Making Sense of Sepsis Coding

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Today’s Outline

- The Cost of Sepsis
- The Progression of Sepsis
- The Organ Dysfunctions and Documentation
- The Changes In Sepsis Coding In ICD-10-CM
- Areas That are Still Unclear
- More Sepsis Coding Scenarios
How Common is Sepsis?

- More than one million people get sepsis every year.
- Between 28 – 50% of these people die from sepsis.
- The number of sepsis cases every year has been on the rise.
- The cost of treating sepsis was more than $20 billion in 2011.

The Cost of Sepsis

- Most common reason for ICU admissions
- Usually requires 7 – 14 days of hospital care
- Average charge for a sepsis patient is $50,000 compared to $35,000 for other admissions

Example: Sepsis vs. Influenza as Principal Diagnosis

- A 39-year-old patient was admitted with the diagnosis of community-acquired pneumonia in the setting of presumptive influenza and concurrent sepsis with asthma exacerbation, acidosis, and hypoxia.
- In the H&P, it was documented that the patient had sepsis and SIRS, meeting the criteria with leukocytosis, fever, tachypnea, and tachycardia with an identified source, i.e. pneumonia with influenza.
- The sputum culture was positive for pseudomonas pneumonia.
- The patient had a 6 day length of stay.
- Sepsis was not documented on the discharge summary and the documentation for sepsis was not well supported in the progress notes.
- A query was sent that asked if the provider agreed with the diagnosis of sepsis that was documented on the H&P.
Example: Coding and Reimbursement

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS-DRG 194</td>
<td>$5694.01 MS-DRG 871 $10,621.61</td>
</tr>
<tr>
<td>J11.08</td>
<td>Influenza due to an unidentified flu virus with specified pneumonia</td>
</tr>
<tr>
<td>J45.901</td>
<td>Unspecified asthma with acute exacerbation</td>
</tr>
<tr>
<td>E87.2</td>
<td>Acidosis</td>
</tr>
<tr>
<td>J15.1</td>
<td>Pneumonia due to Pseudomonas</td>
</tr>
<tr>
<td>R09.02</td>
<td>Hypoxemia</td>
</tr>
<tr>
<td>A41.9</td>
<td>Sepsis, unspecified organism</td>
</tr>
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Definitions

- **MS-DRG** – Medicare Severity Diagnosis-Related Group evaluate quality of care and utilization and reimbursement of services, implemented in 2008
- **POA** – Present on admission indicators tell if the diagnoses was present at the time the patient was admitted, implemented in 2007
- **SIRS** – Systemic Inflammatory Response Syndrome
- **SIRS criteria** – A group of symptoms that typically occur in patient with a severe infection that may lead to sepsis. Consists of monitoring the patient’s temperature, heart rate, respiratory rate and white blood cell count
- **Underlying systemic infection** – Usually refers to sepsis
- **Acute organ dysfunction** – When homeostasis is no longer maintained by the organ and begins to fail

The Progression of Sepsis

- **Localized infection** – UTI, pneumonia, cellulitis, osteomyelitis
- **Bacteremia** – A lab finding of bacteria in the blood
- **Septicemia** – A systemic disease associated with bacteria in the blood
- **Systemic inflammatory response syndrome** – The body’s clinical response to infection or trauma that triggers an acute inflammatory reaction and a cascade of responses in the body
- **Sepsis** – A systemic inflammatory response due to an infection
- **Severe Sepsis** – Sepsis with an acute organ dysfunction
- **Sepsis shock** – Hypotension and circulatory failure in the presence of sepsis
The Localized Infection

Local infection – most common sources are UTI, pneumonia, abdominal infection, infection of a device or surgical site, or cellulitis, etc.
Sepsis occurs when the organism from the local infection enters the blood stream and causes the patient illness

Codes for Localized Infections

Urinary tract infection, site not specified – N39.0
Pneumonia, unspecified – J18.9
Cellulitis – L03.
Osteomyelitis, unspecified – M86.9
Post-operative wound infection – T81.4XXA

ICD-10-CM Coding Tips for Localized Infections

After the guidelines, if the patient is admitted with a localized infection and sepsis or severe sepsis, the code for the systemic infection (A41.9) should be assigned first, followed by a code for the localized infection (pneumonia, UTI, etc.) and if acute organ dysfunction is present, R65.2 with the code(s) for the acute organ dysfunctions.
If the patient is admitted with a localized infection and the patient does not develop sepsis or severe sepsis until after the admission, the localized infection would be coded first, followed by the appropriate codes for sepsis or severe sepsis.
Localized Infection Coding Example

Example: A patient is admitted with pneumonia and acute hypoxic respiratory failure. On day four of the hospital admission, the patient worsens and becomes hypotensive and is diagnosed with sepsis, septic shock, and acute renal failure due to sepsis. On the discharge summary, pneumonia was documented as the principal diagnosis.

