Patient Safety Component
Be in the Know: An Overview of Surgical Site Infection (SSI) Event Surveillance

Victoria Russo, MPH, CIC

NHSN Protocol and Training Team

March 2023

Objectives

- *Understand and apply foundational concepts as outlined in the Surgical Site Infection (SSI) Event Chapter 9 (the 'SSI protocol')*
- *Review the importance of accurate denominator for procedure and SSI event reporting*
- *Assess participants' current knowledge through case scenarios*

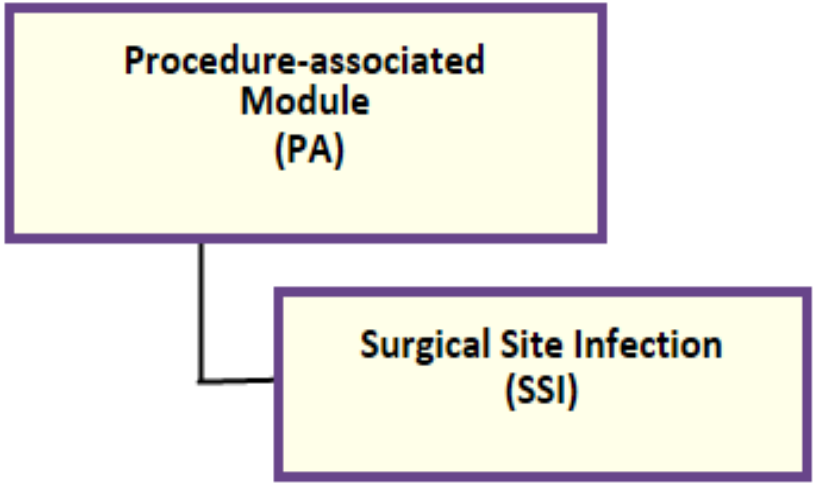
This presentation is reviewed in context of the 2023 SSI protocol.

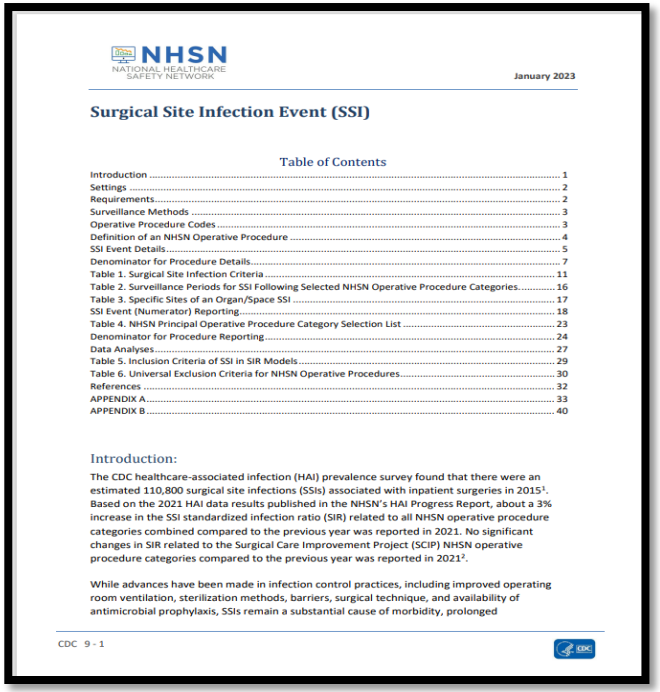
The Basics: The SSI Protocol and Resources

The Importance of SSI Surveillance

- SSIs are a substantial cause of morbidity and mortality
    - Prolonged hospitalizations
    - Increased costs
- The use of standardized SSI criteria applied in the same manner allows the use of data for epidemiological purposes
- Surveillance of SSI with feedback of data is important for prevention efforts and to reduce the risk of SSI
- Monitoring SSI events over time can help inform trends and quality improvement activities

Chapter 9 – The SSI Protocol





NHSN
NATIONAL HEALTHCARE SAFETY NETWORK

January 2023

Surgical Site Infection Event (SSI)

Table of Contents

Introduction:

The CDC healthcare-associated infection (HAI) prevalence survey found that there were an estimated 110,800 surgical site infections (SSIs) associated with inpatient surgeries in 2015[1]. Based on the 2021 HAI data results published in the NHSN's HAI Progress Report, about a 3% increase in the SSI standardized infection ratio (SIR) related to all NHSN operative procedure categories combined compared to the previous year was reported in 2021. No significant changes in SIR related to the Surgical Care Improvement Project (SCIP) NHSN operative procedure categories compared to the previous year was reported in 2021[2].

While advances have been made in infection control practices, including improved operating room ventilation, sterilization methods, barriers, surgical technique, and availability of antimicrobial prophylaxis, SSIs remain a substantial cause of morbidity, prolonged

CDC 9 - 1

'Chapter 9': Surveillance of surgical patients in any inpatient facility and/or hospital outpatient procedure department (HOPD) where the selected NHSN operative procedure(s) are performed

On-Demand Video:
‘Patient Safety Component Navigating SSI Reporting in NHSN’

Content covered:

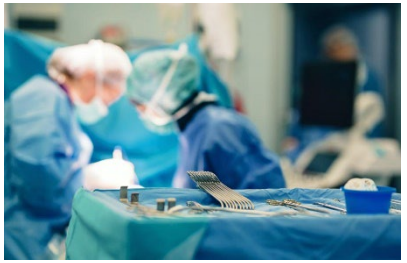
- Identify surveillance methods
- Demonstrate how to locate Surgical Site Infection (SSI) resources on the NHSN website
- Review reporting requirements for Monthly Reporting Plans (MRPs), numerator and denominator data

Resources for Surgical Site Infection Event (SSI)

- NHSN Surgical Site Infection (SSI) Events webpage: https://www.cdc.gov/nhsn/psc/ssi/index.html
- Patient Safety Component Manual Chapter 9: Surgical Site Infection Event (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: https://www.cdc.gov/nhsn/faqs/faq-ssi.html

Denominator: The NHSN Operative Procedure

NHSN Operative Procedure



An **NHSN operative procedure** is a procedure:

- that is included in the ICD-10-PCS and/or 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 is 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.

NHSN Operative Procedure Codes

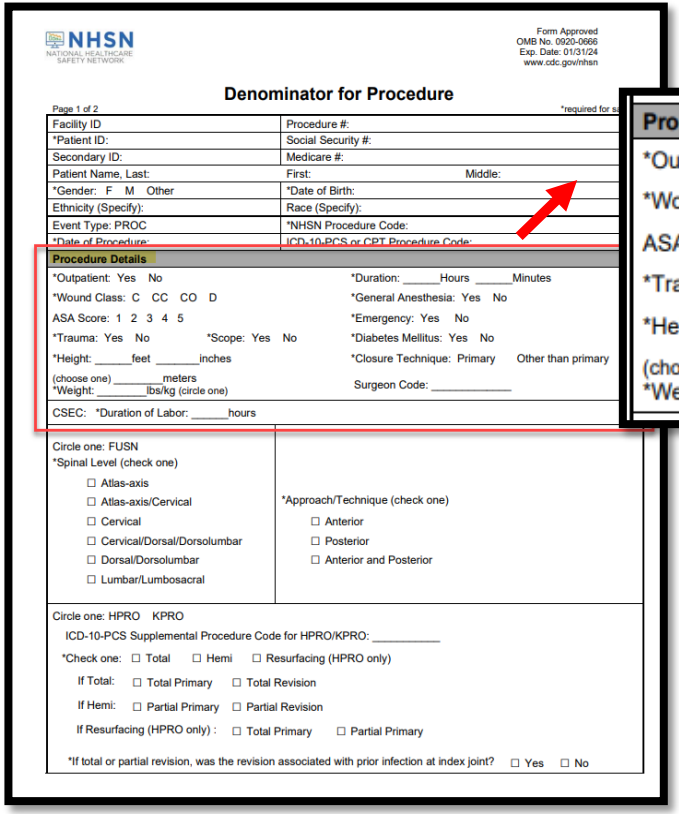
- Allows NHSN to standardize NHSN SSI surveillance reporting.
- Procedures are included in each of the 39 NHSN operative procedure categories based on operative procedure codes.
- NHSN uses ICD-10-CM/PCS **and** CPT operative procedure coding systems.
- **Operative procedure codes are <u>required</u> to determine the correct NHSN operative procedure category to be reported (entry of codes into the NHSN application is optional but <u>recommended</u>).**
  - Must use procedure code documents according to the date of procedure/protocol year.
  - Must include all qualifying procedures in the selected operative procedure categories indicated on the facility MRP.

The NHSN Operative Procedure: Important Points

- The procedure date is the date when the NHSN operative procedure starts.
- The procedure date determines the protocol year to use with SSI surveillance (for 2023 procedures use the 2023 SSI protocol and guidance documents).
- For in-plan reporting purposes, **only NHSN operative procedures are included in SSI surveillance and SSI events can only be attributed to NHSN operative procedures.**
- NHSN does not mandate reporting – each facility decides what NHSN operative procedure categories to monitor within their MRP.

Accurate Denominator for Procedure Reporting

Denominator for Procedure Details
Required Data Fields for Denominator Entry*



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Form Approved
OMB No. 0920-0666
Exp. Date: 01/31/24
www.cdc.gov/nhsn

Denominator for Procedure

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Facility ID	Procedure #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*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

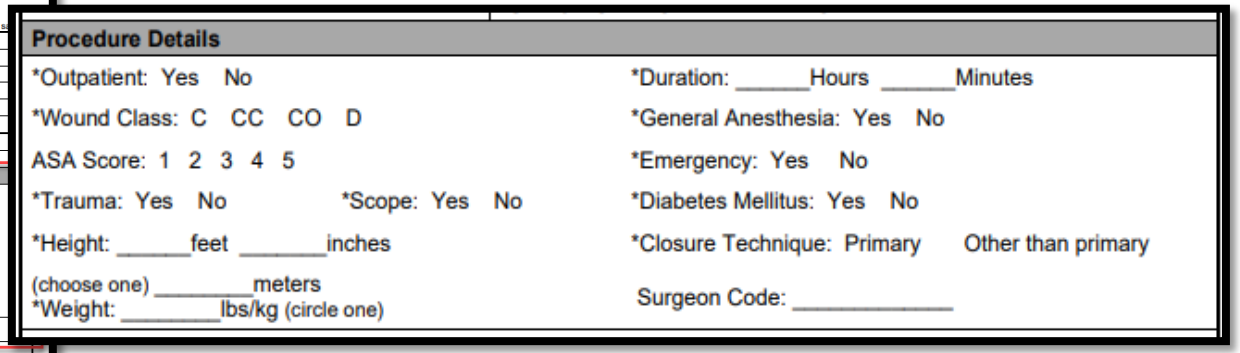
*Outpatient: Yes No
*Wound Class: C CC CO D
ASA Score: 1 2 3 4 5
*Trauma: Yes No
*Scope: Yes No
*Height: _____feet _____inches
(choose one) _____meters
*Weight: _____lbs/kg (circle one)
*Duration: _____Hours _____Minutes
*General Anesthesia: Yes No
*Emergency: Yes No
*Diabetes Mellitus: Yes No
*Closure Technique: Primary Other than primary
Surgeon Code: _____

CSEC: *Duration of Labor: _____hours

Circle one: FUSN
*Spinal Level (check one)
- ☐ Atlas-axis
- ☐ Atlas-axis/Cervical
- ☐ Cervical
- ☐ Cervical/Dorsal/Dorsolumbar
- ☐ Dorsal/Dorsolumbar
- ☐ Lumbar/Lumbosacral

*Approach/Technique (check one)
- ☐ Anterior
- ☐ Posterior
- ☐ Anterior and Posterior

Circle one: HPRO KPRO
ICD-10-PCS Supplemental Procedure Code for HPRO/KPRO: _____
*Check one: ☐ Total ☐ Hemi ☐ Resurfacing (HPRO only)
If Total: ☐ Total Primary ☐ Total Revision
If Hemi: ☐ Partial Primary ☐ Partial Revision
If Resurfacing (HPRO only) : ☐ Total Primary ☐ Partial Primary
*If total or partial revision, was the revision associated with prior infection at index joint? ☐ Yes ☐ No

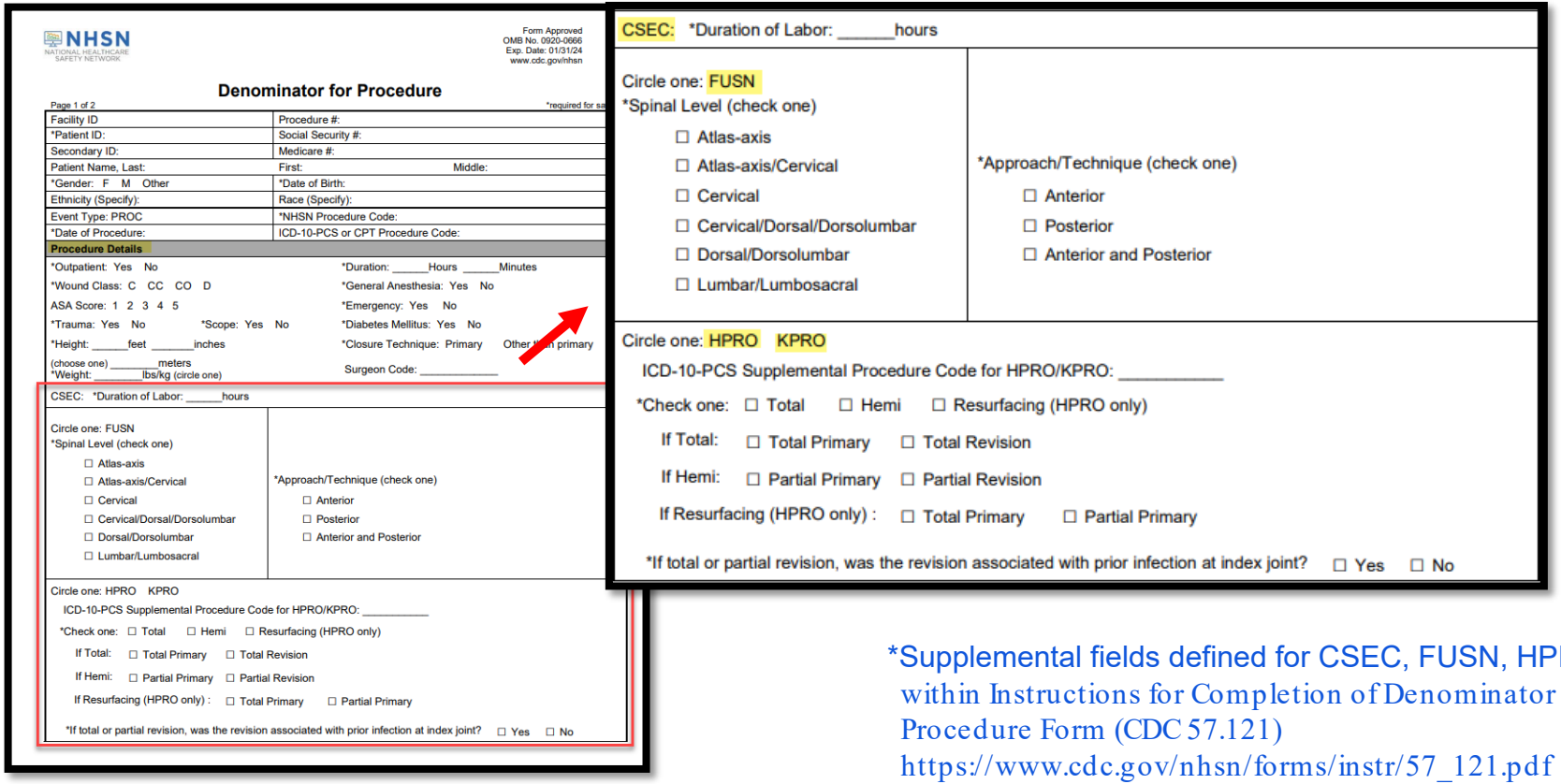


Procedure Details

*Outpatient: Yes No
*Wound Class: C CC CO D
ASA Score: 1 2 3 4 5
*Trauma: Yes No
*Scope: Yes No
*Height: _____feet _____inches
(choose one) _____meters
*Weight: _____lbs/kg (circle one)
*Duration: _____Hours _____Minutes
*General Anesthesia: Yes No
*Emergency: Yes No
*Diabetes Mellitus: Yes No
*Closure Technique: Primary Other than primary
Surgeon Code: _____

*Fields defined beginning on page 97 of the SSI Protocol and within Instructions for Completion of Denominator for Procedure Form (CDC 57.121) https://www.cdc.gov/nhsn/forms/instr/57_121.pdf

Denominator for Procedure Details
Required Supplemental Data Fields for Denominator Entry*:



NHSN
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Form Approved
OMB No. 0920-0666
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Denominator for Procedure

Page 1 of 2 *required for sa

Facility ID	Procedure #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*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: Yes No
*Diabetes Mellitus: Yes No
*Height: _____feet _____inches
*Closure Technique: Primary Other than primary
(choose one) _____meters
*Weight: _____lbs/kg (circle one)
Surgeon Code: _____

CSEC: *Duration of Labor: _____hours

Circle one: FUSN
*Spinal Level (check one)
- ☐ Atlas-axis
- ☐ Atlas-axis/Cervical
- ☐ Cervical
- ☐ Cervical/Dorsal/Dorsolumbar
- ☐ Dorsal/Dorsolumbar
- ☐ Lumbar/Lumbosacral

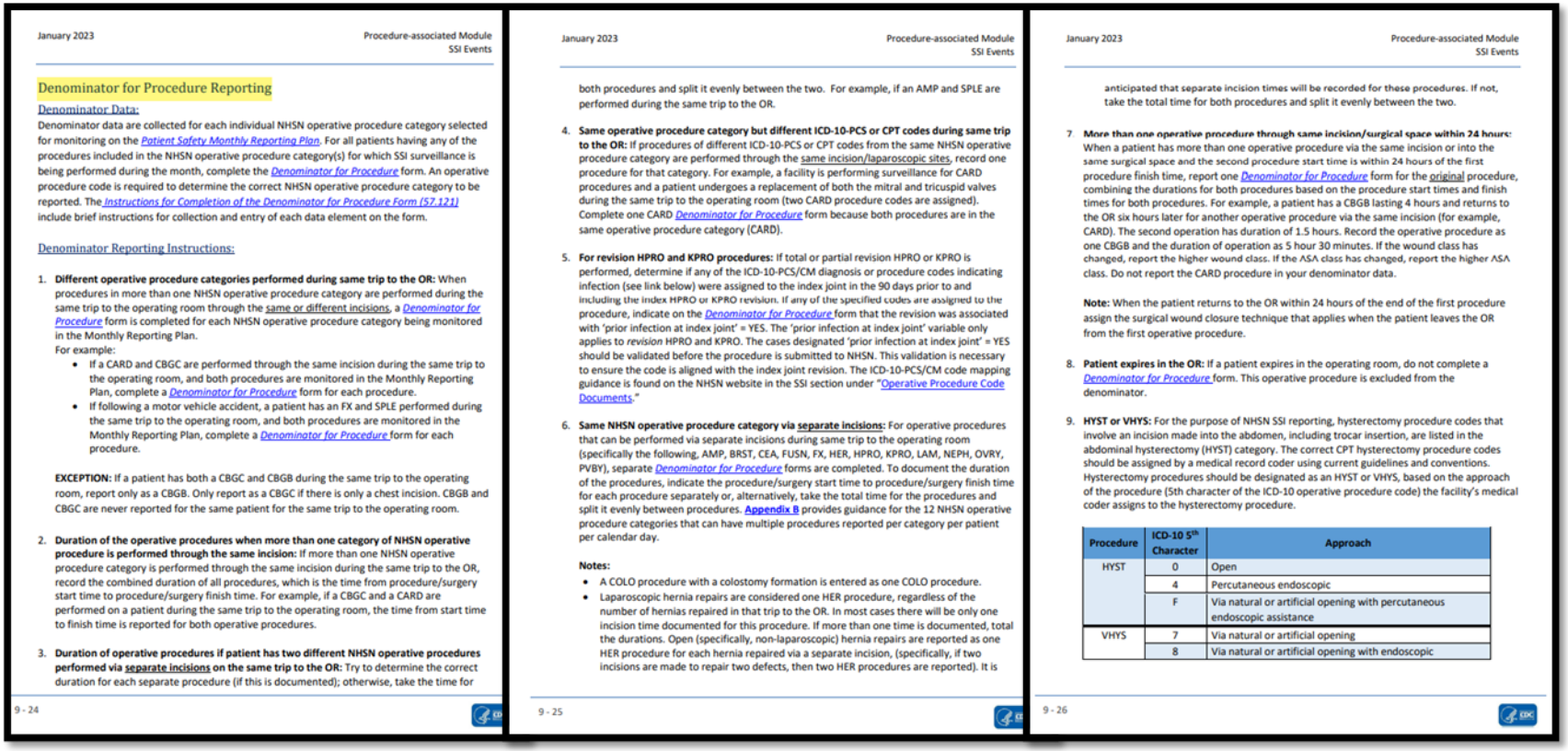
*Approach/Technique (check one)
- ☐ Anterior
- ☐ Posterior
- ☐ Anterior and Posterior

