

REFERENCE ACKNOWLEDGMENT
2024 NHSN ANNUAL TRAINING

► Surgical Site Infection Event (SSI) Surveillance Basics

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PATIENT SAFETY COMPONENT: CHAPTER 9

► Setting:

 SSI surveillance will occur in any inpatient facility and/or hospital outpatient procedure department where the selected NHSN operative procedure(s) are performed.

▶ Requirements

- SSI Surveillance follows at least one NHSN operative procedure category (of the 39 eligible categories) as noted on the facility Monthly Reporting Plan (MRP). Collect SSI event (numerator) and operative procedure (denominator) data on all procedures included in the operative procedure categories selected on the facility MRP.
- All procedures are monitored for superficial incisional, deep incisional, and organ/space SSI events. The type of SSI reported into NHSN must reflect the deepest tissue level where SSI criteria are met during the surveillance period.
- SSI events are reported to NHSN regardless of noted evidence of infection at time of surgery (PATOS). Each SSI is linked to a specific NHSN operative denominator procedure.
- ▶ An SSI event is reported by the facility where the NHSN operative procedure is performed.

NHSN OPERATIVE PROCEDURE



* Is a procedure that is included in the $\underline{\text{ICD-10-PCS}}$ or $\underline{\text{CPT}}$ NHSN operative procedure code mapping.

And

 Takes place during an operation where at least one incision (including laparoscopic approach and cranial Burr holes) is made through the skin or mucous membrane, or entry through an existing incision (such as an incision from a prior operative procedure).

And

Takes place in an operating room (OR), defined as a patient care area that met the Facilities Guidelines Institute's (FGI) or American Institute of Architects' (AIA) criteria for an operating room when it was constructed or renovated. This may include an operating room, C-section room, interventional radiology room, or a cardiac catheterization lab.

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NHSN OPERATIVE PROCEDURE CODES

- ▶ Allows NHSN to standardize NHSN SSI surveillance reporting.
- NHSN operative procedure category includions is based on operative procedure codes.
- Operative procedure codes are required to determine the correct NHSN operative procedure category to be reported (entry of codes into the NHSN application is optional but recommended).
- ▶ NHSN uses ICD-10-CM/PCS & CPT operative procedure coding systems.
- Must include all qualifying procedures in the selected operative procedure categories indicated on the facility MRP.
- ➤ The date of procedure determines the year of protocol/procedure code documents to use with SSI surveillance.

NHSN OPERATIVE PROCEDURE CATEGORIES

▶ Table 2, page 9-16 SSI protocol:

39 NHSN operative procedure categories eligible for SSI surveillance.

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Page 1 of 2 Facility ID	'regated for s
	Procedure #
*Patient IO:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last	Fest Midde
"Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
Event Type: PROC	"NHSN Procedure Code:
"Date of Procedure:	ICD-10-PCS or CPT Procedure Code:
Procedure Details	
*Outpatient Yes No	*Duration: Hours Minutes
"Wound Class: C CC CO D	*General Anesthesia: Yes No
ASA Score: 1 2 3 4 5	"Emergency: Yes No
"Trauma: Yes No "Scope: Ye	
"Height:feetinches	*Closure Technique: Primary Other than primary
(choose one)bakg (circle one)	Surgeon Code:
CSEC: "Duration of Labor:hours	
Circle one: FUSN "Spinal Level (check one) ☐ Atter-axis	
☐ Attas-axis/Cervical	"Approach/Technique (check one)
C Cervical	☐ Anterior
☐ Cervical/Dorsal/Dorsolumbar	☐ Posterior
□ Dorsal/Dorsolumbar	☐ Anterior and Posterior

1	NHSN INPATIENT OPERATIVE PROCEDURE VS. NHSN OUTPATIENT OPERATIVE PROCEDURE
•	NHSN Inpatient Operative Procedure:
	An NHSN operative procedure performed on a patient whose date of admission to the healthcare facility and the date of discharge are different calendar days.
•	NHSN Outpatient Operative Procedure:
	An NHSN operative procedure performed on a patient whose date of admission to the healthcare facility and date of discharge are the same calendar day.
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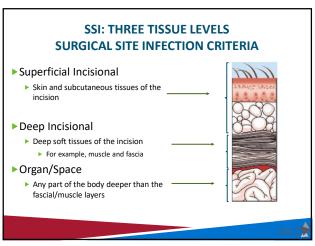
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DENOMINATOR REPORTING INSTRUCTIONS Denominator data is submitted for each individual NHSN operative procedure performed assigned to the procedure category selected for monitoring on the ▶ Depending on scenario, Denominator Reporting Instructions provide guidance ▶ Number of procedure forms to complete Duration of procedure(s) ▶ More than one operative procedure through same incision/surgical space within 24 ► HYST/VHYS reporting ▶ Patient expires in the Operating Room

APPENDIX B: GUIDANCE FOR MULTIPLE PROCEDURE REPORTING ► Addresses the 12 NHSN operative procedure categories that are in Denominator for Reporting Instruction #6- Same NHSN operative procedure category via separate incision: AMP, BRST, CEA, FUSN, FX, HER, HPRO, KPRO, LAM, NEPH, OVRY, PVBY. Correct procedure reporting when multiple procedures form one of these categories (procedures from the same category) are performed via separate incision per patient per calendar day. ▶ The table includes the maximum # of procedures per day per patient and an explanation.

