



# Patient Safety Component

## Surgical Site Infection Event (SSI) Surveillance Basics

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# Objectives

By the end of this lesson, you will be able to:

- Describe the foundational concepts of Surgical Site Infection (SSI) surveillance
- Explain what defines an NHSN operative procedure and an SSI event
- Understand the importance of definitions and reporting instructions for accurate denominator for procedure and SSI event determinations

# Additional SSI Training

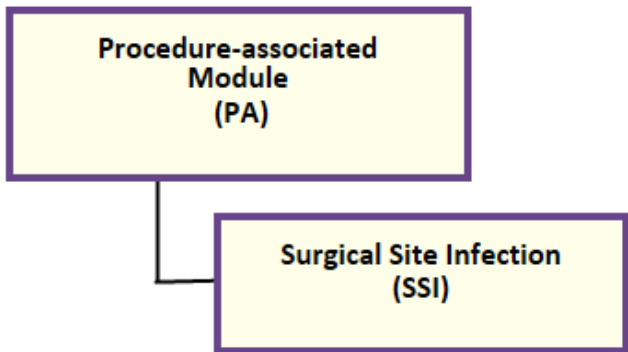
- On-demand: *Surgical Site Infection (SSI) Surveillance: Where to start?*
  - Identify data points necessary to perform effective SSI surveillance and reporting to NHSN
  - Navigate the NHSN website effectively to access protocols and resources and to report SSI events and procedures
- 3/22: *Surgical Site Infection Event (SSI) Case Studies*
  - Correct application of the SSI protocol
  - Identification of misunderstood areas of the SSI protocol
  - Frequently Asked Questions (FAQs)
- This training will not address data analysis.

# Resources

- NHSN Surgical Site Infection (SSI) Events
  - <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/9pscSSIPcurrent.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](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>
  - Surgical Site Procedure Codes
    - <https://www.cdc.gov/nhsn/faqs/faq-ssi-proc-codes.html>

# Settings and Requirements

# Patient Safety Component (PSC): Chapter 9



January 2024

## Surgical Site Infection Event (SSI)

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**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<sup>1</sup>. Based on the 2022 HAI data results published in the NHSN's HAI Progress Report, about a 4% increase in the SSI standardized infection ratio (SIR) related to all NHSN operative procedure categories combined compared to the previous year<sup>2</sup>. In addition, the 2022 HAI data found a 3% significant increase in SIR related to the Surgical Care Improvement Project (SCIP) NHSN operative procedure categories compared to the previous year<sup>2</sup>. Additional SSI HAI data can be found in the annual HAI Progress Report<sup>2</sup>.

While advances have been made in infection control practices, including improved operating room ventilation, sterilization methods, barriers, surgical technique, and availability of

CDC 9-1

## Settings

- Surveillance of surgical patients will occur in any inpatient facility and/or hospital outpatient procedure department (HOPD) where the selected NHSN operative procedure(s) are performed.
- Ambulatory Surgery Centers (ASCs) that report to NHSN must use the Outpatient Procedure Component (OPC) to perform SSI surveillance.

# Requirements

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



**Denominator:  
The NHSN Operative Procedure**

# Definition of an 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

- Operative procedure codes are used in healthcare settings to communicate uniform information. Operative procedure codes allow NHSN to standardize SSI reporting.
- NHSN operative procedure category inclusion is based on operative procedure codes and operative procedure codes are **required** to determine the correct NHSN operative procedure category to be reported.
  - Entry of codes into the NHSN application is optional but **recommended**.
- NHSN uses ICD-10-CM/PCS and CPT operative procedure coding systems.
- Must include all qualifying procedures in the selected operative procedure categories indicated on the facility MRP.

# The NHSN Operative Procedure: Key Points

- 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.
  - An infection associated with a procedure that is not included in one of the NHSN operative procedure categories is not considered an NHSN SSI, although the infection may be investigated as a healthcare-associated infection (HAI).
- The date of procedure determines the year of protocol/procedure code documents to use with SSI surveillance.

# NHSN Operative Procedure Categories

- Table 2, page 9-16 SSI protocol:

39 NHSN operative procedure categories eligible for SSI surveillance.


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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	OVRV	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 categories.
- Secondary incisional SSIs are monitored for a 30-day period regardless of the surveillance period for the primary incision site.

