Sailing through
Surgical Site Infection Event (SSI) Surveillance

Melissa Otis, BSN, RN

Rita Allen, MSN, RN, CIC

Samantha Holton, MPHTM, CIC

National Healthcare Safety Network (NHSN)

Protocol and Training Team

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Let’s move from the rough seas of SSI surveillance to smooth sailing

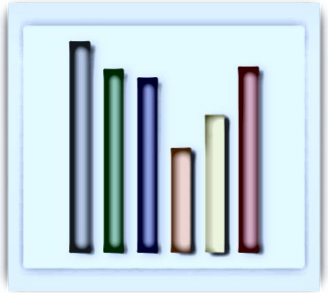
Objectives

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

- Understand key concepts of NHSN SSI surveillance and reporting
- Identify fundamental resources available to assist with SSI surveillance that are available within the NHSN Patient Safety Component Manual and recognize how to use these resources
- Apply the knowledge gained throughout this presentation to realistic case studies in order to effectively and accurately apply reporting instructions and identify SSI events

Background, Settings and Requirements

SSI Surveillance

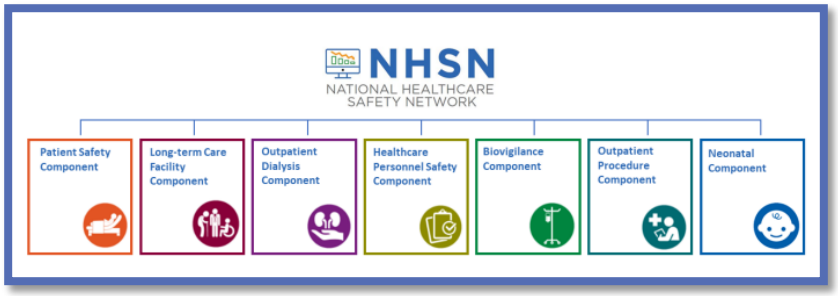


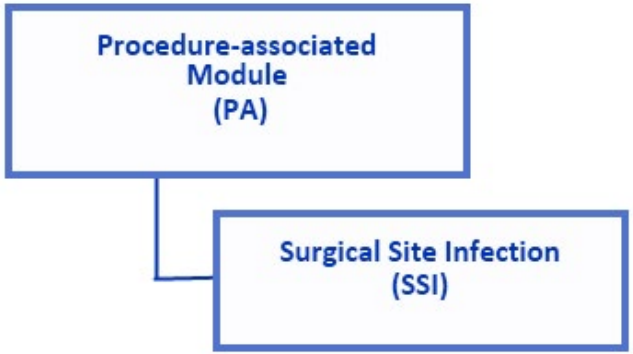
Why is it important to monitor for SSIs?

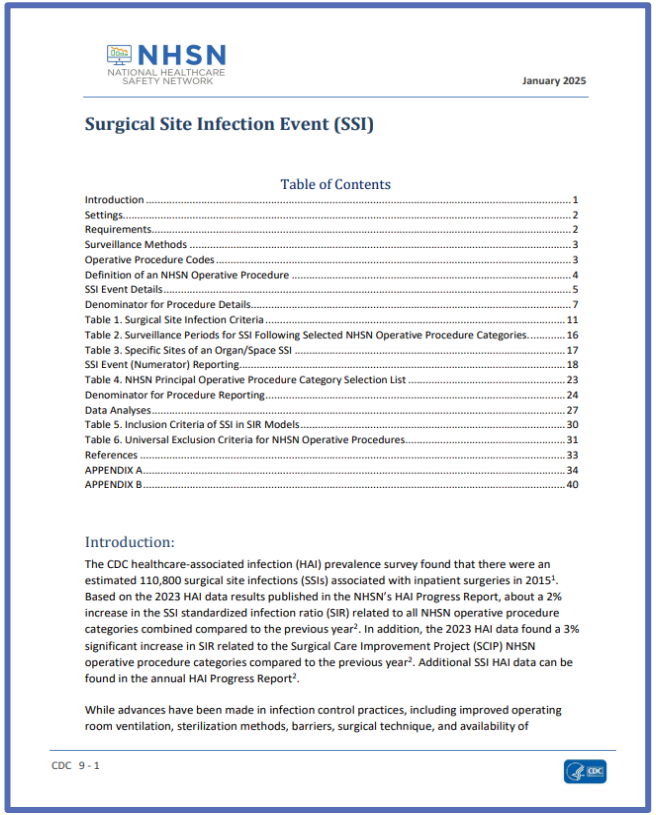
SSIs are a substantial cause of morbidity and mortality

- ❑Prolonged hospitalizations
- ❑Increased costs
- ❑Surveillance of SSI with feedback of data is important to reduce SSI risk

Where does SSI Surveillance Live Within the NHSN Patient Safety Component (PSC)?







NHSN
NATIONAL HEALTHCARE SAFETY NETWORK

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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 2023 HAI data results published in the NHSN's HAI Progress Report, about a 2% increase in the SSI standardized infection ratio (SIR) related to all NHSN operative procedure categories combined compared to the previous year[2]. In addition, the 2023 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[2]. Additional SSI HAI data can be found in the annual HAI Progress Report[2].

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

- SSI surveillance 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

- Perform surveillance for SSI following at least one NHSN operative procedure category (using the associated NHSN operative procedure codes) as indicated in the Patient Safety Monthly Reporting Plan [MRP] (CDC 57.106).

- Collect SSI event (numerator) and operative procedure (denominator) data on all procedures included in the selected operative procedure categories indicated on the facility's Monthly Reporting Plan.

Requirements [Continued]

- All procedures included in the NHSN Monthly Reporting Plan 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.

- SSI events and the procedures to which they are linked are reported to NHSN regardless of noted evidence of infection at time of surgery.

Key Points for SSI Reporting

- An SSI event is attributed to the facility in which the NHSN operative procedure is performed.
- The date of the procedure determines the protocol year to use with SSI surveillance.
- NHSN does not mandate reporting – facility decides what procedures to monitor [based on federal and/or state mandates, internal facility risk assessment, etc].

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

Procedure Code Category	ICD-10-PCS Codes	Procedure Code Descriptions	Code Status
AAA	04B00ZZ	Excision of Abdominal Aorta, Open Approach	No change
AAA	04B04ZZ	Excision of Abdominal Aorta, Percutaneous Endoscopic Approach	No change
AAA	04R007Z	Replacement of Abdominal Aorta with Autologous Tissue Substitute, Open Approach	No change
AAA	04R00JZ	Replacement of Abdominal Aorta with Synthetic Substitute, Open Approach	No change
AAA	04R00KZ	Replacement of Abdominal Aorta with Nonautologous Tissue Substitute, Open Approach	No change
AAA	04R047Z	Replacement of Abdominal Aorta with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	No change
AAA	04R04JZ	Replacement of Abdominal Aorta with Synthetic Substitute, Percutaneous Endoscopic Approach	No change
AAA	04R04KZ	Replacement of Abdominal Aorta with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	No change
AMP	0X600ZZ	Detachment at Right Forequarter, Open Approach	No change
AMP	0X610ZZ	Detachment at Left Forequarter, Open Approach	No change

Procedure Code Category	CPT Codes	Procedure Code Descriptions	Code Status
AAA	34830	Open repair of infrarenal aortic aneurysm or dissection, plus repair of associated arterial trauma, following unsuccessful endovascular repair; tube prosthesis	No Change
AAA	34831	Open repair of infrarenal aortic aneurysm or dissection, plus repair of associated arterial trauma, following unsuccessful endovascular repair; aorto-bi-iliac prosthesis	No Change
AAA	34832	Open repair of infrarenal aortic aneurysm or dissection, plus repair of associated arterial trauma, following unsuccessful endovascular repair; aorto-bifemoral prosthesis	No Change
AAA	35081	Direct repair of aneurysm, pseudoaneurysm, or excision (partial or total) and graft insertion, with or without patch graft; for aneurysm, pseudoaneurysm, and associated occlusive disease, abdominal aorta	No Change
AAA	35082	Direct repair of aneurysm, pseudoaneurysm, or excision (partial or total) and graft insertion, with or without patch graft; for ruptured aneurysm, abdominal aorta	No Change
AAA	35091	Direct repair of aneurysm, pseudoaneurysm, or excision (partial or total) and graft insertion, with or without patch graft; for aneurysm, pseudoaneurysm, and associated occlusive disease, abdominal aorta involving visceral vessels (mesenteric, celiac, renal)	No Change
AAA	35092	Direct repair of aneurysm, pseudoaneurysm, or excision (partial or total) and graft insertion, with or without patch graft; for ruptured aneurysm, abdominal aorta involving visceral vessels (mesenteric, celiac, renal)	No Change

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.

https://www.cdc.gov/nhsn/psc/ssi/index.html

NHSN Operative Procedure Categories

- Based on the operative procedure code(s) assigned, you will determine the operative procedure category.