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DEFINITIONS ► Superficial Incisional SSI Criteria: · Must meet the following criteria DOE occurs within 30 after any NHSN operative procedure • Day 1 = procedure date AND · Involves only skin and subcutaneous tissue of the incision

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DEFINITIONS

► Superficial Incisional SSI Criteria cont.:

AND

- · Patient has at least one of the following
 - a. Purulent drainage from the superficial incision.
 - Organisms identified from an aseptically obtained specimen from the superficial incision or subcutaneous tissue by a culture or non-culture based microbiologic testing.
 - c. Superficial incision that is deliberately opened by a surgeon, physician* or physician designee and culture or non-culture-based testing is not performed AND Patient has at least <u>one</u> of the following signs or symptoms: localized pain or tenderness, localized swelling, erythema, or heat.
 - d. Diagnosis of superficial incisional SSI by a physician* or physician designee

DEFINITIONS

► Superficial Incisional SSI Criteria Notes:

- ▶ Two specific types of superficial incisions SSIs
- ► Superficial incisional primary (SIP)
 - A superficial incisional SSI that is identified in the primary incision in a patient that has had an operation with one or more incisions (chest incision for CBGB)
- ► Superficial incisional secondary (SIS)
 - A superficial incisional SSI that is identified in the secondary incision in a
 patient that has had an operation with one or more incisions (e.g., donor site
 for CBGB)

Note: Refer to SSI Event Reporting Instruction #7 for NHSN operative procedure categories with secondary incision sites available for SSI attribution.

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KEY CONCEPT

▶ Reporting Instructions for Superficial SSI

- A stitch abscess (minimal inflammation and discharge contained to the points of suture penetration) is not considered an SSI
- A localized stab wound, or pin site infection is not considered an SSI
 - may be SKIN/ST infection
 - A laparoscopic trocar site is considered a surgical incision and not a stab wound. If the surgeon uses the trocar site to place a drain at the end of the procedure this is considered a surgical incision.
- Diagnosis of cellulitis (redness/warmth/swelling), by itself, does not meet the criteria for incision SSI criterion 'd'.

KNOWLEDGE CHECK

- 11/1 Mr. Wall is admitted for a spinal fusion.
- 11/4 patient discharged
- 11/20 on post-op visit patient noted to have redness and swelling of the superficial incision. The wound is not cultured nor probed. The patient is given antibiotics and sent home.

Does this meet the superficial SSI definition?

 11/29 Mr. Wall presents to the Emergency room with purulent drainage from the superficial incision. The wound is cultured and grows MRSA.
 Patient is given antibiotics and discharged home.

Does the patient meet the superficial SSI definition?

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DEFINITIONS

▶ Deep Incisional SSI Criteria:

- · Must meet the following criteria
 - DOE occurs within 30 or 90 days after any NHSN operative procedure according to the list in Table 2 in Chapter 9
 - Day 1 = procedure date

AND

- Involves deep soft tissues of the incision
 - For example, fascial and muscle layers

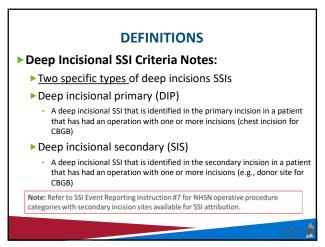


► Deep Incisional SSI Criteria cont:

DEFINITIONS

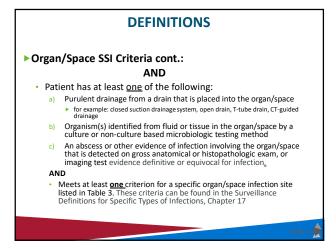
AND

- Patient has at <u>least one</u> of the following:
 - a. Purulent drainage from the deep incision
 - b. Deep incision spontaneously dehisces or is deliberately opened or aspirated by a surgeon, physician** or physician designee AND is culture-positive or not cultured. A culture-negative finding does not meet this criterion. AND The patient has at least one of the following signs or symptoms: fever (>38°C), or localized pain or tenderness.
 - An abscess or other evidence of infection involving the deep incision is detected on gross anatomical or histopathologic exam, or imaging test