Circle one: HPRO KPRO
ICD-10-PCS Supplemental Procedure Code for HPRO/KPRO: _____
*Check one: ☐ Total ☐ Hemi ☐ Resurfacing (HPRO only)
If Total: ☐ Total Primary ☐ Total Revision
If Hemi: ☐ Partial Primary ☐ Partial Revision
If Resurfacing (HPRO only) : ☐ Total Primary ☐ Partial Primary
*If total or partial revision, was the revision associated with prior infection at index joint? ☐ Yes ☐ No

*Supplemental fields defined for CSEC, FUSN, HPRO, KPRO within Instructions for Completion of Denominator for Procedure Form (CDC 57.121)
https://www.cdc.gov/nhsn/forms/instr/57_121.pdf

9 Denominator for Procedure Reporting Instructions

(Instructions begin on page 9-24 of the 2023 SSI Protocol)



Denominator for Procedure Reporting

Denominator Data:

Denominator data are collected for each individual NHSN operative procedure category selected for monitoring on the *Patient Safety Monthly Reporting Plan*. For all patients having any of the procedures included in the NHSN operative procedure category(s) for which SSI surveillance is being performed during the month, complete the *Denominator for Procedure* form. An operative procedure code is required to determine the correct NHSN operative procedure category to be reported. The *Instructions for Completion of the Denominator for Procedure Form (57.121)* include brief instructions for collection and entry of each data element on the form.

Denominator Reporting Instructions:

1. **Different operative procedure categories performed during same trip to the OR:** When procedures in more than one NHSN operative procedure category are performed during the same trip to the operating room through the same or different incisions, a *Denominator for Procedure* form is completed for each NHSN operative procedure category being monitored in the Monthly Reporting Plan.
   For example:
   - If a CARD and CBGC are performed through the same incision during the same trip to the operating room, and both procedures are monitored in the Monthly Reporting Plan, complete a *Denominator for Procedure* form for each procedure.
   - If following a motor vehicle accident, a patient has an FX and SPLE performed during the same trip to the operating room, and both procedures are monitored in the Monthly Reporting Plan, complete a *Denominator for Procedure* form for each procedure.

   EXCEPTION: If a patient has both a CBGC and CBGB during the same trip to the operating room, report only as a CBGB. Only report as a CBGC if there is only a chest incision. CBGB and CBGC are never reported for the same patient for the same trip to the operating room.

2. **Duration of the operative procedures when more than one category of NHSN operative procedure is performed through the same incision:** If more than one NHSN operative procedure category is performed through the same incision during the same trip to the OR, record the combined duration of all procedures, which is the time from procedure/surgery start time to procedure/surgery finish time. For example, if a CBGC and a CARD are performed on a patient during the same trip to the operating room, the time from start time to finish time is reported for both operative procedures.

3. **Duration of operative procedures if patient has two different NHSN operative procedures performed via separate incisions on the same trip to the OR:** Try to determine the correct duration for each separate procedure (if this is documented); otherwise, take the time for

both procedures and split it evenly between the two. For example, if an AMP and SPLE are performed during the same trip to the OR.

4. **Same operative procedure category but different ICD-10-PCS or CPT codes during same trip to the OR:** If procedures of different ICD-10-PCS or CPT codes from the same NHSN operative procedure category are performed through the same incision/laparoscopic sites, record one procedure for that category. For example, a facility is performing surveillance for CARD procedures and a patient undergoes a replacement of both the mitral and tricuspid valves during the same trip to the operating room (two CARD procedure codes are assigned). Complete one CARD *Denominator for Procedure* form because both procedures are in the same operative procedure category (CARD).

5. **For revision HPRO and KPRO procedures:** If total or partial revision HPRO or KPRO is performed, determine if any of the ICD-10-PCS/CM diagnosis or procedure codes indicating infection (see link below) were assigned to the index joint in the 90 days prior to and including the index HPRO or KPRO revision. If any of the specified codes are assigned to the procedure, indicate on the *Denominator for Procedure* form that the revision was associated with 'prior infection at index joint' = YES. The 'prior infection at index joint' variable only applies to *revision* HPRO and KPRO. The cases designated 'prior infection at index joint' = YES should be validated before the procedure is submitted to NHSN. This validation is necessary to ensure the code is aligned with the index joint revision. The ICD-10-PCS/CM code mapping guidance is found on the NHSN website in the SSI section under "Operative Procedure Code Documents."

6. **Same NHSN operative procedure category via separate incisions:** For operative procedures that can be performed via separate incisions during same trip to the operating room (specifically the following, AMP, BRST, CEA, FUSN, FX, HER, HPRO, KPRO, LAM, NEPH, OVRY, PVBY), separate *Denominator for Procedure* forms are completed. To document the duration of the procedures, indicate the procedure/surgery start time to procedure/surgery finish time for each procedure separately or, alternatively, take the total time for the procedures and split it evenly between procedures. **Appendix B** provides guidance for the 12 NHSN operative procedure categories that can have multiple procedures reported per category per patient per calendar day.

   Notes:
   - A COLO procedure with a colostomy formation is entered as one COLO procedure.
   - Laparoscopic hernia repairs are considered one HER procedure, regardless of the number of hernias repaired in that trip to the OR. In most cases there will be only one incision time documented for this procedure. If more than one time is documented, total the durations. Open (specifically, non-laparoscopic) hernia repairs are reported as one HER procedure for each hernia repaired via a separate incision, (specifically, if two incisions are made to repair two defects, then two HER procedures are reported). It is

anticipated that separate incision times will be recorded for these procedures. If not, take the total time for both procedures and split it evenly between the two.

7. **More than one operative procedure through same incision/surgical space within 24 hours:** When a patient has more than one operative procedure via the same incision or into the same surgical space and the second procedure start time is within 24 hours of the first procedure finish time, report one *Denominator for Procedure* form for the original procedure, combining the durations for both procedures based on the procedure start times and finish times for both procedures. For example, a patient has a CBGB lasting 4 hours and returns to the OR six hours later for another operative procedure via the same incision (for example, CARD). The second operation has duration of 1.5 hours. Record the operative procedure as one CBGB and the duration of operation as 5 hour 30 minutes. If the wound class has changed, report the higher wound class. If the ASA class has changed, report the higher ASA class. Do not report the CARD procedure in your denominator data.

   Note: When the patient returns to the OR within 24 hours of the end of the first procedure assign the surgical wound closure technique that applies when the patient leaves the OR from the first operative procedure.

8. **Patient expires in the OR:** If a patient expires in the operating room, do not complete a *Denominator for Procedure* form. This operative procedure is excluded from the denominator.

9. **HYST or VHYS:** For the purpose of NHSN SSI reporting, hysterectomy procedure codes that involve an incision made into the abdomen, including trocar insertion, are listed in the abdominal hysterectomy (HYST) category. The correct CPT hysterectomy procedure codes should be assigned by a medical record coder using current guidelines and conventions. Hysterectomy procedures should be designated as an HYST or VHYS, based on the approach of the procedure (5th character of the ICD-10 operative procedure code) the facility's medical coder assigns to the hysterectomy procedure.

Procedure	ICD-10 5th Character	Approach
HYST	0	Open
	4	Percutaneous endoscopic
	F	Via natural or artificial opening with percutaneous endoscopic assistance
VHYS	7	Via natural or artificial opening
	8	Via natural or artificial opening with endoscopic

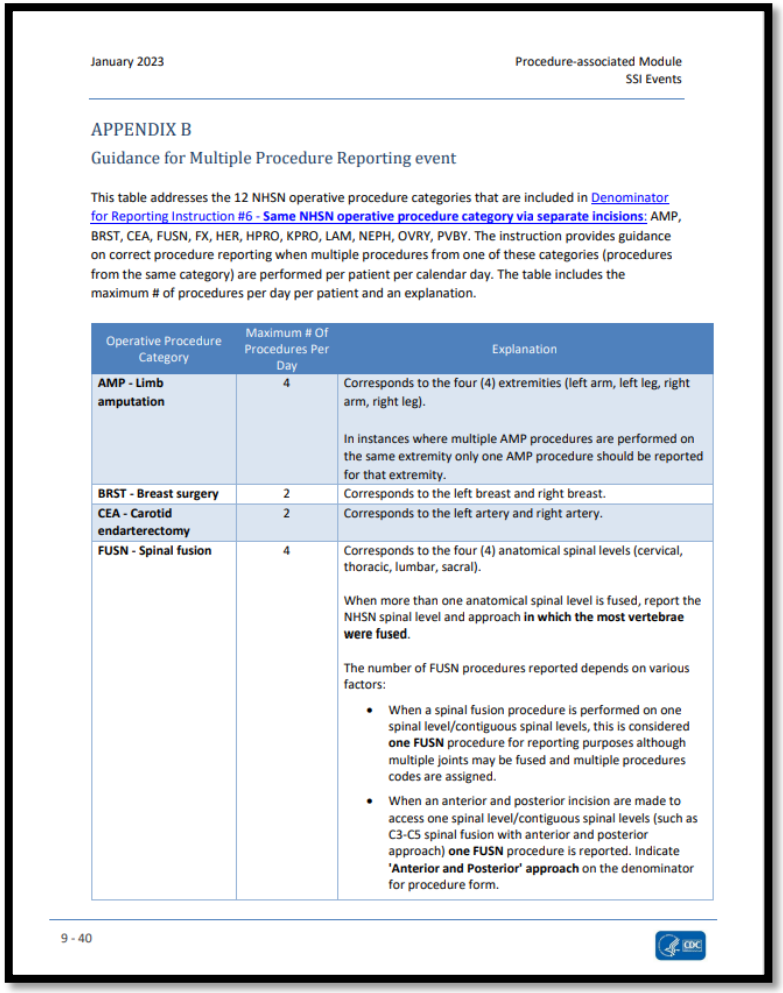
Appendix B : Guidance for Multiple Procedure Reporting

- **Appendix B** added in 2023 to provide clarity and support to:

  ***Denominator Reporting Instruction #6*:**

  Same NHSN operative procedure category via separate incisions.

  - Operative Procedure Category
  - Maximum # of Procedures Per Day
  - Explanation



APPENDIX B

Guidance for Multiple Procedure Reporting event

This table addresses the 12 NHSN operative procedure categories that are included in Denominator for Reporting Instruction #6 - **Same NHSN operative procedure category via separate incisions:** AMP, BRST, CEA, FUSN, FX, HER, HPRO, KPRO, LAM, NEPH, OVRY, PVBY. The instruction provides guidance on correct procedure reporting when multiple procedures from one of these categories (procedures from the same category) are performed per patient per calendar day. The table includes the maximum # of procedures per day per patient and an explanation.

Operative Procedure Category	Maximum # Of Procedures Per Day	Explanation
AMP - Limb amputation	4	Corresponds to the four (4) extremities (left arm, left leg, right arm, right leg). In instances where multiple AMP procedures are performed on the same extremity only one AMP procedure should be reported for that extremity.
BRST - Breast surgery	2	Corresponds to the left breast and right breast.
CEA - Carotid endarterectomy	2	Corresponds to the left artery and right artery.
FUSN - Spinal fusion	4	Corresponds to the four (4) anatomical spinal levels (cervical, thoracic, lumbar, sacral). When more than one anatomical spinal level is fused, report the NHSN spinal level and approach **in which the most vertebrae were fused**. The number of FUSN procedures reported depends on various factors: • When a spinal fusion procedure is performed on one spinal level/contiguous spinal levels, this is considered **one FUSN** procedure for reporting purposes although multiple joints may be fused and multiple procedures codes are assigned. • When an anterior and posterior incision are made to access one spinal level/contiguous spinal levels (such as C3-C5 spinal fusion with anterior and posterior approach) **one FUSN** procedure is reported. Indicate **'Anterior and Posterior' approach** on the denominator for procedure form.

Case Scenarios

Scenario 1

You include COLO – Colon Surgery and HYST – Abdominal Hysterectomy for monitoring on your facility Monthly Reporting Plan (MRP).

Question 1

How should procedures be determined for inclusion into each selected procedure category?

A. Review operative notes to determine which procedures to include.

B. Identify all qualifying procedures by use of assigned NHSN ICD-10-PCS/CPT procedure codes.

C. Identify all qualifying procedures by use of assigned NHSN ICD-10-PCS/CPT procedure codes – but only include those procedures in the denominator with subsequent SSI events.

Scenario 1
Question 1 Answer

B. Identify all qualifying procedures by use of assigned NHSN ICD-10-PCS/CPT procedure codes.

- The NHSN ICD-10-PCS/CPT codes included in the mapping guidance documents provided by NHSN are **required** to determine the correct NHSN operative procedure category to be reported.
  - Procedure codes allows NHSN to standardize NHSN SSI surveillance reporting.

- **Requirement** to collect operative procedure (denominator) data on all procedures included in the selected operative procedure categories indicated on the facility's MRP (and monitor all procedures for SSI).

Scenario 2

You monitor BRST – Breast surgery in your facility MRP. A patient has a bilateral breast procedure performed via separate incisions, with qualifying NHSN operative procedure (BRST) codes for each breast.

Question 1

Based on this information, how many BRST denominator for procedure forms are completed for this patient?

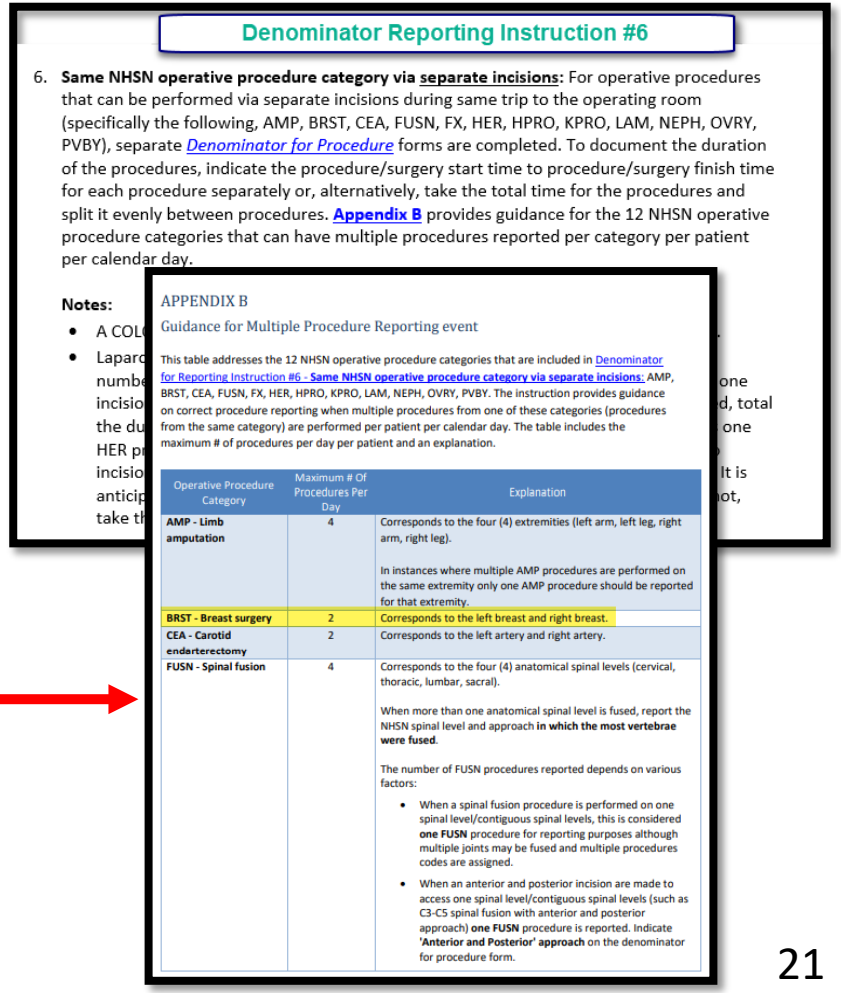
A. One

B. Two

Scenario 2
Question 1 Answer

B. Two

- *Denominator Reporting Instruction #6*: **Same NHSN operative procedure category via separate incisions.**
  - Right and left breast procedures performed via separate incisions with qualifying BRST codes assigned for each breast: **denominator for procedure form is submitted for each BRST procedure.**
- **Appendix B**: Up to two BRST procedures (right and left breast) can be reported per patient per calendar day.
- Both BRST surgical sites monitored for SSI.



Denominator Reporting Instruction #6

6. **Same NHSN operative procedure category via separate incisions:** For operative procedures that can be performed via separate incisions during same trip to the operating room (specifically the following, AMP, BRST, CEA, FUSN, FX, HER, HPRO, KPRO, LAM, NEPH, OVRY, PVBY), separate *Denominator for Procedure* forms are completed. To document the duration of the procedures, indicate the procedure/surgery start time to procedure/surgery finish time for each procedure separately or, alternatively, take the total time for the procedures and split it evenly between procedures. **Appendix B** provides guidance for the 12 NHSN operative procedure categories that can have multiple procedures reported per category per patient per calendar day.

Notes:

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Guidance for Multiple Procedure Reporting event

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Scenario 3

A COLO procedure is performed on 4/1 with a Procedure Start Time (PST) of 3:30 PM and Procedure Finish (PF) of 4:40 PM. Wound class =CO – Contaminated. ASA =2. Non-primary closure.

On 4/2 the patient returns to the OR via the same incision for an XLAP – Exploratory laparotomy procedure, with PST 10:00 AM and PF of 10:30 AM. Wound class=CC – Clean Contaminated. ASA=2. Primary closure.