- Table 2, page 9-16 SSI protocol identifies the 39 NHSN operative procedure categories eligible for SSI surveillance.

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.

The NHSN Operative Procedure: Key Points

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 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.

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. Surveillance period ends for tissue levels entered during the procedure. Surveillance continues for tissue levels not entered.

Knowledge Check #1

Which of the following is **not** required in order to meet the definition of an NHSN operative procedure?

A. 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).

B. 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.

C. Must be an inpatient operative procedure

D. Must have an ICD-10-PCS and/or CPT that is included in the NHSN operative procedure code mapping.

Knowledge Check #1 – Answer & Rationale

Which of the following is **not** required in order to meet the definition of an NHSN operative procedure?

A. 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).

B. 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.

C. Must be an inpatient operative procedure

D. Must have an ICD-10-PCS and/or CPT that is included in the NHSN operative procedure code mapping.

Rationale:

Inpatient/Outpatient status is not used to determine if a procedure meets the definition of an NHSN qualifying operative procedure

Denominator for Procedure Details

Required Procedure Details:

- Outpatient Status
- Wound Class
- Trauma Status
- Duration
- General Anesthesia
- Diabetes Status
- Closure Technique
- Height
- Weight

In addition, there are some conditionally required fields:

CSEC: Duration of Labor

FUSN: Spinal Level and Approach

HPRO and KPRO: Additional Procedure Details

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 for Procedure Reporting Instructions

- **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: #1 and #2

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.

Knowledge Check #2

An NHSN qualifying COLO, SB and REC are performed during a single operative episode through the same incision. Your facility includes all 39 operative procedure categories in your Monthly Reporting Plan. Which operative procedure(s) would be reported in your denominator for procedure form?

A. COLO, SB and REC
B. SB
C. COLO
D. REC
E. SB and REC

Knowledge Check #2 – Answer & Rationale

An NHSN qualifying COLO, SB and REC are performed during a single operative episode through the same incision. Your facility includes all 39 operative procedure categories in your Monthly Reporting Plan. Which operative procedure(s) would be reported in your denominator for procedure form?

A. COLO, SB and REC

B. SB

C. COLO

D. REC

E. SB and REC

Per Denominator for Procedure reporting instruction #1: 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.

Denominator for Procedure Reporting Instructions: #3, #4 and #5

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."

Denominator for Procedure 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:

   - 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, 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.

Denominator for Procedure Reporting Instructions: #7 and #8

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. Do not report the CARD procedure in your denominator data.

    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.
    - If the ASA class has changed in the second procedure, report the higher ASA class.
    - The surveillance period for the procedure reported begins at the completion of the second 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.

Knowledge Check #3

An NHSN qualifying CSEC is performed on 2/1/25 [start time 1835, end time 1918]. The patient develop a post-operative bleed and returns to the OR for an NHSN qualifying HYST on 2/2/25 [start time 0947, end time 1102]. Which procedure(s) are reported on your denominator for procedure form?

A. CSEC
B. CSEC and HYST
C. HYST

Knowledge Check #3 – Answer & Rationale

An NHSN qualifying CSEC is performed on 2/1/25 [start time 1835, end time 1918]. The patient develop a post-operative bleed and returns to the OR for an NHSN qualifying HYST on 2/2/25 [start time 0947, end time 1102]. Which procedure(s) are reported on your denominator for procedure form?

A. CSEC

B. CSEC and HYST

C. HYST

Per Denominator for Procedure reporting instruction #7: 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.

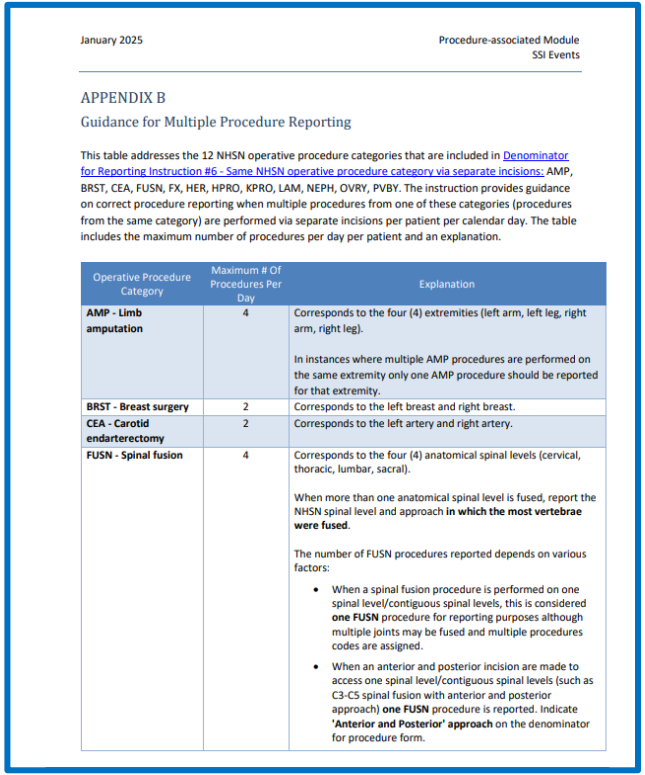
Denominator for Procedure Reporting Instruction: #9

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

- **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.



APPENDIX B

Guidance for Multiple Procedure Reporting

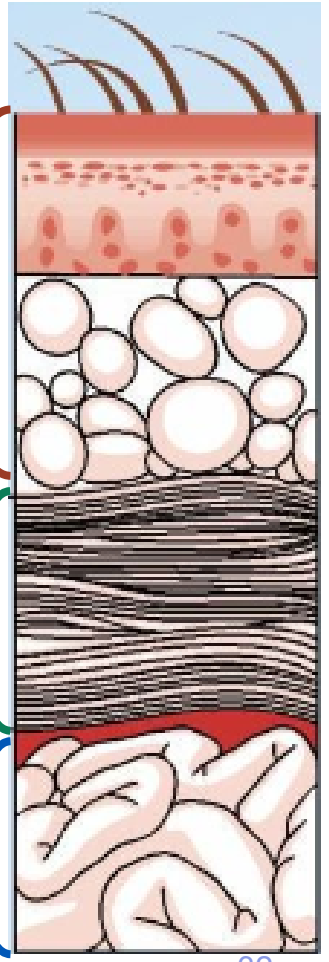
This table addresses the 12 NHSN operative procedure categories that are included in Denominator for Reporting Instruction #6 - Same NHSN operative procedure category via separate incisions: AMP, BRST, CEA, FUSN, FX, HER, HPRO, KPRO, LAM, NEPH, OVRY, PVBY. The instruction provides guidance on correct 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 number 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.

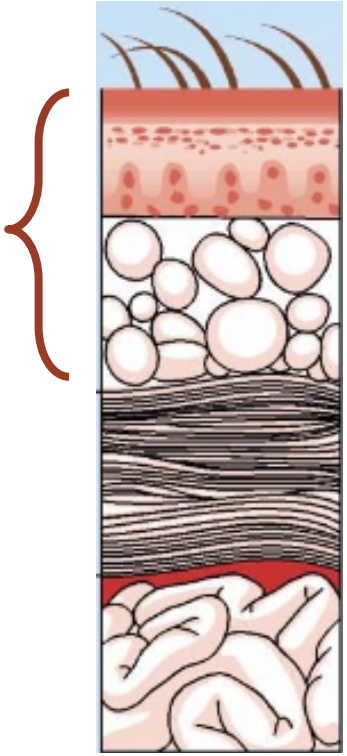
Numerator: The SSI Event

SSI: Three Tissue Levels

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



Superficial Incisional SSI



Criterion	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 or re-accessed 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 for Superficial incisional SSI	**The following do not qualify as criteria for meeting the NHSN definition of superficial incisional SSI:** • Diagnosis/treatment of cellulitis 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. **Notes**: • 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. • 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.

