological lesion
    - unspecified acute renal failure

- **Acute kidney injury**
  - Qualifiers:
    - Yes
    - No
MDC 1 – Encephalopathy
No Uniform Definition

• Dorland’s Medical Dictionary – any degenerative disorder of the brain.

• NIH – *any diffuse disease of the brain that alters brain function or structure.*
  – *Encephalopathy may be caused by infectious agent (bacteria, virus, or prion), metabolic or mitochondrial dysfunction, brain tumor or increased pressure in the skull, prolonged exposure to toxic elements (including solvents, drugs, radiation, paints, industrial chemicals, and certain metals), chronic progressive trauma, poor nutrition, or lack of oxygen or blood flow to the brain.*
  – *The hallmark of encephalopathy is an altered mental state.*

*Coding Clinic, 4th Quarter 1993; 4th Quarter 2003*
MDC 1 – Encephalopathy
Multiple Options in ICD-10-CM

**Encephalopathy (acute)** G93.40
- acute necrotizing hemorrhagic G04.30
- postimmunization G04.32
- postinfectious G04.31
- specified NEC G04.39
- alcoholic G31.2
- anoxic — **see** Damage, brain, anoxic
- arteriosclerotic I67.2
- centrolobar progressive (Schilder) G37.0
- congenital Q07.9
- degenerative, in specified disease NEC G32.89
- demyelinating callosal G37.1
- due to
  - drugs (**see also** Table of Drugs and Chemicals) G92
  - hepatic — **see** Failure, hepatic
  - hyperbilirubinemic, newborn P57.9
  - due to isoimmunization (conditions in P55) P57.0
  - hypertensive I67.4
  - hypoglycemic E16.2
  - hypoxic — **see** Damage, brain, anoxic
  - hypoxic ischemic P91.60
  - mild P91.61
  - moderate P91.62
  - severe P91.63
- in (due to) (with)
  - - birth injury P11.1
  - - hyperinsulinism E16.1 **[G94]**
  - - influenza — **see** Influenza, with, encephalopathy
  - - lack of vitamin (**see also** Deficiency, vitamin) E56.9 **[G32.89]**
  - - neoplastic disease (**see also** Neoplasm) D49.9 **[G13.1]**
  - - serum (**see also** Reaction, serum) T80.69
  - - syphilis A52.17
  - - trauma (postconcussional) F07.81
  - - - current injury — **see** Injury, intracranial
  - - vaccination G04.02
  - - lead — **see** Poisoning, lead
  - - metabolic G93.41
  - - drug induced G92
  - - toxic G92
  - - myoclonic, early, symptomatic — **see** Epilepsy, generalized, specified NEC
- necrotizing, subacute (Leigh) G31.82
- pellagrous E52 **[G32.89]**
- portosystemic — **see** Failure, hepatic
- postcontusional F07.81
- - current injury — **see** Injury, intracranial, diffuse
- - posthypoglycemic (coma) E16.1 **[G94]**
- - postradiation G93.89
- - saturnine — **see** Poisoning, lead
- - septic G93.41
- - specified NEC G93.49
- - spongioform, subacute (viral) A81.09
- - toxic G92
- - - metabolic G92
- - traumatic (postconcussional) F07.81
- - - current injury — **see** Injury, intracranial
- - - vitamin B deficiency NEC E53.9 **[G32.89]**
- - - vitamin B1 E51.2
- - - Wernicke's E51.2

**Encephalopathy by itself must be queried for specificity**

Red = **MCC**
**Delirium vs. Encephalopathy**

- **Delirium**
  - Acute change or fluctuation in mental status and inattention, accompanied by either disorganized thinking or an altered level of consciousness

- **Encephalopathy**
  - Global brain dysfunction

- **Dr. Kennedy’s opinion**
  - If the global brain dysfunction can be explained by an underlying condition or its exacerbation, then the term “encephalopathy” is integral to that condition
  - Exacerbation of a neurodegenerative condition is NOT an encephalopathy
Toxic/Metabolic Encephalopathies

Definitions

• Toxic and metabolic encephalopathies are a group of neurological disorders characterized by an altered mental status
  – A delirium, defined as a disturbance of consciousness characterized by a reduced ability to focus, sustain, or shift attention

That cannot be accounted for by preexisting or evolving dementia and that is caused by the direct physiological consequences of a general medical condition.

• Causes
  – Medications
  – Drug overdose
  – Uremia
  – Liver failure
  – Hypercalcemia
  – Pancreatitis
  – Hyponatremia
  – Sepsis
  – Hypercapnia

Encephalopathy is the Underlying Cause of Delirium
### Encephalopathy

- **Options:**
  - Yes
  - No

### Altered mental status

- **Options:**
  - Transient alteration of awareness
  - Disorientation
  - Delirium
  - Somnolence
  - Stupor
  - Coma
  - Persistent vegetative state
  - Unspecified

- **Additional Options:**
  - Glasgow coma 3-8
  - Glasgow coma 9-12
  - Glasgow coma 13-15
  - Not fully reported
  - Other
  - Unspecified coma depth

---

#### Support Text

- **manifested as:**
  - Delirium
  - Confusion
  - Psychosis

- **vegetative state:**
  - Dementia
  - Stupor
  - Unconsciousness

- **suspected due to:**
  - Known due to:
    - Alzheimer's disease
    - Late effect of stroke

- **toxic-metabolic encephalopathy:**
  - Hepatic encephalopathy
  - Intoxication w/o encephalopathy
  - Intoxication w/toxic encephalopathy

- **anoxic encephalopathy:**
  - Concussion
  - Cerebral edema
  - Brain compression/herniation

- **status epilepticus:**
  - Other static encephalopathy
  - Other -
# Hepatic Encephalopathy and Failure