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# Denominator for Procedure Details

Denominator for Procedure	
Page 1 of 2	*required for saving
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	Surgeon Code: _____
*Weight: ____ lbs/kg (circle one)	
CSEC: *Duration of Labor: ____ hours	
Circle one: FUSN *Spinal Level (check one) <input type="checkbox"/> Atlas-axis <input type="checkbox"/> Atlas-axis/Cervical <input type="checkbox"/> Cervical <input type="checkbox"/> Cervical/Dorsal/Dorsolumbar <input type="checkbox"/> Dorsal/Dorsolumbar <input type="checkbox"/> Lumbar/Lumbosacral	*Approach/Technique (check one) <input type="checkbox"/> Anterior <input type="checkbox"/> Posterior <input type="checkbox"/> Anterior and Posterior
Circle one: HPRO    KPRO	
ICD-10-PCS Supplemental Procedure Code for HPRO/KPRO:	

# NHSN Inpatient Operative Procedure vs. NHSN Outpatient Operative Procedure

- **NHSN Inpatient Operative Procedure**: An NHSN operative procedure performed on a patient whose date of admission to the healthcare facility and the date of discharge are different calendar days.
- **NHSN Outpatient Operative Procedure**: An NHSN operative procedure performed on a patient whose date of admission to the healthcare facility and date of discharge are the same calendar day.

# Denominator Reporting Instructions



- Denominator data is submitted for each individual NHSN operative procedure performed assigned to the procedure category selected for monitoring on the facility MRP.
- Depending on scenario, Denominator Reporting Instructions provide guidance related to:
  - Number of procedure forms to complete
  - Duration of procedure(s)
  - More than one operative procedure through same incision/surgical space within 24 hours
  - HYST/VHYS reporting
  - Patient expires in the Operating Room



# Denominator for Procedure Reporting Instructions

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## Denominator for Procedure Reporting

### Denominator Data:

Denominator data are collected for each individual NHSN operative procedure for monitoring on the [Patient Safety Monthly Reporting Plan](#). For a procedure included in the NHSN operative procedure category(s) being performed during the month, complete the [Denominator for Procedure](#) code (ICD-10-PCS and/or CPT) is required to determine procedure category to be reported. The [Instructions for Completing Procedure Form \(S7.121\)](#) include brief instructions for collection on the form.

### Denominator Reporting Instructions:

1. **Different operative procedure categories performed during same trip to the operating room through the same or different Procedure** form is completed for each NHSN operative procedure in the Monthly Reporting Plan.

For example:

- If a CARD and CBGC are performed through the same in the operating room, and both procedures are monitored on the Monthly Reporting Plan, complete a [Denominator for Procedure](#) form for each procedure.
- If following a motor vehicle accident, a patient has an AMP and a CBGB on the same trip to the operating room, and both procedures are monitored on 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 a separate procedure code for the CBGC. CBGCs 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 procedure is performed through the same incision:** If more than one procedure category is performed through the same incision do not record the combined duration of all procedures, which is the total start time to procedure/surgery finish time. For example, if a procedure is performed on a patient during the same trip to the operating room to finish time to report for both operative procedures.

3. **Duration of operative procedures if patient has two different procedures performed via separate incisions on the same trip to the OR:** Report the duration for each separate procedure (if this is documented); do not

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both procedures and split it evenly between the two. For example, if an AMP and a CBGB 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, report the procedure for that category. For example, a facility is performing surveillance for CPT 43.99 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 performed, determine if any of the ICD-10-PCS/CM diagnosis or procedure codes include 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 with 'prior infection at index joint' = YES. The 'prior infection at index joint' variable applies to revision HPRO and KPRO. The cases designated 'prior infection at index joint' should be validated before the procedure is submitted to NHSN. This validation is required to ensure the code is aligned with the index joint revision. The ICD-10-PCS/CM code guidance is found on the NHSN website in the SSI section under ["Operative Procedure 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, NEP, PVBV), 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 procedure 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 calendar day.

### Notes:

- A COLO procedure with a colostomy formation is considered one COLO procedure with multiple primary incision sites
- Laparoscopic hernia repairs are considered one HER procedure, regardless of the number of hernias repaired in a 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, report the durations. Open (specifically, non-laparoscopic) hernia repairs are reported as HER procedure for each hernia repaired via a separate incision, (specifically, if multiple incisions are made to repair two defects, then two HER procedures are reported

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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. The surveillance period for SSI begins at the completion of the second procedure (the CARD procedure).

### Notes:

- If the first procedure is not an NHSN operative procedure, this guidance does not apply.
- 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 5 <sup>th</sup> 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

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# Return to OR within 24 hours

- **Denominator Reporting Instruction #7**, page 9-26 of the SSI protocol offers guidance around accurate procedure reporting when a patient has more than one operative procedure via the same incision or into the same surgical space within 24 hours.

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. The surveillance period for SSI begins at the completion of the second procedure (the CARD procedure).