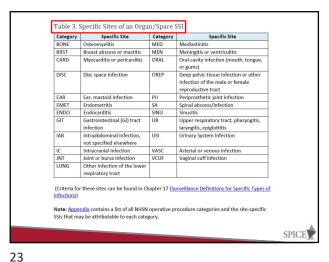
DEFINITIONS ► Organ/Space SSI Criteria: · Must meet the following criteria DOE occurs within 30 or 90 days after any NHSN operative procedure according to the list in Table 2 in Chapter 9 • Day 1 = procedure date AND · Involves any part of the body deeper than the fascial/muscle layers that is opened or manipulated during the operative procedure

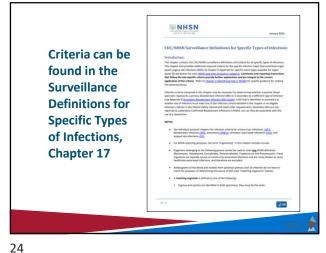
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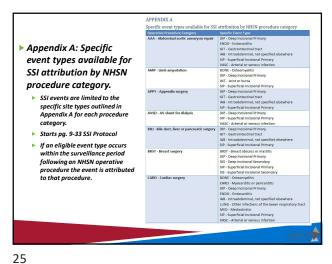


ORGAN SPACE SSI ▶ General Organ space SSI criterion AND applicable Chapter 17 sitespecific criterion must be met to fully meet Organ Space SSI criteria. NHSN AND

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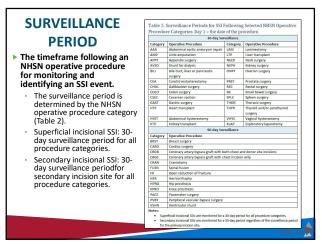




SSI-PROCEDURE-ASSOCIATED MODULE

Chapter 2 terms not applicable to SSI:
Infection window period (IWP)
Present on admission (POA)
Healthcare-associated infection
(HAI)
Repeat infection timeframe (RIT)
SSI protocol uses terms:
Date of Event (DOE)
Secondary BSI Attribution Period

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DATE OF EVENT (DOE) FOR SSI

The date when the first element used to meet the SSI infection criterion occurs for the first time during the SSI surveillance period.

DOE must occur within appropriate 30- or 90-day SSI surveillance period.

The type of SSI reported, and the DOE assigned must reflect the deepest tissue level where SSI criteria are met during the surveillance period.

Example: COLO performed

Meets SIP-SSI with DOE on day 8 of surveillance period.

Meets DIP-SSI with DOE on day 21 of surveillance period.

DIP-SSI reported with DOE as day 21 attributed to the COLO.

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SSI EVENT DETAIL: TIMEFRAME FOR SSI ELEMENTS • SSI guidelines do not offer a strict timeframe for elements of criteria to occur but in NHSN's experience, all elements required to meet an SSI criterion usually occur within a 7–10-day timeframe with typically no more than 2-3 days between elements. • To ensure all elements associate to the SSI, elements must occur in a relatively tight timeframe. • Example: An element on day 5 of the surveillance period with another element three weeks later should not be used to cite an SSI. • Cases differ based on elements that occur and type of SSI under consideration

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SECONDARY BSI SCENARIOS FOR SSI

Scenario 1 (all levels of SSI): At least one organism from the blood specimen matches an organism identified from the site-specific specimen used as an element to meet the NHSN SSI criterion AND the blood specimen is collected during the secondary BSI attribution period.

The secondary BSI attribution period for SSI is a 17-day period which includes the SSI DOE, 3 days prior and 13 days after.

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SECONDARY BSI SCENARIOS FOR SSI

Scenario 2
(Organ/Space SSI
Only): An organism identified in the blood specimen is an element that is used to meet the NHSN
Organ/Space SSI site-specific infection criterion and is collected during the timeframe for SSI elements.

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

- Patient has organism(s) identified from an abscess or from purulent material from intraabdomina space by a culture or non-culture based microbiologic testing method which is performed for
- stient has at least one of the following: a. abscess or other evidence of intraabdominal infection on gross anatomic or hist
- abscess or other evidence of intraabdominal infection on gross anatomic or histopathologic exam

organism(s) identified from blood by a culture or non-culture based microbiologic testing method, which is performed for purposes of ilinical diagnosis or treatment, for example, not Active Surveillance Culture/Testing IRSC/AST). The organism(s) identified in the blood must contain at least one MBI organism on the NHSN Organism List that can be accessed via the

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GROSS ANATOMICAL EXAM



- Evidence of infection elicited or visualized on physical examination or observed during an invasive procedure.
- Examples:
 - · intraabdominal abscess visualized during surgery
 - · Visualization of pus or purulent drainage (includes from a drain).
 - SSI only: Abdominal pain or tenderness post Cesarean section (CSEC) or hysterectomy (HYST/VHYS) is sufficient gross anatomic evidence of infection without an invasive procedure to meet general Organ/Space SSI criterion "c" when a Chapter 17 reproductive tract infection criteria is met.
- Imaging test evidence of is not gross anatomic evidence of infection.

