

# **Debugging Sepsis: Documentation and Coding Guidelines**

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# **SIRS Diagnostic Criteria**

- SIRS = Systemic Inflammatory Response Syndrome
- Two or more of the below:
  - Temp > 38°C (100.4°F) or < 36°C (96.8°F)
  - Heart Rate > 90
  - Respiratory Rate >20 or PaCO<sub>2</sub> <32 mmHg</li>
  - WBC >12,000/mm><sup>3</sup>, <4,000/mm><sup>3</sup>, or 10% bands
- Much dissatisfaction with this criteria (specifically among clinicians).
- Why?

#### **Common Causes of SIRS**

- Trauma
- Burns
- Pancreatitis
- Ischemia
- Hemorrhage
- Complication of Surgery
- Drug overdose

- Adrenal Insufficiency
- Pulmonary Embolism
- Complicated Aortic Aneurysm
- Cardiac Tamponade
- Anaphylaxis

### **About Sepsis**

- Epidemiology:
  - 2<sup>nd</sup> leading case of death in non-coronary ICU patients.
  - Tenth most-common cause of death overall according to CDC data.
  - More dangerous in elderly, immunocompromised, and critically ill patients.
  - Occurs in 1-2% of all hospitalizations and accounts for as much as 24% of ICU bed utilization.
  - Worldwide, mortality rates range from 20% for sepsis, through 40% for severe sepsis, to over 60% for septic shock

#### **More Good News**

- Approximately 20-35% of patients with severe sepsis and 40-60% of patients with septic shock die within 30 days.
- Others die within the ensuing six months.
- Late deaths often result from poorly controlled infection, immunosuppression, complications of intensive care, failure of multiple organs, or the patient's underlying disease.
- Published studies have demonstrated that for every hour delay in the administration of appropriate antibiotic therapy, there is an associated 7% rise in mortality.

# **Treatments for Sepsis**

- IV fluids and antibiotics are administered in the ICU setting.
- To maintain blood pressure, specific vasopressor medications can be used.
- Mechanical ventilation and dialysis may be needed to support the function of the lungs and kidneys.
- A central venous catheter and an arterial catheter may be placed.
- Other preventative measures must be followed for deep vein thrombosis, stress ulcers, and pressure ulcers.
- Some patients benefit from tight control of blood sugar levels with insulin or low-dose corticosteroids.

### **Clinical Sepsis Definitions**

- <u>Sepsis</u> is defined as SIRS associated with suspected or confirmed infection. Positive blood cultures are not necessary.
- <u>Severe sepsis</u> is sepsis complicated by a predefined organ dysfunction.
- <u>Septic shock</u> is cardiovascular collapse related to severe sepsis despite adequate fluid resuscitation. Hypotension is: systolic blood pressure (SBP) < 90 mm Hg, mean arterial pressure (MAP) <65 mm Hg or a reduction of >40 mm Hg on baseline SBP.

# **Organ Dysfunction Criteria**

- Include:
  - Hypoxemia (PaO<sub>2</sub>FiO<sub>2</sub> ratio < 300);</li>
  - Acute oliguria (urine output < 0.5 ml/kg/h for 2 h) or creatinine > 2.0 mg/dL;
  - Coagulopathy (platelet count < 100.000, INR > 1.5 or pTTa > 60s);
  - Ileus
  - Plasma bilirubin > 4 mg/dL)
- From the 1991 conference organized by the American College of Chest Physicians and the Society of Critical Care Medicine.
- Updated in February, 2016

#### 2001 SCCM/ESICM/ACCP/ATS/SIS International Sepsis Definitions Conference

Table 1 - Diagnostic criteria for sepsis

#### Infection, documented or suspected, and some of the following:

General variables

Fever (core temperature > 38.3 °C)

Hypothermia (core temperature < 36 °C)
Heart rate > 90 min<sup>-1</sup> or > 2 SD above the normal value for age =

Altered mental status

Significant edema or positive fluid balance (> 20 ml/kg over 24 hrs)

Hyperglycemia (plasma glucose > 120 mg/dl or 7.7 mmol/l) in the absence of diabetes

Inflammatory variables

Leukocytosis (WBC count > 12,000/mm³)

Leukopenia (WBC count < 4,000/mm³)