**Notes:**

- If the first procedure is **not** an NHSN operative procedure, this guidance does not apply.
- 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.

# Appendix B: Guidance for Multiple Procedure Reporting


- 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**.
- Correct procedure reporting when multiple procedures from one of these categories (procedures from the same category) are performed via separate incisions per patient per calendar day.
  - The table includes the maximum # of procedures per day per patient and an explanation.

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APPENDIX B  
Guidance for Multiple Procedure Reporting

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 via separate incisions 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
<b>AMP - Limb amputation</b>	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.
<b>BRST - Breast surgery</b>	2	Corresponds to the left breast and right breast.
<b>CEA - Carotid endarterectomy</b>	2	Corresponds to the left artery and right artery.
<b>FUSN - Spinal fusion</b>	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 <b>which the most vertebrae were fused</b> .  The number of FUSN procedures reported depends on various factors: <ul style="list-style-type: none"><li>• When a spinal fusion procedure is performed on one spinal level/contiguous spinal levels, this is considered <b>one FUSN</b> procedure for reporting purposes although multiple joints may be fused and multiple procedures codes are assigned.</li><li>• 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) <b>one FUSN</b> procedure is reported. Indicate <b>'Anterior and Posterior' approach</b> on the denominator for procedure form.</li></ul>

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**Numerator:**  
**The Surgical Site Infection (SSI) Event**

# SSI: Three Tissue Levels

- **Superficial Incisional**

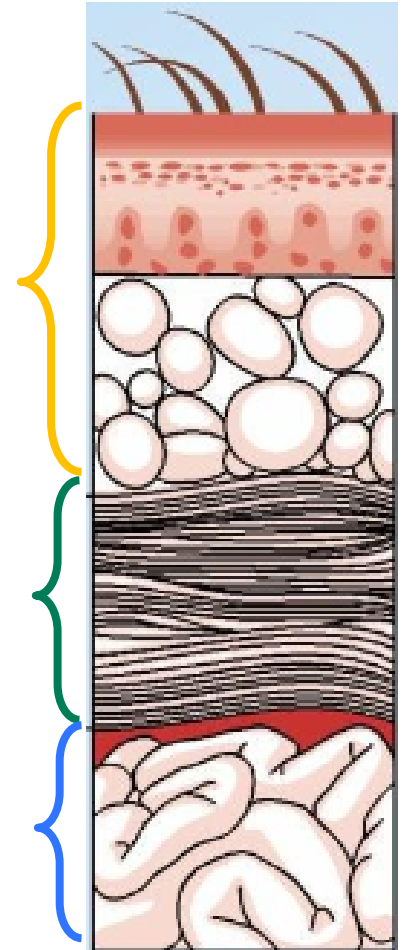
- Skin and subcutaneous tissues of the incision

- **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

- Skin and subcutaneous 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:

- purulent drainage from the superficial incision.
- 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])
- 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

- 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 – cont.

<b>Reporting Instructions for Superficial Incisional SSI</b>	<p><b>The following do not qualify as criteria for meeting the NHSN definition of superficial incisional SSI:</b></p> <ul style="list-style-type: none"><li>• Diagnosis/treatment of cellulitis (redness/warmth/swelling), by itself, does not meet superficial incisional SSI criterion 'd'.</li><li>• A stitch abscess alone (minimal inflammation and discharge confined to the points of suture penetration).</li><li>• 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.</li></ul> <p><b>Notes:</b></p> <ul style="list-style-type: none"><li>• For the purpose of NHSN surveillance, the term "incision" refers to the incision made for the primary surgical procedure and the term "stab wound" refers to an incision made at another site, generally to accommodate a drain.</li><li>• 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.</li></ul>
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<p><b>Superficial incisional SSI</b></p> <p>There are two specific types of superficial incisional SSIs:</p> <ol style="list-style-type: none"><li>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)</li><li>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)</li></ol> <p><b>Note:</b> Refer to SSI Event Reporting Instruction #7 for NHSN operative procedure categories with secondary incision sites available for SSI attribution.</p>
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# Deep Incisional SSI

- Deep soft tissues of the incision (fascial/muscle layers)

## 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:

- purulent drainage from the deep incision
- 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

- 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 SSI – cont.

