National Center for Emerging and Zoonotic Infectious Diseases

"Ask the Experts" Webinar Series

Q & A with Chapter 17 Surveillance Definitions for Specific Types of Infections Experts

NHSN Protocol and Training Team (PaTT)

November 15, 2023

Important Information about today's webinar

This session is set up as a "listen-only" so we will not be able to unmute you for questions.

- Submit questions throughout the presentation in the **Q&A feature**. Questions will be answered as time allows at the end of the presentation.
- When submitting questions, please do not break your question up into multiple parts in the Q&A. Questions come in quickly, and it is difficult for the subject matter experts to provide an answer if they are only seeing a portion of the question. Please type the entirety of your inquiry into the Q&A field before submitting.
- **ONLY on topic protocol question, no specific case reviews will be addressed**.
- All unanswered questions may be sent to NHSN@cdc.gov.
- This session is not being recorded.

Thank you for your participation!

NHSN
NATIONAL HEALTHCARE SAFETY NETWORK

Intent of Chapter 17 Definitions

Secondary BSI Attribution

Some Chapter 17 definitions can be used to deem a positive blood specimen secondary.

Page 4-35

Table B1: Secondary BSI Guide: List of all NHSN primary site-specific definitions available for making secondary BSI determinations using Scenario 1 or Scenario 2

Scenario 1	Scenario 2
A positive blood specimen must contain at least **one eligible matching organism** to the site-specific specimen	Positive blood specimen must be an **element** of the **site-specific definition**
And the blood specimen is collected in the site-specific **secondary BSI attribution period**	**And** blood specimen is collected in the site-specific **infection window period**
And an eligible organism **identified from the site-specific specimen** is used as an element to meet the site-specific definition	And an eligible organism **identified in a blood specimen** is used as an element to meet the site-specific definition

Scenario 1:

Site	Criterion
ABUTI	ABUTI
BONE	1
BRST	1
CARD	1
CIRC	2 or 3
CONJ	1a
DECU	1
DISC	1
EAR	1, 3, 5 or 7
EMET	1
ENDO	1
EYE	1
GE	2a
GIT	2a, 2b (only yeast)
IAB	1 or 3a
IC	1
JNT	1
LUNG	1
MED	1
MEN	1
ORAL	1, 3a, 3d (only yeast)
OREP	1
PJI	1 or 3e
PNEU	2 or 3
SA	1
SINU	1
SSI	SI, DI or OS
SKIN	2a
ST	1
UMB	1a
UR	1a or 3a
USI	1
SUTI	1a, 1b or 2
VASC *only as SSI*	1
VCUF	3

Scenario 2:

Site	Criterion
ABUTI	ABUTI
BONE	3a
BURN	1
DISC	3a
ENDO	4a, 4b, 5a or 5b (specific organisms) 6e or 7e plus other criteria as listed
GIT	1b or 2c
IAB	2b or 3b
JNT	3c
MEN	2c or 3c
OREP	3a
PNEU	2 or 3
SA	3a
UMB	1b
USI	3b or 4b

Infection criteria contained in this chapter may be necessary for determining whether a positive blood specimen represents a primary bloodstream infection (BSI) or is secondary to a different type of infection (see Appendix B Secondary Bloodstream Infection (BSI) Guide). A BSI that is identified as secondary to another site of infection must meet one of the infection criteria detailed in this chapter or an eligible infection criterion in the Patient Safety manual and meet other requirements. Secondary BSIs are not reported as Laboratory Confirmed Bloodstream Infections in NHSN, nor can they be associated with the use of a central line.

Intent of Chapter 17 Definitions

Healthcare-associated Infection (HAI) Surveillance

- Grouped into **14** major infection types
  - Seen in **bold** in the Table of Contents)
  - All caps in the document
- Specific types of infection under each major type of infection
- Approximately 160 infection criteria