Question 1

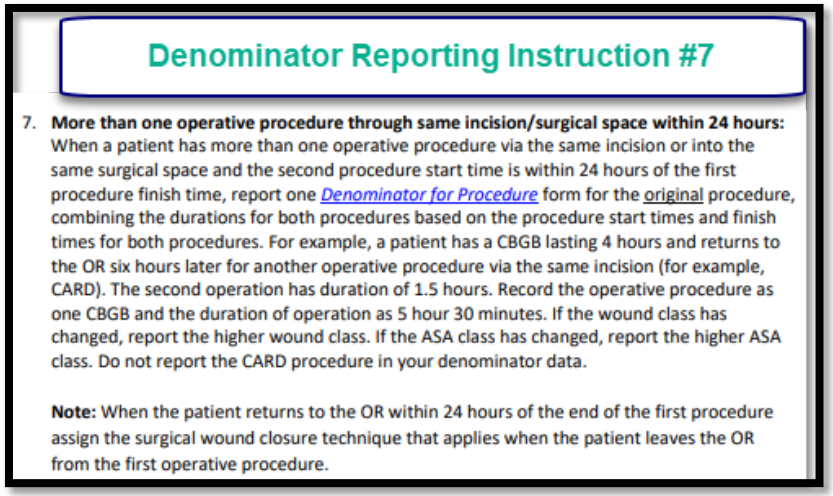
Based on this scenario, what is the correct denominator reporting?

A. COLO with procedure date of 4/1 and XLAP with procedure date of 4/2
B. COLO only (procedure date of 4/1)
C. XLAP only (procedure date of 4/2)

Scenario 3
Question 1 Answer

B. COLO only (procedure date of 4/1)

- *Denominator Reporting Instruction # 7*:
  - **More than one operative procedure via the same incision or into the same surgical space within 24 hours**
    - XLAP PST is within 24 hours of the COLO PF: **One denominator for procedure form is reported, for the original procedure, the COLO.**
    - XLAP is not reported.



Denominator Reporting Instruction #7

7. **More than one operative procedure through same incision/surgical space within 24 hours:** When a patient has more than one operative procedure via the same incision or into the same surgical space and the second procedure start time is within 24 hours of the first procedure finish time, report one *Denominator for Procedure* form for the original procedure, combining the durations for both procedures based on the procedure start times and finish times for both procedures. For example, a patient has a CBGB lasting 4 hours and returns to the OR six hours later for another operative procedure via the same incision (for example, CARD). The second operation has duration of 1.5 hours. Record the operative procedure as one CBGB and the duration of operation as 5 hour 30 minutes. If the wound class has changed, report the higher wound class. If the ASA class has changed, report the higher ASA class. Do not report the CARD procedure in your denominator data.

Note: When the patient returns to the OR within 24 hours of the end of the first procedure assign the surgical wound closure technique that applies when the patient leaves the OR from the first operative procedure.

Scenario 3
Question 1 Answer

- Denominator details are assigned according to instruction #7.
  - Combine the durations for both procedures based on the PST and PF for both procedures.
  - If the wound class has changed, report the higher wound class.
  - If the ASA class has changed, report the higher ASA class.
  - Assign the surgical wound closure technique that applies when the patient leaves the OR from the first operative procedure.

Denominator Details in this case:

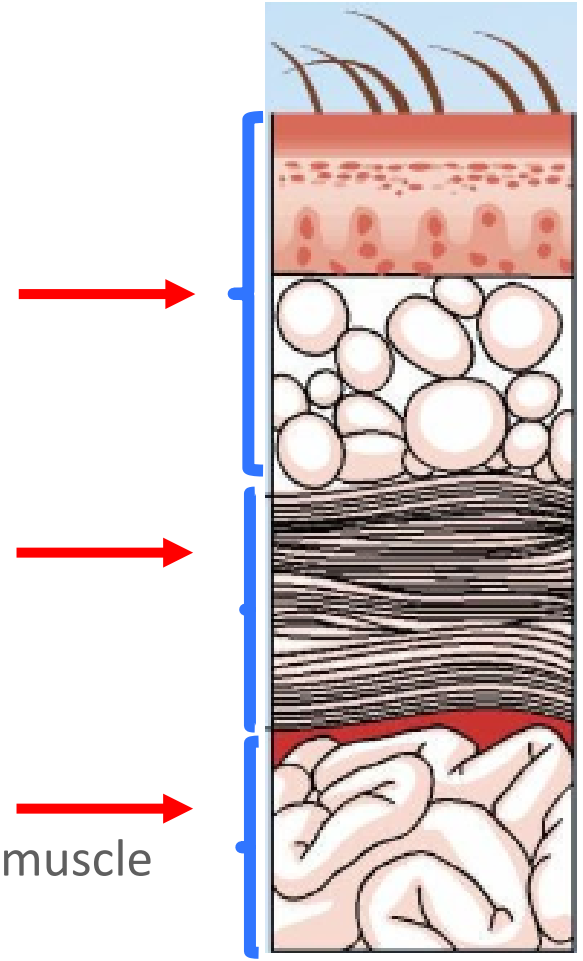
4/1 COLO reported only:

- **Procedure duration** = 100 minutes (70 minutes + 30 minutes)
- **Wound Class** = CO – Contaminated (highest wound class assigned)
- **ASA** = 2 (no change)
- **Wound Closure Technique** = Non-Primary Closure (COLO [first] procedure)

Numerator: The SSI Event
Surgical Site Infection Criteria

SSI: Three Tissue Levels
Surgical Site Infection Criteria

- **Superficial Incisional**
  - Skin and subcutaneous tissues of the incision
- **Deep Incisional**
  - Deep soft tissues of the incision
    - For example, fascial/muscle layers
- **Organ/Space**
  - Any part of the body deeper than the fascial/muscle layers



Superficial Incisional SSI Criteria

Table 1. Surgical Site Infection Criteria

Superficial incisional SSI

Must meet the following criteria:

Date of event occurs within 30 days following the NHSN operative procedure (where day 1 = the procedure date)

AND

involves only skin and subcutaneous tissue of the incision

AND

patient has at least ***one*** of the following:

a. purulent drainage from the superficial incision.

b. organism(s) identified from an aseptically-obtained specimen from the superficial incision or subcutaneous tissue 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]).

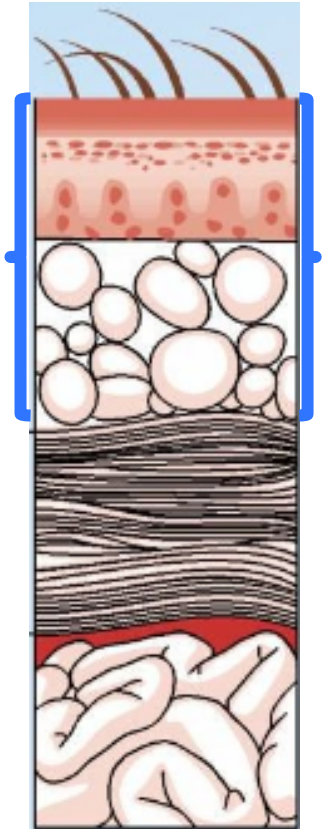
c. a superficial incision that is deliberately opened by a surgeon, physician* or physician designee and culture or non-culture based testing of the superficial incision or subcutaneous tissue is not performed

AND

patient has at least one of the following signs or symptoms: localized pain or tenderness; localized swelling; erythema; or heat.

d. diagnosis of a superficial incisional SSI by a physician* or physician designee.

* The term physician for the purpose of application of the NHSN SSI criteria may be interpreted to mean a surgeon, infectious disease physician, emergency physician, other physician on the case, or physician's designee (nurse practitioner or physician's assistant).



Superficial Incisional SSI – Reporting Instructions

Reporting Instructions for Superficial incisional SSI	**<u>The following do not qualify as criteria for meeting the NHSN definition of superficial incisional SSI:</u>** • Diagnosis/treatment of cellulitis (redness/warmth/swelling), by itself, does not meet superficial incisional SSI criterion 'd'. • A stitch abscess alone (minimal inflammation and discharge confined to the points of suture penetration). • A localized stab wound or pin site infection; depending on the depth, these infections might be considered either a skin (SKIN) or soft tissue (ST) infection. **Note**: For an NHSN operative procedure, a laparoscopic trocar site is considered a surgical incision and not a stab wound. If a surgeon uses a laparoscopic trocar site to place a drain at the end of a procedure this is considered a surgical incision.

Superficial Incisional SSIs: SIP and SIS

There are two specific types of superficial incisional SSIs:

1. 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 (for example, C-section incision or chest incision for CBGB)
2. Superficial Incisional Secondary (SIS) – a superficial incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (for example, donor site incision for CBGB)

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

Deep Incisional SSI Criteria

Table 1. Surgical Site Infection Criteria

Deep incisional 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 deep soft tissues of the incision (for example, fascial and muscle layers)

AND

patient has at least ***one*** of the following:

a. purulent drainage from the deep incision.

b. a deep incision that is deliberately opened or aspirated by a surgeon, physician* or physician designee or spontaneously dehisces

AND

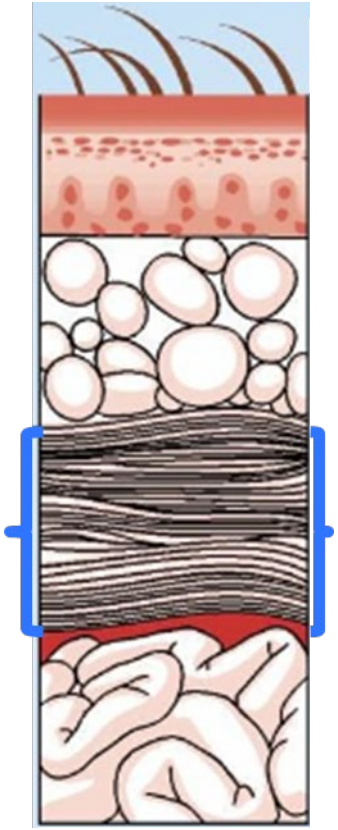
organism(s) identified from the deep soft tissues of the incision by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing [ASC/AST]) or culture or non-culture based microbiologic testing method is not performed. A culture or non-culture based test from the deep soft tissues of the incision that has a negative finding does not meet this criterion.

AND

patient has at least ***one*** of the following signs or symptoms: fever (>38°C); localized pain or tenderness.

c. an abscess or other evidence of infection involving the deep incision detected on gross anatomical exam, histopathologic exam, or imaging test.

* The term physician for the purpose of application of the NHSN SSI criteria may be interpreted to mean a surgeon, infectious disease physician, emergency physician, other physician on the case, or physician's designee (nurse practitioner or physician's assistant).



Deep Incisional SSIs: DIP and DIS

There are two specific types of deep incisional SSIs:

1. Deep Incisional Primary (DIP) – a deep incisional SSI that is identified in a primary incision in a patient that has had an operation with one or more incisions (for example, C-section incision or chest incision for CBGB)
2. Deep Incisional Secondary (DIS) – a deep incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (for example, donor site incision for CBGB)

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

Organ/Space SSI Criteria

Table 1. Surgical Site Infection Criteria

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

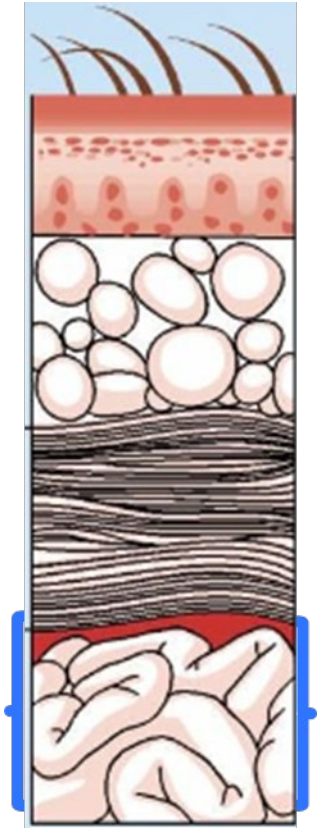
AND

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

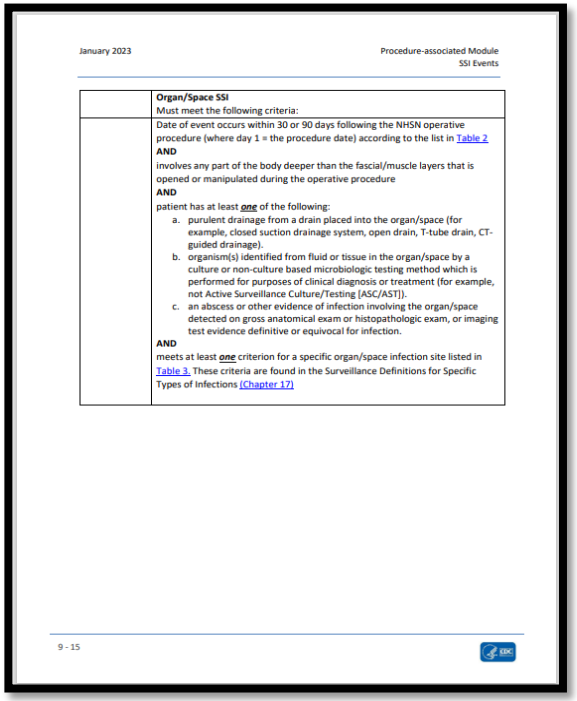
meets at least ***one*** criterion for a specific organ/space infection site listed in Table 3. These criteria are found in the Surveillance Definitions for Specific Types of Infections (Chapter 17)



Organ/Space SSI Criteria: Chapter 9 AND Chapter 17

Organ/Space SSI event must meet:

Organ/Space criteria (Chapter 9)



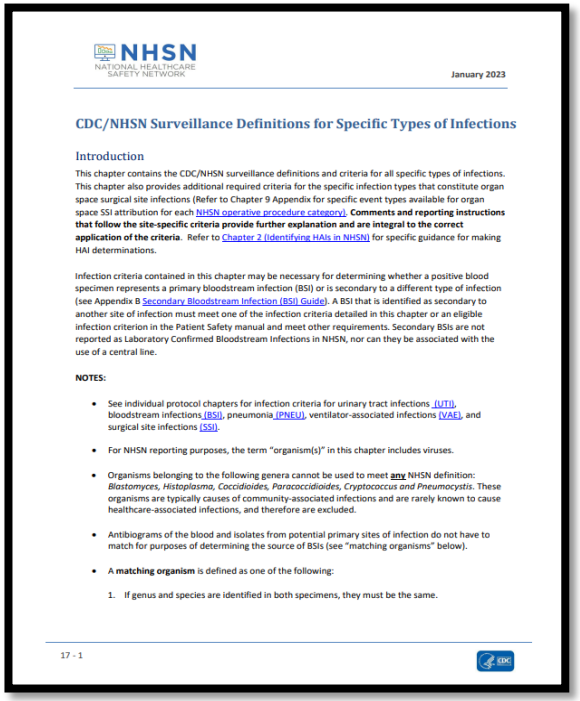
January 2023 — Procedure-associated Module — SSI Events

	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)

9 - 15

AND

Applicable criterion for a specific organ/space infection site (Chapter 17)



NHSN NATIONAL HEALTHCARE SAFETY NETWORK

January 2023

CDC/NHSN Surveillance Definitions for Specific Types of Infections

Introduction

This chapter contains the CDC/NHSN surveillance definitions and criteria for all specific types of infections. This chapter also provides additional required criteria for the specific infection types that constitute organ space surgical site infections (Refer to Chapter 9 Appendix for specific event types available for organ space SSI attribution for each NHSN operative procedure category). **Comments and reporting instructions that follow the site-specific criteria provide further explanation and are integral to the correct application of the criteria**. Refer to Chapter 2 (Identifying HAIs in NHSN) for specific guidance for making HAI determinations.

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.

NOTES:

- See individual protocol chapters for infection criteria for urinary tract infections (UTI), bloodstream infections (BSI), pneumonia (PNEU), ventilator-associated infections (VAE), and surgical site infections (SSI).
- For NHSN reporting purposes, the term "organism(s)" in this chapter includes viruses.
- Organisms belonging to the following genera cannot be used to meet **any** NHSN definition: *Blastomyces, Histoplasma, Coccidioides, Paracoccidioides, Cryptococcus and Pneumocystis*. These organisms are typically causes of community-associated infections and are rarely known to cause healthcare-associated infections, and therefore are excluded.
- Antibiograms of the blood and isolates from potential primary sites of infection do not have to match for purposes of determining the source of BSIs (see "matching organisms" below).
- **A matching organism** is defined as one of the following:
  1. If genus and species are identified in both specimens, they must be the same.

17 - 1

Organ/Space SSI Criteria – Site-Specific Criteria

- **Table 3** lists the specific sites available for Organ/Space SSI event reporting.

- Definitions for these sites are found in Chapter 17 - CDC/NHSN Surveillance Definitions for Specific Types of Infections*

Table 3. Specific Sites of an Organ/Space SSI

Category	Specific Site	Category	Specific Site
BONE	Osteomyelitis	MED	Mediastinitis
BRST	Breast abscess or mastitis	MEN	Meningitis or ventriculitis
CARD	Myocarditis or pericarditis	ORAL	Oral cavity infection (mouth, tongue, or gums)
DISC	Disc space infection	OREP	Deep pelvic tissue infection or other infection of the male or female reproductive tract
EAR	Ear, mastoid infection	PJI	Periprosthetic joint infection
EMET	Endometritis	SA	Spinal abscess/infection
ENDO	Endocarditis	SINU	Sinusitis
GIT	Gastrointestinal (GI) tract infection	UR	Upper respiratory tract, pharyngitis, laryngitis, epiglottitis
IAB	Intraabdominal infection, not specified elsewhere	USI	Urinary System Infection
IC	Intracranial infection	VASC	Arterial or venous infection
JNT	Joint or bursa infection	VCUF	Vaginal cuff infection
LUNG	Other infection of the lower respiratory tract		

Criteria for these sites can be found in Chapter 17, Surveillance Definitions for Specific Types of Infections

Appendix A contains a complete list of all NHSN operative procedure categories and the corresponding site-specific SSIs that may be attributable to each category.

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

Appendix A: Specific Event Types Available for SSI Attribution by NHSN Procedure Category

- SSI event reporting is limited to the following specific event types for each procedure category.

- If an eligible event type occurs within the surveillance period following the NHSN operative procedure the event is cited attributed to that procedure.

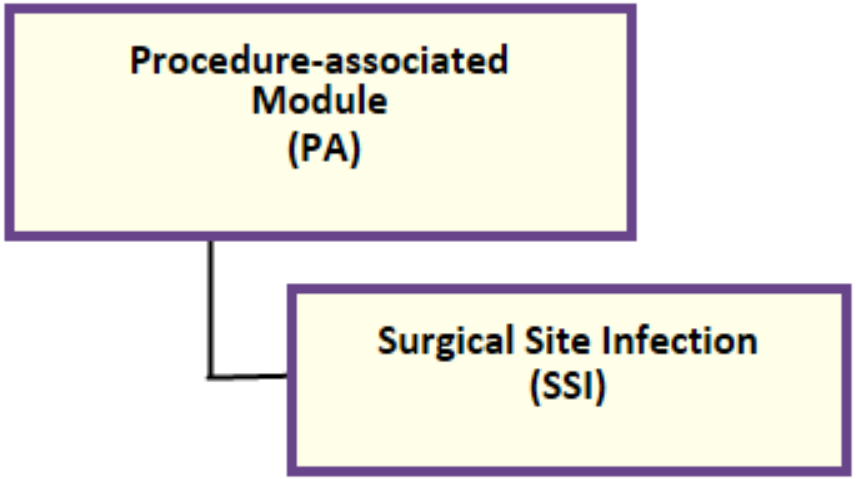
APPENDIX A

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
BILI - Bile duct, liver or pancreatic surgery	DIP - Deep Incisional Primary GIT - Gastrointestinal tract IAB - Intraabdominal, not specified elsewhere SIP - Superficial Incisional Primary
BRST - Breast surgery	BRST - Breast abscess or mastitis DIP - Deep Incisional Primary DIS - Deep Incisional Secondary SIP - Superficial Incisional Primary SIS - Superficial Incisional Secondary
CARD - Cardiac surgery	BONE - Osteomyelitis CARD - Myocarditis or pericarditis DIP - Deep Incisional Primary ENDO - Endocarditis IAB - Intraabdominal, not specified elsewhere LUNG - Other infections of the lower respiratory tract MED - Mediastinitis SIP - Superficial Incisional Primary VASC - Arterial or venous infection

Accurate SSI Event Reporting

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

The SSI Event: Important Points

- Must collect SSI event (numerator) data on all procedures included in the selected operative procedure categories indicated on the facility's MRP.
  - All procedures are monitored for superficial incisional, deep incisional, and organ/space SSI events and the type of SSI reported must reflect the deepest tissue level where SSI criteria are met during the surveillance period.
- Events meeting SSI criteria are reported to NHSN regardless of noted evidence of infection at time of surgery (there is no such thing as 'POA' or 'ongoing' infection in SSI surveillance).
- An SSI event is attributed to the facility where the NHSN operative procedure is performed.