### Deep Incisional SSI

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

- Any part of the body deeper than the fascial/muscle layers

## 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:

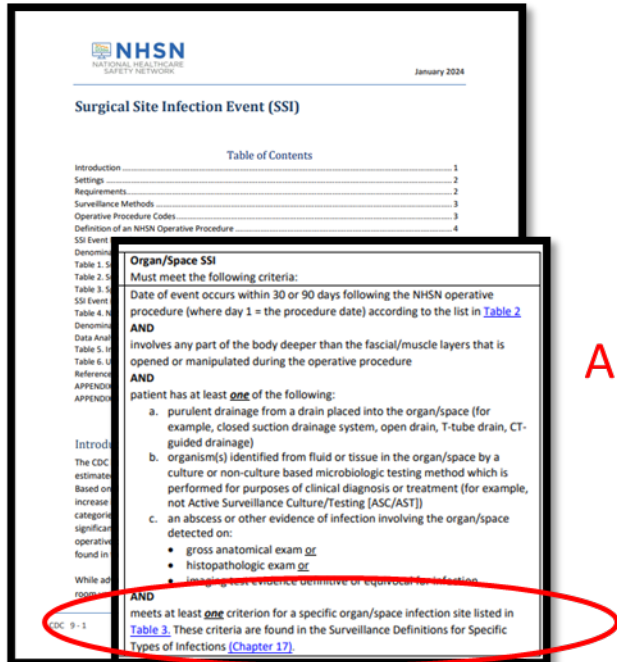
- purulent drainage from a drain placed into the organ/space (for example, closed suction drainage system, open drain, T-tube drain, CT-guided drainage)
- organism(s) identified from fluid or tissue in the organ/space by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing [ASC/AST])
- 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](#)).

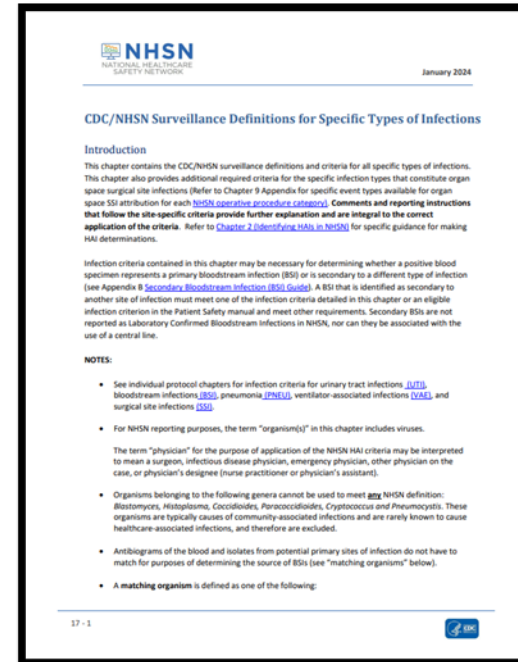
# Organ/Space SSI – cont.

- General Organ/Space criterion **AND** applicable Chapter 17 site-specific criterion must be met to fully meet Organ/Space SSI 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](#)).

**AND**



**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 HAI 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 9 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.  
The term "physician" for the purpose of application of the NHSN HAI 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).  
• Organisms belonging to the following genera cannot be used to meet any NHSN definition: *Bifidobacterium*, *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:

# Specific Sites of An Organ/Space SSI

- **Table 3**, page 9-17 of the SSI protocol, 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.


# Appendix A: Specific event types available for SSI attribution by NHSN procedure category

- SSI event reporting is limited to the specific event types outlined in Appendix A for each procedure category.
- If an eligible event type occurs within the surveillance period following an NHSN operative procedure the event is attributed to that procedure.

January 2024 Procedure-associated Module  
SSI Events

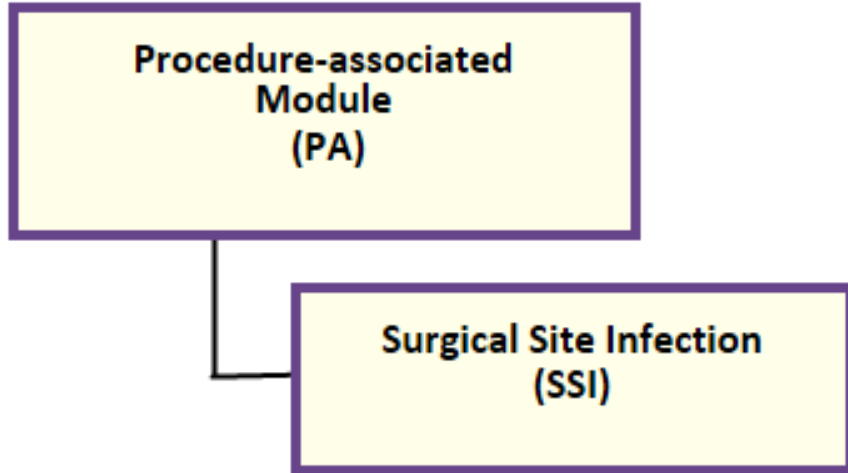
APPENDIX A  
Specific event types available for SSI attribution by NHSN procedure category