https://www.cdc.gov/nhsn/pdfs/pscmanual/17pscnosinfdef_current.pdf

Table of Contents

BJ – Bone and Joint Infection 6
BONE – Osteomyelitis 6
DISC – Disc space infection 6
JNT – Joint or bursa infection (not for use as Organ/Space SSI after HPRO or KPRO procedures) 7
PJI – Periprosthetic Joint Infection (for use as Organ/Space SSI following HPRO and KPRO only) 7
CNS – Central Nervous System 8
IC – Intracranial infection (brain abscess, subdural or epidural infection, encephalitis) 8
MEN – Meningitis or ventriculitis 9
SA – Spinal abscess/infection (spinal abscess, spinal subdural or epidural infection) 10
CVS – Cardiovascular System Infection 11
CARD – Myocarditis or pericarditis 11
ENDO – Endocarditis 11
MED – Mediastinitis 14
VASC – Arterial or venous infection excluding infections involving vascular access devices with organisms identified in the blood 15
EENT – Eye, Ear, Nose, Throat, or Mouth Infection 16
CONJ – Conjunctivitis 16
EAR – Ear, mastoid infection 17
EYE – Eye infection, other than conjunctivitis 17
ORAL – Oral cavity infection (mouth, tongue, or gums) 18
SINU – Sinusitis 18
UR – Upper respiratory tract infection, pharyngitis, laryngitis, epiglottitis 19
GI – Gastrointestinal System Infection 19
CDI – *Clostridioides difficile* Infection 19
GE – Gastroenteritis (excluding *C. difficile* infections) 20
GIT – Gastrointestinal tract infection (esophagus, stomach, small and large bowel, and rectum) excluding gastroenteritis, appendicitis, and *C. difficile* infection 21
IAB – Intraabdominal infection, not specified elsewhere, including gallbladder, bile ducts, liver (excluding viral hepatitis), spleen, pancreas, peritoneum, retroperitoneal, subphrenic or subdiaphragmatic space, or other intraabdominal tissue or area not specified elsewhere 22
NEC – Necrotizing enterocolitis 23
LRI – Lower Respiratory System Infection, Other Than Pneumonia 24
LUNG – Other infection of the lower respiratory tract and pleural cavity 24

Intent of Chapter 17 Definitions

The Chapter 17 Surveillance Definitions by site is an important piece to Organ/Space SSI surveillance :

- SSI protocol pg. 9-15

Pg. 933

Organ/Space SSI Must meet the following criteria:
Date of event occurs within 30 or 90 days following the NHSN operative procedure (where day 1 = the procedure date) according to the list in Table 2 **AND** involves any part of the body deeper than the fascial/muscle layers that is opened or manipulated during the operative procedure **AND** patient has at least ***one*** of the following: a. purulent drainage from a drain placed into the organ/space (for example, closed suction drainage system, open drain, T-tube drain, CT-guided drainage). b. organism(s) identified from fluid or tissue in the organ/space by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing [ASC/AST]). c. an abscess or other evidence of infection involving the organ/space detected on gross anatomical exam or histopathologic exam, or imaging test evidence definitive or equivocal for infection. **AND** meets at least ***one*** criterion for a specific organ/space infection site listed in Table 3. These criteria are found in the Surveillance Definitions for Specific Types of Infections (Chapter 17)

APPENDIX A

Specific event types available for SSI attribution by NHSN procedure category

Operative Procedure Category	Specific Event Type
AAA - Abdominal aortic aneurysm repair	DIP - Deep Incisional Primary ENDO - Endocarditis GIT - Gastrointestinal tract IAB - Intraabdominal, not specified elsewhere SIP - Superficial Incisional Primary VASC - Arterial or venous infection
AMP - Limb amputation	BONE - Osteomyelitis DIP - Deep Incisional Primary JNT - Joint or bursa SIP - Superficial Incisional Primary
APPY - Appendix surgery	DIP - Deep Incisional Primary GIT - Gastrointestinal tract IAB - Intraabdominal, not specified elsewhere SIP - Superficial Incisional Primary
AVSD - AV shunt for dialysis	DIP - Deep Incisional Primary SIP - Superficial Incisional Primary VASC - Arterial or venous infection

NHSN
NATIONAL HEALTHCARE SAFETY NETWORK

Purulence

https://www.cdc.gov/nhsn/faqs/faq-ssi.html#Evidence-of-Infection

Q9. Does NHSN have a definition for purulence?

There is no standard, clinically agreed upon definition for purulence. For NHSN surveillance purposes, the descriptors "pus" or "purulence" are sufficient gross anatomic evidence of infection. When the terms 'pus' or 'purulence' are not written in the medical record, NHSN has allowed determinations for purulence based off descriptors. Documentation that uses a color descriptor and a consistency descriptor (from the list below) in combination is acceptable to indicate 'purulence'. For example, fluid only described as yellow, or only described as thick, is not sufficient. However, if the terms are combined, then they may be more representative of purulence (for example: fluid described as thick and yellow).

Color

Green

Yellow

Consistency

Milky

Thick

Creamy

Opaque

Viscous

NOTE: The following descriptors cannot be used to define purulence/infection: 'Cloudy', 'turbid', 'murky' or the odor of a wound.

Gram stain results such as WBCs or PMNs cannot be used to define purulence within the SSI protocol [PDF – 1 MB].

Eligible Infection Site Guidance

- Some of the definitions will provide the infection sites that are eligible for an infection criterion.

GIT-Gastrointestinal tract infection (esophagus, stomach, small and large bowel, and rectum) excluding gastroenteritis, appendicitis, and *C. difficile* infection

IAB-Intraabdominal infection, not specified elsewhere, including gallbladder, bile ducts, liver (excluding viral hepatitis), spleen, pancreas, peritoneum, retroperitoneal, subphrenic or subdiaphragmatic space, or other intraabdominal tissue or area not specified elsewhere

OREP- Deep pelvic tissue infection or other infection of the male or female reproductive tract (for example, epididymis, testes, prostate, vagina, ovaries, uterus) including chorioamnionitis, but excluding vaginitis, endometritis or vaginal cuff infections

What Does "*With no other recognized cause" Mean?