Two types of Superficial Incisional SSIs: SIP and SIS

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

Example:
COLO incision or chest incision for CBGB).

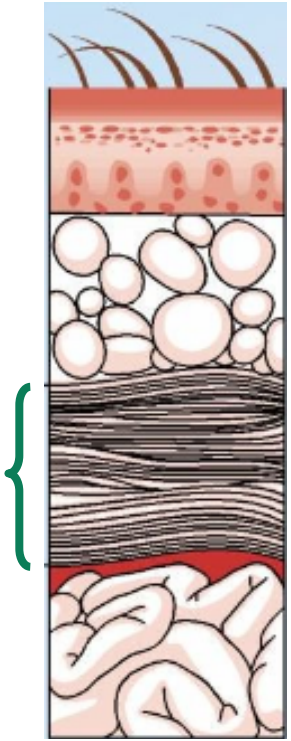
Superficial Incisional Secondary (SIS)

A superficial incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision

Example:
Saphenous vein harvest incision site for CBGB

Sites with eligible secondary incisions:
BRST, CBGB, CEA, FUSN, PVBY, REC, and VS
(See SSI Event Reporting Instruction #7)

Deep Incisional SSI



	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*, re-accessed, 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 **Excludes any known multi-part/multi-phase procedures that occur over more than one operative episode [during the same admission] that is documented in the medical record by a surgeon prior to first phase of the procedure.* **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).

Knowledge Check #4

Which tissue level involves the deep tissues including the muscle and/or fascia?

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

Knowledge Check #4 – Answer & Rationale

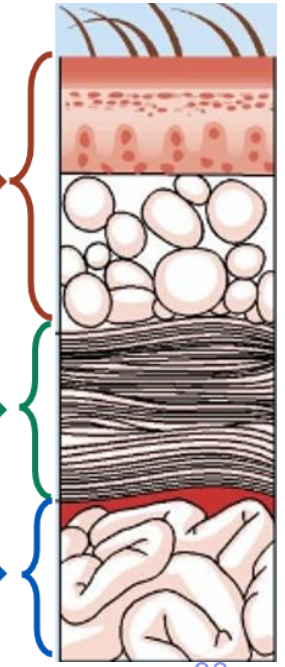
Which tissue level involves the muscle and/or fascia?

A. Organ/Space

B. Superficial Incisional

C. Deep Incisional

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



Two types of Deep Incisional SSIs: DIP and DIS

Deep Incisional Primary (DIP)

A deep incisional SSI that is identified in the primary incision in a patient that has had an operation with one or more incisions

Example:

COLO incision or chest incision for CBGB).

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

Example:

Saphenous vein harvest incision site for CBGB

Sites with eligible secondary incisions:

BRST, CBGB, CEA, FUSN, PVBY, REC, and VS

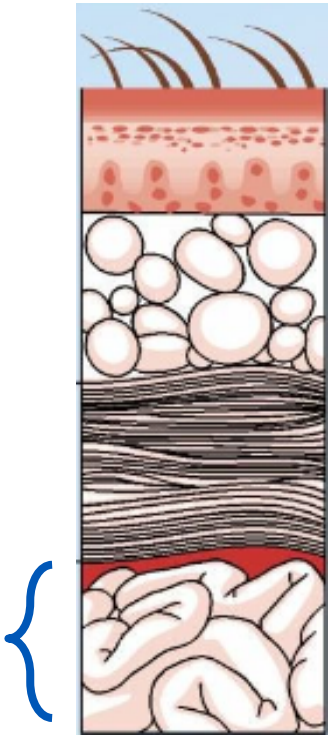
(see SSI event Reporting Instruction #7)

Deep Incisional SSI ‘b’

- The following statement has been added to the Deep Incisional SSI ‘b’ criterion:

  Excludes any known multi-part/multi-phase procedures that occur over more than one operative episode [during the same admission] that is documented in the medical record by a surgeon prior to first phase of the procedure.

Organ/Space SSI



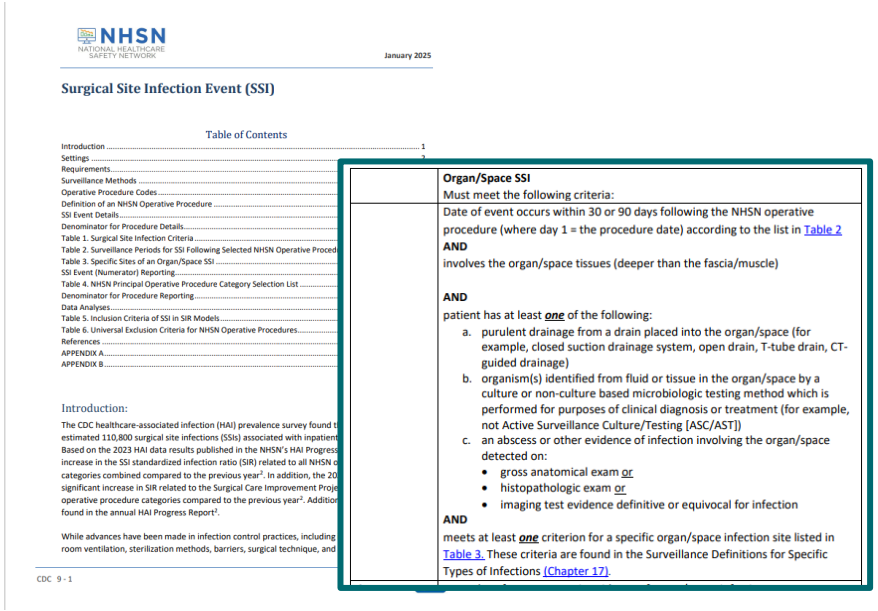
	Organ/Space SSI Must meet the following criteria:
	Date of event occurs within 30 or 90 days following the NHSN operative procedure (where day 1 = the procedure date) according to the list in Table 2 **AND** involves the organ/space tissues (deeper than the fascia/muscle) **AND** patient has at least ***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

Comments	Examples of gross anatomic evidence of organ/space infection: • An intraabdominal abscess will require an invasive procedure to actually visualize the abscess. • Visualization of pus or purulent drainage (includes from a drain). • 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 general Organ/Space SSI criterion 'c' **when a Chapter 17 Reproductive Tract Infection criteria is met**. Allowing the documentation of abdominal pain or tenderness as gross anatomic evidence of infection to meet general Organ/Space SSI criterion 'c' enables the user to report an SSI-OREP, SSI-EMET or SSI-VCUF event. 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').

Organ/Space SSI

- **General Organ/Space criterion <u>AND</u> applicable Chapter 17 site-specific criterion must be met to fully meet Organ/Space SSI criteria**



NHSN
NATIONAL HEALTHCARE SAFETY NETWORK

January 2025

Surgical Site Infection Event (SSI)

Table of Contents

Introduction:

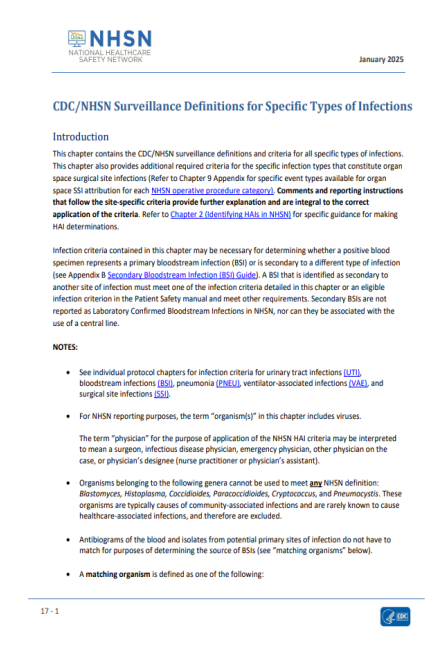
The CDC healthcare-associated infection (HAI) prevalence survey found t
estimated 110,800 surgical site infections (SSIs) associated with inpatient
Based on the 2023 HAI data results published in the NHSN's HAI Progress
increase in the SSI standardized infection ratio (SIR) related to all NHSN c
categories combined compared to the previous year[3]. In addition, the 20
significant increase in SIR related to the Surgical Care Improvement Proje
operative procedure categories compared to the previous year[2]. Addition
found in the annual HAI Progress Report[3].

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

CDC 9 - 1

	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 the organ/space tissues (deeper than the fascia/muscle) **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



NHSN
NATIONAL HEALTHCARE SAFETY NETWORK

January 2025

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.