Normal WBC count with > 10% immature forms

Plasma C-reactive protein > 2 SD above the normal value

Plasma procalcitonin > 2 SD above the normal value

Hemodynamic variables

Arterial hypotension (SBP < 90 mm Hg, MAP < 70, or an SBP decrease > 40 mm Hg in adults or < 2 SD below normal for age)  $SvO_2 > 70\%$ 

Cardiac index > 3.5 l/min-1/M-23

Organ dysfunction variables

Arterial hypoxemia (PaO $_2$ /FIO $_2$  < 300) Acute oliguria (urine output  $< 0.5~\rm ml/kg^{-1}/hr^{-1}$  or  $45~\rm mmol/l$  for at least 2~hrs)

Creatinine increase > 0.5 mg/dl

Coagulation abnormalities (INR > 1.5 or aPTT > 60 secs) lleus (absent bowel sounds)

Thrombocytopenia (platelet count < 100,000/mm³)

Hyperbilirubinemia (plasma total bilirubin > 4 mg/dl or 70 mmol/l)

Tissue perfusion variables

Hyperlactatemia (> 1 mmol/l)
Decreased capillary refill or mottling

Summary: "...the clinician at bedside will make the clinical judgment as to whether or not a patient has sepsis or not..."

#### Breaking News: The Third International Consensus Definitions for Sepsis and Septic Shock (February 2016)

#### • Key Findings:

- "Previous definitions included an excessive focus on inflammation"
- "Misleading model that sepsis follows a continuum through severe sepsis to shock"
- "Inadequate specificity and sensitivity of the SIRS criteria"
- "Concluded that the term SEVERE SEPSIS WAS REDUNDANT"

#### Recommendations:

- "Sepsis should be defined as life-threatening organ dysfunction caused by a dysregulated host response to infections"
- "For clinical operationalization, organ dysfunction can be represented by an increase in the Sequential (Sepsis-related) Organ Failure Assessment (SOFA) score of 2 points or more which is associated with an in-hospital mortality greater than 10%"
- "Septic shock should be defined as a subset of sepsis in which particularly profound circulatory, cellular, and metabolic abnormalities are associated with a greater risk of mortality than with sepsis alone."

#### Breaking News: The Third International Consensus Definitions for Sepsis and Septic Shock (February 2016)

#### http://jama.jamanetwork.com/article.aspx?articleid=2492881

System	Score				
	0	1	2	3	4
Respiration					
PaO <sub>2</sub> /FiO <sub>2</sub> , mm Hg (kPa)	≥400 (53.3)	<400 (53.3)	<300 (40)	<200 (26.7) with respiratory support	<100 (13.3) with respiratory support
Coagulation					
Platelets, ×10 <sup>3</sup> /μL	≥150	<150	<100	<50	<20
Liver					
Bilirubin, mg/dL (μmol/L)	<1.2 (20)	1.2-1.9 (20-32)	2.0-5.9 (33-101)	6.0-11.9 (102-204)	>12.0 (204)
Cardiovascular	MAP ≥70 mm Hg	MAP <70 mm Hg	Dopamine <5 or dobutamine (any dose) <sup>b</sup>	Dopamine 5.1-15 or epinephrine ≤0.1 or norepinephrine ≤0.1 <sup>b</sup>	Dopamine >15 or epinephrine >0.1 or norepinephrine >0.1
Central nervous system					
Glasgow Coma Scale score <sup>c</sup>	15	13-14	10-12	6-9	<6
Renal					
Creatinine, mg/dL (µmol/L)	<1.2 (110)	1.2-1.9 (110-170)	2.0-3.4 (171-299)	3.5-4.9 (300-440)	>5.0 (440)
Urine output, mL/d				<500	<200
Abbreviations: Fio <sub>2</sub> , fraction of inspired oxygen; MAP, mean arterial pressure;			<sup>b</sup> Catecholamine doses are given as µg/kg/min for at least 1 hour.		
Pao <sub>2</sub> , partial pressure of oxygen.			<sup>c</sup> Glasgow Coma Scale scores range from 3-15; higher score indicates better		

#### Breaking News: The Third International Consensus Definitions for Sepsis and Septic Shock (February 2016)

#### **qSOFA (Quick SOFA) Criteria**

- Respiratory rate ≥22/min
- Altered mentation
- Systolic blood pressure ≤100 mm Hg