- **"With no other recognized cause"** means the sign/symptom is eligible for use in meeting the HAI or SSI criteria unless there is physician documentation within the medical record that specifically states the sign/symptom is due to something other than an HAI or SSI.

- The local facility must make this determination based on the documentation available in the medical record.

BJ-BONE AND JOINT INFECTION

BONE-Osteomyelitis

Osteomyelitis must meet at least ***one*** of the following criteria:

1. Patient has organism(s) identified from bone by culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis and treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).
2. Patient has evidence of osteomyelitis on gross anatomic or histopathologic exam.
3. Patient has at least ***two*** of the following localized signs or symptoms: fever (>38.0°C), swelling*, pain or tenderness*, heat*, or drainage*

And at least *one* of the following:

a. organism(s) identified from blood by culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis and treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).
AND
imaging test evidence definitive for infection (for example, x-ray, CT scan, MRI, radiolabel scan [gallium, technetium, etc.]), which if equivocal is supported by clinical correlation, specifically, physician documentation of antimicrobial treatment for osteomyelitis.

b. imaging test evidence definitive for infection (for example, x-ray, CT scan, MRI, radiolabel scan [gallium, technetium, etc.]), which if equivocal is supported by clinical correlation, specifically, physician documentation of antimicrobial treatment for osteomyelitis.

** With no other recognized cause*

Reporting Instructions

- Report mediastinitis following cardiac surgery that is accompanied by osteomyelitis as SSI-MED rather than SSI-BONE.
- If a patient meets both organ space JNT and BONE report the SSI as BONE.
- After an HPRO or a KPRO if a patient meets both organ space PJI and BONE report the SSI as BONE.

Chapter 17 Key Concepts:
Definitive Imaging Test Findings

- "Definitive for": Confirms the presence of an infection on an imaging test
  - Does not require clinical correlation (physician documentation of antimicrobial therapy for a specific infection)
- **Examples:**
  - "Abscess"
  - "Infected seroma"
  - "Pyelonephritis"
  - "Osteomyelitis"

Chapter 17 Key Concepts: Equivocal Imaging Finding

- ## Equivocal:

Equivocal imaging	Findings from medical imaging studies that do not conclusively identify an infection or infectious process. Imaging findings such as these require additional conclusive clinical evidence that an infection is present, such as physician documentation of antimicrobial therapy for treating the infection or infectious process. Example of definitive imaging: abscess visualized in the right lower quadrant. Example of equivocal imaging: fluid collection visualized in the right lower quadrant.

- ## Clinical Correlation:

Clinical correlation	Physician documentation of antimicrobial treatment for site-specific infection related to equivocal findings (not clearly identified) of infection on imaging test. For example, when applying intraabdominal infection (IAB) criterion "3b", the finding of 'fluid collection seen in the lower abdominal cavity' on an imaging test, may or may not represent an infection. This finding is not clearly identified as an infection and should be confirmed with clinical evidence that an infection is present. In the case of IAB criterion "3b", the clinical evidence that is required, is physician documentation of antimicrobial therapy for treating the intraabdominal infection.

Let’s Talk About the “itis” Conditions

- Not all “itis” conditions are created equal!
- Most “itis” conditions are associated with an inflammatory process that does not always indicate presence of infection.
  - Imaging findings alone below are not definitive or equivocal for infection:
    - Colitis
    - Cholecystitis
    - Peritonitis
    - Pancreatitis
- Imaging findings below are either definitive for or equivocal for an infection
  - Pyelonephritis (Definitive for Urinary System Infection)
  - Cholangitis - “Biliary ductal dilatation”(Equivocal for cholangitis)
  - Osteomyelitis

» Questions?

Please submit any questions related to today's topic to the Q&A field on your Zoom window.

The team is online and will answer questions in the Q&A as they are submitted.

Future webinars

Webinars will be held on Wednesdays at 2:00 pm EST
Mark your calendars
****

PROTOCOL & TRAINING TEAM
VIRTUAL TRAINING SERIES 2023

- Upcoming webinar Zoom registration link is in the email.
- Sessions are 60 minutes
- No recordings

PaTT Ask the Experts Webinar Series 2023	
Date	**Topic**
~~July 19th~~	~~How to Use the NHSN Organism List~~
~~August 16th~~	~~BSI~~
~~September 20th~~	~~Secondary BSI~~
~~October 25th~~	~~SSI~~
~~November 15th~~	~~Chapter 17~~
December 13th	UTI/PNEU

For any questions or concerns, contact the NHSN Helpdesk at nhsn@cdc.gov

For more information please contact Centers for Disease Control and Prevention
1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov   Web: www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.