J18.9 Pneumonia, unspecified organism
J96.01 Acute respiratory failure with hypoxia
A41.9 Sepsis, unspecified organism
N17.9 Acute kidney failure, unspecified
A51.21 Severe sepsis with septic shock

Bacteremia

Bacteremia – lab finding of bacteria in the blood in the absence of 2 or more signs of sepsis or SIRS, may be transient or may progress to sepsicemia
The patient isn’t symptomatic from the organisms in the blood
May be spurious finding
If the physician has documented both bacteremia and sepsis, code only the sepsis

Code for Bacteremia

R78.81 – Bacteremia
ICD-10-CM Coding Tips for Bacteremia

According to Coding Clinic 2Q 2011, pages 7-8, if bacteremia is associated with a local infection, then the local infection is coded first, followed by the code for bacteremia and then the infectious organism.

Bacteremia Example

A 79 year old patient is admitted with dizziness and fever. A urine sample is collected on admission and is positive for Klebsiella. The blood sample, taken on admission, is also positive for Klebsiella.
The doctor lists: UTI due to Klebsiella, bacteremia 2/2 Klebsiella.
N39.0 UTI
R78.81 Bacteremia
B96.1 Klebsiella as the cause of diseases classified elsewhere

Septicemia

Septicemia – a systemic disease associated with the presence and persistence of pathogenic microorganisms or their toxins in the blood
Bacteria – most common
Fungal
Virual
The patient is symptomatic from the organisms in the blood
Code for Septicemia

A41.9 is the default code for septicemia

ICD-10-CM Coding Tips for Septicemia

ICD-10-CM, the term “septicemia” in the alphabetic index references the coder to “sepsis.”
The various causative organisms and various septic conditions are listed under the entry for “sepsis” in ICD-10-CM.
The term “septicemia” is no longer found in the Guidelines for chapter 1.

Septicemia Example

A 42 year-old woman is admitted with high fever, malaise, and myalgias. Blood cultures and urine cultures taken on admission are positive for E. coli. The patient is diagnosed with septicemia and UTI due to E. coli.

A41.51 Sepsis due to E. Coli
A539.0 UTI
Systemic Inflammatory Response Syndrome - SIRS

- SIRS – Clinical response to infection or trauma that can trigger an acute inflammatory reaction and progresses to coagulation, impaired fibrinolysis, and organ failure.
- Manifested by 2 or more of the following symptoms: fever, tachycardia, tachypnea, leukocytosis or leukopenia.

Codes for SIRS

- R65.10 – Systemic inflammatory response syndrome of non-infectious origin without acute organ dysfunction.
- R65.11 - Systemic inflammatory response syndrome of non-infectious origin with acute organ dysfunction.

ICD-10-CM Coding Tips for SIRS

- Documentation of SIRS due to a localized infection can no longer be coded as sepsis in ICD-10-CM.
- If “SIRS due to pneumonia” is documented, the term “sepsis” must also be documented to code A41.9.
- This is a major change from ICD-9-CM.
- If the term “sepsis” is not documented with “SIRS” when it is due to a localized infection and clinical indicators for sepsis are present, the coder must query the physician for clarification.
SIRS: Infectious vs. Non-infectious

The guidelines for Chapter 1 no longer make reference to SIRS with sepsis and severe sepsis.
Guidelines pertaining to SIRS are now found in the Chapter 18 guidelines.
In the alphabetic index under “Syndrome, systemic inflammatory response,” the coder is led only to the non-infectious SIRS, R65.10 and R65.11.
Codes from section R65 may never be sequenced first; always code the underlying cause first.

Non-infectious SIRS

- Non-infectious causes are the result of
  - Trauma
  - Burns
  - Pancreatitis
  - Drug reaction, etc.
When SIRS is due to a non-infectious cause, the non-infectious process is coded first, followed by R65.10, or if acute organ dysfunction is present, R65.11.