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PURULENCE

- NHSN does not define purulence, as there is no standard, clinically agreed upon definition
 - · The descriptors "pus" or "purulence" are sufficient evidence
- Drainage using a color descriptor <u>AND</u> a consistency descriptor (if combined) are acceptable to indicate purulence:
 - Color: green, yellow
 - Consistency: milky, thick, creamy, opaque, viscous
 - Example: 'thick yellow' drainage is acceptable to indicate purulence but 'thick' alone or 'yellow' alone is not.
- Gram stain results (WBCs or PMNs) cannot be used to define purulence

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

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SSI EVENT REPORTING INSTRUCTIONS

- ➤ SSI Event Reporting Instructions starting on page 9-18 of the SSI module, provides guidance on accurate SSI even reporting including:
 - Excluded organisms
 - ▶ Infection Present at the time of surgery (PATOS)
 - ► SSI attribution
 - ▶ SSI even detected at another facility
 - ▶ SSI following invasive manipulation or accession of the operative site

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INFECTION PRESENT AT TIME OF SURGERY(PATOS)

- Denotes that there is evidence of an infection visualized (seen) during the operative procedure to which the SSI is attributed.
- The evidence of infection must be noted intraoperatively and documented within the narrative portion of the operative note or report of surgery (commonly labeled the 'procedure in detail' or 'description of procedure's section)
 - Pre/post op diagnoses, 'indication for surgery' NOT surgical narrative.
 - A "Findings" section, if a reflection of what the surgeon 'sees' present at the time of surgery, can be considered a surgical narrative.
- PATOS is tissue level specific meaning the documented infection must be at the same tissue level of the subsequent SSI.
- Pathology findings, culture results, wound classification, trauma status, and imaging test findings cannot be used for PATOS determination.
- Traumas resulting in a contaminated case does not necessarily meet PATOS.

INFECTION PRESENT AT TIME OF SURGERY(PATOS)

- Examples that indicate evidence of infection may include:
 - Abscess, infection, purulence, phlegmon, or "feculent peritonitis".
 - $\bullet~$ A ruptured/perforated appendix is evidence of infection at the organ/space level
- Examples of verbiage that is not considered evidence of infection include but are not limited to:
 - colon perforation, contamination, necrosis, gangrene, fecal spillage, nicked bowel during procedure, or a note of inflammation.
- The use of the ending "itis" in an operative note does not automatically meet PATOS, as it may only reflect inflammation.
 - Examples: diverticulitis, peritonitis, appendicitis.

SSI FOLLOWING INVASIVE MANIPULATION/ACCESSION OF THE OPERATIVE SITE

- An SSI will not be attributed if the following 3 criteria are ALL met:
 - During the post-operative period, the surgical site is without evidence of infection related to the surgical site/space.
 - An invasive manipulation/accession of the site is performed for diagnostic or therapeutic purposes (for example, needle aspiration, accession of ventricular shunts, accession of breast expanders)
 - An infection subsequently develops in a tissue level which was entered during the manipulation/accession

Notes:

- Suspicion or evidence of infection may include signs and symptoms of infection (e.g. fever, abdominal pain) depending on the site of the procedure.
- ► Tissue levels not manipulated/access are still eligible for SSI.
- Does not include closed manipulation, wound packing or changing of wound packing materials, or routine flushing of catheters as part of standard care and maintenance.

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associated with the infection. When attribution is not clear, use the NHNS Principal Operative Procedure Category Selection Lists (Table 4) to select the operative procedure to which to attribute the SSI.

SSI attribution after multiple

procedures are performed during a single trip to the OR:

Attribute the SSI to the

procedure that is thought to be

categories of NHSN

SSI ATTRIBUTION

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RESOURCES

- ▶ NHSN Surgical Site Infection (SSI) Events webpage
 - https://www.cdc.gov/nhsn/psc/ssi/index.htm
- ▶ Patient Safety Component Manual Chapter 9: SSI Protocol
 - https://www.cdc.gov/nhsn/pdfs/pscmanual/9pscssicurrent.pdf
- Patient Safety Component Manual Chapter 17: CDC/NHSN Surveillance Definitions for Specific Types of Infections
 - https://www.cdc.gov/nhsn/pdfs/pscmanual/17pscnosinfdef_current.pdf
- ► FAQs: Surgical Site Infections (SSI) Events:
- intps://www.cuc.gov/iiisii/iaqs/iaq-ssi.num
- Surgical Site Procedure Codes

► FAQs: Surgical Site Procedure Codes | NHSN | CDC



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