SSI Event Detail: Surveillance Period for SSI

- **The timeframe following an NHSN operative procedure for monitoring and identifying an SSI event.**
  - Surveillance period is determined by the NHSN operative procedure category.
    - **30-day surveillance** or **90-day surveillance**.
  - **Table 2** lists the surveillance periods for SSI by NHSN operative procedure category.

- Superficial incisional SSI events and Secondary incisional SSI events:
  - **30-day** surveillance period for all procedure types.

Table 2. Surveillance Periods for SSI Following Selected NHSN Operative Procedure Categories. Day 1 = the date of the procedure.

30-day Surveillance			
Category	**Operative Procedure**	**Category**	**Operative Procedure**
AAA	Abdominal aortic aneurysm repair	LAM	Laminectomy
AMP	Limb amputation	LTP	Liver transplant
APPY	Appendix surgery	NECK	Neck surgery
AVSD	Shunt for dialysis	NEPH	Kidney surgery
BILI	Bile duct, liver or pancreatic surgery	OVRY	Ovarian surgery
CEA	Carotid endarterectomy	PRST	Prostate surgery
CHOL	Gallbladder surgery	REC	Rectal surgery
COLO	Colon surgery	SB	Small bowel surgery
CSEC	Cesarean section	SPLE	Spleen surgery
GAST	Gastric surgery	THOR	Thoracic surgery
HTP	Heart transplant	THYR	Thyroid and/or parathyroid surgery
HYST	Abdominal hysterectomy	VHYS	Vaginal hysterectomy
KTP	Kidney transplant	XLAP	Exploratory laparotomy

90-day Surveillance	
Category	**Operative Procedure**
BRST	Breast surgery
CARD	Cardiac surgery
CBGB	Coronary artery bypass graft with both chest and donor site incisions
CBGC	Coronary artery bypass graft with chest incision only
CRAN	Craniotomy
FUSN	Spinal fusion
FX	Open reduction of fracture
HER	Herniorrhaphy
HPRO	Hip prosthesis
KPRO	Knee prosthesis
PACE	Pacemaker surgery
PVBY	Peripheral vascular bypass surgery
VSHN	Ventricular shunt

Notes:
- Superficial incisional SSIs are monitored for a 30-day period for all procedure types.
- Secondary incisional SSIs are monitored for a 30-day period regardless of the surveillance period for the primary site.

SSI Event Detail: Surveillance Period for SSI

- **Each trip to the OR for an NHSN operative procedure sets an SSI surveillance period for the surgical site.**
  - If a patient returns to the OR for another NHSN operative procedure and the same surgical site is entered, the surveillance period for the prior NHSN operative procedure ends and a new SSI surveillance period begins.

- **Non-NHSN operative procedures do not set an SSI surveillance period.**
  - If within the surveillance period following an NHSN operative procedure a non-NHSN operative procedure is performed, and all three tissue levels are entered, the SSI surveillance period for the NHSN operative procedure ends.
    - If all three tissue levels are not entered, the surveillance period continues for the tissue levels not entered during the non-NHSN operative procedure.

SSI Event Detail: 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.

SSI Event Detail: Timeframe for SSI elements

- The concept of infection window period (IWP) is not applicable to SSI surveillance. There are surveillance periods defined by the procedure category.
- **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.

SSI Event Detail: Secondary BSI Scenarios for SSI

Scenario 1: At least one organism from the blood specimen matches an organism identified from the site-specific specimen that is 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 that includes the SSI DOE, 3 days prior, and 13 days after.

OR

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.

Secondary BSI Scenario 1

17 days

Post-Op Day	SSI Secondary BSI Attribution Period
9	
10	
11	
12	
13	DOE for an SSI
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15	
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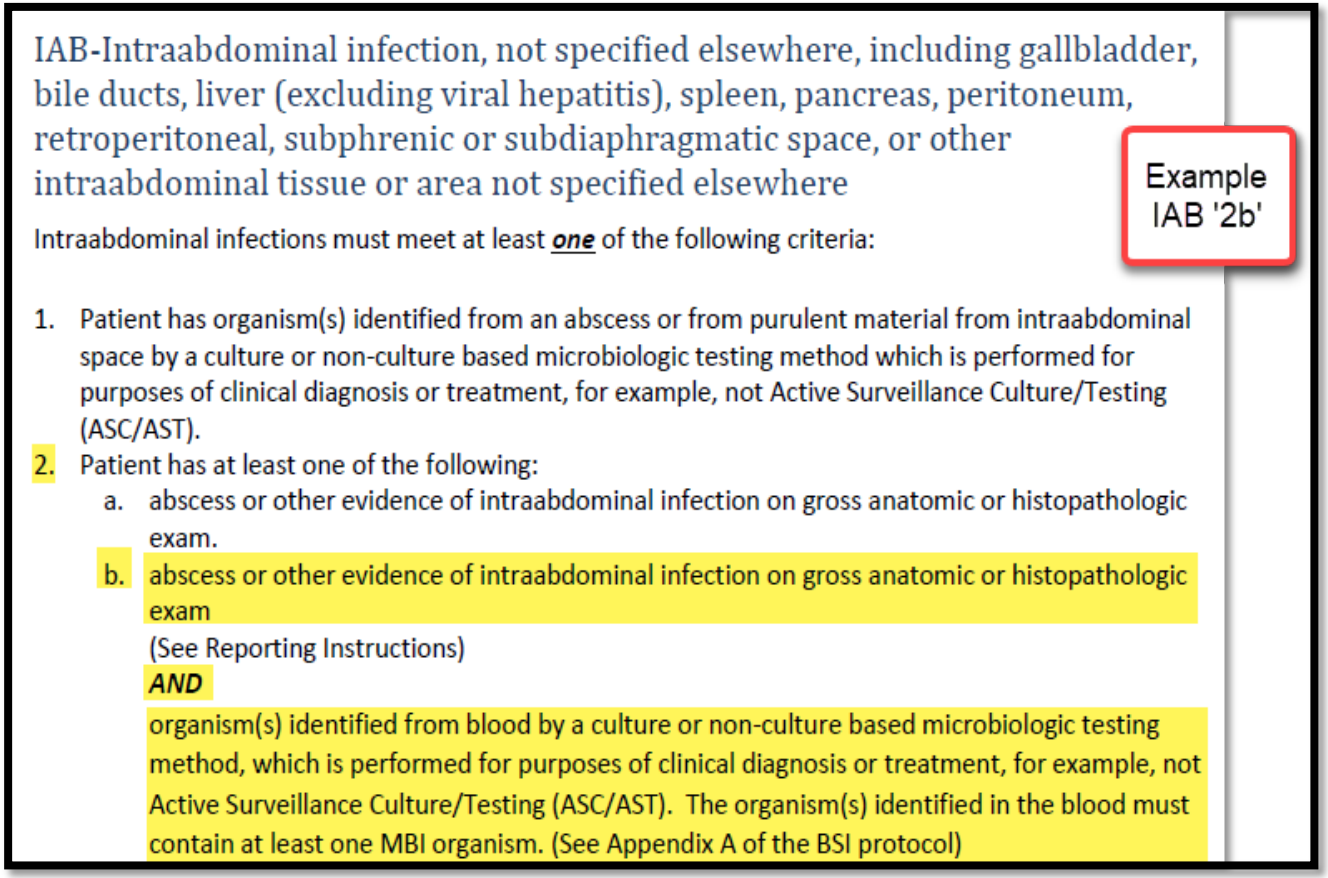
Secondary BSI Scenario 2 Example



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

Example IAB '2b'

Intraabdominal infections must meet at least ***one*** of the following criteria:

1. Patient has organism(s) identified from an abscess or from purulent material from intraabdominal 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).
2. Patient has at least one of the following:
   a. abscess or other evidence of intraabdominal infection on gross anatomic or histopathologic exam.
   b. abscess or other evidence of intraabdominal infection on gross anatomic or histopathologic exam
   (See Reporting Instructions)
   AND
   organism(s) identified from blood 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). The organism(s) identified in the blood must contain at least one MBI organism. (See Appendix A of the BSI protocol)

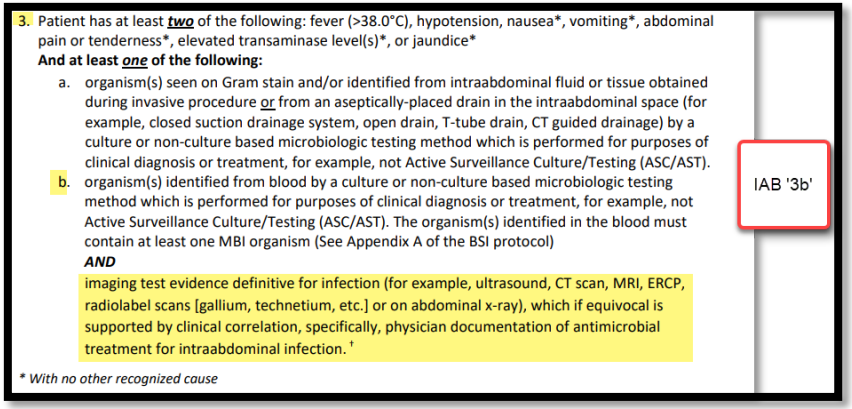
SSI Event Detail: Gross Anatomical Exam

- **Evidence of infection elicited or visualized on physical examination or observed during a medical/invasive procedure.**
- Examples:
  - An intraabdominal abscess will require an invasive procedure to actually visualize the abscess.
  - Visualization of pus or purulent drainage (includes from a drain).
  - SSI only: Abdominal pain or tenderness **post Cesarean section (CSEC) or hysterectomy (HYST or VHYS)** is sufficient gross anatomic evidence of infection without an invasive procedure to meet Organ/Space SSI criterion "c" **when OREP** (Deep pelvic tissue infection or other infection of the male or female reproductive tract) **or EMET** (Endometritis) **is met**.
    - Allowing the documentation of abdominal pain or tenderness as gross anatomic evidence of infection to meet Organ/Space SSI criterion "c" enables the user to report an SSI-OREP or SSI-EMET.

SSI Event Detail: Gross Anatomical Exam

- SSI: Abdominal pain or tenderness cannot be applied as 'other evidence of infection on gross anatomic exam' to meet Deep Incisional SSI criterion 'c' or to meet any Chapter 17 site-specific criterion (for example, OREP '2').

- **Imaging test evidence of infection cannot be applied to meet gross anatomic evidence of infection.**
  - Imaging test evidence has distinct findings in the NHSN definitions (example: IAB '3b').



3. Patient has at least ***two*** of the following: fever (>38.0°C), hypotension, nausea*, vomiting*, abdominal pain or tenderness*, elevated transaminase level(s)*, or jaundice*

And at least *one* of the following:

a. organism(s) seen on Gram stain and/or identified from intraabdominal fluid or tissue obtained during invasive procedure or from an aseptically-placed drain in the intraabdominal space (for example, closed suction drainage system, open drain, T-tube drain, CT guided drainage) 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).

b. organism(s) identified from blood 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). The organism(s) identified in the blood must contain at least one MBI organism (See Appendix A of the BSI protocol)

AND

imaging test evidence definitive for infection (for example, ultrasound, CT scan, MRI, ERCP, radiolabel scans [gallium, technetium, etc.] or on abdominal x-ray), which if equivocal is supported by clinical correlation, specifically, physician documentation of antimicrobial treatment for intraabdominal infection.†

* *With no other recognized cause*

IAB '3b'

SSI Event Detail: Purulence

- **NHSN does not define purulence as there is no standard, clinically agreed upon definition.**
  - The descriptors “pus” or “purulence” are sufficient evidence of infection.

- Drainage using a color descriptor and a consistency descriptor (as long as combined) are acceptable to indicate purulence:

  Color: green, yellow

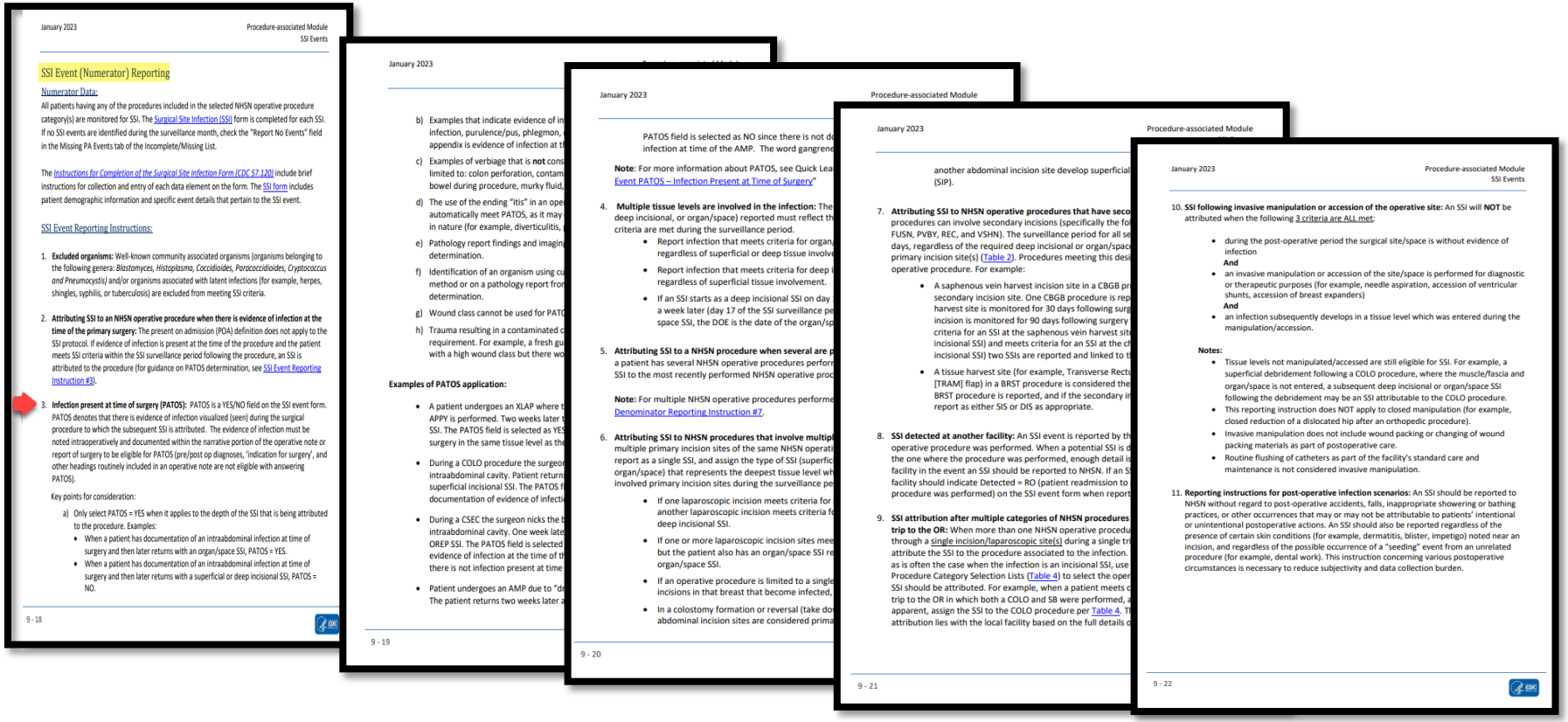
  Consistency: milky, thick, creamy, opaque, viscous

- **Example**: *‘thick yellow’* drainage acceptable to indicate purulence.

- Gram stain results (WBCs or PMNs) cannot be used to define purulence.

11 SSI Event (Numerator) Reporting Instructions

(Instructions begin on page 9-18 of the 2023 SSI Protocol)



January 2023 Procedure-associated Module SSI Events

SSI Event (Numerator) Reporting

Numerator Data:

All patients having any of the procedures included in the selected NHSN operative procedure category(s) are monitored for SSI. The Surgical Site Infection (SSI) form is completed for each SSI. If no SSI events are identified during the surveillance month, check the "Report No Events" field in the Missing PA Events tab of the Incomplete/Missing List.

The *Instructions for Completion of the Surgical Site Infection Form (CDC 57.120)* include brief instructions for collection and entry of each data element on the form. The SSI form includes patient demographic information and specific event details that pertain to the SSI event.

SSI Event Reporting Instructions:

1. **Excluded organisms:** Well-known community associated organisms (organisms belonging to the following genera: *Blastomyces, Histoplasma, Coccidioides, Paracoccidioides, Cryptococcus and Pneumocystis)* and/or organisms associated with latent infections (for example, herpes, shingles, syphilis, or tuberculosis) are excluded from meeting SSI criteria.

2. **Attributing SSI to an NHSN operative procedure when there is evidence of infection at the time of the primary surgery:** The present on admission (POA) definition does not apply to the SSI protocol. If evidence of infection is present at the time of the procedure and the patient meets SSI criteria within the SSI surveillance period following the procedure, an SSI is attributed to the procedure (for guidance on PATOS determination, see SSI Event Reporting Instruction #3).

3. **Infection present at time of surgery (PATOS):** PATOS is a YES/NO field on the SSI event form. PATOS denotes that there is evidence of infection visualized (seen) during the surgical procedure to which the subsequent 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 to be eligible for PATOS (pre/post op diagnoses, 'indication for surgery', and other headings routinely included in an operative note are not eligible with answering PATOS).

   Key points for consideration:

   a) Only select PATOS = YES when it applies to the depth of the SSI that is being attributed to the procedure. Examples:
   - When a patient has documentation of an intraabdominal infection at time of surgery and then later returns with an organ/space SSI, PATOS = YES.
   - When a patient has documentation of an intraabdominal infection at time of surgery and then later returns with a superficial or deep incisional SSI, PATOS = NO.

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b) Examples that indicate evidence of in
infection, purulence/pus, phlegmon,
appendix is evidence of infection at t
c) Examples of verbiage that is **not** cons
limited to: colon perforation, contam
bowel during procedure, murky fluid,
d) The use of the ending "itis" in an ope
automatically meet PATOS, as it may
in nature (for example, diverticulitis,
e) Pathology report findings and imagin
determination.
f) Identification of an organism using cu
method or on a pathology report fro
determination.
g) Wound class cannot be used for PATO
h) Trauma resulting in a contaminated c
requirement. For example, a fresh gu
with a high wound class but there wo

Examples of PATOS application:

- A patient undergoes an XLAP where t
APPY is performed. Two weeks later t
SSI. The PATOS field is selected as YES
surgery in the same tissue level as th
- During a COLO procedure the surgeo
intraabdominal cavity. Patient return
superficial incisional SSI. The PATOS f
documentation of evidence of infecti
- During a CSEC the surgeon nicks the b
intraabdominal cavity. One week late
OREP SSI. The PATOS field is selected
evidence of infection at the time of t
there is not infection present at time
- Patient undergoes an AMP due to "d
The patient returns two weeks later a

9 - 19

PATOS field is selected as NO since there is not d
infection at time of the AMP. The word gangrene

Note: For more information about PATOS, see Quick Lea
Event PATOS – Infection Present at Time of Surgery"

4. **Multiple tissue levels are involved in the infection:** The
deep incisional, or organ/space) reported must reflect th
criteria are met during the surveillance period.
   - Report infection that meets criteria for organ
   regardless of superficial or deep tissue involv
   - Report infection that meets criteria for deep
   regardless of superficial tissue involvement.
   - If an SSI starts as a deep incisional SSI on day
   a week later (day 17 of the SSI surveillance pe
   space SSI, the DOE is the date of the organ/sp

5. **Attributing SSI to a NHSN procedure when several are p**
a patient has several NHSN operative procedures perfor
SSI to the most recently performed NHSN operative proc

Note: For multiple NHSN operative procedures performe
Denominator Reporting Instruction #7.