  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: *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:

17 - 1

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

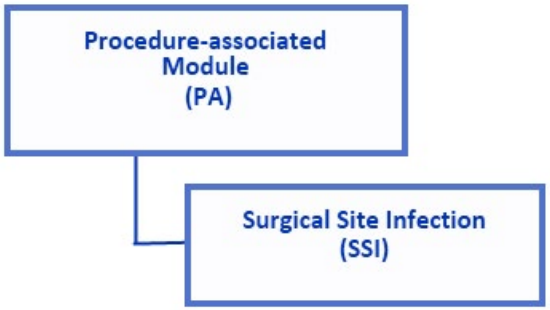
- **SSI events are limited to the specific site types outlined in Appendix A for each procedure category.**
- **Starts pg. 9-33 SSI protocol.**
- **If an eligible event type occurs within the surveillance period following an NHSN operative procedure the event is attributed to that procedure.**

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

SSI – Procedure-associated Module



- **Chapter 2 terms <u>not</u> applicable to SSI:**
  - Infection window period (IWP)
  - Present on admission (POA)
  - Healthcare-associated infection (HAI)
  - Repeat infection timeframe (RIT)

DOES **<u>NOT</u>** APPLY TO SSI SURVEILLANCE

- **SSI protocol uses terms:**
  - Date of Event (DOE)
  - Secondary BSI Attribution Period

DOES APPLY TO SSI SURVEILLANCE

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 historically, all elements used to meet an SSI criterion generally occur within a 7-10 day timeframe. To ensure that all elements associate to the SSI, the elements must be relational to one another. Each case differs based on the individual elements occurring and the type of SSI but the DOE for an SSI must occur within the appropriate 30- or 90-day SSI surveillance period.
- **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.**

Knowledge Check #5

An NHSN qualifying CARD procedure is performed on 1/20/25. On 2/14/25 the patient calls the surgeon's office with complaints of redness at the incision with purulent drainage and states she has a fever of 101.1° F. She is seen by the surgeon on 2/15/25 and the decision is made to return to the OR. During the return to OR on 2/16/25 a culture is taken of the bone and S. aureus is identified. Is there an SSI reported and if so, what is the criterion met and the Date of Event [DOE] that is reported?

A. Superficial Incisional SSI with DOE 2/14/25
B. No SSI is reported
C. Organ/Space SSI – BONE is met with DOE 2/14/25
D. Organ/Space SSI – BONE is met with DOE 2/16/25

Knowledge Check #5 – Answer & Rationale

An NHSN qualifying CARD procedure is performed on 1/20/25. On 2/14/25 the patient calls the surgeon's office with complaints of redness at the incision with purulent drainage and states she has a fever of 101.1° F. She is seen by the surgeon on 2/15/25 and the decision is made to return to the OR. During the return to OR on 2/16/25 a culture is taken of the bone and S. aureus is identified. Is there an SSI reported and if so, what is the criterion met and the Date of Event [DOE] that is reported?

A. Superficial Incisional SSI with DOE 2/14/25
B. No SSI is reported
C. Organ/Space SSI – BONE is met with DOE 2/14/25
D. Organ/Space SSI – BONE is met with DOE 2/16/25

The Date of Event [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. Superficial incisional SSI 'a' is met on 2/14/25 [DOE 2/14/25]. On 2/16/25 both general organ/space 'b' and BONE '1' are met [DOE 2/16/25]. Because the deepest tissue level that SSI criteria are met is the organ/space level, the O/S SSI – BONE is reported.

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

	Secondary BSI Attribution Period
10	
11	
12	
13	DOE for an SSI
14	
15	
16	
17	
18	
19	
20	
21	
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24	
25	
26	

Secondary BSI Guide

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

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

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

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

Secondary BSI:

Scenario 2 Example

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 from the NHSN Terminology Browser.
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 from the NHSN Terminology Browser.
   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 or physician designee 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 or physician designee documentation of antimicrobial treatment for gastrointestinal tract infection.

** With no other recognized cause*

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 include:**
  - An intraabdominal abscess will require an invasive procedure to actually visualize the abscess.
  - Visualization of pus or purulent drainage (includes from a drain).
  - 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 general 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.

Knowledge Check #6

Which of the following is **NOT** considered gross anatomic evidence of infection?

A. Yellow, cloudy drainage at the superficial incisional site
B. An abscess seen during a return to OR in the intraabdominal space
C. Pus visualized at the superficial incisional site
D. Milky, green drainage seen at the superficial incisional site

Knowledge Check #6 – Answer & Rationale

Which of the following is **NOT** considered gross anatomic evidence of infection?

A. **Yellow, cloudy drainage at the superficial incisional site**
B. An abscess seen during a return to OR in the intraabdominal space
C. Pus visualized at the superficial incisional site
D. Milky, green drainage seen at the superficial incisional site

Abscess and pus are both considered gross anatomic evidence of infection. In addition, NHSN considers Documentation that uses an eligible color descriptor and a consistency descriptor in combination is acceptable to indicate 'purulence'.

Color: Green, yellow

Consistency: Milky, thick, creamy, opaque, viscous

Therefore, the documentation of milky, green drainage is considered purulence [evidence of infection]. However, cloudy is not an eligible descriptor and therefore, yellow, cloudy drainage is considered purulence.

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: #1 and #2

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).

SSI Event Reporting Instruction: #3 [PATOS]

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.

   b) Examples of verbiage that is considered evidence of infection include but are not limited to: abscess, infection, purulence/pus, phlegmon, osteomyelitis, or "feculent peritonitis". A ruptured/perforated appendix is evidence of infection at the organ/space level.

   c) Examples of verbiage that is **not** considered evidence of infection include but are not limited to: colon perforation, contamination, necrosis, gangrene, fecal spillage, nicked bowel during procedure, murky fluid, or documentation of inflammation.

   d) The use of the ending "itis" in an operative note/report of surgery does not automatically meet PATOS, as it may only reflect inflammation which is not infectious in nature (for example, diverticulitis, peritonitis, and appendicitis).

   e) Pathology report findings and imaging test findings cannot be used for PATOS determination.

   f) Identification of an organism using culture or non-culture based microbiologic testing method or on a pathology report from a surgical specimen cannot be used for PATOS determination.

   g) Wound class assignment cannot be used for PATOS determination.

   h) Trauma resulting in a contaminated case does not automatically meet the PATOS requirement. For example, a fresh gunshot wound to the abdomen may be a trauma with a high wound class but there would not be time for infection to develop.

- 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

Knowledge Check #7

When it comes to PATOS, which of the following is true [select all that apply]?

A. PATOS is a question on the procedure for denominator form
B. PATOS is a question on the SSI event form
C. If an abscess is visualized at the superficial tissue level ONLY – the PATOS = YES for a subsequent SSI of the organ/space tissue level
D. A wound class ‘D’ [Dirty/Infected] would meet the PATOS definition at the all tissue levels
E. Trauma cases are always PATOS = YES
F. Feculent peritonitis would be PATOS = YES at the organ/space tissue level

Knowledge Check #7 – Answer & Rationale

When it comes to PATOS, which of the following is true [select all that apply]?

A. PATOS is a question on the procedure for denominator form
B. PATOS is a question on the SSI event form
C. If an abscess is visualized at the superficial tissue level ONLY – the PATOS = YES for a subsequent SSI of the organ/space tissue level
D. A wound class 'D' [Dirty/Infected] would meet the PATOS definition at the all tissue levels
E. Trauma cases are always PATOS = YES
F. Feculent peritonitis would be PATOS = YES at the organ/space tissue level

PATOS is a question found on the SSI event form ONLY and is not found on the procedure for denominator form. The PATOS question on the SSI event form is answered based on evidence of infection that is seen at the same tissue level as the subsequent SSI that is identified. Wound class and trauma status are not eligible for use to meet PATOS. Feculent peritonitis is considered evidence of infection at the organ/space tissue level.

SSI Event Reporting Instructions: #4 and #5

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. The DOE assigned is the date of the first element used to meet the SSI criteria at the deepest tissue level that is met.
    - 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 a patient meets criteria for a deep incisional SSI on day 10 of the SSI surveillance period and a week later (day 17 of the SSI surveillance period) the patient meets criteria for an organ space SSI, the DOE assigned is the date of the organ/space SSI.