SIRS Example

A 27 year-old patient is admitted with fever, tachypnea, and a high lipase level. The patient is diagnosed with SIRS due to pancreatitis.
K85.9 Pancreatitis
K65.10 SIRS of non-infectious origin without acute organ dysfunction
SIRS Criteria Table

Systemic Inflammatory Response Syndrome (SIRS)
Two or more of the following
- Temperature > 38°C or < 36°C
- Heart rate > 90 beats/min
- Respiratory rate > 20 breaths/min or PaCO2 < 32 torr
- WBC > 12,000 or < 4,000 or > 10% immature (band) forms

Used as a screening tool for patients at risk for sepsis

Sepsis

Sepsis is the presence of bacteria or other infectious organisms or toxins created by the infectious organisms in the bloodstream with spread throughout the body.
From the Greek, it means “I rot.”
The patient has a systemic inflammatory response to organisms in the blood.

Codes for Sepsis
A40 – A41.9 – Bacterial sepsis
B37.7 – Sepsis due to Candida
B00.7 – Sepsis due to herpesvirus
Pathophysiology of Sepsis

- Bacteria in the blood causes toxic substances to be released into the bloodstream.
- This causes the release of proinflammatory cytokines (TNF-a, IL-1, etc.).
- This activates the complement system (results in vasodilation and hypotension), the coagulation cascade, white blood cell response.
- This leads to endothelial cell dysfunction which causes:
  - Capillary leak – fluid and protein leak into interstitial spaces
  - Microvascular thrombus – causes organ ischemia
  - Tissue hypoxia – lactic acidosis, a sign of organ failure
  - Cell destruction (apoptosis)
  - Impaired vascular tone - hypotension
- This leads to an uncontrolled systemic inflammatory response
- This leads to multiple organ dysfunction

ICD-10-CM Coding Tips for Sepsis

- The coder can assign a code for sepsis when the physician documents the term “sepsis.”
- If a blood culture is negative or inconclusive, it does not preclude, or rule out, the patient from having sepsis when the patient has clinical evidence of sepsis.
- When the patient has clinical indicators for sepsis, but the term “sepsis” is not documented, the provider should be queried even when blood cultures are negative.

ICD-10-CM Coding Tips for Sepsis

- Only one code is needed to code sepsis without acute organ dysfunction.
- If acute organ dysfunction is present, assign code R65.2 and the code(s) for the acute organ dysfunction.
- If the localized infection is documented it may be added.
Sepsis with an Organism

If the physician specifies a causal organism, such as “sepsis due to E. Coli” or “sepsis with blood cultures positive for E. Coli,” or “E. Coli sepsis,” use the code for sepsis naming the specific organism.

If positive blood cultures are found only as lab result without the physician documenting the significance, the coder may not assign a code for sepsis naming the specific organism. The coder must query the physician regarding whether the sepsis was caused by the specific organism.

Sepsis Example

A 45 year-old woman presents with severe stomach ache, fever, vomiting, and bloating. On CT scan a perforated bowel is discovered with abscess. The patient meets SIRS criteria with peritoneal abscess as the source. The peritoneal fluid and blood cultures are positive for Enterococcus. The patient is diagnosed with Enterococcal sepsis.

A41.81 Sepsis due to Enterococcus
K65.1 Peritoneal abscess
K63.1 Perforation of bowel

Severe Sepsis

Severe Sepsis – Sepsis with acute organ dysfunction (OD) or multi-organ dysfunction (MOD)
A Acute kidney failure
A Acute respiratory failure
A Critical illness myopathy
A Critical illness polyneuropathy
A Disseminated intravascular coagulopathy
A Hepatic failure
A Septic shock
A Acute myocardial infarction (not on ICD list)
### Codes for Severe Sepsis

- **R65.20** – Severe sepsis without septic shock
- **R65.21** – Severe sepsis with septic shock

### ICD-10-CM Coding Tips for Severe Sepsis

When severe sepsis is documented, there will be a minimum of two codes when using ICD-10-CM.
- First, there will be a code for the underlying systemic infection, followed by a code for severe sepsis, R65.2.
- If acute organ dysfunction other than septic shock is present, the codes for the specific acute organ dysfunction will be added.
- A code for the localized infection would be added, if documented.

### Multi-organ Dysfunction (MOD)

If the patient has sepsis with multiple organ dysfunction, follow the instructions for coding severe sepsis

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If the specific organ dysfunction is not named, query the physician
- Organ dysfunctions must be documented as “due to” the sepsis...
Severe Sepsis Example

A 90-year-old patient is admitted with sepsis/SIRS meeting criteria with tachypnea and tachycardia. The source is determined to be aspiration pneumonia. The patient develops acute hypoxic respiratory failure and acute renal failure related to the sepsis.