Operative Procedure Category	Specific Event Type
<b>AAA - Abdominal aortic aneurysm repair</b>	DIP - Deep Incisional Primary ENDO - Endocarditis GIT - Gastrointestinal tract IAB - Intraabdominal, not specified elsewhere SIP - Superficial Incisional Primary VASC - Arterial or venous infection
<b>AMP - Limb amputation</b>	BONE - Osteomyelitis DIP - Deep Incisional Primary JNT - Joint or bursa SIP - Superficial Incisional Primary
<b>APPY - Appendix surgery</b>	DIP - Deep Incisional Primary GIT - Gastrointestinal tract IAB - Intraabdominal, not specified elsewhere SIP - Superficial Incisional Primary
<b>AVSD - AV shunt for dialysis</b>	DIP - Deep Incisional Primary SIP - Superficial Incisional Primary VASC - Arterial or venous infection
<b>BILI - Bile duct, liver or pancreatic surgery</b>	DIP - Deep Incisional Primary GIT - Gastrointestinal tract IAB - Intraabdominal, not specified elsewhere SIP - Superficial Incisional Primary
<b>BRST - Breast surgery</b>	BRST - Breast abscess or mastitis DIP - Deep Incisional Primary DIS - Deep Incisional Secondary SIP - Superficial Incisional Primary SIS - Superficial Incisional Secondary
<b>CARD - Cardiac surgery</b>	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

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# SSI Event Details

# 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

# Surveillance Period

- The timeframe following an NHSN operative procedure for monitoring and identifying an SSI event.
- The surveillance period is determined by the NHSN operative procedure category (**Table 2**).
- Superficial incisional SSIs: 30-day surveillance period for all procedure categories.
- Secondary incisional SSIs: 30-day surveillance period for secondary incision site for all procedure categories.

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 categories.
- Secondary incisional SSIs are monitored for a 30-day period regardless of the surveillance period for the primary incision site.



## Surveillance Period- cont.

- Each trip to the OR for an NHSN operative procedure sets an SSI surveillance period for the surgical site. Non-NHSN operative procedures do not set an SSI surveillance period.
- If a patient returns to the OR for an 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 at the conclusion of the procedure.
- 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 at the conclusion of the non-NHSN operative procedure. The SSI surveillance period continues for the tissue levels not entered during the non-NHSN operative procedure.

# SSI Date of Event (DOE)

- 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 occur within the SSI surveillance period to meet SSI criteria.
- The type of SSI (superficial incisional, deep incisional, or organ/space) submitted to NHSN 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.**

# Timeframe for SSI elements

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

## Secondary BSI Scenarios for SSI

**Scenario 1 (All levels of SSI):** At least one organism from the blood specimen matches an organism identified from the SSI specimen used as an element to meet the NHSN SSI criterion AND the blood specimen is collected during the secondary BSI attribution period. The secondary BSI attribution period for SSI is a 17-day period 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

**SSI  
Secondary  
BSI  
Attribution  
Period**  
3 days before DOE  
+  
DOE  
+  
13 days after DOE

17 days

Post-Op Day	SSI Secondary BSI Attribution Period
9	
10	
11	
12	
13	DOE for an SSI
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	

# 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

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 on the NHSN Organism List that can be accessed via the [spreadsheet](#) or the new [NHSN Terminology Browser](#).

Example  
IAB '2b'

# Gross Anatomical Exam

- **Gross anatomic evidence of infection is evidence of infection elicited or visualized on physical examination or observed during an invasive procedure.**
- **Examples:**
  - Intraabdominal abscess visualized during surgery
  - Visualization of purulence from a drain
  - SSI only: abdominal pain/tenderness post CSEC or HYST/VHYS is sufficient gross anatomic evidence of infection without an invasive procedure to meet Organ/Space SSI criterion 'c' when a Chapter 17 Reproductive Tract Infection criteria is met.
- **NOTE:** Imaging test evidence of infection is not gross anatomic evidence of infection. These are separate elements of infection criterion.

# Purulence

- There is no standard, clinically agreed upon definition for purulence.
- Descriptors “pus” or “purulence” are sufficient gross anatomic evidence of infection.
- Documentation that uses a color descriptor and a consistency descriptor in combination is acceptable to indicate ‘purulence’.
  - **Color:** Green, yellow
  - **Consistency:** Milky, thick, creamy, opaque, viscous
    - For example, fluid only described as yellow, or only described as thick, is not sufficient. However, if the terms are combined, then they may be more representative of purulence (for example: fluid described as thick and yellow).
- **Notes :** The following descriptors cannot be used to define purulence/infection: ‘Cloudy’, ‘turbid’, ‘murky’ or the odor of a wound.
- Gram stain results such as WBCs or PMNs cannot be used to define purulence within the SSI protocol.