6. **Attributing SSI to NHSN procedures that involve multip**
multiple primary incision sites of the same NHSN operati
report as a single SSI, and assign the type of SSI (superfic
organ/space) that represents the deepest tissue level wh
involved primary incision sites during the surveillance pe
   - If one laparoscopic incision meets criteria for
   another laparoscopic incision meets criteria fo
   deep incisional SSI.
   - If one or more laparoscopic incision sites mee
   but the patient also has an organ/space SSI re
   organ/space SSI.
   - If an operative procedure is limited to a single
   incisions in that breast that become infected,
   - In a colostomy formation or reversal (take do
   abdominal incision sites are considered prima

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Procedure-associated Module

another abdominal incision site develop superficial
(SIP).

7. **Attributing SSI to NHSN operative procedures that have seco**
procedures can involve secondary incisions (specifically the fo
FUSN, PVBY, REC, and VSHN). The surveillance period for all se
days, regardless of the required deep incisional or organ/space
primary incision site(s) (Table 2). Procedures meeting this desi
operative procedure. For example:
   - A saphenous vein harvest incision site in a CBGB pr
   secondary incision site. One CBGB procedure is rep
   harvest site is monitored for 30 days following surg
   incision is monitored for 90 days following surgery
   criteria for an SSI at the saphenous vein harvest sit
   incisional SSI) and meets criteria for an SSI at the ch
   incisional SSI) two SSIs are reported and linked to t
   - A tissue harvest site (for example, Transverse Rectu
   [TRAM] flap) in a BRST procedure is considered the
   BRST procedure is reported, and if the secondary in
   report as either SIS or DIS as appropriate.

8. **SSI detected at another facility:** An SSI event is reported by th
operative procedure was performed. When a potential SSI is d
the one where the procedure was performed, enough detail is
facility in the event an SSI should be reported to NHSN. If an S
facility should indicate Detected = RO (patient readmission to
procedure was performed) on the SSI event form when report

9. **SSI attribution after multiple categories of NHSN procedures**
trip to the OR: When more than one NHSN operative procedu
through a single incision/laparoscopic site(s) during a single tr
attribute the SSI to the procedure associated to the infection.
as is often the case when the infection is an incisional SSI, use
Procedure Category Selection Lists (Table 4) to select the oper
SSI should be attributed. For example, when a patient meets c
trip to the OR in which both a COLO and SB were performed, a
apparent, assign the SSI to the COLO procedure per Table 4. Th
attribution lies with the local facility based on the full details o

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January 2023 Procedure-associated Module SSI Events

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

   Notes:
   - Tissue levels not manipulated/accessed are still eligible for SSI. For example, a superficial debridement following a COLO procedure, where the muscle/fascia and organ/space is not entered, a subsequent deep incisional or organ/space SSI following the debridement may be an SSI attributable to the COLO procedure.
   - This reporting instruction does NOT apply to closed manipulation (for example, closed reduction of a dislocated hip after an orthopedic procedure).
   - Invasive manipulation does not include wound packing or changing of wound packing materials as part of postoperative care.
   - Routine flushing of catheters as part of the facility's standard care and maintenance is not considered invasive manipulation.

11. **Reporting instructions for post-operative infection scenarios:** An SSI should be reported to NHSN without regard to post-operative accidents, falls, inappropriate showering or bathing practices, or other occurrences that may or may not be attributable to patients' intentional or unintentional postoperative actions. An SSI should also be reported regardless of the presence of certain skin conditions (for example, dermatitis, blister, impetigo) noted near an incision, and regardless of the possible occurrence of a "seeding" event from an unrelated procedure (for example, dental work). This instruction concerning various postoperative circumstances is necessary to reduce subjectivity and data collection burden.

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SSI Event Reporting Instruction #3: Infection Present at time of surgery (PATOS)

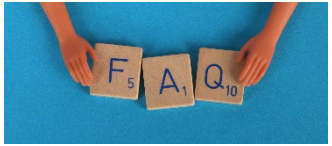
- A YES/NO field found on the SSI event form and denotes that there is evidence of infection visualized during the operative procedure to which the SSI is attributed.
  - An SSI must be identified within the surveillance period following an NHSN operative procedure to review for PATOS.

- The evidence of infection must be noted intraoperatively and documented within the **narrative portion** of the operative note/report of surgery (commonly labeled the 'procedure in detail' or 'description of procedure' section).
  - Pre/post op diagnoses, 'indication for surgery' NOT surgical narrative.

- PATOS is tissue level specific: documented infection must be at the same tissue level of subsequent SSI for PATOS to be YES.

- Pathology reports, culture results, wound classification, trauma status, imaging test findings cannot be used with answering the PATOS question.

PATOS



- **What are some examples of documentation that indicates evidence of infection?**
  - abscess, infection, purulence/pus, phlegmon, “feculent peritonitis”.

- **What are some examples of documentation that does <u>not</u> indicate evidence of infection?**
  - colon perforation, contamination, necrosis, gangrene, fecal spillage, nicked bowel during procedure, murky fluid, or documentation of inflammation.

- **Do SSI events where PATOS = YES is documented on the SSI event form need to be reported to NHSN?**
  - YES! SSI events where PATOS = YES are still SSI events that must be reported to NHSN regardless of noted evidence of infection at time of surgery.

PATOS – Example Scenarios

PATOS Quick Learn is available on the SSI Training Page

- During a COLO procedure the surgeon documents multiple abscesses seen in the intraabdominal cavity within the narrative of the operative note. Three weeks later the patient meets criteria for a superficial incisional SSI. The PATOS field is selected as **NO** since there was no documentation of infection of the superficial tissue level during the COLO.
- During a CSEC procedure the surgeon nicks the bowel and there is contamination of the intraabdominal cavity, documented within the narrative of the operative note. One week later the patient meets criteria for an organ/space OREP SSI. The PATOS field is selected as **NO** since there is no documentation of infection of the organ/space during the CSEC. The colon nick is a complication but there is not infection present at time of surgery.
- During a HYST procedure the patient is noted with purulence involving the uterus and this is documented within the narrative of the operative note. The patient subsequently develops an organ/space IAB SSI. The PATOS field is selected as **YES** since there is documentation of infection of the organ/space during the HYST.

Case Scenarios

Scenario 4

On 3/4 a patient undergoes an HPRO procedure. The patient tolerates the procedure well and is discharged to rehab on 3/10. On 3/12, while in rehab, the patient's surgical incision site is noted with increased erythema with a small amount of clear fluid draining from incision. A culture is collected from this fluid with *Staph epidermidis* subsequently identified.

Question 1

Is this an SSI?

A. No – *Staph epidermidis* is a common commensal and this organism is excluded from SSI event reporting.

B. Yes – this is a Superficial Incisional Primary (SIP) SSI event. *Staph epidermidis* is an eligible specimen for SSI event reporting.

Scenario 4
Question 1 Answer

B. Yes – this is a Superficial Incisional Primary (SIP) SSI event. *Staph epidermidis* is an eligible specimen for SSI event reporting.

- Superficial Incisional SSI criterion 'b' met
  - *S. epidermidis* identified by culture from fluid from the superficial tissue of the incision.

Surgical Site Infection (SSI)

Superficial incisional SSI

Must meet the following criteria:

Date of event occurs within 30 days following the NHSN operative procedure (where day 1 = the procedure date)

AND

involves only skin and subcutaneous tissue of the incision

AND

patient has at least ***one*** of the following:

a. purulent drainage from the superficial incision.

b. organism(s) identified from an aseptically-obtained specimen from the superficial incision or subcutaneous tissue 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. a superficial incision that is deliberately opened by a surgeon, physician* or physician designee and culture or non-culture based testing of the superficial incision or subcutaneous tissue is not performed

AND

patient has at least one of the following signs or symptoms: localized pain or tenderness; localized swelling; erythema; or heat.

d. diagnosis of a superficial incisional SSI by a physician* or physician designee.

* The term physician for the purpose of application of the NHSN SSI criteria may be interpreted to mean a surgeon, infectious disease physician, emergency physician, other physician on the case, or physician's designee (nurse practitioner or physician's assistant).

Scenario 4
Question 1 Answer

- Common commensals are not excluded from meeting SSI criteria.
- SSI surveillance is based on surveillance definitions that don't judge organisms isolated as 'contaminants' or 'clinically significant'.
- The only excluded organisms from SSI event reporting are outlined in *SSI Event Reporting Instruction #1* – **Excluded organisms***:*

SSI Event Reporting Instruction #1

1. **Excluded organisms:** Well-known community associated organisms (organisms belonging to the following genera: *Blastomyces, Histoplasma, Coccidioides, Paracoccidioides, Cryptococcus and Pneumocystis)* and/or organisms associated with latent infections (for example, herpes, shingles, syphilis, or tuberculosis) are excluded from meeting SSI criteria.

Scenario 4 continued

The patient continues to experience erythema and drainage from the surgical incision site, in addition to new persistent hip pain. The surgeon performs a hip aspiration on 3/16 and two joint fluid specimens are collected for culture. Both cultures identified *Staph epidermidis* and *Proteus mirabilis.* Organ/Space SSI criterion 'b' and PJI - Periprosthetic Joint Infection criterion '1' met.

Question 2

Given this information, what gets reported?

A. Two SSI events. A SIP-SSI event and an Organ/Space SSI PJI event are reported attributed to the 3/4 HPRO.

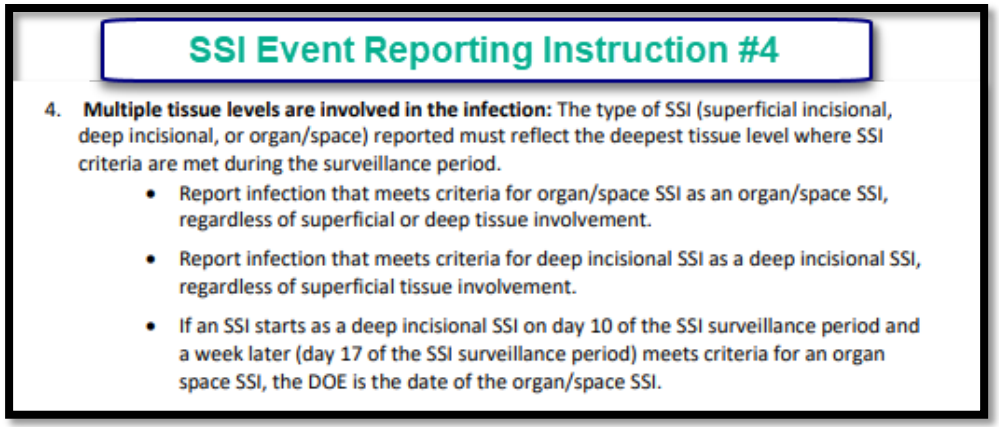
B. One SSI event gets reported at the deepest tissue level where SSI criteria are met. Report the Organ/Space SSI PJI event only.

C. No SSI event is reported attributed to the 3/4 HPRO.

Scenario 4
Question 2 Answer

B. One SSI event gets reported at the deepest tissue level where SSI criteria are met. Report the Organ/Space SSI PJI event only.

- *SSI Event Reporting Instruction #4*: **Multiple tissue levels are involved in the infection:** The type of SSI reported must reflect the deepest tissue level where SSI criteria are met during the surveillance period.



SSI Event Reporting Instruction #4

4. **Multiple tissue levels are involved in the infection:** The type of SSI (superficial incisional, deep incisional, or organ/space) reported must reflect the deepest tissue level where SSI criteria are met during the surveillance period.
   - Report infection that meets criteria for organ/space SSI as an organ/space SSI, regardless of superficial or deep tissue involvement.
   - Report infection that meets criteria for deep incisional SSI as a deep incisional SSI, regardless of superficial tissue involvement.
   - If an SSI starts as a deep incisional SSI on day 10 of the SSI surveillance period and a week later (day 17 of the SSI surveillance period) meets criteria for an organ space SSI, the DOE is the date of the organ/space SSI.

- **Organ/Space SSI PJI event reported attributed to the 3/4 HPRO.**

Scenario 4
Question 2 Answer

Organ/Space SSI criterion ‘b’ met and

PJI – Periprosthetic Joint Infection criterion ‘1’ met

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)

PJI – Periprosthetic Joint Infection (for use as Organ/Space SSI following HPRO and KPRO only)

Joint or bursa infections must meet at least ***one*** of the following criteria:

1. ***Two*** positive periprosthetic specimens (*tissue or fluid*) with at least one matching organism, identified 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. A sinus tract* communicating with the joint identified on gross anatomic exam.
3. Having ***three*** of the following minor criteria:
   a. elevated serum C-reactive protein (CRP; >100 mg/L) ***and*** erythrocyte sedimentation rate (ESR; >30 mm/hr.)
   b. elevated synovial fluid white blood cell (WBC; >10,000 cells/µL) count *OR* “++” *(or greater)* change on leukocyte esterase test strip of synovial fluid.
   c. elevated synovial fluid polymorphonuclear neutrophil percentage (PMN% >90%)
   d. positive histological analysis of periprosthetic tissue (>5 neutrophils (PMNs) per high power field).
   e. organism(s) identified from a single positive periprosthetic specimen (*tissue or fluid*) 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).

* A sinus tract is defined as a narrow opening or passageway that can extend in any direction through soft tissue and results in dead space with potential for abscess formation.

Scenario 4
Question 3

What is the SSI Date of Event (DOE)?

A. 3/10
B. 3/12
C. 3/16

Scenario 4
Question 3 Answer

C. 3/16

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

- SSI type and DOE assignment must reflect the deepest tissue level where SSI criteria are met during the surveillance period.

  - In this case, the date of hip aspiration, 3/16 (specimens collected from the joint and organisms identified), is the date the first element used to meet Organ/Space SSI PJI event occurs. **The SSI DOE is 3/16.**

Scenario 5

A COLO procedure is performed on 12/1. The surgeon documents 'purulent fluid within abdominal cavity' within the narrative of the operative report. On 12/7 the patient spikes a temperature of 38.4°C and imaging of the abdomen/pelvis reveals a fluid collection within the deep pelvic tissues. On 12/9 another COLO procedure is performed and purulence is seen within the deep pelvic tissues. Organ/Space SSI criteria are met.

Question 1

Which Organ/Space Specific event type is applied in this case?

A. OREP – Deep pelvic tissue infection or other infection of the male or female reproductive tract

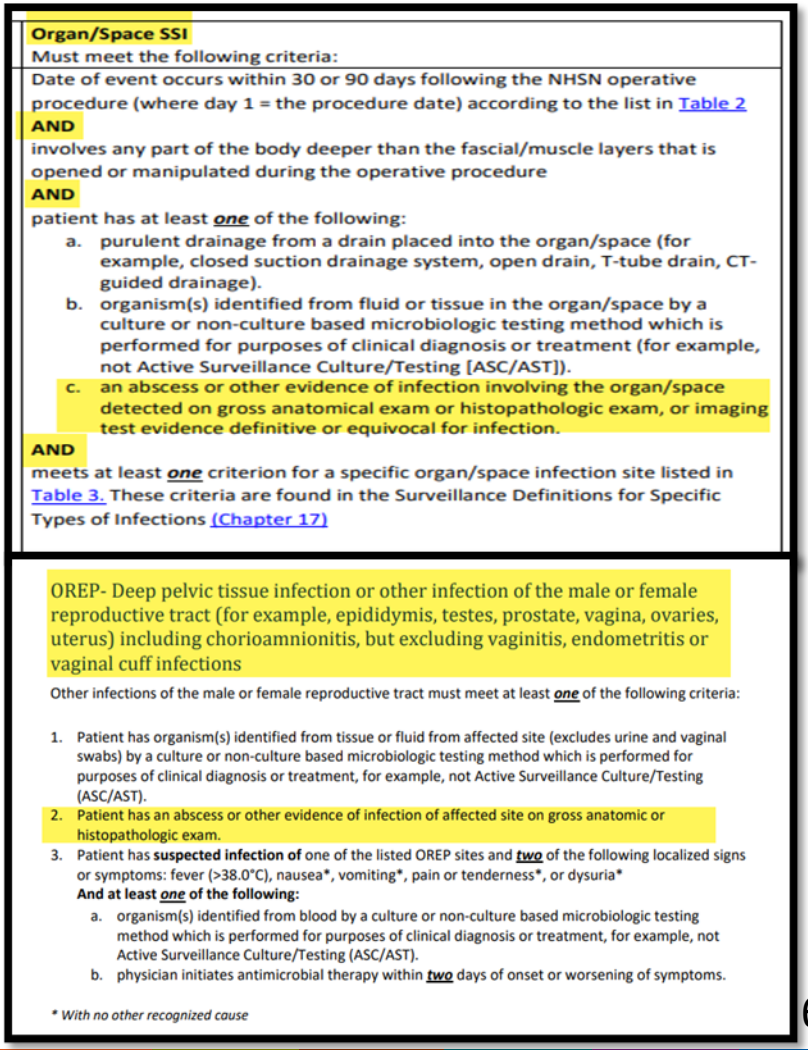
B. IAB – Intraabdominal infection

C. GIT – Gastrointestinal tract infection

Scenario 5
Question 1 Answer

A. OREP - Deep pelvic tissue infection or other infection of the male or female reproductive tract

- Organ/Space SSI criterion ‘c’ met and OREP criterion ‘2’ met
  - Fluid collection within deep pelvic tissues on imaging meets Organ/Space SSI criterion ‘c’
  - Purulence seen within the deep pelvic tissues meets Organ/Space SSI criterion ‘c’ and OREP criterion ‘2’.



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)

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

Other infections of the male or female reproductive tract must meet at least ***one*** of the following criteria:

1. Patient has organism(s) identified from tissue or fluid from affected site (excludes urine and vaginal swabs) 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).
2. Patient has an abscess or other evidence of infection of affected site on gross anatomic or histopathologic exam.
3. Patient has **suspected infection of** one of the listed OREP sites and ***two*** of the following localized signs or symptoms: fever (>38.0°C), nausea*, vomiting*, pain or tenderness*, or dysuria*
   And at least *one* of the following:
   a. organism(s) identified from blood 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).
   b. physician initiates antimicrobial therapy within ***two*** days of onset or worsening of symptoms.

** With no other recognized cause*

Scenario 5
Question 1 Answer

OREP vs. IAB. vs. GIT

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

Scenario 5
Question 2

What is the SSI Date of Event (DOE)?

A. 12/1
B. 12/7
C. 12/9

Scenario 5
Question 2 Answer

B. 12/7

- Organ/Space SSI criterion ‘c’ met on 12/7: imaging of the abdomen/pelvis reveals a **fluid collection within the deep pelvic tissues.**
  - This imaging finding is considered the first element used to meet the SSI criterion for the first time during the SSI surveillance period.

Date of Event (DOE) for SSI:

For an SSI, the DOE is the date when the first element used to meet the SSI infection criterion occurs for the first time during the SSI surveillance period. The DOE must fall within the SSI surveillance period to meet SSI criteria. The type of SSI (superficial incisional, deep incisional, or organ/space) reported and the DOE assigned must reflect the deepest tissue level where SSI criteria are met during the surveillance period. Synonym: infection date.