A A41.9 Sepsis
A A65.20 Severe sepsis without septic shock
A A69.0 Aspiration pneumonia
A A96.01 Acute hypoxic respiratory failure
A N17.9 Acute renal failure

Septic Shock

A Septic shock – circulatory failure associated with severe sepsis, and, therefore, it represents a type of acute organ failure
A Manifested by hypotension in the patient
A Treated with IV hydration and vasopressors

Code for Septic Shock

A R65.21 – Severe sepsis with septic shock
ICD-10-CM Coding Tips for Septic Shock

- Septic shock does not have a separate code in ICD-10-CM as it does in ICD-9-CM.
- The term “septic shock” is occasionally documented without the term “sepsis.” According to the guidelines, for all cases of septic shock, the code for the underlying systemic infection should be sequenced first, followed by R65.21 Severe sepsis with septic shock or T81.12 Postprocedural septic shock.
- Additional codes for other acute organ dysfunctions should be coded as well.
- The code for severe sepsis with septic shock, R65.21, can never be assigned as principal diagnosis.

Septic Shock Example

A patient is admitted with cellulitis and abscess of the left leg, severe sepsis with SIRS, septic shock, and acute renal failure and encephalopathy due to the sepsis.
- A41.9 Sepsis
- R65.21 Severe sepsis with septic shock
- L03.116 Cellulitis of the left leg
- L02.416 Abscess of the left leg
- N17.9 Acute renal failure
- G93.41 Metabolic encephalopathy

Guidelines: Principal diagnosis or secondary diagnosis

- If sepsis or severe sepsis is present on admission (POA) and meets the definition of principal diagnosis, then the systemic infection code can be sequenced first (A41.9)
- If sepsis or severe sepsis occurs during the course of the admission (it was not POA), the systemic infection code should be assigned as secondary diagnoses
- If it is unclear whether sepsis or severe sepsis was POA, query the provider

A1.C.1.d.4 (ICD-10-CM)
Clinical Evidence of Organ Dysfunction

- Cardiovascular dysfunction/hypoperfusion
  - Hypotension (SBP<90, MAP<65)
  - Tachycardia
  - Elevated troponin

  - Did the patient experience an NSTEMI?
  - Was the patient in septic shock?

- Pulmonary dysfunction
  - Hypoxia requiring new or increased oxygen
  - Hypoxia requiring mechanical ventilation (MV)
  - Respiratory acidosis
  - Pulmonary hypertension
  - Difficulty weaning from MV

  - Did the patient have acute respiratory failure?

- Renal dysfunction
  - Increased serum creatinine and BUN
  - Acute renal dysfunction, creatinine increased by 0.5
  - Low urine output: <0.5 ml/kg/hr for >= 1 hours
  - Prerenal azotemia

  - Did the patient have acute renal failure?
  - Did the patient have acute tubular necrosis?
Clinical Evidence (continued)

Hematologic dysfunction
- Coagulopathy (PT, PTT, D-dimer)
- Thrombocytopenia (pts <100 or 50% decrease over past 3 days)

Does the patient have disseminated intravascular coagulopathy (DIC)?

Clinical Evidence (continued)

Hepatic dysfunction
- Jaundice/hyperbilirubinemia (total/bili >4 mg/dl)
- Increased liver enzymes (AST, LDH, ALT)
- Hepatomegaly

Does the patient have shock liver?

Clinical Evidence (continued)

Central nervous system
- Lethargy
- Altered level of consciousness
- Confusion
- Profound weakness

Does the patient have metabolic encephalopathy?
Does the patient have critical illness polyneuropathy?
Changes from I-9 to I-10: Septicemia

ICD-9-CM
- Guideline 1.C.1.b.1.a
- The terms septicemia and sepsis are not considered synonymous terms
- Septicemia 038.9, default
- Sepsis 995.91, default

ICD-10-CM
- In the index: Septicemia A41.9
- Meaning sepsis – see Sepsis
- Sepsis A41.9
- Septicemia = Sepsis in the coding world
- Septicemia is no longer mentioned in the guidelines

Changes from I-9 to I-10: The Number of Codes Required

ICD-9-CM
- Sepsis and severe sepsis require a minimum of 2 codes, plus codes for organ dysfunction and local infection 1.C.1.b.1.b