5. **Attributing SSI to a NHSN procedure when several are performed on different dates:** When a patient has several NHSN operative procedures performed on different dates, attribute the SSI to the most recently performed NHSN operative procedure.

    Note: For multiple NHSN operative procedures performed within a 24 hour period, see Denominator Reporting Instruction #7.

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).

SSI Event Reporting Instructions: #7

7. **Attributing SSI to NHSN operative procedures that have secondary incision sites**: Certain procedures can involve secondary incisions (specifically, BRST, CBGB, CEA, FUSN, PVBY, REC, and VSHN). Secondary incision sites are monitored for Superficial Incisional Secondary (SIS) SSI and Deep Incisional Secondary (DIS) SSI. 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, although up to two SSI events can be reported linked to the procedure (a primary incision site SSI and a secondary incision site SSI). 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.

SSI Event Reporting Instruction: #8 and #9

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

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, 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.

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	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

SSI Event Reporting Instruction: #10 [Invasive Manipulation]

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.

Knowledge Check #8

When it comes to the invasive manipulation reporting instruction [#10], signs/symptoms such as fever or pain are considered evidence of infection?

A. True
B. False

Knowledge Check #8 – Answer & Rationale

When it comes to the invasive manipulation reporting instruction [#10], signs/symptoms such as fever or pain are considered evidence of infection?

A. True

B. False

Signs/symptoms of infection, such as fever or pain are considered evidence of infection that therefore, if these are present, then the first bullet of the Invasive Manipulation reporting instruction is not met and this reporting instruction IS NOT applied.

- 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.

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.

What's on the horizon for NHSN SSI Surveillance?

Deep Incisional SSI ‘b’ and Superficial Incisional SSI ‘c’?

- **<u>WE HAVE HEARD YOUR FEEDBACK about Deep Incisional SSI ‘b’ and Superficial Incisional SSI ‘c’</u>**
- **We are currently in the process of taking a comprehensive review of these criteria and will be working to improve these definitions.**

Deep Incisional SSI ‘b’ and Superficial Incisional SSI ‘c’?

- **We appreciate your patience as we work to improve DI SSI ‘b’ and SI SSI ‘c’**

Case Studies

Scenario #1

A patient presents to the hospital for an abdominal hysterectomy (HYST) on 8/6. The narrative of the operative note includes documentation of visualized purulence in the pelvic space. Two days later, on 8/8, the patient reports abdominal pain and is noted to be febrile at 39°C. A CT abdomen/pelvis is ordered on 8/9 with the following findings: 'Post-surgical changes status post hysterectomy. Fluid collections in both the pelvis and abdomen, suspicious for abscess. No free air.' The patient is started on Zosyn 8/9.

Scenario #1, Question #1

A patient presents to the hospital for an abdominal hysterectomy (HYST) on 8/6. The narrative of the operative note includes documentation of visualized purulence in the pelvic space. Two days later, on 8/8, the patient reports abdominal pain and is noted to be febrile at 39°C. A CT abdomen/pelvis is ordered on 8/9 with the following findings: 'Post-surgical changes status post hysterectomy. Fluid collections in both the pelvis and abdomen, suspicious for abscess. No free air.' The patient is started on Zosyn 8/9.

1/1. Are any SSI Definitions met?

a. Yes – O/S SSI 'c' – OREP-3b
b. Yes – O/S SSI 'c' – EMET-2
c. Yes – O/S SSI 'c' – IAB-3b
d. No SSI identified

Scenario #1, Question #1, Answer

A patient presents to the hospital for an abdominal hysterectomy (HYST) on 8/6. The narrative of the operative note includes documentation of visualized purulence in the pelvic space. Two days later, on 8/8, the patient reports abdominal pain and is noted to be febrile at 39°C. A CT abdomen/pelvis is ordered on 8/9 with the following findings: 'Post-surgical changes status post hysterectomy. Fluid collections in both the pelvis and abdomen, suspicious for abscess. No free air.' The patient is started on Zosyn 8/9.

1/1. Are any SSI Definitions met?

a. **Yes – O/S SSI 'c' – OREP-3b**
b. Yes – O/S SSI 'c' – EMET-2
c. Yes – O/S SSI 'c' – IAB-3b
d. No SSI identified

Scenario #1, Question #1, Rationale

A patient presents to the hospital for an abdominal hysterectomy (HYST) on 8/6. The narrative of the operative note includes documentation of visualized purulence in the pelvic space. Two days later, on 8/8, the patient reports abdominal pain and is noted to be febrile at 39°C. A CT abdomen/pelvis is ordered on 8/9 with the following findings: 'Post-surgical changes status post hysterectomy. Fluid collections in both the pelvis and abdomen, suspicious for abscess. No free air.' The patient is started on Zosyn 8/9.

- **Appendix A lists the specific event types available for SSI attribution by NHSN procedure category**

HYST - Abdominal hysterectomy	DIP - Deep Incisional Primary IAB - Intraabdominal, not specified elsewhere OREP - Deep pelvic tissue infection or other infection of the male or female reproductive tract SIP - Superficial Incisional Primary VCUF - Vaginal cuff infection

Scenario #1, Question #1, Rationale

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 the organ/space tissues (deeper than the fascia/muscle)

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 one of the specified OREP sites (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 or physician designee initiates antimicrobial therapy within ***two*** days of onset or worsening of symptoms.

** With no other recognized cause*

Scenario #1, Question #2

A patient presents to the hospital for an abdominal hysterectomy (HYST) on 8/6. The narrative of the operative note includes documentation of visualized purulence in the pelvic space. Two days later, on 8/8, the patient reports abdominal pain and is noted to be febrile at 39°C. A CT abdomen/pelvis is ordered on 8/9 with the following findings: 'Post-surgical changes status post hysterectomy. Fluid collections in both the pelvis and abdomen, suspicious for abscess. No free air.' The patient is started on Zosyn 8/9.

1/2: What is the date of event (DOE)?

a. 8/8
b. 8/9
c. 8/10

Scenario #1, Question #2 Answer & Rationale

A patient presents to the hospital for an abdominal hysterectomy (HYST) on 8/6. The narrative of the operative note includes documentation of visualized purulence in the pelvic space. Two days later, on 8/8, the patient reports abdominal pain and is noted to be febrile at 39°C. A CT abdomen/pelvis is ordered on 8/9 with the following findings: 'Post-surgical changes status post hysterectomy. Fluid collections in both the pelvis and abdomen, suspicious for abscess. No free air.' The patient is started on Zosyn 8/9.

1/2: What is the date of event (DOE)?

a. 8/8

b. 8/9

c. 8/10

Scenario #1, Question #2 Rationale

A patient presents to the hospital for an abdominal hysterectomy (HYST) on 8/6. The narrative of the operative note includes documentation of visualized purulence in the pelvic space. Two days later, on 8/8, the patient reports abdominal pain and is noted to be febrile at 39°C. A CT abdomen/pelvis is ordered on 8/9 with the following findings: 'Post-surgical changes status post hysterectomy. Fluid collections in both the pelvis and abdomen, suspicious for abscess. No free air.' The patient is started on Zosyn 8/9.

Examples of gross anatomic evidence of organ/space infection:

- An intraabdominal abscess will require an invasive procedure to actually visualize the abscess.
- Visualization of pus or purulent drainage (includes from a drain).
- 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 general Organ/Space SSI criterion 'c' **when a Chapter 17 Reproductive Tract Infection criteria is met**. Allowing the documentation of abdominal pain or tenderness as gross anatomic evidence of infection to meet general Organ/Space SSI criterion 'c' enables the user to report an SSI-OREP, SSI-EMET or SSI-VCUF event. 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').

Scenario #1, Question #3

A patient presents to the hospital for an abdominal hysterectomy (HYST) on 8/6. The narrative of the operative note includes documentation of visualized purulence in the pelvic space. Two days later, on 8/8, the patient reports abdominal pain and is noted to be febrile at 39*C. A CT abdomen/pelvis is ordered on 8/9 with the following findings: 'Post-surgical changes status post hysterectomy. Fluid collections in both the pelvis and abdomen, suspicious for abscess. No free air.' The patient is started on Zosyn 8/9.

1/3. Is the SSI reported as PATOS?

a. PATOS = Yes
b. PATOS = No
c. No SSI is reported, because this meets PATOS definition, which excludes the SSI from reporting.