<table>
<thead>
<tr>
<th>ICD-10 Code</th>
<th>Description</th>
<th>2014 HCC #</th>
<th>2014 CM RW</th>
<th>2014 IN RW</th>
<th>MS-DRG MCC/CC</th>
<th>APR-DRG SOI</th>
<th>APR-DRG ROM</th>
<th>APR-DRG PPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>K7040</td>
<td>Alcoholic hepatic failure without coma</td>
<td>28</td>
<td>0.409</td>
<td>0.359</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>K7041</td>
<td>Alcoholic hepatic failure with coma</td>
<td>27</td>
<td>0.947</td>
<td>1.110</td>
<td>MCC</td>
<td>1</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>K7110</td>
<td>Toxic liver disease with hepatic necrosis, without coma</td>
<td>27</td>
<td>0.947</td>
<td>1.110</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>K7111</td>
<td>Toxic liver disease with hepatic necrosis, with coma</td>
<td>27</td>
<td>0.947</td>
<td>1.110</td>
<td>MCC</td>
<td>1</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>K7200</td>
<td>Acute and subacute hepatic failure without coma</td>
<td>27</td>
<td>0.947</td>
<td>1.110</td>
<td>MCC</td>
<td>4</td>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>K7201</td>
<td>Acute and subacute hepatic failure with coma</td>
<td>27</td>
<td>0.947</td>
<td>1.110</td>
<td>MCC</td>
<td>4</td>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>K7210</td>
<td>Chronic hepatic failure without coma</td>
<td>27</td>
<td>0.947</td>
<td>1.110</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>K7211</td>
<td>Chronic hepatic failure with coma</td>
<td>27</td>
<td>0.947</td>
<td>1.110</td>
<td>MCC</td>
<td>1</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>K7290</td>
<td>Hepatic failure, unspecified without coma</td>
<td>27</td>
<td>0.947</td>
<td>1.110</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>K7291</td>
<td>Hepatic failure, unspecified with coma</td>
<td>27</td>
<td>0.947</td>
<td>1.110</td>
<td>MCC</td>
<td>4</td>
<td>4</td>
<td>19</td>
</tr>
</tbody>
</table>

“Unconscious” = Coma in ICD-10-CM; altered mental status or stupor is not
If coma or acute/subacute hepatic failure is not documented on admission but
documented later, it counts as a PPC
Hepatic Failure

• Definition
  – Elevated aminotransferases
    • More often seen with acute hepatic failure
    • Often with abnormal bilirubin and alkaline phosphatase levels
  – Hepatic encephalopathy
  – Prolonged prothrombin time (INR ≥1.5)
    • Physician has to document a coagulopathy due to liver disease to get extra credit

• Acuity
  – Hyperacute (<7 days)
  – Acute (7 to 21 days)
  – Subacute (>21 days and <26 weeks)
  – Chronic (> 26 weeks)
### Meditech 5.67

<table>
<thead>
<tr>
<th>Diagnosis Present on Admission</th>
<th>Hepatic encephalopathy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualifiers</td>
<td>Yes</td>
</tr>
<tr>
<td>Problem Specific A/P</td>
<td></td>
</tr>
<tr>
<td>Support Text</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diagnosis Present on Admission</th>
<th>Hepatic failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualifiers</td>
<td>Yes</td>
</tr>
<tr>
<td>Liver failure chronicity</td>
<td>acute, subacute, chronic, unspecified chronicity</td>
</tr>
<tr>
<td>Hepatic coma status</td>
<td>with hepatic coma, without hepatic coma</td>
</tr>
<tr>
<td>Qualified Code</td>
<td></td>
</tr>
<tr>
<td>Problem Specific A/P</td>
<td></td>
</tr>
<tr>
<td>Support Text</td>
<td></td>
</tr>
</tbody>
</table>
# ICD-9-CM vs. ICD-10-CM

## Appendicitis with peritonitis

### ICD-9-CM

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>540.0</td>
<td>With generalized peritonitis</td>
</tr>
<tr>
<td>540.1</td>
<td>With peritoneal abscess</td>
</tr>
<tr>
<td>540.9</td>
<td>Without mention of peritonitis</td>
</tr>
</tbody>
</table>

- **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

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K35.2</td>
<td>Acute appendicitis with generalized peritonitis</td>
</tr>
<tr>
<td>K35.3</td>
<td>Acute appendicitis with localized peritonitis</td>
</tr>
<tr>
<td>K35.8</td>
<td>Other and unspecified acute appendicitis</td>
</tr>
</tbody>
</table>

- **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>W</th>
<th>GM LOS</th>
<th>Bundled Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>338</td>
<td>APPENDECTOMY W <strong>COMPLICATED</strong> PRINCIPAL DIAG W MCC</td>
<td>3.2008</td>
<td>8.3</td>
<td>$32,008</td>
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<tr>
<td>339</td>
<td>APPENDECTOMY W <strong>COMPLICATED</strong> PRINCIPAL DIAG W CC</td>
<td>1.8675</td>
<td>5.4</td>
<td>$18,675</td>
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<tr>
<td>340</td>
<td>APPENDECTOMY W <strong>COMPLICATED</strong> PRINCIPAL DIAG W/O CC/MCC</td>
<td>1.2024</td>
<td>3.0</td>
<td>$12,024</td>
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<td>341</td>
<td>APPENDECTOMY W/O <strong>COMPLICATED</strong> 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 <strong>COMPLICATED</strong> 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 <strong>COMPLICATED</strong> 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”
Appendicitis in Meditech 5.67

- Yes
- No

- Acute appendicitis
- Other
- Unspecified
- With localized peritonitis
- With generalized peritonitis
- Other
- Unspecified acute appendicitis type
Other GI Conditions Whereby Peritonitis May Not Be Documented

- Epiploic appendagitis
- Diverticulitis
- Salphingo-oophriritis
F11.9 Opioid use, unspecified

Excludes:
- opioid abuse (F11.1-)
- opioid dependence (F11.2-)

F11.90 Opioid use, unspecified, uncomplicated

F11.92 Opioid use, unspecified with intoxication

Excludes:
- opioid use, unspecified with withdrawal (F11.93)

F11.920 Opioid use, unspecified with intoxication, uncomplicated

F11.921 Opioid use, unspecified with intoxication delirium

F11.922 Opioid use, unspecified with intoxication with perceptual disturbance

F11.929 Opioid use, unspecified with intoxication, unspecified

F11.93 Opioid use, unspecified with withdrawal

Excludes:
- opioid use, unspecified with intoxication (F11.92-)

F11.94 Opioid use, unspecified with opioid-induced mood disorder

F11.95 Opioid use, unspecified with opioid-induced psychotic disorder

F11.950 Opioid use, unspecified with opioid-induced psychotic disorder with delusions

F11.951 Opioid use, unspecified with opioid-induced psychotic disorder with hallucinations

F11.959 Opioid use, unspecified with opioid-induced psychotic disorder, unspecified