# SSI Event Reporting Instructions

- Any procedures included in the 39 NHSN operative procedure category(s) are monitored for SSI for the appropriate surveillance period assigned. A Surgical Site Infection (SSI) report is completed for each SSI.
- SSI Event Reporting Instructions provide guidance on accurate SSI event reporting including:
  - Excluded organisms
  - Infection present at time of surgery (PATOS)
  - SSI attribution
  - SSI events detected at another facility
  - SSI following invasive manipulation or accession of the operative site.

# SSI Event Reporting Instructions – cont.

January 2024	January 2024	January 2024	January 2024	January 2024
<p>SSI Event (Numerator) Reporting Instructions</p> <p><b>Numerator Data:</b> All patients having any of the procedure category(s) are monitored for SSI. If no SSI events are identified during the Missing PA Events tab of the SSI Event Reporting Instructions.</p> <p>The <a href="#">Instructions for Completion</a> provide instructions for collection and entry of patient demographic information.</p> <p><b>SSI Event Reporting Instructions</b></p> <ol style="list-style-type: none"> <li><b>Excluded organisms:</b> Well-known organisms: <i>Blastomyces</i> and <i>Pneumocystis</i> and/or oral shingles, syphilis, or tuberculosis.</li> <li><b>Attributing SSI to an NHSN procedure:</b> If evidence of infection meets SSI criteria within the time period attributed to the procedure (<a href="#">Instruction #3</a>).</li> <li><b>Infection present at time of event form:</b> PATOS denotes a surgical procedure to which reported intraoperatively and documented of surgery to be eligible other headings routinely include PATOS.</li> </ol> <p>Key points for consideration:</p> <ol style="list-style-type: none"> <li>Only select PATOS = 1 to the procedure. Examples:           <ul style="list-style-type: none"> <li>When a patient has surgery and then</li> <li>When a patient has surgery and then</li> <li>When a patient has surgery and then</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>Examples of verbiage that is considered limited to: abscess, infection, purulent peritonitis*, A ruptured/perforated organ/space level.</li> <li>Examples of verbiage that is not considered limited to: colon perforation, contamination during procedure, murky fluid in nature (for example, diverticulitis).</li> <li>The use of the ending "itis" in an organ/space automatically meet PATOS, as it meets in nature (for example, diverticulitis).</li> <li>Pathology report findings and image determination.</li> <li>Identification of an organism using method or on a pathology report for determination.</li> <li>Wound class assignment cannot be determined.</li> <li>Trauma resulting in a contaminated requirement. For example, a fresh wound with a high wound class but there is no evidence of infection.</li> </ol> <p><b>Examples of PATOS application:</b></p> <ul style="list-style-type: none"> <li>A patient undergoes an XLAP when APPY is performed. Two weeks later SSI. The PATOS field is selected as 1 surgery in the same tissue level as the XLAP.</li> <li>During a COLO procedure the surgeon enters the intraabdominal cavity. Patient returns with superficial incisional SSI. The PATOS documentation of evidence of infection is 1.</li> <li>During a CSEC the surgeon nicks the intraabdominal cavity. One week later OREP SSI. The PATOS field is selected as 1 evidence of infection at the time of there is not infection present at time of AMP.</li> <li>Patient undergoes an AMP due to breast cancer. The patient returns two weeks later with SSI. The PATOS field is selected as 1 breast cancer.</li> </ul>	<p>PATOS field is selected as NO SSI if there is no evidence of infection at time of the AMP. The PATOS field is selected as 1 if there is evidence of infection at time of the AMP.</p> <p><b>Note:</b> For more information about PATOS, see <a href="#">PATOS – Infection Present at Time of AMP</a>.</p> <ol style="list-style-type: none"> <li><b>Multiple tissue levels are involved in the event:</b> If a patient meets criteria for a SSI in multiple tissue levels, the SSI should be reported for each tissue level.       <ul style="list-style-type: none"> <li>Report infection that meets criteria for a SSI regardless of superficial or deep tissue level.</li> <li>Report infection that meets criteria for a SSI regardless of superficial or deep tissue level.