Scenario #1, Question #3 Answer & Rationale

A patient presents to the hospital for an abdominal hysterectomy (HYST) on 8/6. The narrative of the operative note includes documentation of visualized purulence in the pelvic space. Two days later, on 8/8, the patient reports abdominal pain and is noted to be febrile at 39*C. A CT abdomen/pelvis is ordered on 8/9 with the following findings: 'Post-surgical changes status post hysterectomy. Fluid collections in both the pelvis and abdomen, suspicious for abscess. No free air.' The patient is started on Zosyn 8/9.

1/3. Is the SSI reported as PATOS?

a. **PATOS = Yes**
b. PATOS = No
c. No SSI is reported, because this meets PATOS definition, which excludes the SSI from reporting.

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).

Scenario #2

A 54-year-old patient with history of MRSA and other MDROs presents to the emergency room with diffuse abdominal pain on 3/3. CT and abdominal exam are suggestive of ruptured appendix and abscesses. The patient is taken to the OR emergently. Surgical procedures coded are COLO and APPY. A ruptured appendix is indeed identified during the surgical procedure, with purulence within the abdominal cavity, which is documented in the narrative of the operative note. The provider documents the need for re-exploration in two to three days, and leaves the incision partially open, with wound vac applied. On 3/5 patient complains of abdominal pain. Purulent drainage from superficial tissue level of the incision is documented. On 3/6 the patient is taken back to the OR for re-exploration and wound closure (non-NHSN operative procedure). No cultures are collected. Patient is started on Meropenem.

Scenario #2, Question #1

A 54-year-old patient with history of MRSA and other MDROs presents to the emergency room with diffuse abdominal pain on 3/3. CT and abdominal exam are suggestive of ruptured appendix and abscesses. The patient is taken to the OR emergently. Surgical procedures coded are COLO and APPY. A ruptured appendix is indeed identified during the surgical procedure, with purulence within the abdominal cavity, which is documented in the narrative of the operative note. The provider documents the need for re-exploration in two to three days, and leaves the incision partially open, with wound vac applied. On 3/5 patient complains of abdominal pain. Purulent drainage from superficial tissue level of the incision is documented. On 3/6 the patient is taken back to the OR for re-exploration and wound closure (non-NHSN operative procedure). No cultures are collected. Patient is started on Meropenem.

2/1. COLO and APPY are on the facility's Monthly Reporting Plan. Which procedure(s) are reported for 3/3?

a. Both COLO and APPY are reported.

b. Only the APPY procedure is reported, because the APPY was the primary reason for the trip to the OR.

c. No procedures are reported, because PATOS is met.

Scenario #2, Question #1, Answer

A 54-year-old patient with history of MRSA and other MDROs presents to the emergency room with diffuse abdominal pain on 3/3. CT and abdominal exam are suggestive of ruptured appendix and abscesses. The patient is taken to the OR emergently. Surgical procedures coded are COLO and APPY. A ruptured appendix is indeed identified during the surgical procedure, with purulence within the abdominal cavity, which is documented in the narrative of the operative note. The provider documents the need for re-exploration in two to three days, and leaves the incision partially open, with wound vac applied. On 3/5 patient complains of abdominal pain. Purulent drainage from superficial tissue level of the incision is documented. On 3/6 the patient is taken back to the OR for re-exploration and wound closure. No cultures are collected. Patient is started on Meropenem.

2/1. APPY and XLAP are on the facility's Monthly Reporting Plan. Which procedures are reported for 3/3?

a. **Both COLO and APPY are reported.**

b. Only the APPY procedure is reported, because the APPY was the primary reason for the trip to the OR.

c. No procedures are reported, because PATOS is met.

Scenario #2, Question #1, Rationale (page 9-24, 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.

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.

Bonus Question – How do I know if this is an NHSN operative procedure?

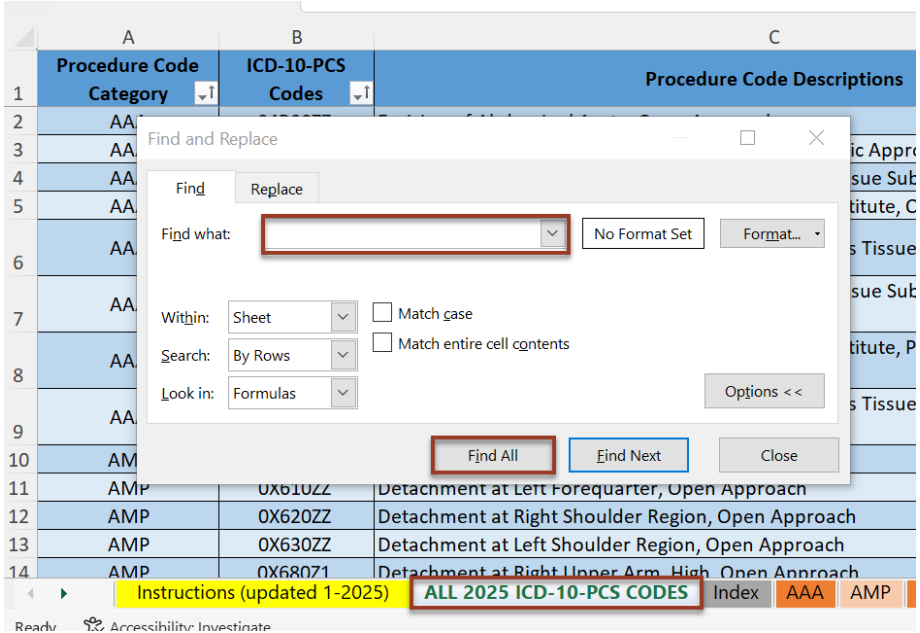
An NHSN Operative Procedure is a procedure:

- 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[11]. This may include an operating room, C-section room, interventional radiology room, or a cardiac catheterization lab.

- Procedure descriptions are not used to identify NHSN operative procedures.

Bonus Question – How do I know if this is an NHSN operative procedure?

- Use operative procedure codes assigned by your facility's coding department (ICD-10-PCS or CPT codes), cross reference with NHSN operative procedure code documents.
- https://www.cdc.gov/nhsn/xls/icd10-pcs-pcm-nhsn-opc.xlsx
- https://www.cdc.gov/nhsn/xls/cpt-pcm-nhsn.xlsx



Scenario #2, Question #2

A 54-year-old patient with history of MRSA and other MDROs presents to the emergency room with diffuse abdominal pain on 3/3. CT and abdominal exam are suggestive of ruptured appendix and abscesses. The patient is taken to the OR emergently. Surgical procedures coded are COLO and APPY. A ruptured appendix is indeed identified during the surgical procedure, with purulence within the abdominal cavity, which is documented in the narrative of the operative note. The provider documents the need for re-exploration in two to three days, and leaves the incision partially open, with wound vac applied. On 3/5 patient complains of abdominal pain. Purulent drainage from superficial tissue level of the incision is documented. On 3/6 the patient is taken back to the OR for re-exploration and wound closure (non-NHSN operative procedure). No cultures are collected. Patient is started on Meropenem.

2/2. Does the scenario meet Superficial SSI definitions on 3/5?

a. No. The incision wasn't closed. No SSI is identified.

b. No. It meets definition for PATOS, so no SSI is identified.

c. Yes. Purulence at the superficial tissue level.

d. No. There were no cultures collected. A positive culture is needed to meet SSI definitions.

Scenario #2, Question #2, Answer

A 54-year-old patient with history of MRSA and other MDROs presents to the emergency room with diffuse abdominal pain on 3/3. CT and abdominal exam are suggestive of ruptured appendix and abscesses. The patient is taken to the OR emergently. Surgical procedures coded are COLO and APPY. A ruptured appendix is indeed identified during the surgical procedure, with purulence within the abdominal cavity, which is documented in the narrative of the operative note. The provider documents the need for re-exploration in two to three days, and leaves the incision partially open, with wound vac applied. On 3/5 patient complains of abdominal pain. Purulent drainage from superficial tissue level of the incision is documented. On 3/6 the patient is taken back to the OR for re-exploration and wound closure (non-NHSN operative procedure). No cultures are collected. Patient is started on Meropenem.

2/2. Does the scenario meet Superficial SSI definitions on 3/5?

a. No. The incision wasn't closed. No SSI is identified.

b. No. It meets definition for PATOS, so no SSI is identified.

c. <u>Yes. Purulence at the superficial tissue level.</u>

d. No. There were no cultures collected. A positive culture is needed to meet SSI definitions.