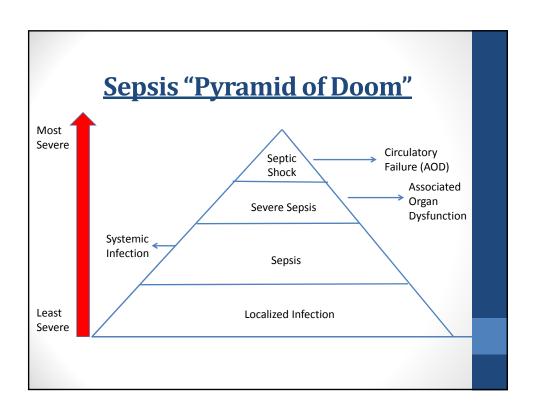
#### **Other Areas Addressed for Clinical Definitions:**

- Hypotension
- Need for Vasopressor Therapy
- Raised Lactate
- Adequate Fluid Resuscitation

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#### **Using Pre-ICD-10 Coding Clinics**

- "As far as previously published advice on documentation is concerned, documentation issues would generally not be unique to ICD-9-CM, and so long as there is nothing new published in *Coding Clinic for ICD-10-CM and ICD-10-PCS* to replace it, the advice would stand."
- "As with the application of any of the coding advice published in Coding Clinic, the information needs to be reviewed carefully for similarities and differences on a case by case basis. Care must be exercised as the codes may have changed. Such change could be related to new codes, new combination codes, code revisions, a change in nonessential modifiers, or any other instructional note."





#### What about Bacteremia?

- Bacteremia denotes a laboratory finding while sepsis reflects acute illness (CC, Vol. 17, No. 2, Second Quarter 2000 page 5-6).
  - "The Coder should be aware of the difference between these two conditions and consult the physician when the diagnosis is not clearly differentiated."
  - Possible query opportunity

#### SIRS Due to a Non-Infectious Process

- When SIRS is documented with a noninfectious condition, and no subsequent infection is documented, the code for the underlying condition, such as an injury, should be assigned, followed by code R65.10, Systemic inflammatory response syndrome (SIRS) of noninfectious origin without acute organ dysfunction, or code R65.11, Systemic inflammatory response syndrome (SIRS) of non-infectious origin with acute organ dysfunction.
- If an associated acute organ dysfunction is documented, the appropriate code(s) for the specific type of organ dysfunction(s) should be assigned in addition to code R65.11.
- If acute organ dysfunction is documented, but it cannot be determined if the acute organ dysfunction is associated with SIRS or due to another condition (e.g., directly due to the trauma), the provider should be queried.

# **Coding Clinic**

#### Question:

 A 68-year-old male presents to our facility with symptoms of malaise, fatigue and fever. The patient was diagnosed with systemic inflammatory response syndrome (SIRS). However, he did not have sepsis. The provider listed "SIRS secondary to pneumonia," in his diagnostic statement. My particular encoder is directing me to the sepsis code. ICD-10-CM does not seem to have a code for SIRS due to infectious process. How should we report SIRS due to pneumonia?

#### Answer:

- Assign only code J18.9, Pneumonia unspecified organism. When sepsis
  is not present, no other code is required. The ICD-10-CM does not
  provide a separate code or index entry for SIRS due to an infectious
  process. If the health record documentation appears to meet the
  criteria for sepsis, the provider should be queried for clarification.
  Encoders are tools that may assist coders; however the codes must be
  validated and supported by the health record documentation.
- Coding Clinic, Third Quarter ICD-10 2014 Page: 4

# **Sepsis and Severe Sepsis**

- "For a diagnosis of sepsis, assign the appropriate code for the underlying systemic infection. If the type of infection or causal organism is not further specified, assign code A41.9, Sepsis, unspecified organism."
- "If a patient has sepsis and associated acute organ dysfunction or multiple organ dysfunction (MOD), follow the instructions for coding severe sepsis."
- "If a patient has sepsis and an acute organ dysfunction, but the medical record
  documentation indicates that the acute organ dysfunction is related to a medical
  condition other than the sepsis, do not assign a code from subcategory R65.2,
  Severe sepsis. An acute organ dysfunction must be associated with the sepsis in
  order to assign the severe sepsis code."
- "If the documentation is not clear as to whether an acute organ dysfunction is related to the sepsis or another medical condition, query the provider."
- "Negative or inconclusive blood cultures do not preclude a diagnosis of sepsis in patients with clinical evidence of the condition... However, the <u>provider should be</u> <u>queried</u>."