F11.98 Opioid use, unspecified with other specified opioid-induced disorder

F11.981 Opioid use, unspecified with opioid-induced sexual dysfunction

F11.982 Opioid use, unspecified with opioid-induced sleep disorder

F11.988 Opioid use, unspecified with other opioid-induced disorder

F11.99 Opioid use, unspecified with unspecified opioid-induced disorder
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ICD-10-CM: A Dictionary w/o Definitions
Drug Use/Abuse/Addiction

F11.2 Opioid dependence

- Excludes1: opioid abuse (F11.1-)
  - opioid use, unspecified (F11.9-)
- Excludes2: opioid poisoning (T40.0-T40.2-)

F11.20 Opioid dependence, uncomplicated
F11.21 Opioid dependence, in remission
F11.22 Opioid dependence with intoxication

- Excludes1: opioid dependence with withdrawal (F11.23)
- Excludes2: opioid dependence with intoxication (F11.22-)

- F11.220 Opioid dependence with intoxication, uncomplicated
- F11.221 Opioid dependence with intoxication delirium
- F11.222 Opioid dependence with intoxication with perceptual disturbance
- F11.229 Opioid dependence with intoxication, unspecified

F11.23 Opioid dependence with withdrawal

- Excludes1: opioid dependence with intoxication (F11.22-)

F11.24 Opioid dependence with opioid-induced mood disorder
F11.25 Opioid dependence with opioid-induced psychotic disorder

- F11.260 Opioid dependence with opioid-induced psychotic disorder with delusions
- F11.251 Opioid dependence with opioid-induced psychotic disorder with hallucinations
- F11.259 Opioid dependence with opioid-induced psychotic disorder, unspecified

F11.28 Opioid dependence with other opioid-induced disorder

- F11.281 Opioid dependence with opioid-induced sexual dysfunction
- F11.282 Opioid dependence with opioid-induced sleep disorder
- F11.288 Opioid dependence with other opioid-induced disorder

F11.29 Opioid dependence with unspecified opioid-induced disorder
Definitions – DSM-5

Use vs. Abuse vs. Dependency

- **Use** – legal use of a drug or chemical
- **Abuse** – illegal or excessive use of a drug or chemical causing adverse consequences
- **Dependency (at least 2 of the following)**
  - Item taken in larger amounts or over a longer period than intended
  - Persistent desire or unsuccessful efforts to cut down or control use
  - Great deal of time spent to obtain the chemical
  - Craving or a strong desire to use
  - Continued use despite adverse consequences due to drug/chemical
  - Failure to meet major role obligations at home, work, or school
  - Recurrent use in situations that are hazardous (2 DWIs)
  - Continued use despite knowledge of having a physical or mental condition that is worsened by the chemical use
  - Tolerance (need for more drug to have the same effect)
  - Withdrawal symptoms when drug is discontinued

Source: Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5)
Definitions – DSM-5

Remission

• **Intoxication** - Reversible substance-specific syndrome due to recent ingestion of a substance

• **Delirium** - A disturbance in attention (e.g. reduced ability to direct, focus, or sustain) and awareness (reduced orientation to environment that develops over a short period of time, that is different over baseline, and tends to fluctuate in severity over the course of a day than cannot be better explained by a preexisting neurocognitive disorder

• **Remission** - After full criteria for dependency were previously met, none of the criteria (except for craving or a strong desire to use) have been met for at least 3 months
  – Early remission – between 3 to 12 months
  – Sustained remission – over 12 months

Source: Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5)
Meditech 5.67

Alcohol use

- Alcohol use, last updated by Physician, SoCal on 2015-08-01 16:09

[used with abuse] [alcohol dependent] [alcohol dependency in remission]
[interaction with illegal drug] [interaction with prescribed drug] [accidental overdose] [intentional overdose]
**resulting in** [intoxication] [intoxication with delirium] [toxic encephalopathy]
[mood disorder] [psychosis with hallucinations] [psychosis with delirium] [with sleep disorder]
[in withdrawal] [with delirium tremens] [with withdrawal seizures]
[with other consequence - list]
# Alcohol and Drug Dependency

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Acute Blood Loss Anemia (not ↓ Hct)

- “Acute blood loss anemia” - CC
- Major Bleeding Definition
  - Clinically overt
  - Associated with a fall of the hemoglobin level of 2.0 g/dL (e.g. Hct drop of 6) or required transfusion of at least 2 units of red cells, or involved a critical organ or was fatal

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<th>MS-DRG Title</th>
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<th>Payment</th>
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<td>378</td>
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Indications for Endoscopy

Indications for Procedure:
- Abdominal Pain
- Achalasia
- Anemia
  - Blood Loss
  - Acute
  - Chronic
- Other
- Barrett’s Esophagus
- Esophageal Cancer Surveillance
- Bleeding, Gastrointestinal
  - Upper
  - Rectal
  - Hematemesis
  - Lower
  - Occult
  - Hematochezia
- Change of Bowel Habit
- Cirrhosis
- Varices
- Portal HTN
- Colon Cancer
  - Currently Present
  - Personal Past Hx
  - Screen. Exam
  - Family Hx
  - F/U Rx
- Colitis
  - Crohn’s
  - Ulcerative
  - C. Difficile
- Constipation
- Diarrhea
- Diverticulosis
- Diverticulitis
  - Bleeding
  - Obstructed
  - Perforated
- Dyspepsia
- Dysphagia
- Esophageal Cancer
  - Past History
  - Current
  - F/U of Rx
- Esophagitis
- Esophageal Ulcer
  - Herpetic
  - Erosive
  - Candida
- Gastric Outlet Obstruction
- Gastric Cancer
  - Currently Present
  - Past History of
  - Gastritis 2°
  - NSAID
  - Helicobacter
  - GERD
  - Heartburn, Unresponsive
- Gastrostomy Tube
- Jejunostomy
- New
- Malfunctioning
- Jaundice
  - Obstructive
  - CBD Stone
  - Malfunction Biliary Stent
- Malabsorption
  - r/o Celiac Dz.
- Mass
  - Stricture
  - with obstruction
- Esophageal
- Gastric
- Duodenal
- Sm Bowel
- Large Bowel
- Rectal
- Biliary
  - Other
- Nausea/Vomiting of uncertain etiology
- Odynophagia
- Polyps
- Ulcer
- Mass
- Stricture
  - Location:
    - Gastric
    - Duodenal
    - Colon
- Weight Loss
- Malnutrition