Scenario #2, Question #2, Rationale

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 or re-accessed 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

2/2. Does the scenario meet Superficial SSI definitions on 3/5?

a. No. The incision wasn't closed. No SSI is identified.

b. No. It meets definition for PATOS, so no SSI is identified.

c. <u>Yes. Purulence at the superficial tissue level.</u>

d. No. There were no cultures collected. We need a positive culture to meet SSI definitions.

Scenario #2, Question #3

A 54-year-old patient with history of MRSA and other MDROs presents to the emergency room with diffuse abdominal pain on 3/3. CT and abdominal exam are suggestive of ruptured appendix and abscesses. The patient is taken to the OR emergently. Surgical procedures coded are COLO and APPY. A ruptured appendix is indeed identified during the surgical procedure, with purulence within the abdominal cavity, which is documented in the narrative of the operative note. The provider documents the need for re-exploration in two to three days, and leaves the incision partially open, with wound vac applied. On 3/5 patient complains of abdominal pain. Purulent drainage from superficial tissue level of the incision is documented. On 3/6 the patient is taken back to the OR for re-exploration and wound closure (non-NHSN operative procedure). No cultures are collected. Patient is started on Meropenem.

2/3. Are there any reportable SSIs identified on 3/6?

a. No. An SSI was already identified. This stops the surveillance period.
b. Yes. Deep b SSI definitions are met.
c. No SSI is identified for 3/6.
d. Yes. Organ/space SSI definitions are met, because the abdomen was entered again.

Scenario #2, Question #3, Answer

A 54-year-old patient with history of MRSA and other MDROs presents to the emergency room with diffuse abdominal pain on 3/3. CT and abdominal exam are suggestive of ruptured appendix and abscesses. The patient is taken to the OR emergently. Surgical procedures coded are COLO and APPY. A ruptured appendix is indeed identified during the surgical procedure, with purulence within the abdominal cavity, which is documented in the narrative of the operative note. The provider documents the need for re-exploration in two to three days, and leaves the incision partially open, with wound vac applied. On 3/5 patient complains of abdominal pain. Purulent drainage from superficial tissue level of the incision is documented. On 3/6 the patient is taken back to the OR for re-exploration and wound closure (non-NHSN operative procedure). No cultures are collected. Patient is started on Meropenem.

2/3. Are there any reportable SSIs identified on 3/6?

a. No. An SSI was already identified. This stops the surveillance period.

b. Yes. Deep incisional b SSI definitions are met.

c. **No SSI is identified for 3/6.**

d. Yes. Organ/space SSI definitions are met, because the abdomen was entered again.

Scenario #2, Question #3, Rationale

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*, re-accessed, 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

**Excludes any known multi-part/multi-phase procedures that occur over more than one operative episode [during the same admission] that is documented in the medical record by a surgeon prior to first phase of the procedure.*

2/3. Are any reportable SSIs identified on 3/6?

a. No. An SSI was already identified. This stops the surveillance period.

b. Yes. Deep incisional b SSI definitions are met.

c. No SSI is identified for 3/6.

d. Yes. Organ/space SSI definitions are met, because the abdomen was entered again.

Scenario #3

A 66-year-old patient has a right KPRO procedure performed on 5/1. Within the surveillance period, on 5/15, the patient has a follow-up visit with the provider and complains of pain at the right knee. Although swelling is noted, the incision is healing well. A joint fluid aspiration of the R knee is performed, and the culture is reported as negative. The patient is started on antimicrobial therapy. On 5/23, the patient messages the surgeon through the online patient portal to report no improvement in the swelling and pain. On 5/25, the patient returns for an outpatient visit, and now also has a small opening at the skin level draining serous fluid. The patient is transferred to the hospital and taken to the OR for exploration and KPRO revision. All three tissue levels are entered. Surgeon documents sinus tract communicating to the joint, but no purulence.

Scenario #3, Question #1

A 66-year-old patient has a right KPRO procedure performed on 5/1. Within the surveillance period, on 5/15, the patient has a follow-up visit with the provider and complains of pain at the right knee. Although swelling is noted, the incision is healing well. A joint fluid aspiration of the R knee is performed, and the culture is reported as negative. The patient is started on antimicrobial therapy. On 5/23, the patient messages the surgeon through the online patient portal to report no improvement in the swelling and pain. On 5/25, the patient returns for an outpatient visit, and now also has a small opening at the skin level draining serous fluid. The patient is transferred to the hospital and taken to the OR for exploration and KPRO revision. All three tissue levels are entered. Surgeon documents sinus tract communicating to the joint, but no purulence.

3/1. Are any SSI definitions met on 5/15?

a. Yes – deep incisional SSI ‘b’
b. No SSI definitions are met
c. Yes – organ/space SSI ‘c’ with invasive manipulation

Scenario #3, Question #1, Answer

A 66-year-old patient has a right KPRO procedure performed on 5/1. Within the surveillance period, on 5/15, the patient has a follow-up visit with the provider and complains of pain at the right knee. Although swelling is noted, the incision is healing well. A joint fluid aspiration of the R knee is performed, and the culture is reported as negative. The patient is started on antimicrobial therapy. On 5/23, the patient messages the surgeon through the online patient portal to report no improvement in the swelling and pain. On 5/25, the patient returns for an outpatient visit, and now also has a small opening at the skin level draining serous fluid. The patient is transferred to the hospital and taken to the OR for exploration and KPRO revision. All three tissue levels are entered. Surgeon documents sinus tract communicating to the joint, but no purulence.

3/1. Are any SSI definitions met on 5/15?

a. Yes – deep incisional SSI ‘b’

b. No SSI definitions are met

c. Yes – organ/space SSI ‘c’ with invasive manipulation

Scenario #3, Question #1, Answer & Rationale

A 66-year-old patient has a right KPRO procedure performed on 5/1. Within the surveillance period, on 5/15, the patient has a follow-up visit with the provider and complains of pain at the right knee. Although swelling is noted, the incision is healing well. A joint fluid aspiration of the R knee is performed, and the culture is reported as negative. The patient is started on antimicrobial therapy. On 5/23, the patient messages the surgeon through the online patient portal to report no improvement in the swelling and pain. On 5/25, the patient returns for an outpatient visit, and now also has a small opening at the skin level draining serous fluid. The patient is transferred to the hospital and taken to the OR for exploration and KPRO revision. All three tissue levels are entered. Surgeon documents sinus tract communicating to the joint, but no purulence.

3/1. Are any SSI definitions met on 5/15?

a. Going through deep tissue to access o/s with needle doesn't meet re-accessing deep tissues.

b. Neither superficial, deep, nor organ/space SSI definitions are met.

c. Invasive manipulation definitions are NOT met, as there was suspicion of infection at time of procedure. No gross anatomic evidence of infection, no imaging to meet organ/space SSI.

Scenario #3, Question #1, Answer, Rationale

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.

Scenario #3, Question #2

A 66-year-old patient has a right KPRO procedure performed on 5/1. Within the surveillance period, on 5/15, the patient has a follow-up visit with the provider and complains of pain at the right knee. Although swelling is noted, the incision is healing well. A joint fluid aspiration of the R knee is performed, and the culture is reported as negative. The patient is started on antimicrobial therapy. On 5/23, the patient messages the surgeon through the online patient portal to report no improvement in the swelling and pain. On 5/25, the patient returns for an outpatient visit, and now also has a small opening at the skin level draining serous fluid. The patient is transferred to the hospital and taken to the OR for exploration and KPRO revision. All three tissue levels are entered. Surgeon documents sinus tract communicating to the joint, but no purulence.

3/2. Are any SSI definitions met on 5/25?

a. Yes – deep incisional SSI ‘b’
b. No SSI definitions are met
c. Yes – organ/space SSI ‘c’; PJI-2
d. Yes – organ/space SSI ‘c’; BONE-1

Scenario #3, Question #2, Answer

A 66-year-old patient has a right KPRO procedure performed on 5/1. Within the surveillance period, on 5/15, the patient has a follow-up visit with the provider and complains of pain at the right knee. Although swelling is noted, the incision is healing well. A joint fluid aspiration of the R knee is performed, and the culture is reported as negative. The patient is started on antimicrobial therapy. On 5/23, the patient messages the surgeon through his patient portal to report no improvement in the swelling and pain. On 5/25, the patient returns for an outpatient visit, and now also has a small opening at the skin level draining serous fluid. The patient is transferred to the hospital and taken to the OR for exploration and KPRO revision. All three tissue levels are entered. Surgeon documents sinus tract communicating to the joint, but no purulence.