#### **Severe Sepsis**

- "The coding of severe sepsis requires a minimum of 2 codes: first a code for the underlying systemic infection, followed by a code from subcategory R65.2, Severe sepsis. If the causal organism is not documented, assign code A41.9, Sepsis, unspecified organism, for the infection. Additional code(s) for the associated acute organ dysfunction are also required."
- "Due to the complex nature of severe sepsis, some cases may require querying the provider prior to assignment of the codes."
- •R65.21 severe sepsis w/o septic shock
- •R65.22 severe sepsis with septic shock

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- "Diagnoses subsequently confirmed after admission are considered present on admission if at the time of admission they are documented as suspected, possible, rule out, differential diagnosis, or constitute an underlying cause of a symptom that is present at the time of admission."
- "If the final diagnosis contains a possible, probable, suspected, or rule out diagnosis, and this diagnosis was based on signs, symptoms or clinical findings suspected at the time of inpatient admission, assign 'Y."
- "If the final diagnosis contains a possible, probable, suspected, or rule out diagnosis, and this diagnosis was based on signs, symptoms or clinical findings that were not present on admission, assign 'N'."
- If at the time of code assignment the documentation is unclear as to whether a condition was present on admission or not, it is appropriate to query the provider for clarification.
- CYA your POA

#### Sepsis/Severe Sepsis with a Localized Infection

- If the reason for admission is both sepsis, severe sepsis, or SIRS and a localized infection (pneumonia, cellulitis, etc), code in this order:
  - The systemic infection first
  - The localized infection
  - If the patient has severe sepsis, a code from subcategory R65.2 should also be assigned as a secondary diagnosis.
- If the patient is admitted with a localized infection, such as pneumonia, and sepsis/severe sepsis doesn't develop until after admission, the localized infection should be assigned first, followed by the appropriate sepsis/severe sepsis codes.

#### **Coding Clinic Guidance**

- Third Quarter 2011, pg. 14-15
- Example: A 45-year-old patient was admitted with mental status changes. She had a long-standing history of methicillin resistant Staphylococcus aureus (MRSA) osteomyelitis of the ankle and end-stage renal failure (ESRD), receiving hemodialysis. Laboratory workup showed a white count of 28,000 and blood cultures positive for MRSA. The provider determined that the patient's mental status change was due to sepsis and his final diagnostic statement listed, "sepsis secondary to osteomyelitis." What is the appropriate sequencing of the principal diagnosis, the localized infection (osteomyelitis) or the systemic infection (sepsis)? How are coders to determine whether the localized infection is the underlying cause of the sepsis?

### **Coding Clinic Guidance**

• Answer: Assign code 038.12, MRSA Septicemia, as the principal diagnosis since it was POA and is the systemic infection. Assign codes 995.91, Sepsis, 730.17, Chronic osteomyelitis, ankle and foot, 585.6, ESRD, and V45.11, Renal dialysis status, as additional diagnoses. Even though osteomyelitis was POA, it is a localized infection, and the guidelines dictate that when the reason for admission is both a localized infection and sepsis, a code for the systemic infection is assigned first, then code 995.91 (or 995.92 if applicable), followed by the code for the localized infection. The coder cannot assume a linkage between sepsis and an underlying localized infection, such as pneumonia, osteomyelitis, or a urinary tract infection. The provider must indicate a direct causal relationship between the underlying condition and the sepsis.

### **Septic Shock**

- Septic shock generally refers to circulatory failure associated with severe sepsis, and therefore, it represents a type of acute organ dysfunction.
- "For cases of septic shock, the code for the systemic infection should be sequenced first, followed by code R65.21, Severe sepsis with septic shock or code T81.12, Postprocedural septic shock. Any additional codes for the other acute organ dysfunctions should also be assigned."
- Postprocedural Septic Shock includes Severe Sepsis

#### **Another Coding Clinic Example**

- Question: When a patient is admitted with septic shock due to bacterial peritonitis, should a code for the peritonitis (567.29) or code 038.9, unspecified septicemia, be assigned as the principal diagnosis?
- Answer: Assign code 038.x, Septicemia, as the principal diagnosis. Assign code 567.29, Other suppurative peritonitis, code 995.92, Severe sepsis, and code 785.52 Septic shock, as additional diagnoses...