Gastroenterology can help capture **acute or chronic blood loss anemia** if it is listed as an indication for a procedure.
Underlying Causes of UGI Bleed

- Gastric and/or duodenal ulcers
- Esophagogastric varices with or without portal hypertensive gastropathy
- Esophagitis
- Erosive gastritis/duodenitis
- Mallory-Weiss syndrome
- Angiodysplasia
- Mass lesions (polyps/cancers)
- Dieulafoy's lesion
- Uncommon causes of upper gastrointestinal bleeding include hemobilia, hemosuccus pancreaticus, and aortoenteric fistula.
- In 11 percent of cases, no upper GI lesion can be identified.
# GI Bundled Payments

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Complicated Peptic Ulcer Qualifying Principal Diagnosis

- E164 Increased secretion of gastrin
- K2210 Ulcer of esophagus w/o bleeding
- **K2211 Ulcer of esophagus with bleeding**
- K2270 Barrett's esophagus w/o dysplasia
- K22710 Barrett's esophagus with low grade dysplasia
- K22711 Barrett's esophagus with high grade dysplasia
- K22719 Barrett's esophagus with dysplasia, unspecified
- K251 Acute gastric ulcer with perforation
- K255 Chronic or unspecified gastric ulcer with perforation
- K261 Acute duodenal ulcer with perforation
- K265 Chronic or unspecified duodenal ulcer with perforation
- K271 Acute peptic ulcer, site unspecified, with perforation
- K275 Chronic or unspecified peptic ulcer, site unspecified, with perforation
- K281 Acute gastrojejunal ulcer with perforation
- K283 Acute gastrojejunal ulcer w/o hemorrhage or perforation
- K285 Chronic or unspecified gastrojejunal ulcer with perforation
- K287 Chronic gastrojejunal ulcer w/o hemorrhage or perforation
- K289 Gastrojejunal ulcer, unspecified as acute or chronic, w/o hemorrhage or perforation
- K311 Adult hypertrophic pyloric stenosis
- K315 Obstruction of duodenum
- Q430 Meckel's diverticulum (displaced) (hypertrophic)
Major Esophageal Disorders
Qualifying Principal Diagnoses

- B3781 Candidal esophagitis
- I8500 Esophageal varices w/o bleeding
- I8501 Esophageal varices with bleeding
- I8511 Secondary esophageal varices with bleeding
- K223 Perforation of esophagus
- K226 Gastro-esophageal laceration-hemorrhage syndrome
- Q390 Atresia of esophagus w/o fistula
- Q391 Atresia of esophagus with tracheo-esophageal fistula
- Q392 Congenital trachea-esophageal fistula w/o atresia
- Q393 Congenital stenosis and stricture of esophagus
- Q394 Esophageal web
- Q395 Congenital dilatation of esophagus
- Q396 Congenital diverticulum of esophagus
- Q398 Other congenital malformations of esophagus
- Q399 Congenital malformation of esophagus, unspecified
- S27812A Contusion of esophagus (thoracic part), initial encounter
- S27813A Laceration of esophagus (thoracic part), initial encounter
- S27818A Other injury of esophagus (thoracic part), initial encounter
- S27819A Unspecified injury of esophagus (thoracic part), initial encounter
- T281XXA Burn of esophagus, initial encounter
- T286XXA Corrosion of esophagus, initial encounter

Inpatient coding rule – if an uncertain diagnosis is documented at DC, code as if it existed or was established
## Asthma: Severities of Illness

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<th>Persistent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>All</td>
<td>&lt;= 2 day/week</td>
<td>&gt; 2 days/week but not daily</td>
<td>Daily</td>
</tr>
<tr>
<td>Night Awakenings</td>
<td>0-4</td>
<td>0</td>
<td>1-2x/month</td>
<td>3-4x/month</td>
</tr>
<tr>
<td></td>
<td>&gt;=5</td>
<td>&lt;= 2x/month</td>
<td>3-4x/month</td>
<td>&gt; 1x/week but not nightly</td>
</tr>
<tr>
<td>SABA use for symptom control</td>
<td>All</td>
<td>&lt;= 2 days/week</td>
<td>&gt; 2 days/week but not daily</td>
<td>Daily</td>
</tr>
<tr>
<td>Interference with normal activity</td>
<td>All</td>
<td>None</td>
<td>Minor limitation</td>
<td>Some limitation</td>
</tr>
<tr>
<td>Lung Function</td>
<td></td>
<td></td>
<td></td>
<td>Extremely limited</td>
</tr>
<tr>
<td>FEV1 (predicted) or PEF (personal best)</td>
<td>&gt;=5</td>
<td>Normal FEV1</td>
<td>Normal FEV1</td>
<td>Normal FEV1</td>
</tr>
<tr>
<td></td>
<td>5-11</td>
<td>&gt;85%</td>
<td>&gt;80%</td>
<td>75-80%</td>
</tr>
<tr>
<td></td>
<td>&gt;=12</td>
<td>Normal</td>
<td>Reduced 5%</td>
<td>Reduced &gt; 5%</td>
</tr>
<tr>
<td>FEV1/FVC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td></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></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5-11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;=12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: UMichHS Asthma Quality Improvement Steering Committee
Asthma in Meditech 5.67

<table>
<thead>
<tr>
<th>Diagnosis Present on Admission</th>
<th>Asthma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualifiers</td>
<td>Yes</td>
</tr>
<tr>
<td>Qualifiers</td>
<td></td>
</tr>
<tr>
<td>Asthma severity</td>
<td>Yes</td>
</tr>
<tr>
<td>Asthma severity</td>
<td></td>
</tr>
<tr>
<td>mild intermittent</td>
<td>Yes</td>
</tr>
<tr>
<td>mild persistent</td>
<td>Yes</td>
</tr>
<tr>
<td>moderate persistent</td>
<td>Yes</td>
</tr>
<tr>
<td>severe persistent</td>
<td>Yes</td>
</tr>
<tr>
<td>unspecified severity</td>
<td>Yes</td>
</tr>
<tr>
<td>with acute exacerbation</td>
<td>Yes</td>
</tr>
<tr>
<td>with status asthmaticus</td>
<td>Yes</td>
</tr>
<tr>
<td>uncomplicated</td>
<td>Yes</td>
</tr>
</tbody>
</table>
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.-) \textbf{Includes “smoker”}
- tobacco use (Z72.0) \textbf{= MS-DRG CC}