Scenario 5
Question 3

How is the PATOS field answered on the SSI event form?

A. PATOS = YES

B. PATOS = NO

Scenario 5
Question 3 Answer

A. PATOS = YES

- You select PATOS = YES when it applies to the depth of the SSI that is being attributed to the procedure.
  - Since '**purulent peritoneal fluid within abdominal cavity**' was documented within the narrative of the 12/1 COLO operative report and the subsequent SSI event is an Organ/Space SSI event, **PATOS = YES**.

Scenario 5
Question 4

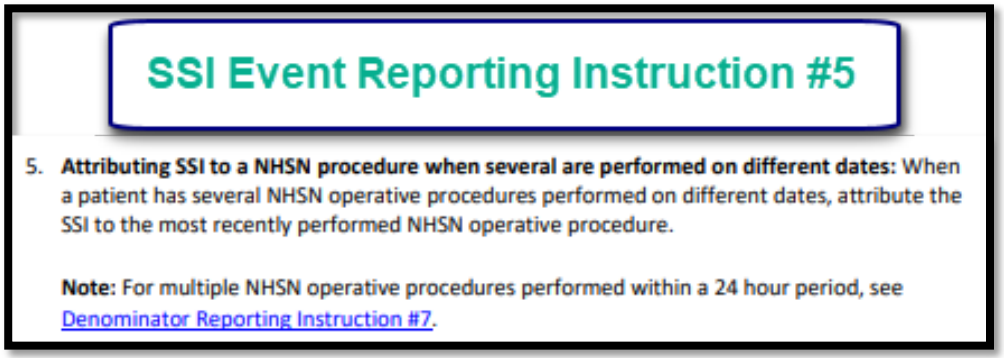
IF an SSI is identified within the surveillance period following the 12/9 COLO which procedure gets the SSI attribution?

A. 12/1 COLO – this is an ongoing SSI from the 12/1 COLO.
B. 12/9 COLO – the patient is in an SSI surveillance period for the 12/9 COLO. The surveillance period for the 12/1 COLO ended at the conclusion of the 12/9 COLO.

Scenario 5
Question 4 Answer

B. 12/9 COLO – the patient is in an SSI surveillance period for this procedure. The surveillance period for the 12/1 COLO ended at the conclusion of the 12/9 COLO.

- Each trip to the OR for an NHSN operative procedure sets an SSI surveillance period for the surgical site.
  - A new surveillance period is set based on the 12/9 return to OR for the COLO.
  - The surveillance period for the 12/1 COLO ends.
  - **The SSI event following the 12/9 COLO is attributed to the 12/9 COLO.**



Scenario 6

Patient undergoes an Emergent CSEC procedure on 8/8 for fetal bradycardia. Thick meconium is noted within the operative report narrative and the procedure is assigned a wound class of CO – Contaminated. On 8/11 the patient is noted with sharp uterine pain and a temperature of 38.6°C with documented suspected endometritis.

Question 1

Should the patient be reviewed for meeting SSI criteria?

A. Yes – The CSEC sets an SSI surveillance period and findings following the CSEC should be reviewed for meeting SSI criteria.

B. No – The Emergent status of the procedure and assigned wound class of CO – Contaminated excludes findings following the CSEC from review for meeting SSI criteria.

Scenario 6
Question 1 Answer

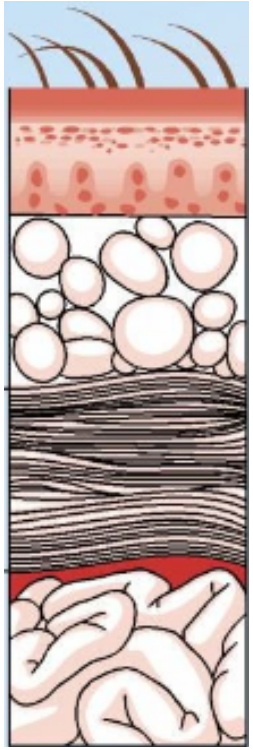
A. Yes – The CSEC sets an SSI surveillance period and findings following the CSEC should be reviewed for meeting SSI criteria.

- Emergency status and/or a high wound class are not an exclusion for reporting an NHSN operative procedure nor citing an SSI event if SSI criteria are met.

Scenario 6
Question 2

Given the information provided, what is the tissue level of the SSI event?

A. Superficial Incisional
B. Deep Incisional
C. Organ/Space
D. Not applicable: patient is not reviewed for meeting SSI criteria



Scenario 6
Question 2 Answer

C. Organ/Space

- There is suspected endometritis (the uterus: organ/space tissue level).

- 'Sharp uterine pain' post CSEC is allowed as gross anatomic evidence of infection to meet **Organ/Space SSI criterion 'c'.**

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)

Scenario 6
Question 2 Answer

- EMET – Endometritis criterion ‘2’ met:
  - Suspected endometritis
  - Uterine pain
  - Fever

EMET-Endometritis

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

1. Patient has organism(s) identified from endometrial fluid or tissue 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).
2. Patient has **suspected endometritis** with at least ***two*** of the following signs or symptoms: fever (>38.0°C), pain or tenderness (uterine or abdominal)*, or purulent drainage from uterus.

** With no other recognized cause*

Reporting Instructions

- Do not report an HAI chorioamnionitis as EMET (see OREP).
- Do not report subsequent postpartum endometritis after a vaginal delivery as an HAI if a patient is admitted with POA chorioamnionitis (OREP). (See next bullet for endometritis following a C-section).
- Report as an organ space SSI-EMET if a C-section was performed on a patient with chorioamnionitis, and the patient later develops endometritis.

Scenario 6
Question 3

When filling out the SSI event form, what do you indicate for the PATOS field?

A. PATOS = YES

B. PATOS = NO

C. No SSI event is reported so PATOS is not reviewed

Scenario 6
Question 3 Answer

B. PATOS = NO

- There is no documentation of infection of the organ/space within the narrative of the CSEC operative report.
- The presence of meconium is not considered evidence of infection.
- For the SSI-EMET event, you indicate PATOS = NO on the SSI event form.

Scenario 7

On 2/13 a patient undergoes a posterior C1-C4 and anterior C1-C5 FUSN – Spinal fusion and LAM – Laminectomy procedure. On 2/20 the patient is discharged. The patient was seen in the provider office on 2/28 with complaints of new constant headache. On exam the provider notes clear drainage from the incision. The provider initiates antibiotics.

On 3/1 the patient returns to the provider office with worsening headache and a lumbar puncture was performed, no growth in the cerebrospinal fluid (CSF). The provider elects to admit the patient on 3/2. At time of admission the patient now has a documented fever of 38.3°C and additional CSF studies and blood cultures are performed. CSF cultures results with MRSA and blood cultures results with MRSA.

Scenario 7
Question 1

The IP is entering the FUSN procedure details into the NHSN application for this case. Based on Scenario 7, what gets entered for FUSN?

A. One FUSN: Approach: Anterior and Posterior
   Spinal Level: Atlas-Axis cervical C1-C7 (any combination excluding C1 and/or C2 only)

B. Two FUSNs: One FUSN with Anterior Approach
   One FUSN with Posterior Approach
   Spinal Level: Atlas-Axis Cervical C1-C7 (any combination excluding C1 and/or C2 only) for both FUSN procedures

Scenario 7
Question 1 Answer

A. One FUSN, Approach: Anterior and Posterior with Spinal Level: Atlas-Axis Cervical C1-C7 (any combination excluding C1 and/or C2 only)

Instructions for Completion of Denominator for Procedure Form:

- Approach: both anterior and posterior approaches used to perform spinal fusion
- Spinal level: Atlas-Axis/Cervical – C1-C7

Instructions for Completion of Denominator for Procedure Form (CDC 57.121)

FUSN: Spinal level	Conditionally required. If operative procedure is FUSN check appropriate spinal level of procedure from list. • Atlas-Axis – C1 and/or C2 only • Atlas-Axis/Cervical – C1-C7 (any combination excluding C1 and/or C2 only) • Cervical – C3-C7 (any combination) • Cervical/Dorsal/Dorsolumbar – Extends from any cervical through any lumbar levels • Dorsal/Dorsolumbar – T1 – L5 (any combination of thoracic and lumbar) • Lumbar/Lumbosacral – L1-S5 (any combination of lumbar and sacral) If more than one level is fused, report category in which the most vertebra were fused. To use ICD-10-PCS mapping guidance to determine spinal level and approach refer to the link below. https://www.cdc.gov/nhsn/xls/fusn-icd-10-pcs-codes.xlsx
FUSN: Approach/Technique	Conditionally required. If operative procedure is FUSN, check appropriate surgical approach or technique from list.

Scenario 7
Question 1 Answer

- Reminder: **Appendix B** found with the SSI protocol provides guidance on FUSN procedure reporting.

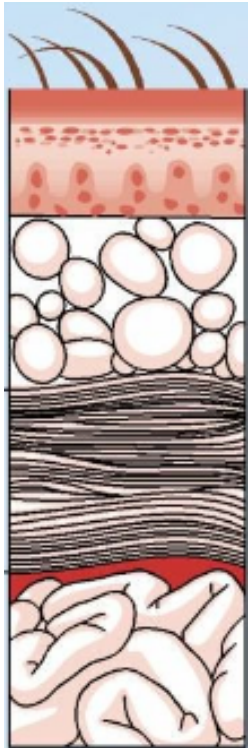
Appendix B SSI Protocol, p. 9-40

FUSN - Spinal fusion	4	Corresponds to the four (4) anatomical spinal levels (cervical, thoracic, lumbar, sacral). When more than one anatomical spinal level is fused, report the NHSN spinal level and approach **in which the most vertebrae were fused**. The number of FUSN procedures reported depends on various factors: • When a spinal fusion procedure is performed on one spinal level/contiguous spinal levels, this is considered **one FUSN** procedure for reporting purposes although multiple joints may be fused and multiple procedures codes are assigned. • When an anterior and posterior incision are made to access one spinal level/contiguous spinal levels (such as C3-C5 spinal fusion with anterior and posterior approach) **one FUSN** procedure is reported. Indicate **'Anterior and Posterior' approach** on the denominator for procedure form.

Scenario 7
Question 2

What tissue level of SSI is determined?

A. Superficial Incisional
B. Deep Incisional
C. Organ/Space



Scenario 7
Question 2 Answer

C. Organ/Space

Infections of the cerebrospinal fluid (CSF) – Organ/Space SSI criteria is applied.

Organ/Space SSI criterion '2' and MEN – Meningitis or ventriculitis criterion '1' met. **DOE: 3/2**.

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)

MEN-Meningitis or ventriculitis

Meningitis or ventriculitis must meet at least ***one*** of the following criteria:

1. Patient has organism(s) identified from cerebrospinal fluid (CSF) 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).
2. Patient has at least ***two*** of the following:
   i. fever (>38.0°C) or headache (Note: Elements of "i" alone may not be used to meet the two required elements)
   ii. meningeal sign(s)*
   iii. cranial nerve sign(s)*

   And at least *one* of the following:
   a. increased white cells, elevated protein, and decreased glucose in CSF (per reporting laboratory's reference range).
   b. organism(s) seen on Gram stain of CSF.
   c. organism(s) identified from blood 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).
   d. diagnostic single antibody titer (IgM) or 4-fold increase in paired sera (IgG) for organism

Scenario 7
Question 3

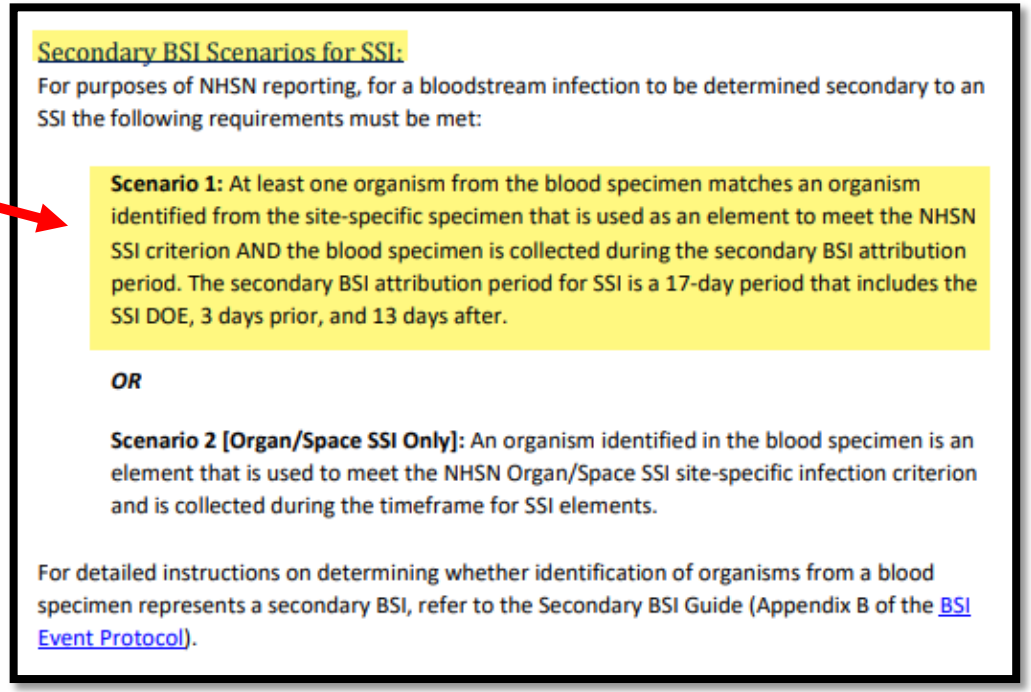
Does the patient have a secondary BSI?

A. Yes
B. No

Scenario 7
Question 3 Answer

A. Yes

- **Secondary BSI Scenario 1** applied.
- SSI-MEN DOE: **3/2**
  - **3/2**: MRSA identified in CSF.
  - **3/2**: MRSA identified in blood cultures.
  - Matching blood cultures fall within secondary BSI attribution period for the SSI event (**2/27-3/15**).



Secondary BSI Scenarios for SSI:

For purposes of NHSN reporting, for a bloodstream infection to be determined secondary to an SSI the following requirements must be met:

Scenario 1: At least one organism from the blood specimen matches an organism identified from the site-specific specimen that is 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 that includes the SSI DOE, 3 days prior, and 13 days after.

OR

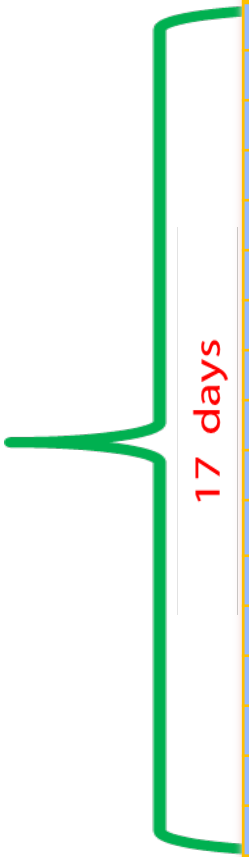
Scenario 2 [Organ/Space SSI Only]: An organism identified in the blood specimen is an element that is used to meet the NHSN Organ/Space SSI site-specific infection criterion and is collected during the timeframe for SSI elements.

For detailed instructions on determining whether identification of organisms from a blood specimen represents a secondary BSI, refer to the Secondary BSI Guide (Appendix B of the BSI Event Protocol).

Scenario 7
Question 3 Answer
Secondary BSI: Scenario 1

SSI Secondary BSI Attribution Period is based off SSI DOE

3 days before DOE (2/27)
+
3/2 DOE
+
13 days after DOE (3/15)



Date of Event	SSI Secondary BSI Attribution Period
2/27	
2/28	
3/1	
3/2	SSI-MEN DOE. CSF and Blood cultures + MRSA
3/3	
3/4	
3/5	
3/6	
3/7	
3/8	
3/9	
3/10	
3/11	
3/12	
3/13	
3/14	
3/15	
3/16	

Scenario 7
Question 4

Would SSI Event Reporting Instruction #10 be applied, and the SSI event excluded from consideration due to the 3/1 lumbar puncture (invasive manipulation of the surgical site)?

A. Yes
B. No

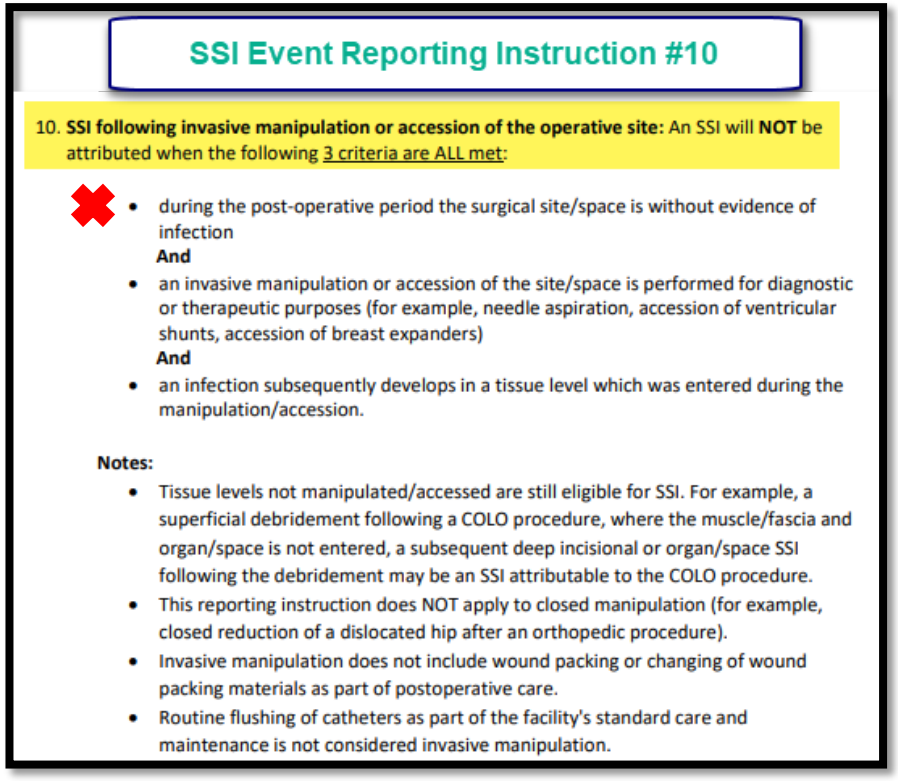
Scenario 7
Question 4 Answer

B. No

- *SSI Event Reporting Instruction #10*:

  SSI following invasive manipulation or accession of the operative site:

  - Invasive manipulation reporting exclusion not applied as there is evidence of infection at time of the lumbar puncture (headache) and patient is being worked up for infection.



SSI Event Reporting Instruction #10

10. **SSI following invasive manipulation or accession of the operative site:** An SSI will **NOT** be attributed when the following 3 criteria are ALL met:

- during the post-operative period the surgical site/space is without evidence of infection

And

- an invasive manipulation or accession of the site/space is performed for diagnostic or therapeutic purposes (for example, needle aspiration, accession of ventricular shunts, accession of breast expanders)

And

- an infection subsequently develops in a tissue level which was entered during the manipulation/accession.

Notes:

- Tissue levels not manipulated/accessed are still eligible for SSI. For example, a superficial debridement following a COLO procedure, where the muscle/fascia and organ/space is not entered, a subsequent deep incisional or organ/space SSI following the debridement may be an SSI attributable to the COLO procedure.
- This reporting instruction does NOT apply to closed manipulation (for example, closed reduction of a dislocated hip after an orthopedic procedure).
- Invasive manipulation does not include wound packing or changing of wound packing materials as part of postoperative care.
- Routine flushing of catheters as part of the facility's standard care and maintenance is not considered invasive manipulation.