</li> <li>If a patient meets criteria for a SSI in multiple tissue levels, the SSI should be reported for each tissue level.</li> </ul> </li> <li><b>Attributing SSI to a NHSN procedure:</b> If a patient has several NHSN operative procedures, the SSI should be attributed to the most recently performed NHSN procedure.</li> </ol> <p><b>Note:</b> For multiple NHSN operative procedures, see <a href="#">Denominator Reporting Instruction #7</a>.</p> <ol style="list-style-type: none"> <li><b>Attributing SSI to NHSN procedures:</b> If a patient has multiple primary incision sites of the same type, report as a single SSI, and assign the type of incision that represents the deepest involved primary incision sites during the procedure.       <ul style="list-style-type: none"> <li>If one laparoscopic incision and another laparoscopic incision and a deep incisional SSI.</li> <li>If one or more laparoscopic incisions and a deep incisional SSI.</li> <li>If an operative procedure is performed on the breast that results in a SSI, the PATOS field is selected as 1 breast cancer.</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>In a colostomy formation or abdominal incision sites are another abdominal incision (SIP).</li> <li><b>Attributing SSI to NHSN operative procedures:</b> NHSN operative procedures can involve secondary incisions and VSHN. Secondary incision sites are SSI and Deep Incisional Secondary (DIS) sites is 30 days, regardless of the required period for the primary incision site(s). If reported as one operative procedure, it is attributed to the procedure (a primary incision site).       <ul style="list-style-type: none"> <li>A saphenous vein harvest in secondary incision site. One harvest site is monitored for infection is monitored for 90 days. If a patient meets criteria for an SSI at the saphenous vein harvest site, the SSI is reported as either SIS or DIS as appropriate.</li> <li>A tissue harvest site (for example, [TRAM] flap) in a BRST procedure is reported, the SSI is reported as either SIS or DIS as appropriate.</li> </ul> </li> <li><b>SSI detected at another facility:</b> An SSI event that was reported at a facility other than the one where the procedure was performed, the SSI should be reported as Detected = RO (if the procedure was performed) on the SSI event form.</li> <li><b>SSI attribution after multiple categories:</b> When more than one NHSN procedure is performed through a single incision/laparoscopic incision, the SSI should be attributed to the procedure also as often the case when the infection Procedure Category Selection Lists (<a href="#">Table 1</a>) SSI should be attributed. For example, a patient has a SSI attributed to a trip to the OR in which both a COLO and a BRST procedure were performed.</li> </ol>	<p>Procedure-associated Module SSI Events</p> <p>apparent, assign the SSI to the COLO procedure per <a href="#">Table 4</a>. The final decision for SSI attribution lies with the local facility based on the full details of the case.</p> <ol style="list-style-type: none"> <li><b>SSI following invasive manipulation or accession of the operative site:</b> An SSI will NOT be attributed when the following 3 criteria are ALL met:       <ul style="list-style-type: none"> <li>during the post-operative period there is no suspicion or evidence of infection related to the surgical site/space.</li> <li>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).</li> <li>An infection subsequently develops in a tissue level which was entered during the manipulation/accession.</li> </ul> </li> </ol> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>Suspicion or evidence of infection may include signs and symptoms of infection (for example, fever, abdominal pain) depending on the site of the procedure.</li> <li>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.</li> <li>This reporting instruction does NOT apply to closed manipulation (for example, closed reduction of a dislocated hip after an orthopedic procedure).</li> <li>Invasive manipulation does not include wound packing or changing of wound packing materials as part of postoperative care.</li> <li>Routine flushing of catheters as part of the facility's standard care and maintenance is not considered invasive manipulation.</li> </ul> <ol style="list-style-type: none"> <li><b>Reporting instructions for post-operative infection scenarios:</b> 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.</li> </ol>
9 - 18	9 - 19	9 - 20	9 - 21	9 - 22