“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

<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>F17210</td>
<td>Nicotine dependence, cigarettes, uncomplicated</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>F17211</td>
<td>Nicotine dependence, cigarettes, in remission</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>F17213</td>
<td>Nicotine dependence, cigarettes, with withdrawal</td>
<td>CMS CC</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>F17218</td>
<td>Nicotine dependence, cigarettes, with other nicotine-induced disorders</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>F17219</td>
<td>Nicotine dependence, cigarettes, with unspecified nicotine-induced disorders</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
COPD in Meditech 5.67

<table>
<thead>
<tr>
<th>Problem List</th>
<th>COPD (chronic obstructive pulmonary disease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis Present on Admission</td>
<td>chronic bronchitis  emphysema  COPD with acute exacerbation  COPD with acute lower respiratory infection  unspecified COPD  simple  mucopurulent  mixed simple and mucopurulent  unspecified  centrilobular  panlobular  unilateral  other  unspecified</td>
</tr>
<tr>
<td>Qualifiers</td>
<td>chronic bronchitis  emphysema  COPD with acute exacerbation  COPD with acute lower respiratory infection  unspecified COPD  simple  mucopurulent  mixed simple and mucopurulent  unspecified  centrilobular  panlobular  unilateral  other  unspecified</td>
</tr>
<tr>
<td>COPD type</td>
<td></td>
</tr>
<tr>
<td>Chronic bronchitis type</td>
<td></td>
</tr>
<tr>
<td>Emphysema type</td>
<td></td>
</tr>
<tr>
<td>Qualified Code</td>
<td></td>
</tr>
<tr>
<td>Problem Specific A/P</td>
<td></td>
</tr>
<tr>
<td>Support Text</td>
<td></td>
</tr>
</tbody>
</table>

| Chronic obstructive airway disease |  |
| Diagnosis Present on Admission |  |
| Qualifiers |  |
| COPD type |  |
| Chronic bronchitis type |  |
| Emphysema type |  |
| Qualified Code |  |
| Problem Specific A/P |  |
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.
Respiratory Failure in Meditech 5.67

<table>
<thead>
<tr>
<th>Diagnosis Present on Admission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualifiers</td>
</tr>
<tr>
<td>Chronicity</td>
</tr>
<tr>
<td>Respiratory failure complication</td>
</tr>
<tr>
<td>Qualified Code</td>
</tr>
<tr>
<td>Problem Specific A/P</td>
</tr>
<tr>
<td>Support Text</td>
</tr>
</tbody>
</table>

**Respiratory failure**

- Yes
- No

- acute
- acute on chronic
- chronic
- unspecified
- hypoxia
- hypercapnia
- hypoxia and hypercapnia
- unspecified whether with hypoxia or hypercapnia
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>81</td>
<td>Acute Myocardial Infarction</td>
<td>0.359</td>
</tr>
<tr>
<td>4111</td>
<td>Intermediate Coronary Syndrome</td>
<td>82</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>83</td>
<td>Angina Pectoris/Old Myocardial Infarction</td>
<td>0.244</td>
</tr>
<tr>
<td>4130</td>
<td>Angina decubitus</td>
<td>83</td>
<td>Angina Pectoris/Old Myocardial Infarction</td>
<td>0.244</td>
</tr>
<tr>
<td>4131</td>
<td>Prinzmetal angina</td>
<td>83</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>83</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)
Impact of Troponins on Heart Failure Mortality

If there is a rise and fall of troponins at the 99th URL in the setting of acutely decompensated systolic or diastolic HF, is it “troponin leak” or a non-STEMI?


Physicians need to be given the 99th URL, not a three-level “normal” value as exhibited to the right.
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**

<table>
<thead>
<tr>
<th>Criteria for acute myocardial infarction</th>
</tr>
</thead>
</table>

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.

[http://circ.ahajournals.org/content/early/2012/08/23/CIR.0b013e31826e1058.citation](http://circ.ahajournals.org/content/early/2012/08/23/CIR.0b013e31826e1058.citation)

Published online on August 24, 2012
Third Universal Definition of MI

Types of MI

1. Plaque rupture with thrombus
   - MI Type 1

2. Vasospasm or endothelial dysfunction
   - MI Type 2

3. Fixed atherosclerosis and supply-demand imbalance
   - MI Type 2

4. Supply-demand imbalance alone
   - MI Type 2
Demand **Ischemia** vs. Demand Infarction

Type 1 vs. Type 2 vs. NiMl,w,N

<table>
<thead>
<tr>
<th>Type 1 MI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usually spontaneous in onset with associated ECG changes such as ST-segment depression or elevation;</td>
</tr>
<tr>
<td>Patients often describe ischemic chest discomfort or equivalent;</td>
</tr>
<tr>
<td>Associated abnormal blood troponin levels tend to be higher than in type 2 MI, but this is not invariably the case;</td>
</tr>
<tr>
<td>Absence of conditions leading to elevated myocardial oxygen consumption or decreased myocardial blood flow;</td>
</tr>
<tr>
<td>Plaque rupture, ulceration, fissuring, erosion, or dissection with complex plaque and coronary arterial thrombus often seen during coronary angiography.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 2 MI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usually associated with conditions that lead to elevated myocardial oxygen demand, for example, tachycardia with heart rate &gt;150 beats per minute for a time, or decreased myocardial blood flow, for example, hypotension (BP &lt;90 mm Hg) secondary to blood loss;</td>
</tr>
<tr>
<td>ECG changes are often minimal, absent or non-specific;</td>
</tr>
<tr>
<td>Associated blood troponin levels often but not always minimally elevated;</td>
</tr>
<tr>
<td>Ischemic chest discomfort or equivalent may be absent;</td>
</tr>
<tr>
<td>Angiography often does not demonstrate plaque rupture with associated thrombus.</td>
</tr>
</tbody>
</table>

**Nonischemic myocardial injury with necrosis:**

<table>
<thead>
<tr>
<th>Nonischemic myocardial injury with necrosis:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usually occurs in patients with critical illness, for example, sepsis or respiratory failure, or in patients with chronic conditions associated with low grade ongoing myocardial injury, for example, severe heart failure or renal failure;</td>
</tr>
<tr>
<td>ECG changes are often minimal, absent or non-specific;</td>
</tr>
<tr>
<td>Associated blood troponin levels often minimally elevated and usually without a rise or fall;</td>
</tr>
<tr>
<td>Ischemic chest discomfort or equivalent usually absent;</td>
</tr>
<tr>
<td>Angiography usually does not demonstrate plaque rupture with associated thrombus.</td>
</tr>
</tbody>
</table>

MD must define, diagnose and document these conditions as to code them.