### **Postprocedural Sepsis**

- "As with all postprocedural complications, code assignment is based on the provider's documentation of the relationship between the infection and the procedure."
- Sepsis due to a postprocedural infection:
- First code the postprocedural infection code:
  - T81.4 Infection following a procedure
  - 086.0 Infection of obstetrical surgical wound
  - T88.0 Infection following immunization
  - T80.2 Infections following infusion, transfusion, and therapeutic injection
- Then code the systemic infection (sepsis)
- If severe sepsis has also occurred, code R65.20 Severe Sepsis without septic shock
- If septic shock has also occurred, omit the severe sepsis code and code T81.12 Postprocedural septic shock instead.

# **Coding Clinic**

 Question: A 53-year-old male patient status post coronary artery bypass graft (CABG) was readmitted to the hospital after he developed redness and purulent drainage from the sternal wires. The patient quickly deteriorated after admission, became septic and went into shock two days after admission. With aggressive intravenous antibiotic management, the patient improved and was later discharged. The physician also documented Methicillin resistant Staphylococcus aureus sepsis and postoperative septic shock. How should this case be coded?

# **Coding Clinic**

- Answer
  - Assign code 998.59, Other postoperative infection, as the principal diagnosis. Assign codes, 038.12, Methicillin resistant Staphylococcus Aureus septicemia; 995.92, Severe sepsis; 998.02, Postoperative shock, septic; and V45.81, Aortocoronary bypass status, as secondary diagnoses. Code assignment s supported by the Official Guidelines for Coding and Reporting, Section I.C.1.b.

# **Pregnancy-Related Sepsis**

- Puerperal infection refers to a bacterial infection following childbirth.
  - 2%-4% of new mothers who deliver vaginally suffer some form of puerperal infection, but for cesarean sections, the figure is 5-10 times higher.
  - Risk factors include extended labor, obesity, anemia, and poor prenatal nutrition.
- "Code O85, Puerperal sepsis, should be assigned with a secondary code to identify the causal organism."
- "A code from category A40, Streptococcal sepsis, or A41, Other sepsis, should not be used for puerperal sepsis."
- "If applicable, use additional codes to identify severe sepsis (R65.2-) and any associated acute organ dysfunction."

### **Coding Clinic Example**

- Fourth Quarter, 2009, pgs. 96-98
- Example: A 30-year-old female patient was admitted to the hospital and diagnosed with severe sepsis and acute renal failure. She had delivered a healthy baby via Csection two weeks prior to the current admission. The documentation reflected that the severe sepsis with acute renal failure was due to a MRSA Staph aureus sepsis from the C-section wound. How should this case be coded?

# **Coding Clinic Example**

- Answer:
  - Assign code 674.34, Other complications of obstetrical surgical wounds, as the principal diagnosis. Assign also codes 670.24, Puerperal sepsis, postpartum condition or complication; and 041.12, Methicillin resistant Staphylococcus aureus for the MRSA puerperal sepsis, code 995.92, Severe sepsis, and 584.9, Acute kidney failure, unspecified, as additional diagnoses. The sequencing is based on the Official Guidelines for Coding and Reporting instructions regarding puerperal sepsis and postprocedural sepsis.

# **Newborn Sepsis**

- Septicemia of the newborn is one of the most serious newborn illnesses and a significant cause of death for neonates.
  - Often seen in low birthweight babies, babies with decreased respiratory function at birth, and those with high-risk maternal factors.
- "Category P36, Bacterial sepsis of newborn, includes congenital sepsis.
  If a perinate is documented as having sepsis without documentation of
  congenital or community acquired, the default is congenital and a code
  from category P36 should be assigned."
- "If the P36 code includes the causal organism, an additional code from category B95, Streptococcus, Staphylococcus, and Enterococcus as the cause of diseases classified elsewhere, or B96, Other bacterial agents as the cause of diseases classified elsewhere, should not be assigned."
- "If the P36 code does not include the causal organism, assign an additional code from category B96."