Scenario 7
Question 5

A FUSN and LAM is reported. If an SSI event is determined, and the source of attribution is not clear, which procedure gets the SSI attribution?

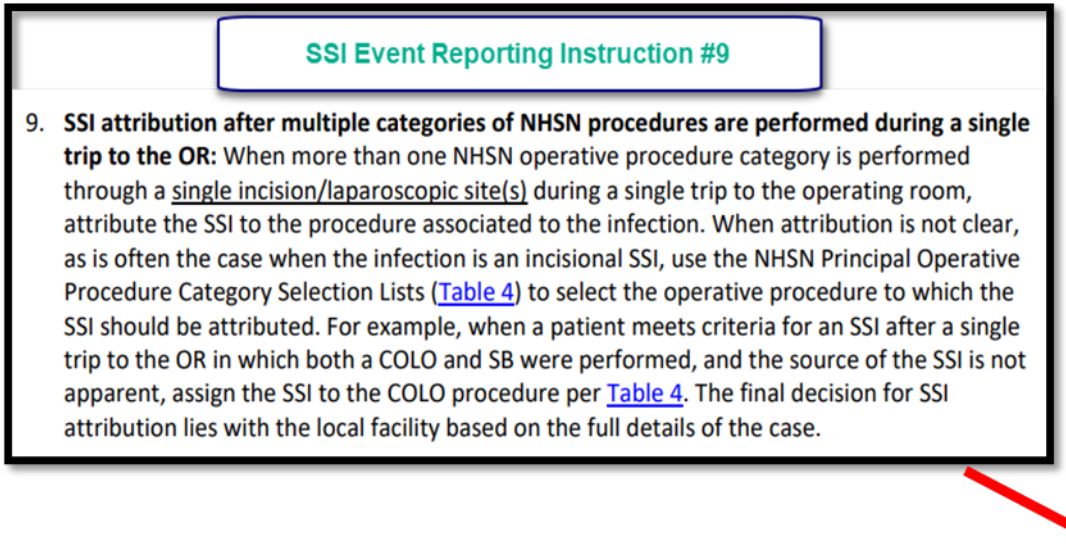
A. FUSN

B. LAM

Scenario 7
Question 5 Answer

A. FUSN

- *SSI Event Reporting Instruction #9:* **SSI attribution after multiple categories of NHSN procedures are performed during a single trip to the OR:**
  - **Table 4** is used to determine SSI attribution since source of attribution is not clear.



SSI Event Reporting Instruction #9

9. **SSI attribution after multiple categories of NHSN procedures are performed during a single trip to the OR:** When more than one NHSN operative procedure category is performed through a single incision/laparoscopic site(s) during a single trip to the operating room, attribute the SSI to the procedure associated to the infection. When attribution is not clear, as is often the case when the infection is an incisional SSI, use the NHSN Principal Operative Procedure Category Selection Lists (Table 4) to select the operative procedure to which the SSI should be attributed. For example, when a patient meets criteria for an SSI after a single trip to the OR in which both a COLO and SB were performed, and the source of the SSI is not apparent, assign the SSI to the COLO procedure per Table 4. The final decision for SSI attribution lies with the local facility based on the full details of the case.

Scenario 7
Question 5 Answer

- FUSN is above LAM on Table 4 hierarchy, therefore the SSI is attributed to the FUSN procedure.

Table 4. NHSN Principal Operative Procedure Category Selection List

(The categories with the highest risk of SSI are listed before those with lower risks.)

Priority	Category	Abdominal Operative Procedures
1	LTP	Liver transplant
2	COLO	Colon surgery
3	BILI	Bile duct, liver or pancreatic surgery
4	SB	Small bowel surgery
5	REC	Rectal surgery
6	KTP	Kidney transplant
7	GAST	Gastric surgery
8	AAA	Abdominal aortic aneurysm repair
9	HYST	Abdominal hysterectomy
10	CSEC	Cesarean section
11	XLAP	Laparotomy
12	APPY	Appendix surgery
13	HER	Herniorrhaphy
14	NEPH	Kidney surgery
15	VHYS	Vaginal hysterectomy
16	SPLE	Spleen surgery
17	CHOL	Gall bladder surgery
18	OVRY	Ovarian surgery
Priority	**Category**	**Thoracic Operative Procedures**
1	HTP	Heart transplant
2	CBGB	Coronary artery bypass graft with donor incision(s)
3	CBGC	Coronary artery bypass graft, chest incision only
4	CARD	Cardiac surgery
5	THOR	Thoracic surgery
Priority	**Category**	**Neurosurgical (Brain/Spine) Operative Procedures**
1	VSHN	Ventricular shunt
2	CRAN	Craniotomy
3	FUSN	Spinal fusion
4	LAM	Laminectomy
Priority	**Category**	**Neck Operative Procedures**
1	NECK	Neck surgery
2	THYR	Thyroid and or parathyroid surgery

FUSN is ranked above LAM

Scenario 8

On 10/14 a patient undergoes a COLO procedure (total abdominal colectomy and end ileostomy). There is a midline incision and stoma site. On 10/20 the patient is noted with purulence at the subcutaneous tissues of the stoma site and with tenderness and dehiscence of the fascia of the midline incision site.

Question 1

What gets reported in terms of an SSI?

A. **Two SSI events**: Superficial Incisional Secondary (SIS) SSI event at the stoma site and Deep Incisional Primary (DIP) SSI event at midline incision site.

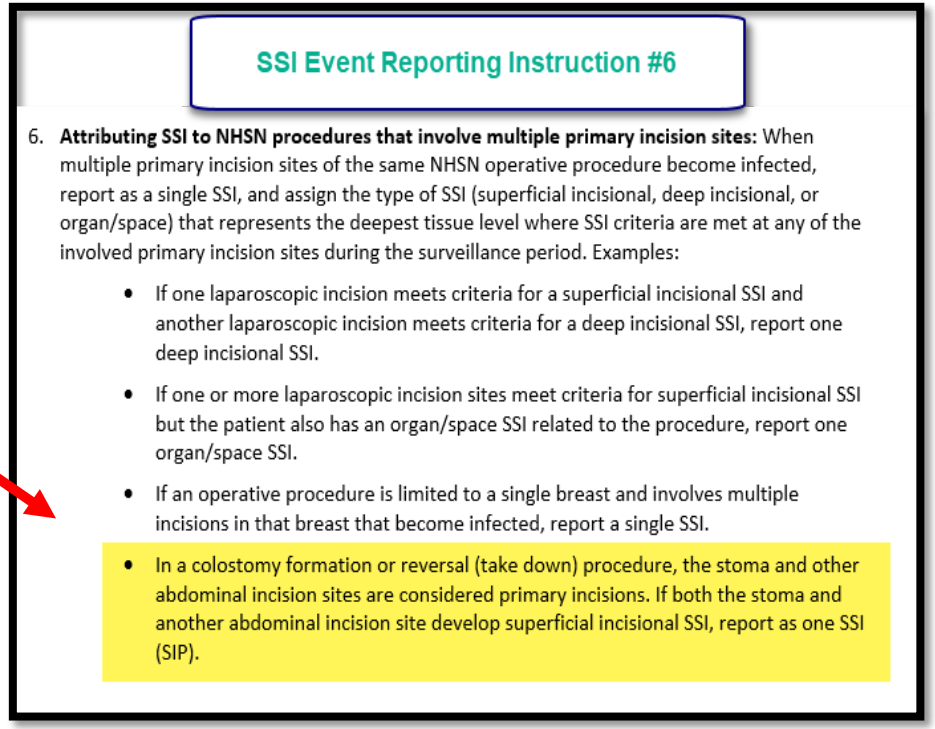
B. **Two SSI events**: Superficial Incisional Primary (SIP) SSI at stoma site and Deep Incisional (DIP) SSI at midline incision site.

C. **One SSI event**: Deep Incisional Primary (DIP) SSI is reported only (deepest tissue level where SSI criteria are met).

Scenario 8
Question 1 Answer

C. One SSI event: Deep Incisional Primary (DIP) SSI is reported only (deepest tissue level where SSI criteria are met)

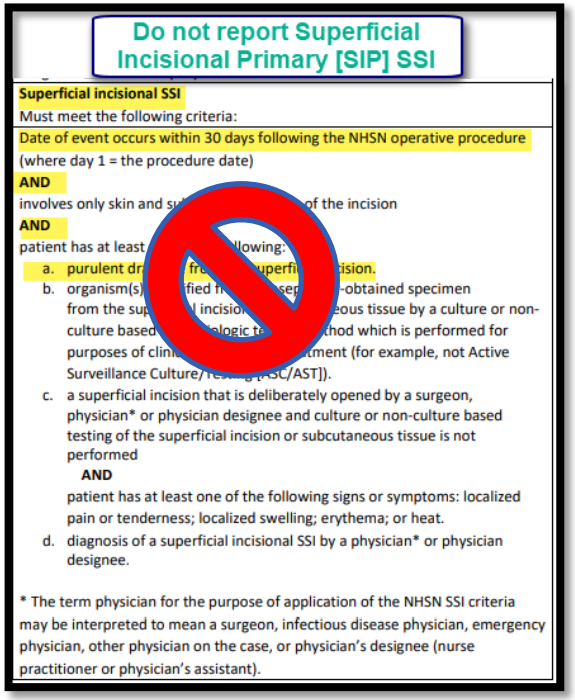
- *SSI Event Reporting Instruction #6*: **Attributing SSI to NHSN procedures that involve multiple primary incision sites**:
  - Stoma site and midline incision are both **primary incision sites**.
  - No secondary incision site for COLO.
  - SSI criteria met at more than one primary incision site, therefore report the SSI event at the deepest tissue level where SSI criteria are met: **DIP-SSI event gets reported**.



SSI Event Reporting Instruction #6

6. **Attributing SSI to NHSN procedures that involve multiple primary incision sites:** When multiple primary incision sites of the same NHSN operative procedure become infected, report as a single SSI, and assign the type of SSI (superficial incisional, deep incisional, or organ/space) that represents the deepest tissue level where SSI criteria are met at any of the involved primary incision sites during the surveillance period. Examples:
   - If one laparoscopic incision meets criteria for a superficial incisional SSI and another laparoscopic incision meets criteria for a deep incisional SSI, report one deep incisional SSI.
   - If one or more laparoscopic incision sites meet criteria for superficial incisional SSI but the patient also has an organ/space SSI related to the procedure, report one organ/space SSI.
   - If an operative procedure is limited to a single breast and involves multiple incisions in that breast that become infected, report a single SSI.
   - In a colostomy formation or reversal (take down) procedure, the stoma and other abdominal incision sites are considered primary incisions. If both the stoma and another abdominal incision site develop superficial incisional SSI, report as one SSI (SIP).

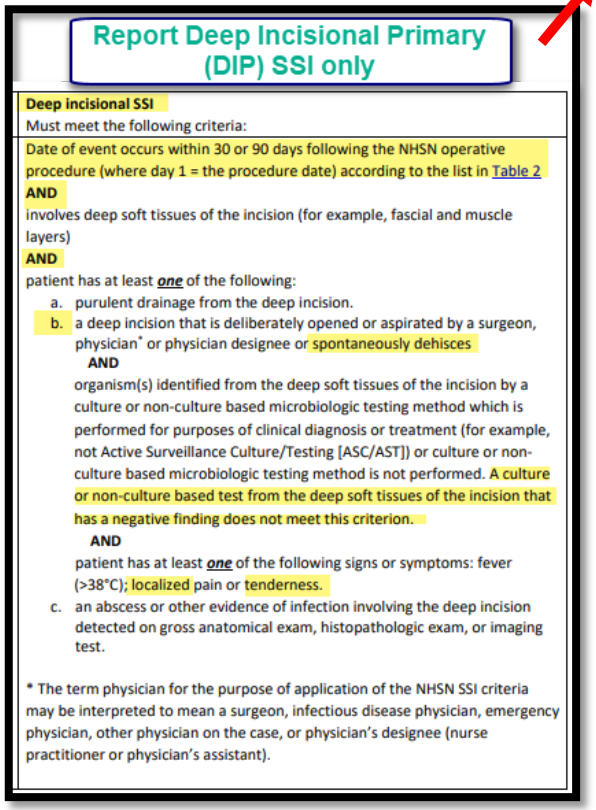
Scenario 8
Question 1 Answer



Do not report Superficial Incisional Primary [SIP] SSI

Superficial incisional SSI
Must meet the following criteria:
Date of event occurs within 30 days following the NHSN operative procedure (where day 1 = the procedure date)
AND
involves only skin and su… of the incision
AND
patient has at least … llowing:
a. purulent dr… fro… superfi… cision.
b. organism(s) … fied fr… ser… -obtained specimen from the sup… l incisio… eous tissue by a culture or non-culture based … logic te… thod which is performed for purposes of clini… tment (for example, not Active Surveillance Culture/Te… [ASC/AST]).
c. a superficial incision that is deliberately opened by a surgeon, physician* or physician designee and culture or non-culture based testing of the superficial incision or subcutaneous tissue is not performed
AND
patient has at least one of the following signs or symptoms: localized pain or tenderness; localized swelling; erythema; or heat.
d. diagnosis of a superficial incisional SSI by a physician* or physician designee.

* The term physician for the purpose of application of the NHSN SSI criteria may be interpreted to mean a surgeon, infectious disease physician, emergency physician, other physician on the case, or physician's designee (nurse practitioner or physician's assistant).



Report Deep Incisional Primary (DIP) SSI only

Deep incisional 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 deep soft tissues of the incision (for example, fascial and muscle layers)
AND
patient has at least ***one*** of the following:
a. purulent drainage from the deep incision.
b. a deep incision that is deliberately opened or aspirated by a surgeon, physician* or physician designee or spontaneously dehisces
AND
organism(s) identified from the deep soft tissues of the incision 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]) or culture or non-culture based microbiologic testing method is not performed. A culture or non-culture based test from the deep soft tissues of the incision that has a negative finding does not meet this criterion.
AND
patient has at least ***one*** of the following signs or symptoms: fever (>38°C); localized pain or tenderness.
c. an abscess or other evidence of infection involving the deep incision detected on gross anatomical exam, histopathologic exam, or imaging test.

* The term physician for the purpose of application of the NHSN SSI criteria may be interpreted to mean a surgeon, infectious disease physician, emergency physician, other physician on the case, or physician's designee (nurse practitioner or physician's assistant).

- Deep Incisional Primary (DIP) SSI criterion 'b' met:
  - Deep incision spontaneously dehisces
  - No culture performed of the deep soft tissues of the incision
  - Localized tenderness

Scenario 9

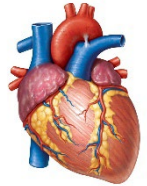
On 10/15 patient undergoes CABG x2 with endoscopic vein harvest (NHSN CBGB procedure performed). A chest tube is inserted into the mediastinal space at time of surgery. On 10/20 the nurse documents 'purulent drainage' at the vein harvest site within the patient medical record. The MD documents 'serosanguinous drainage' with reference to the vein harvest site. On 10/22 a fever of 38.3°C is noted and a culture is collected from drainage from the chest tube, *Pseudomonas aeruginosa* is subsequently identified.

Question 1

Given the information provided, how many SSI events should be considered in this case?

A. One SSI

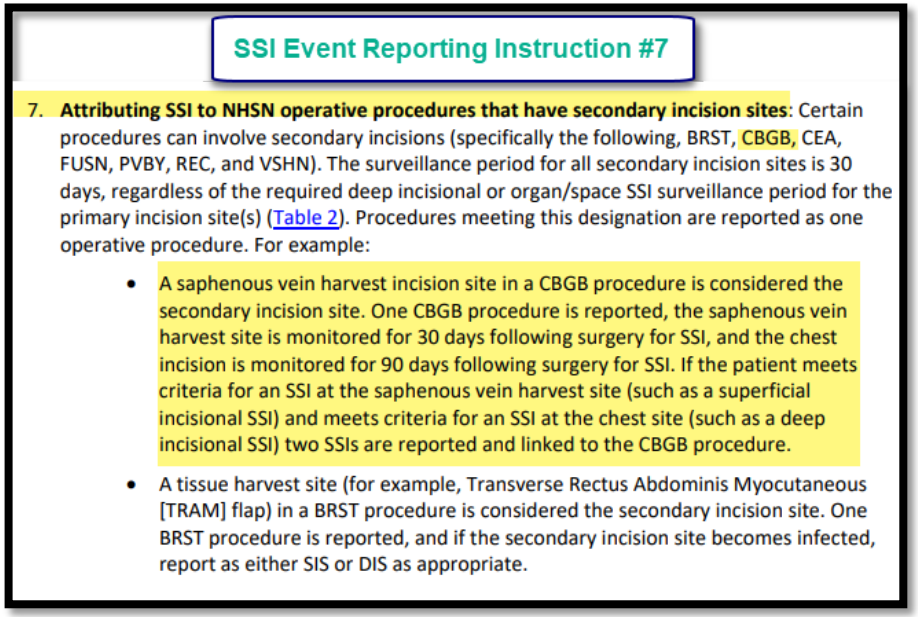
B. Two SSIs



Scenario 9
Question 1 Answer

B. **Two SSIs**

- *SSI Event Reporting Instruction #7*: **Attributing SSI to NHSN operative procedures that have secondary incision sites**:
  - One CBGB is reported.
    - Primary incision site (chest) monitored for 90 days.
    - Secondary incision site (saphenous vein harvest site) monitored for 30 days.



SSI Event Reporting Instruction #7

7. **Attributing SSI to NHSN operative procedures that have secondary incision sites**: Certain procedures can involve secondary incisions (specifically the following, BRST, CBGB, CEA, FUSN, PVBY, REC, and VSHN). The surveillance period for all secondary incision sites is 30 days, regardless of the required deep incisional or organ/space SSI surveillance period for the primary incision site(s) (Table 2). Procedures meeting this designation are reported as one operative procedure. For example:
   - A saphenous vein harvest incision site in a CBGB procedure is considered the secondary incision site. One CBGB procedure is reported, the saphenous vein harvest site is monitored for 30 days following surgery for SSI, and the chest incision is monitored for 90 days following surgery for SSI. If the patient meets criteria for an SSI at the saphenous vein harvest site (such as a superficial incisional SSI) and meets criteria for an SSI at the chest site (such as a deep incisional SSI) two SSIs are reported and linked to the CBGB procedure.
   - A tissue harvest site (for example, Transverse Rectus Abdominis Myocutaneous [TRAM] flap) in a BRST procedure is considered the secondary incision site. One BRST procedure is reported, and if the secondary incision site becomes infected, report as either SIS or DIS as appropriate.

Scenario 9
Question 2

Does the patient have a Superficial Incisional Secondary (SIS) SSI?

A. Yes – the nurse reported purulence at the secondary incision site.
B. No – a nurse report of purulence does not qualify to meet SSI criteria.

Scenario 9
Question 2 Answer

A. Yes – the nurse reported purulence at the secondary incision site.

- Superficial Incisional Secondary (SIS) SSI criterion 'a' met.
  - The nurse report of purulence at the vein harvest site is eligible for use with meeting SSI criteria.
  - NHSN takes documentation at face value and a single note of purulence is sufficient for use with meeting SSI criteria.

Surgical Site Infection (SSI)

Superficial incisional SSI

Must meet the following criteria:

Date of event occurs within 30 days following the NHSN operative procedure (where day 1 = the procedure date)

AND

involves only skin and subcutaneous tissue of the incision

AND

patient has at least ***one*** of the following:

a. purulent drainage from the superficial incision.
b. organism(s) identified from an aseptically-obtained specimen from the superficial incision or subcutaneous tissue 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. a superficial incision that is deliberately opened by a surgeon, physician* or physician designee and culture or non-culture based testing of the superficial incision or subcutaneous tissue is not performed
   AND
   patient has at least one of the following signs or symptoms: localized pain or tenderness; localized swelling; erythema; or heat.
d. diagnosis of a superficial incisional SSI by a physician* or physician designee.