ICD-10-CM
- Sepsis – one code
- Severe sepsis – a minimum of 2 codes 1.C.1.d.1.a

Changes from I-9 to I-10: Septic Shock is a Combination Code

ICD-9-CM
- Septicemia (038.X)
- SIRS/Sepsis/Severe Sepsis (995.9X)
- Septic Shock (785.52)

ICD-10-CM
- Sepsis (A40–A41)
- SIRS/Severe Sepsis with septic shock (R65.21)
Changes from I-9 to I-10: Urosepsis

- Urosepsis 599.0
- The term is no longer recognized

Changes from I-9 to I-10: Definitions

- The definitions for sepsis, SIRS, and severe sepsis are no longer included in the guidelines in ICD-10-CM.
- In ICD-9-CM the definitions were provided as a reference, but stated that the provider should be queried for clarification for the terms when used in the documentation.

Changes from I-9 to I-10: SIRS

- ICD-9-CM
  - SIRS with local infection = Sepsis
  - SIRS is in the guidelines

- ICD-10-CM
  - SIRS with localized infections is not sepsis

- SIRS is only in Chapter 18 guidelines
- SIRS is only coded when associated with non-infectious processes
Unclear: Infections with Organ Dysfunction

According to the alphabetic index in ICD-10-CM, a localized infection with acute organ dysfunction can be coded as severe sepsis. If the term "infection, with organ dysfunction" is located in the alphabetic index, the code R65.20 is listed and, if septic shock is present, then R65.21 is coded.

When locating the category R65.2- in the tabular section, an inclusion term under severe sepsis is "infection with associated acute organ dysfunction."

Coding severe sepsis R65.2- without documentation of sepsis in the chart is not recommended.

Unclear: SIRS due to Infectious Process with Acute Organ Dysfunction

Another inclusion term under R65.20 Severe sepsis is "systemic inflammatory response syndrome due to infectious process with acute organ dysfunction."

As stated above, SIRS due to a localized infection is no longer coded as sepsis. This inclusion terms seems to indicate that when SIRS due a localized infection results in acute organ dysfunction, R65.20 can be coded. The problem is that this can't be referenced in the alphabetic index under "syndrome, systemic inflammatory response."

This is conflicting information.

Unclear: Sepsis and Pregnancy

When sepsis occurs during an abortion, ectopic pregnancy, molar pregnancy or during labor, it is unclear whether codes from categories A40 or A41 should be assigned in addition to a code from Chapter 15 in ICD-10-CM.

In Chapter 1 under A40 and A41 in the tabular section there is a note to "Code first sepsis during labor" and "sepsis following abortion or ectopic or molar pregnancy." This implies that the A40 – A41 codes would be coded as secondary codes.

These instructions conflict, though, with the instructions in Chapter 15. The guidelines for chapter 15 instruct the coder to first code the Chapter 15 code and assign an additional code for the specific type of infection.

In the OB tabular section instructions are given to "Use additional code (B95 – B97) to identify infectious agent" and "Use additional code (R65.21) to identify severe sepsis if applicable." Again, there are no instructions to add a code from categories A40 – A41 for sepsis.
If the documentation says: Labor, with sepsis

- Without severe sepsis
  - O75.3
  - A895. - thru B97.
  - A

- With severe sepsis
  - O75.3
  - A865.2
  - A
  - Organ dysfunction
  - A895. - thru B97.
  - A1.C.15.j

If the documentation says: Sepsis due to a postoperative wound

- Without severe sepsis
  - T81.4
  - A40. - thru A41.89
  - A
  - Local infection

- With severe sepsis
  - T81.4
  - A40. - thru A41.89
  - A865.2
  - A
  - Local infection
  - A
  - Organ dysfunction
  - A1.C.1.d.5.b

If the documentation says: Sepsis due to a vascular device

- Without severe sepsis
  - T82.7
  - A40. - A41.89

- With severe sepsis
  - T82.7
  - A40. - A41.89
  - A865.2
  - A
  - Organ dysfunction
  - A1.C.1.d.5.b
If the documentation says: Sepsis due to an indwelling urinary catheter

- Without severe sepsis
  - T83.51
  - A40 – A41.89

- With severe sepsis
  - T83.51
  - A40 – A41.89
  - R65.2
  - Organ dysfunction
  - A1.c.1.d.5.b