#### **An Interesting Case**

- Coding Clinic, 1<sup>st</sup> Quarter 2010 pgs. 10-11
- Question: The patient was admitted with a three-day history of fever. Upon admission the patient had tachycardia and low white blood count. The provider documented that clinically the patient fulfilled the criteria for systemic inflammatory response syndrome (SIRS). A complete sepsis workup was carried out to identify the source of infection. Blood and cerebrospinal fluid cultures were negative. Urinalysis and chest x-rays were completely normal. Based on the lab findings, the provider indicated that the patient did not have an acute infectious process and had developed systemic inflammatory response syndrome (SIRS) secondary to Zyprexa. The patient's Zyprexa was held and his vital signs returned to normal. What is the appropriate code assignment for SIRS secondary to a possible drug reaction?

#### **An Interesting Case**

• Answer: Code the presenting symptoms (e.g., tachycardia, tachypnea, etc.) along with code E939.3, Pyschotropic agents, other antipsychotics, neuroleptics, and major tranquilizers to identify the external cause. The symptoms are the systemic inflammatory responses. Code 995.93, Systemic inflammatory response syndrome due to noninfectious process without acute organ dysfunction, should be assigned as an additional diagnosis. The coding of SIRS requires a minimum of two codes: a code for the underlying cause (such as infection or trauma) and a code from subcategory 995.9, Systemic inflammatory response syndrome (SIRS). Instructional notes under code 995.93 direct, "Code first underlying conditions." However, in this case there is no underlying condition since the systemic inflammatory response syndrome occurred as an adverse reaction to the medication.

# **Another Interesting Case**

- Coding Clinic, 1<sup>st</sup> Quarter 2012, pg. 19
- Question: The patient was transferred to the long term care hospital (LTCH) following a lengthy hospitalization for sepsis and acute respiratory failure. She was transferred to the LTCH for further intravenous antibiotic treatment and management of her multiple medical problems including resolving coagulasenegative staphyloccus sepsis and respiratory failure. Since the sepsis is resolving, would it be appropriate to code sepsis as the appropriate diagnosis? The ICD-9-CM Official Guidelines for Coding and Reporting do not address this issue.

### **Another Interesting Case**

- Answer: The Editorial Advisory Board (EAB) for Coding Clinic has become aware of a pattern of documentation problems concerning patients transferred to the LTCH with a diagnosis of sepsis. Physician advisers reviewing these cases did not agree that these patients were truly septic since they had no clinical indicators. If the documentation is unclear as to whether the patient is still septic, query the provider for clarification. Facilities should work with the medical staff to improve the physician documentation and address any documentation issues. Please refer to the Fourth Quarter 2003 issue fo Coding Clinic, pages 102-103, for additional information regarding coding and reporting for long term care hospitals.
- i.e. "We have no clue."

#### **Competing Systemic Infections**

- Question:
- A patient was admitted, diagnosed and died secondary to septic shock due to Toxic Shock Syndrome (TSS) related to staph pneumonia. Would the TSS be considered the systemic infection and coded as the principal diagnosis? Or is the TSS considered a localized infection and sepsis (the systemic infection) assigned as the principal diagnosis?
- Answer:
- Assign code 040.82, Toxic Shock Syndrome, as the principal diagnosis. TSS is a systemic infection. Code 040.82 appropriately describes the systemic infection and should be used instead of code 038.19, Other staphylococcal septicemia. Codes 995.92, Severe sepsis, 785.52, Septic shock, and 482.49, Other staphylococcus pneumonia, should be assigned as additional diagnoses for the severe sepsis, septic shock and staph pneumonia.
- Coding Clinic, Second Quarter 2013 Page: 21

### **Sepsis DRG Redeterminations**

- Why the scrutiny?
  - · Sepsis sequencing issues
    - Many coders think the guidelines require sepsis to always be the principal diagnosis.
    - The rules seem to imply that whenever a patient has sepsis and a localized infection no matter
      what else occurred during an admission that the principal diagnosis is always a code from the
      sepsis series.
  - Pneumonia and sepsis
    - RACs are trawling for cases where the hospital billed for pneumonia as the principal diagnosis but the patient also had sepsis. If the patient had sepsis at admission, the rule is that the hospital must code for sepsis as the principal diagnosis.
    - Hospitals have been appealing when sepsis has been documented as suspected of likely and not confirmed, but they have not been winning.
- What you can do:
  - Scrutinize your PEPPER Reports
  - Follow the Coding Guidelines
  - Query for the most accurate documentation

Questions?