Increase in Type 2 MI and Nonischemic Heart Necrosis
Table 1 Causes of an Acute Elevation in Serum Troponin Levels

<table>
<thead>
<tr>
<th>Cause</th>
<th>Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac</td>
<td></td>
</tr>
<tr>
<td>Thrombotic acute coronary syndrome</td>
<td>Hypoxic damage to myocytes</td>
</tr>
<tr>
<td>Spontaneous coronary artery dissection</td>
<td>Hypoxic damage to myocytes</td>
</tr>
<tr>
<td>Acute heart failure</td>
<td>Global wall stretch, systemic and coronary hypoperfusion</td>
</tr>
<tr>
<td>Myocarditis</td>
<td>Direct damage to myocytes</td>
</tr>
<tr>
<td>Pericarditis</td>
<td>Direct damage to myocytes</td>
</tr>
<tr>
<td>Aortic dissection (Stanford A)</td>
<td>Dissection of coronary artery with hypoxic damage to myocytes</td>
</tr>
<tr>
<td>Cardiac procedures</td>
<td></td>
</tr>
<tr>
<td>• Coronary angioplasty</td>
<td>Side branch occlusions, coronary dissection, bulky devices causing transient ischemia and microembolism</td>
</tr>
<tr>
<td>• Electrophysiologic ablations</td>
<td>Direct damage to myocytes</td>
</tr>
<tr>
<td>• Electrical cardioversions</td>
<td>Direct damage to myocytes</td>
</tr>
<tr>
<td>• Open heart surgery</td>
<td>Direct surgical trauma, incomplete cardioprotection, reperfusion injury, myocardial infarction</td>
</tr>
<tr>
<td>Noncardiac</td>
<td></td>
</tr>
<tr>
<td>Defibrillator shocks</td>
<td>Direct damage to myocytes</td>
</tr>
<tr>
<td>Heart transplantation</td>
<td>Direct damage to myocytes</td>
</tr>
<tr>
<td>Cardiotoxic drugs</td>
<td>Inflammatory/immune mediated, direct surgical trauma</td>
</tr>
<tr>
<td>Cardiac contusion after blunt chest wall trauma</td>
<td>Direct toxic effects to myocytes</td>
</tr>
<tr>
<td>Pulmonary embolism</td>
<td>Right ventricular strain</td>
</tr>
<tr>
<td>Septic shock/critically ill patients</td>
<td>Oxygen supply/demand mismatch, cytokine/endotoxin-mediated toxicity, heterophile antibodies (false-positives)</td>
</tr>
<tr>
<td>Strenuous exercise</td>
<td>Ventricular stretch, right ventricular strain</td>
</tr>
<tr>
<td>Rhabdomyolysis</td>
<td>Direct damage to myocytes, cross-reactivity between skeletal and cardiac muscle isoforms with cTnT</td>
</tr>
</tbody>
</table>

- **DDx of acute troponin elevations**
<table>
<thead>
<tr>
<th>Cause</th>
<th>Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cardiac</strong></td>
<td></td>
</tr>
<tr>
<td>Chronic ischemic heart disease</td>
<td>Hypoxic damage to myocytes</td>
</tr>
<tr>
<td>Chronic heart failure</td>
<td>Global wall stretch, degradation of contractile protein, and cellular injury due to oxidative stress and neurohumoral factors</td>
</tr>
<tr>
<td>Left ventricular hypertrophy</td>
<td>Global wall stretch, degradation of contractile protein, and cellular injury due to oxidative stress and neurohumoral factors</td>
</tr>
<tr>
<td>Cardiac infiltrative disorders</td>
<td>Myocyte compression</td>
</tr>
<tr>
<td>- Amyloidosis</td>
<td></td>
</tr>
<tr>
<td>- Sarcoidosis</td>
<td></td>
</tr>
<tr>
<td><strong>Noncardiac causes</strong></td>
<td></td>
</tr>
<tr>
<td>End-stage renal disease</td>
<td>Multiple: concomitant cardiac disease, metabolic, left ventricular hypertrophy</td>
</tr>
</tbody>
</table>
Figure 2. Proposed Algorithm for Classifying Elevated Troponin Levels

Cardiac injury present
Troponin level >99th percentile

Acute troponin elevation
Rise and/or fall in troponin level over serial measurements

Chronic troponin elevation
Troponin level elevated but no rise and/or fall over serial measurements

Ischemic mechanism present?
Are the patient history, ECG, or cardiac imaging consistent with myocardial ischemia?

Yes
Clinical presentation consistent with atherosclerotic plaque rupture
Type 1 MI
Follow treatment guidelines for acute MI

Precipitant other than coronary artery disease
Anemia, tachyarrhythmia, severe hypertension, etc
Type 2 MI
Correct precipitant
Consider aspirin and β-blocker treatment

Nonischemic acute myocardial injury
Pulmonary embolism, acute heart failure, etc
Treat underlying disease
Recognize elevated troponin level as poor prognostic marker

Possible structural heart disease, chronic renal disease
Consider echocardiogram
Localization of MI

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

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

“acute inferior ST elevation MI”
<table>
<thead>
<tr>
<th>Diagnosis Present on Admission</th>
<th>Acute myocardial infarction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualifiers</td>
<td>Yes</td>
</tr>
<tr>
<td>Myocardial infarction ST status</td>
<td>No</td>
</tr>
<tr>
<td>Involved coronary artery</td>
<td>non-ST elevation myocardial infarction</td>
</tr>
<tr>
<td>Qualified Code</td>
<td>ST elevation myocardial infarction</td>
</tr>
<tr>
<td>Problem Specific A/P</td>
<td>LAD coronary artery</td>
</tr>
<tr>
<td>Support Text</td>
<td>left circumflex coronary artery</td>
</tr>
<tr>
<td></td>
<td>left main coronary artery</td>
</tr>
<tr>
<td></td>
<td>right coronary artery</td>
</tr>
<tr>
<td></td>
<td>other anterior wall coronary artery</td>
</tr>
<tr>
<td></td>
<td>other inferior wall coronary artery</td>
</tr>
<tr>
<td></td>
<td>other coronary artery</td>
</tr>
<tr>
<td></td>
<td>unspecified coronary artery</td>
</tr>
</tbody>
</table>
Demand MI
Coded as a STEMI