# Infection Present at Time of Surgery (PATOS)

## ■ SSI Event Reporting Instruction #3

3. **Infection present at time of surgery (PATOS):** PATOS is a YES/NO field found on the SSI event form. PATOS denotes there was evidence of infection visualized (seen) during the surgical procedure to which a 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.

# Infection Present at Time of Surgery (PATOS) – cont.

- A **YES/NO** field found on the SSI event form that denotes there was evidence of infection visualized (seen) during the surgical procedure to which a subsequent SSI is attributed.
  - An SSI must be identified within the surveillance period following an NHSN operative procedure to review for PATOS.
- Evidence of infection must be noted intraoperatively and documented within the narrative portion of the operative note/report of surgery (commonly labeled ‘procedure in detail’/‘description of procedure’ section).
  - NOT surgical narrative: Pre/post op diagnoses, ‘indication for surgery’ sections.
  - A 'Findings' section, if a reflection of what the surgeon 'sees' present at time of surgery, can be considered a 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

# SSI Attribution – Table 4

- SSI Event Reporting Instruction #9  
Table 4, page 9-23 of the SSI protocol:  
is used to determine SSI attribution  
since source of attribution is not clear.

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.

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	OVRV	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

# SSI following invasive manipulation or accession of the operative site

- 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 there is no suspicion or evidence of infection related to the surgical site/space.  
**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:**

- Suspicion or evidence of infection may include signs and symptoms of infection (for example, fever, abdominal pain) depending on the site of the procedure.
- 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.

# SSI Event Report

SAFETY NETWORK		www.cdc.gov/nhsn	
<b>Surgical Site Infection (SSI)</b>			
Page 1 of 4			
*required for saving **required for completion			
Facility ID:	Event #:		
*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: SSI	*Date of Event:		
*NHSN Procedure Code:	ICD-10-PCS or CPT Procedure Code:		
*Date of Procedure:	*Outpatient Procedure: Yes No		
*MDRO Infection Surveillance:			
<input type="checkbox"/> Yes, this infection's pathogen & location are in-plan for Infection Surveillance in the MDRO/CDI Module <input type="checkbox"/> No, this infection's pathogen & location are <b>not</b> in-plan for Infection Surveillance in the MDRO/CDI Module			
*Date Admitted to Facility:		Location:	
<b>Event Details</b>			
*Specific Event:			
<input type="checkbox"/> Superficial Incisional Primary (SIP)		<input type="checkbox"/> Deep Incisional Primary (DIP)	
<input type="checkbox"/> Superficial Incisional Secondary (SIS)		<input type="checkbox"/> Deep Incisional Secondary (DIS)	
<input type="checkbox"/> Organ/Space (specify site): _____			
*Infection present at the time of surgery (PATOS): <input type="checkbox"/> Yes <input type="checkbox"/> No			
*Specify Criteria Used (check all that apply):			
<u>Signs &amp; Symptoms</u>		<u>Laboratory</u>	
<input type="checkbox"/> Drainage or material <sup>†</sup>	<input type="checkbox"/> Sinus tract	<input type="checkbox"/> Organism(s) identified	
<input type="checkbox"/> Pain or tenderness	<input type="checkbox"/> Hypothermia	<input type="checkbox"/> Culture or non-culture based testing not performed	
<input type="checkbox"/> Swelling or inflammation	<input type="checkbox"/> Apnea	<input type="checkbox"/> Organism(s) identified from blood specimen	
<input type="checkbox"/> Erythema or redness	<input type="checkbox"/> Bradycardia	<input type="checkbox"/> Organism(s) identified from ≥ 2 periprosthetic specimens	
<input type="checkbox"/> Heat	<input type="checkbox"/> Lethargy	<input type="checkbox"/> Other positive laboratory tests <sup>†</sup>	
<input type="checkbox"/> Fever	<input type="checkbox"/> Cough	<input type="checkbox"/> Imaging test evidence of infection	
<input type="checkbox"/> Incision deliberately opened/drained	<input type="checkbox"/> Nausea		
<input type="checkbox"/> Wound spontaneously dehisces	<input type="checkbox"/> Vomiting		
<input type="checkbox"/> Abscess	<input type="checkbox"/> Dysuria	<u>Clinical Diagnosis</u>	
<input type="checkbox"/> Other evidence of infection found on invasive procedure, gross anatomic exam, or histopathologic exam <sup>†</sup>		<input type="checkbox"/> Physician diagnosis of this event type	
		<input type="checkbox"/> Physician institutes appropriate antimicrobial therapy <sup>†</sup>	

## Any Updates to the SSI Protocol on the Horizon?

- NHSN welcomes user feedback related to concerns with SSI criteria. User feedback is an importance step in identifying concerns around specific SSI criterion. NHSN takes all user feedback into consideration during the NHSN annual review process. There are specific SSI criterion concerns expressed across multiple reporting facilities which are currently under review. When criterion is updated/amended, updates are shared with all NHSN users through the NHSN communication system.



## Resources - cont.

- NHSN Surgical Site Infection (SSI) Events
  - <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/9pscSSIPcurrent.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](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>
  - Surgical Site Procedure Codes
    - <https://www.cdc.gov/nhsn/faqs/faq-ssi-proc-codes.html>

# For any questions or concerns, contact the NHSN Helpdesk using

- **NHSN-ServiceNow** to submit questions to the NHSN Help Desk. The new portal can be accessed at <https://servicedesk.cdc.gov/nhsncsp>.
- Users will be authenticated using CDC's Secure Access Management Services (SAMS) the same way you access NHSN.
- If you do not have a SAMS login, or are unable to access ServiceNow, you can still email the NHSN Help Desk at [nhsn@cdc.gov](mailto: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](mailto:cdcinfo@cdc.gov) Web: [www.cdc.gov](http://www.cdc.gov)

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