* The term physician for the purpose of application of the NHSN SSI criteria may be interpreted to mean a surgeon, infectious disease physician, emergency physician, other physician on the case, or physician's designee (nurse practitioner or physician's assistant).

Scenario 9
Question 3

Does the patient have an SSI at the primary incision site (the chest) following the CBGB procedure?

A. Yes

B. No – the chest tube inserted into the mediastinal space at time of surgery has been in place too long and therefore organisms identified by culture from a specimen from the chest tube aren't eligible to be an SSI

Scenario 9
Question 3 Answer

A. Yes

- The patient had a chest tube inserted into the mediastinal space at time of the 10/15 CBGB procedure.
- On 10/22 a culture of drainage is collected from this chest tube and *Pseudomonas aeruginosa* is identified.
- For the chest tube inserted into the mediastinal space at time of surgery there is no restriction in terms of length of time that the chest tube is in place when specimen collected. Organisms identified are eligible with meeting SSI criteria.

Scenario 9
Question 3 Answer

- Organ/Space SSI criterion ‘c’ and MED – Mediastinitis criterion ‘1’ met
  - Culture is collected from drainage from the chest tube that terminates within the mediastinal space, *Pseudomonas aeruginosa* identified.

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)

MED-Mediastinitis

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

1. Patient has organism(s) identified from mediastinal tissue or fluid 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).
2. Patient has evidence of mediastinitis on gross anatomic or histopathologic exam.
3. Patient has at least ***one*** of the following signs or symptoms: fever (>38.0°C), chest pain*, or sternal instability. *

   And at least *one* of the following:

   a. purulent drainage from mediastinal area
   b. mediastinal widening on imaging test
4. Patient ≤1 year of age has at least ***one*** of the following signs or symptoms: fever (>38.0°C), hypothermia (<36.0°C), apnea*, bradycardia*, or sternal instability*

   And at least *one* of the following:

   a. purulent drainage from mediastinal area.
   b. mediastinal widening on imaging test.

** With no other recognized cause*

Comment:

- The mediastinal space is the area under the sternum and in front of the vertebral column, containing the heart and its large vessels, trachea, esophagus, thymus, lymph nodes, and other structures and tissues. It is divided into anterior, middle, posterior, and superior regions.

Reporting Instruction

- Report mediastinitis (MED) following cardiac surgery that is accompanied by osteomyelitis as SSI-MED rather than SSI-BONE.

Scenario 9
Question 3 Answer

SSI FAQ #29

Event Detail – Level of SSI After Cardiac Procedures

Q29. How do I determine the level of infection for the sternal site after cardiac procedures?

- Apply the superficial incisional SSI criteria if the infection involves the skin or subcutaneous tissue.
- Apply the deep incisional SSI criteria if the infection goes to the sternum but does not involve the bone.
- Apply the organ/space BONE criteria if the infection is of the sternal bone.
- Apply the organ/space MED – Mediastinitis criteria if the infection is below the sternum in the mediastinal space.

NOTE: If a patient meets both organ/space BONE and MED criteria report the SSI event as organ/space MED – Mediastinitis.

Scenario 10

On 10/3 patient is admitted as a Trauma following a Motor Vehicle Collision. The patient goes to the OR for a COLO procedure and the procedure narrative notes a perforation of the sigmoid colon with contamination of feculent material in the abdomen. At the conclusion of surgery, the fascia is reapproximated with the skin left completely open with a wound vac placed.

On 10/9 the patient experiences sharp abdominal pain and nausea and a CT of the abdomen is performed. Blood cultures are collected. The CT indicates a concern for an anastomotic leak with a fluid collection at the staple line within the sigmoid colon. The physician documents treatment for a gastrointestinal tract infection. Blood culture findings identify *E.coli*.

Scenario 10
Question 1

The IP monitors COLO procedures at their facility. Given the 10/3 COLO is performed on a trauma case and is a contaminated procedure, does the 10/3 COLO get included in the facility denominator data and monitored for SSI?

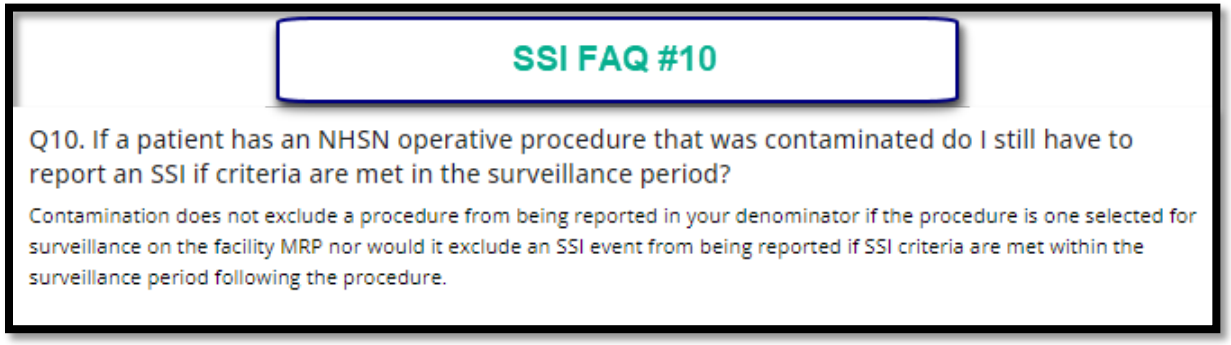
A. Yes

B. No

Scenario 10
Question 1 Answer

A. Yes

- All qualifying COLO procedures are included in the facility COLO denominator data and monitored for SSI.
- Procedures that are Trauma = Yes or are 'contaminated' are not excluded from procedure reporting and any subsequent SSI events attributed to these procedures are not excluded from SSI event reporting.



SSI FAQ #10

Q10. If a patient has an NHSN operative procedure that was contaminated do I still have to report an SSI if criteria are met in the surveillance period?

Contamination does not exclude a procedure from being reported in your denominator if the procedure is one selected for surveillance on the facility MRP nor would it exclude an SSI event from being reported if SSI criteria are met within the surveillance period following the procedure.

Scenario 10
Question 2

At the conclusion of the 10/3 COLO procedure, the fascia is 'reapproximated with the skin left completely open with a wound vac placed'. Closure method is a required field for denominator for procedure entry.

What closure method is indicated for the 10/3 COLO?

A. Primary closure
B. Non-primary closure

Scenario 10
Question 2 Answer

Closure Method Defined with the SSI Protocol 'Denominator Details'

B. Non-primary closure

- Skin-level left completely open with a wound vac placed
  - Non-primary closure is defined as: *The closure of the surgical wound in a way which leaves the skin level completely open following the surgery*.
  - Wounds with non-primary closure may or may not be described as "packed" with gauze or other material, and may or may not be covered with plastic, "wound vacs," or other synthetic devices or materials.

Scenario 10
Question 3

What type of SSI event should be reported following the 10/3 COLO procedure?

A. Organ/Space SSI criterion ‘c’ IAB – Intraabdominal infection criterion ‘3b’
B. Organ/Space SSI criterion ‘c’ GIT – Gastrointestinal tract infection criterion ‘2c’
C. No SSI is reported – the surgeon states the anastomotic leak following the COLO procedure is a post-operative complication and excludes the case from SSI event reporting.

Scenario 10
Question 3 Answer

B. **Organ/Space SSI criterion 'c'**

GIT – Gastrointestinal tract infection criterion '2c'

- Organ/Space SSI 'c' met:
  - Imaging test evidence of a fluid collection at the staple line within the sigmoid colon is equivocal for gastrointestinal tract infection

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]).

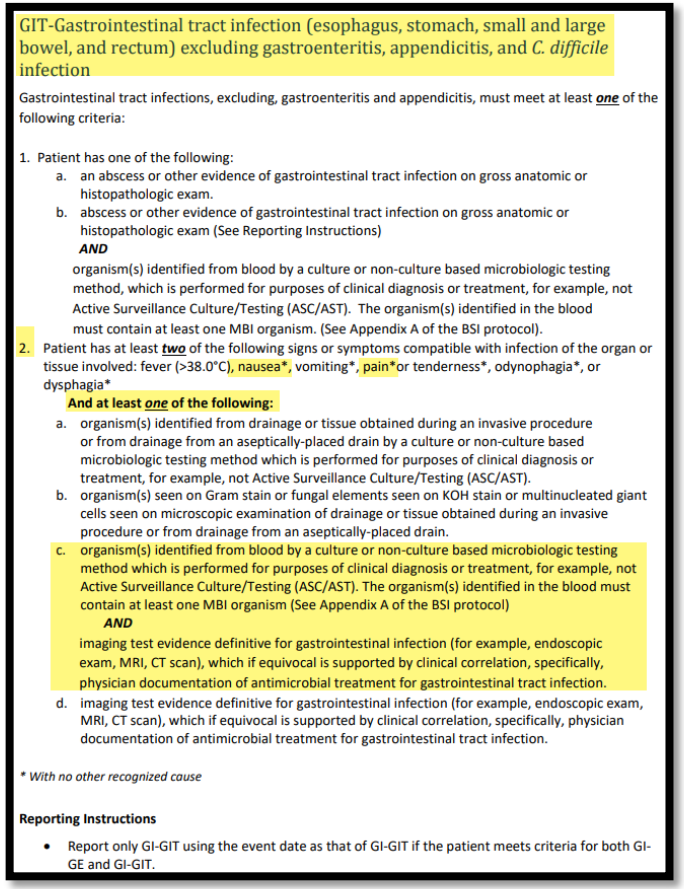
c. an abscess or other evidence of infection involving the organ/space detected on gross anatomical exam or histopathologic exam, or imaging test evidence definitive or equivocal for infection.

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)

Scenario 10
Question 3 Answer

- GIT criterion '2c' met:
  - Sharp abdominal pain and nausea.
  - Organisms (*E.coli*) identified from blood by culture. Organism identified in blood contains an MBI organism (*E. coli*).
  - Imaging test evidence of a fluid collection at the staple line within the sigmoid colon is **equivocal** for gastrointestinal tract infection.
  - **Equivocal** imaging is supported by **clinical correlation**: Physician documentation of antimicrobial treatment for a gastrointestinal tract infection.



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

Gastrointestinal tract infections, excluding, gastroenteritis and appendicitis, must meet at least ***one*** of the following criteria:

1. Patient has one of the following:
   a. an abscess or other evidence of gastrointestinal tract infection on gross anatomic or histopathologic exam.
   b. abscess or other evidence of gastrointestinal tract infection on gross anatomic or histopathologic exam (See Reporting Instructions)
   AND
   organism(s) identified from blood 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). The organism(s) identified in the blood must contain at least one MBI organism. (See Appendix A of the BSI protocol).
2. Patient has at least ***two*** of the following signs or symptoms compatible with infection of the organ or tissue involved: fever (>38.0°C), nausea*, vomiting*, pain*or tenderness*, odynophagia*, or dysphagia*
   And at least *one* of the following:
   a. organism(s) identified from drainage or tissue obtained during an invasive procedure or from drainage from an aseptically-placed drain 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).
   b. organism(s) seen on Gram stain or fungal elements seen on KOH stain or multinucleated giant cells seen on microscopic examination of drainage or tissue obtained during an invasive procedure or from drainage from an aseptically-placed drain.
   c. organism(s) identified from blood 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). The organism(s) identified in the blood must contain at least one MBI organism (See Appendix A of the BSI protocol)
   AND
   imaging test evidence definitive for gastrointestinal infection (for example, endoscopic exam, MRI, CT scan), which if equivocal is supported by clinical correlation, specifically, physician documentation of antimicrobial treatment for gastrointestinal tract infection.
   d. imaging test evidence definitive for gastrointestinal infection (for example, endoscopic exam, MRI, CT scan), which if equivocal is supported by clinical correlation, specifically, physician documentation of antimicrobial treatment for gastrointestinal tract infection.

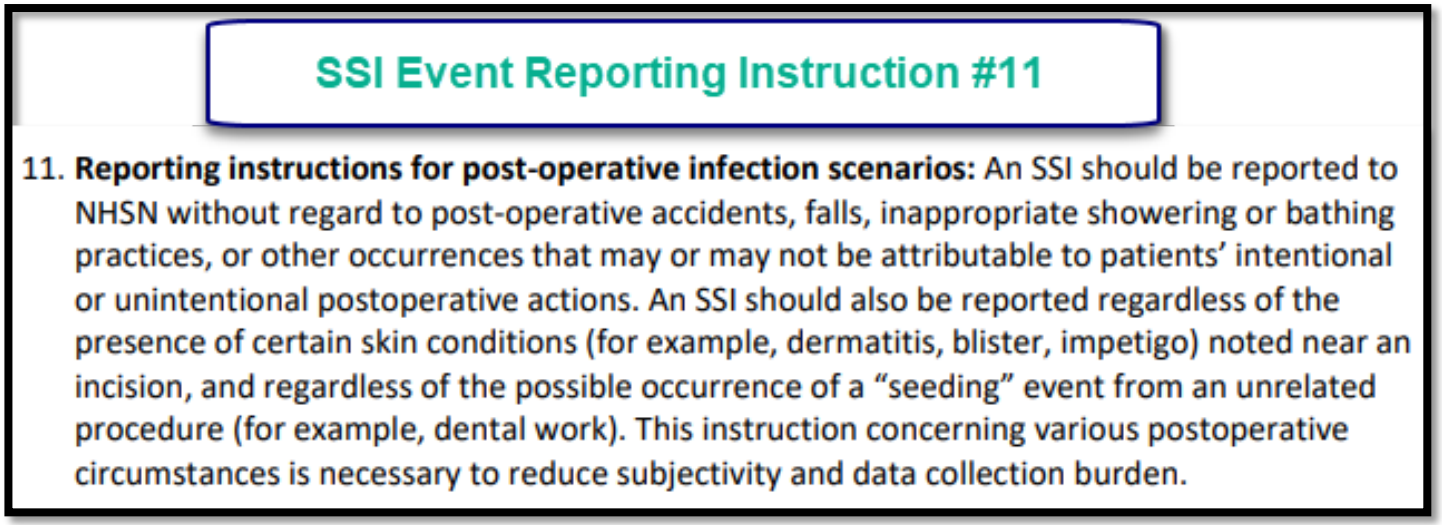
** With no other recognized cause*

Reporting Instructions

- Report only GI-GIT using the event date as that of GI-GIT if the patient meets criteria for both GI-GE and GI-GIT.

Scenario 10
Question 3 Answer

- *SSI Event Reporting Instruction #11*: **Reporting instructions for post-operative infection scenarios**: A post-operative occurrence/complication (such as an anastomotic leak) does not exclude an SSI event from reporting when SSI criteria are met.



SSI Event Reporting Instruction #11

11. **Reporting instructions for post-operative infection scenarios:** An SSI should be reported to NHSN without regard to post-operative accidents, falls, inappropriate showering or bathing practices, or other occurrences that may or may not be attributable to patients' intentional or unintentional postoperative actions. An SSI should also be reported regardless of the presence of certain skin conditions (for example, dermatitis, blister, impetigo) noted near an incision, and regardless of the possible occurrence of a "seeding" event from an unrelated procedure (for example, dental work). This instruction concerning various postoperative circumstances is necessary to reduce subjectivity and data collection burden.

Scenario 10
Question 4

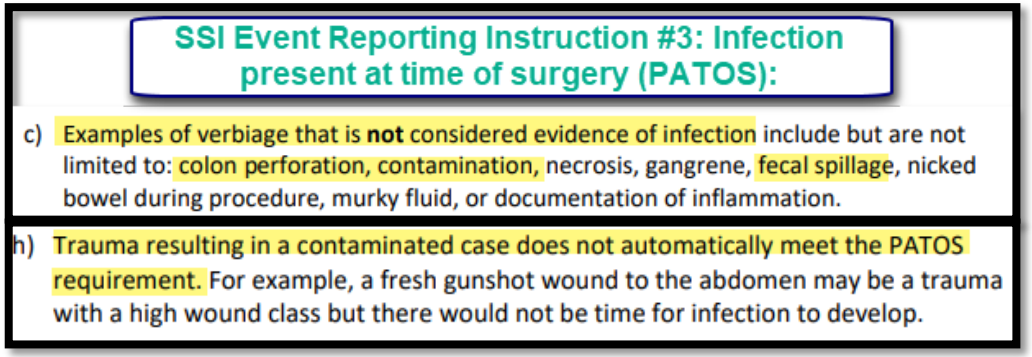
If an SSI event is reported, how is the PATOS field answered on the SSI event form?

A. PATOS = YES
B. PATOS = NO
C. No SSI event is reported so PATOS is not reviewed

Scenario 10
Question 4 Answer

B. **PATOS = NO**

- The patient goes to the OR for a COLO and the procedure narrative notes a '**perforation of the sigmoid colon** with **contamination of feculent material'** in the abdomen.
- *SSI Event Reporting Instruction #3*: **PATOS**: Perforation and contamination of feculent material is not evidence of infection.



SSI Case Review Requests

NHSN SSI Case Review

Q1. When sending an inquiry to NHSN, what should the NHSN user provide when requesting assistance with an SSI case review?

Please note it is very important to provide NHSN your thoughts regarding the case you are requesting for review. Please provide specifics as to the criteria you have considered and which elements of the criteria you have determined the patient does or does not meet. If you are unable to make a determination, please let us know specifically why you are unable to decide and clearly outline your question(s). Our hope is that the case review process will be educational for you for making future determinations.

Please provide the following information when sending NHSN a question for SSI case review:

- OR procedure(s) and date(s) of all OR procedures, including reoperations:
  - Whether the operative procedures are coded as NHSN operative procedures (if so, provide the NHSN operative procedure code(s) and category(s)).
  - If a return to OR via same incision/surgical space, was the start time of the return to OR procedure within 24 hours of finish time of the prior operative procedure?
- Other procedures that access the surgical site during the SSI surveillance period and dates of these procedures (for example, CT-guided drainage, tap to knee). Please include findings from these procedures.
- Patient signs and symptoms and dates of signs and symptoms.
- Tissue level(s) that may be involved in the infection – superficial incisional, deep incisional and/or organ/space and dates of involvement.
- Imaging tests performed and results of these tests – please include dates of these tests.
- Other diagnostic testing performed – please include dates of these tests.
- Culture or non-culture based microbiologic tests performed and the results – please include collection dates.
  - Include tissue level (If you are unsure NHSN recommends consulting with the surgeon/physician to make that determination).
  - Please provide any other evidence of infection – please includes dates.

https://www.cdc.gov/nhsn/faqs/faq-ssi.html

Conclusion

- The SSI protocol has its own definitions and criteria for SSI event reporting.
- When monitoring an NHSN operative procedure category in the MRP, the facility must follow the entire SSI protocol and report all qualifying procedures and SSIs for that procedure category. This includes superficial incisional, deep incisional and organ/space SSI events.
- It is important to accurately apply denominator and numerator event details and reporting instructions when performing SSI surveillance.
- Familiarize yourself with the SSI protocol and all supporting documents.
  - A lot of excellent resources available to assist you with SSI surveillance.

NHSN SSI Case Study

American Journal of Infection Control (AJIC) July 2022

Health care-associated infections studies project: An American Journal of Infection Control and National Healthcare Safety Network Data Quality Collaboration Case Study – Chapter 9 Surgical site infection event (SSI) case study

https://www.sciencedirect.com/science/article/pii/S019665532200217 6?via%3Dihub

Can be found in the Resource Center!

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