- Unspecified or “demand” MI = STEMI (default)
  - MD must say “NSTEMI” or other terms if the clinical circumstances warrant it.
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I21.0</td>
<td>ST elevation (STEMI) myocardial infarction of anterior wall</td>
</tr>
<tr>
<td>I21.01</td>
<td>ST elevation (STEMI) myocardial infarction involving left main coronary artery</td>
</tr>
<tr>
<td>I21.02</td>
<td>ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery</td>
</tr>
<tr>
<td>I21.09</td>
<td>ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall</td>
</tr>
<tr>
<td>I21.1</td>
<td>ST elevation (STEMI) myocardial infarction of inferior wall</td>
</tr>
<tr>
<td>I21.11</td>
<td>ST elevation (STEMI) myocardial infarction involving right coronary artery</td>
</tr>
<tr>
<td>I21.19</td>
<td>ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall</td>
</tr>
<tr>
<td>I21.2</td>
<td>ST elevation (STEMI) myocardial infarction of other sites</td>
</tr>
<tr>
<td>I21.21</td>
<td>ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery</td>
</tr>
<tr>
<td>I21.29</td>
<td>ST elevation (STEMI) myocardial infarction involving other sites</td>
</tr>
</tbody>
</table>

**Excludes**: ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery (I21.21)
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

• If heart failure, state if systolic or diastolic

• Differentiate cardiogenic vs. noncardiogenic pulmonary or peripheral edema states
  – Not all are cardiogenic in nature (e.g. fluid overload due to ESRD noncompliance)

• Capture all consequences,
  – Acute respiratory failure
  – Acute kidney injury
    • presumed rise of the serum creatinine of over 50% within the previous 7 days
  – Cardiogenic shock
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.
## Heart Failure in Meditech 5.67

<table>
<thead>
<tr>
<th>Diagnosis Present on Admission</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualifiers</td>
<td></td>
<td></td>
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<tr>
<td>Congestive heart failure type</td>
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<tr>
<td>Congestive heart failure chronicity</td>
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<td></td>
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<tr>
<td>Qualified Code</td>
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<td></td>
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<tr>
<td>Problem Specific A/P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support Text</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### CHF (congestive heart failure)

- systolic
- diastolic
- combined
- unspecified congestive heart failure type
- acute
- chronic
- acute on chronic
- unspecified congestive heart failure chronicity

### Congestive cardiac failure

- systolic
- diastolic
- combined
- unspecified congestive heart failure type
- acute
- chronic
- acute on chronic
- unspecified congestive heart failure chronicity

### Congestive heart failure

- systolic
- diastolic
- combined
- unspecified congestive heart failure type
- acute
- chronic
- acute on chronic
- unspecified congestive heart failure chronicity
Shock

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
<table>
<thead>
<tr>
<th>Diagnosis Present on Admission</th>
<th>Qualifiers</th>
<th>Problem Specific A/P</th>
<th>Support Text</th>
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<tr>
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<td>No</td>
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<td>No</td>
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<tr>
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<tr>
<td>Qualified Code</td>
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</tr>
<tr>
<td>Acute kidney injury</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
• “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
Reason for Elimination of 24 hour rule for TIA

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>
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<tr>
<td>2–3</td>
<td>39.5</td>
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<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
Differentiation from TIA
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
Subdural Hematomas

• 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 acute subdural hemorrhage</td>
</tr>
<tr>
<td>I6202</td>
<td>Nontraumatic subacute subdural hemorrhage</td>
</tr>
<tr>
<td>I6203</td>
<td>Nontraumatic chronic subdural hemorrhage</td>
</tr>
</tbody>
</table>

• Physicians must define and specify these in their documentation
  – Coders cannot code from inpatient X-ray reports
## Stroke in Meditech 5.67

### CVA (cerebral infarction)

<table>
<thead>
<tr>
<th>Qualifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

- embolism
- thrombosis
- vascular occlusion
- vascular stenosis
- nonpyogenic cerebral venous thrombosis
- other mechanism
- unspecified mechanism
- anterior cerebral artery
- anterior cerebral artery, left
- anterior cerebral artery, right
- basilar artery
- carotid artery
- carotid artery, left
- carotid artery, right
- cerebellar artery
- cerebellar artery, left
- cerebellar artery, right
- middle cerebral artery
- middle cerebral artery, left
- middle cerebral artery, right
- posterior cerebral artery
- posterior cerebral artery, left
- posterior cerebral artery, right
- vertebral artery
- vertebral artery, left
- vertebral artery, right
- other cerebral artery
- other precerebral artery
- unspecified cerebral artery
- unspecified precerebral artery

### CVA (cerebral vascular accident)

<table>
<thead>
<tr>
<th>Qualifiers</th>
</tr>
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<tbody>
<tr>
<td>Yes</td>
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</table>

### Stroke

<table>
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<tr>
<th>Qualifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>
Stroke or Intracranial 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**

Source: Wikipedia - [http://tinyurl.com/4ydzdl](http://tinyurl.com/4ydzdl) - Used with permission
Cerebral Edema, Cerebral Herniation

- Decadron treats the edema, not the malignancy
- Note any cerebral herniation or compression
  - Midline shift alone is only an X-ray finding
Case Study

Radiology Report

1. No significant interval change in volume of a mixed density right-sided subdural hematoma with associated mass effect on the underlying brain parenchyma. Persistent right to left midline shift measuring 7 to 8 mm with a mild component of 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

• Does the patient have an acute, subacute, or chronic subdural hematoma?
• Is there a subfalcine herniation?
Midline Shift of Brain in Meditech 5.67

Diagnosis Present on Admission
Qualifiers
Problem Specific A/P
Support Text

Software by MEDITECH

[with intracranial hypertension] due to [subdural hematoma] [epidural hematoma] [brain neoplasm] [cerebral hemorrhage] [traumatic brain injury] [ischemic stroke] [subarachnoid hemorrhage] [other etiology - ] resulting in [brain herniation] [respiratory failure] [Cheyne-Stokes respiration] [coma]
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>C3481</td>
<td>Malignant neoplasm of overlapping sites of right 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>CMS MCC</th>
<th>HAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>L89521</td>
<td>Pressure ulcer of left ankle, stage 1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>L89522</td>
<td>Pressure ulcer of left ankle, stage 2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>L89523</td>
<td>Pressure ulcer of left ankle, stage 3</td>
<td>CMS MCC</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>L89524</td>
<td>Pressure ulcer of left ankle, stage 4</td>
<td>CMS MCC</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>L89529</td>
<td>Pressure ulcer of left ankle, unspecified stage</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

- 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
New in ICD-10-CM

Chronic Non-Pressure Ulcer Codes

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

<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>
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

• **Note depth of excision**
  - Skin
  - Subcutaneous Tissue
  - Fascia
  - Muscle
  - Bone

If excision is not documented, coder will query and, if no answer, will assume it is non-excisional
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.
  – *Drug poisoning/underdosing/adverse effect:* Initial care

• **Subsequent encounter:** care during a period of healing or recovery.
  – *Fx care:* Cast change, suture removal, etc.
  – *F/U of drug effect*

• **Sequela:** After the healing process is complete.
  – *Fx care:* Arthritis remotely after trauma, etc.
  – *Long term effects of drug effects*
Traumatic Fractures
LEOC.FAR

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

- **Episode of care** *(NEW)*
  - “initial encounter”
  - “subsequent encounter”
  - “sequela”

- **Open vs. closed**

- **Classifications**
  - Salter classifications
  - Guistilo-Anderson classification for open fractures *(NEW)*
  - Others

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

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

- **Results** *(NEW in ICD-10)*
  - Routine or delayed healing
<table>
<thead>
<tr>
<th>Diagnosis Present on Admission</th>
<th>Ankle fracture</th>
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<tbody>
<tr>
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<tr>
<td>Encounter type</td>
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<td>Fracture type</td>
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<tr>
<td>Open fracture type</td>
<td>subsequent encounter</td>
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<tr>
<td>Laterality</td>
<td>sequela</td>
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<tr>
<td>Fracture healing</td>
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<td>Support Text</td>
<td>open type III</td>
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<td>left</td>
</tr>
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<td></td>
<td>right</td>
</tr>
<tr>
<td></td>
<td>unspecified laterality</td>
</tr>
<tr>
<td></td>
<td>with routine healing</td>
</tr>
<tr>
<td></td>
<td>with delayed healing</td>
</tr>
<tr>
<td></td>
<td>with nonunion</td>
</tr>
<tr>
<td></td>
<td>with malunion</td>
</tr>
</tbody>
</table>
Bone Pathology
Healthy vs. Pathological Bone

M80 Osteoporosis with current pathological fracture
   Includes: osteoporosis with current fragility fracture
   Use additional code to identify major osseous defect, if applicable (M89.7-)
   Excludes1: collapsed vertebra NOS (M48.5)
   pathological fracture NOS (M84.4)
   wedging of vertebra NOS (M48.5)
   Excludes2: personal history of (healed) osteoporosis fracture (Z87.310)
   The appropriate 7th character is to be added to each code from category M80:
   A - initial encounter for fracture
   D - subsequent encounter for fracture with routine healing
   G - subsequent encounter for fracture with delayed healing
   K - subsequent encounter for fracture with nonunion
   P - subsequent encounter for fracture with malunion
   S - sequela

• Fragility fracture has no code in ICD-10-CM
• Alternatives:
  – Pathological fracture
  – Insufficiency fracture
ICD-10-PCS Change
Inpatient Procedures

- ICD-9-CM

1 2 . 4 3

- ICD-10-PCS

0 D B 5 8 Z X
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

Section
Body System
Root Operation
Body Part
Approach
Device
Qualifier
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?

<table>
<thead>
<tr>
<th>Body Part</th>
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</thead>
<tbody>
<tr>
<td>0 Lymphatic, Head</td>
</tr>
<tr>
<td>1 Lymphatic, Right Neck</td>
</tr>
<tr>
<td>2 Lymphatic, Left Neck</td>
</tr>
<tr>
<td>3 Lymphatic, Right Upper Extremity</td>
</tr>
<tr>
<td>4 Lymphatic, Left Upper Extremity</td>
</tr>
<tr>
<td>5 Lymphatic, Right Axillary</td>
</tr>
<tr>
<td>6 Lymphatic, Left Axillary</td>
</tr>
<tr>
<td>7 Lymphatic, Thorax</td>
</tr>
<tr>
<td>8 Lymphatic, Internal Mammary, Right</td>
</tr>
<tr>
<td>9 Lymphatic, Internal Mammary, Left</td>
</tr>
<tr>
<td>B Lymphatic, Mesenteric</td>
</tr>
<tr>
<td>C Lymphatic, Pelvis</td>
</tr>
<tr>
<td>D Lymphatic, Aortic</td>
</tr>
<tr>
<td>F Lymphatic, Right Lower Extremity</td>
</tr>
<tr>
<td>G Lymphatic, Left Lower Extremity</td>
</tr>
<tr>
<td>H Lymphatic, Right Inguinal</td>
</tr>
<tr>
<td>J Lymphatic, Left Inguinal</td>
</tr>
<tr>
<td>K Thoracic Duct</td>
</tr>
<tr>
<td>L Cisterna Chyli</td>
</tr>
<tr>
<td>M Thymus</td>
</tr>
<tr>
<td>P Spleen</td>
</tr>
</tbody>
</table>
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

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>Body Part</th>
<th>Approach</th>
<th>Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Medical and Surgical</td>
<td>2</td>
<td>Heart and Great Vessels</td>
<td>N</td>
<td>Release: Freeing a body part from an abnormal physical constraint by cutting or by the use of force</td>
</tr>
<tr>
<td>6</td>
<td>4 Coronary Vein</td>
<td>7</td>
<td>Atrial Septum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Atrial Right</td>
<td>7</td>
<td>Atrial Left</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Conduction Mechanism</td>
<td>9</td>
<td>Chordae Tendineae</td>
<td></td>
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</tr>
<tr>
<td>9</td>
<td>D Papillary Muscle</td>
<td>F</td>
<td>Aortic Valve</td>
<td></td>
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<tr>
<td>10</td>
<td>G Mitral Valve</td>
<td>H</td>
<td>Pulmonary Valve</td>
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<tr>
<td>11</td>
<td>J Tricuspid Valve</td>
<td>K</td>
<td>Ventricles, Right</td>
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</tr>
<tr>
<td>12</td>
<td>L Ventricles, Left</td>
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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

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 236 – Coronary Bypass w/o Cardiac Cath – w/o MCC – 3.7777

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
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?