3/2. Are any SSI definitions met on 5/25?

a. Yes – deep incisional SSI 'b'
b. No SSI definitions are met
c. **Yes – organ/space SSI 'c'; PJI-2**
d. Yes – organ/space SSI 'c'; BONE-1

Scenario #3, Question #2, Rationale

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 the organ/space tissues (deeper than the fascia/muscle)

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.

What is gross anatomic evidence of infection?

- **Visualized during anatomic exam or invasive procedure and documented in the medical records.**
- **Examples include (but are not limited to):**
  - Purulence, pus, seropurulence
    - Qualifying descriptors of purulence (at least one qualifying color, and one consistency descriptor, i.e. green, yellow and milky, thick, creamy, opaque, viscous)
  - Sinus tract after KPRO, HPRO surgical procedures
  - Phlegmon
  - Feculent peritonitis

Scenario #4

A 44-year-old patient had a scheduled LAM and FUSN procedure involving the lower thoracic and upper lumbar region on 2/4. Patient presents to the ED on 2/15 with severe backpain, fever 39.0 degrees Celsius. Blood cultures are collected that later result with Serratia marcescens. A CT report outlines findings of “fluid collection in the paraspinal musculature overlying the surgical site along the lower thoracic and upper lumbar region, centered at L1-L2”…findings presumably represent either an abscess or post-op collection such as evolving hematoma“.

The patient is taken to the OR for exploration of the prior surgical site. An abscess with purulent material is found in the musculature, reaching down to the spinal canal and surgical hardware. Cultures collected from the spinal abscess reveal Serratia marcescens.

Scenario #4, Question #1

A 44-year-old patient had a scheduled LAM and FUSN procedure involving the lower thoracic and upper lumbar region on 2/4. Patient presents to the ED on 2/15 with severe backpain, fever 39.0 degrees Celsius. Blood cultures are collected that later result with Serratia marcescens. A CT report outlines findings of "fluid collection in the paraspinal musculature overlying the surgical site along the lower thoracic and upper lumbar region, centered at L1-L2"…"findings presumably represent either an abscess or post-op collection such as evolving hematoma".

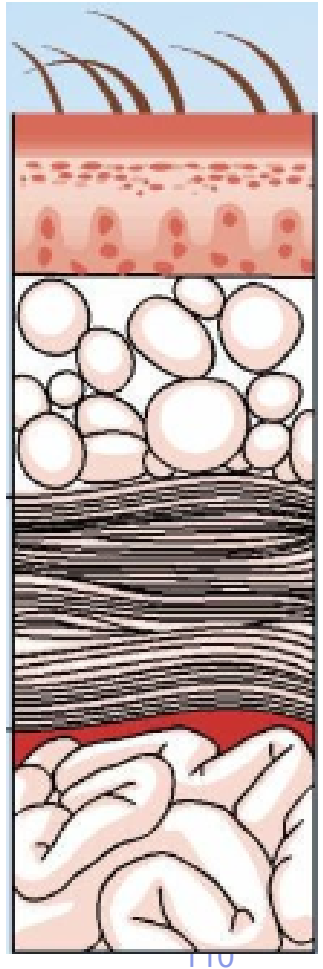
The patient is taken to the OR for exploration of the prior surgical site. An abscess with purulent material is found in the musculature, reaching down to the spinal canal and surgical hardware. Cultures collected from the spinal abscess reveal Serratia marcescens.

4/1. What SSI surveillance definition elements are met with these CT findings?

a. Imaging findings definite for infection, meeting O/S c.
b. Imaging findings equivocal for infection, meeting O/S c.
c. Imaging findings equivocal for infection, meeting Deep c.
d. No SSI definition elements are met with these imaging findings.

SSI: Remember the Three Tissue Levels

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



Scenario #4, Question #1, Answer

A 44-year-old patient had a scheduled LAM and FUSN procedure involving the lower thoracic and upper lumbar region on 2/4. Patient presents to the ED on 2/15 with severe backpain, fever 39.0 degrees Celsius. Blood cultures are collected that later result with Serratia marcescens. A CT report outlines findings of "fluid collection in the paraspinal musculature overlying the surgical site along the lower thoracic and upper lumbar region, centered at L1-L2"…"findings presumably represent either an abscess or post-op collection such as evolving hematoma".

The patient is taken to the OR for exploration of the prior surgical site. An abscess with purulent material is found in the musculature, reaching down to the spinal canal and surgical hardware. Cultures collected from the spinal abscess reveal Serratia marcescens.

4/1. What SSI surveillance definition elements are met with these CT findings?

a. Imaging findings definite for infection, meeting O/S c.
b. Imaging findings equivocal for infection, meeting O/S c.
c. Imaging findings equivocal for infection, meeting Deep incisional c.
d. <u>No SSI definition elements are met with these imaging findings.</u>

Let's look at the definitions

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*, re-accessed, 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

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 the organ/space tissues (deeper than the fascia/muscle)

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).

Imaging findings…some examples

- **Findings definitive for infection**
  - Abscess
  - Fluid collection consistent with abscess
  - Consistent with infectious process
  - Pyelonephritis
  - Discitis
  - Osteomyelitis
  - Vegetation (for endocarditis)

- **Findings equivocal for infection**
  - Fluid collection
  - Might represent abscess or hematoma
  - Possible osteomyelitis
  - Abscess vs. seroma
  - Infectious vs. inflammatory
  - Biliary duct dilatation

Doesn't meet definite or equivocal imaging:
Free fluid
Inflammatory process (…itis, except as above)

Scenario #4, Question #2

A 44-year-old patient had a scheduled LAM and FUSN procedure involving the lower thoracic and upper lumbar region on 2/4. Patient presents to the ED on 2/15 with severe backpain, fever 39.0 degrees Celsius. Blood cultures are collected that later result with Serratia marcescens. A CT report outlines findings of “fluid collection in the paraspinal musculature overlying the surgical site along the lower thoracic and upper lumbar region, centered at L1-L2”…”findings presumably represent either an abscess or post-op collection such as evolving hematoma“.

The patient is taken to the OR for exploration of the prior surgical site. An abscess with purulent material is found in the musculature, reaching down to the spinal canal and surgical hardware. Cultures collected from the spinal abscess reveal Serratia marcescens.

4/2. What SSI surveillance definitions are met?

a. Deep incisional b. and c.
b. Deep incisional b. and c. with secondary BSI
c. O/S c, IAB 2., with secondary BSI
d. O/S b. and c., SA 1., 2., with secondary BSI

Scenario #4, Question #2, Answer

A 44-year-old patient had a scheduled LAM and FUSN procedure involving the lower thoracic and upper lumbar region on 2/4. Patient presents to the ED on 2/15 with severe backpain, fever 39.0 degrees Celsius. Blood cultures are collected that later result with Serratia marcescens. A CT report outlines findings of "fluid collection in the paraspinal musculature overlying the surgical site along the lower thoracic and upper lumbar region, centered at L1-L2"…"findings presumably represent either an abscess or post-op collection such as evolving hematoma".

The patient is taken to the OR for exploration of the prior surgical site. An abscess with purulent material is found in the musculature, reaching down to the spinal canal and surgical hardware. Cultures collected from the spinal abscess reveal Serratia marcescens.

4/2. What SSI surveillance definitions are met?

a. Deep incisional b. and c.
b. Deep incisional b. and c. with secondary BSI
c. O/S c, IAB 2., with secondary BSI
d. <u>O/S b. and c., SA 1., 2., with secondary BSI</u>

Scenario #4, Question #2, Rationale

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*, re-accessed, 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

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 the organ/space tissues (deeper than the fascia/muscle)

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 #4, Question #2, Rationale

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. The DOE assigned is the date of the first element used to meet the SSI criteria at the deepest tissue level that is met.
    - 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 a patient meets criteria for a deep incisional SSI on day 10 of the SSI surveillance period and a week later (day 17 of the SSI surveillance period) the patient meets criteria for an organ space SSI, the DOE assigned is the date of the organ/space SSI.

Scenario #4, Question #2, Rationale: What site-specific definition from Chapter 17 should we use in this scenario?

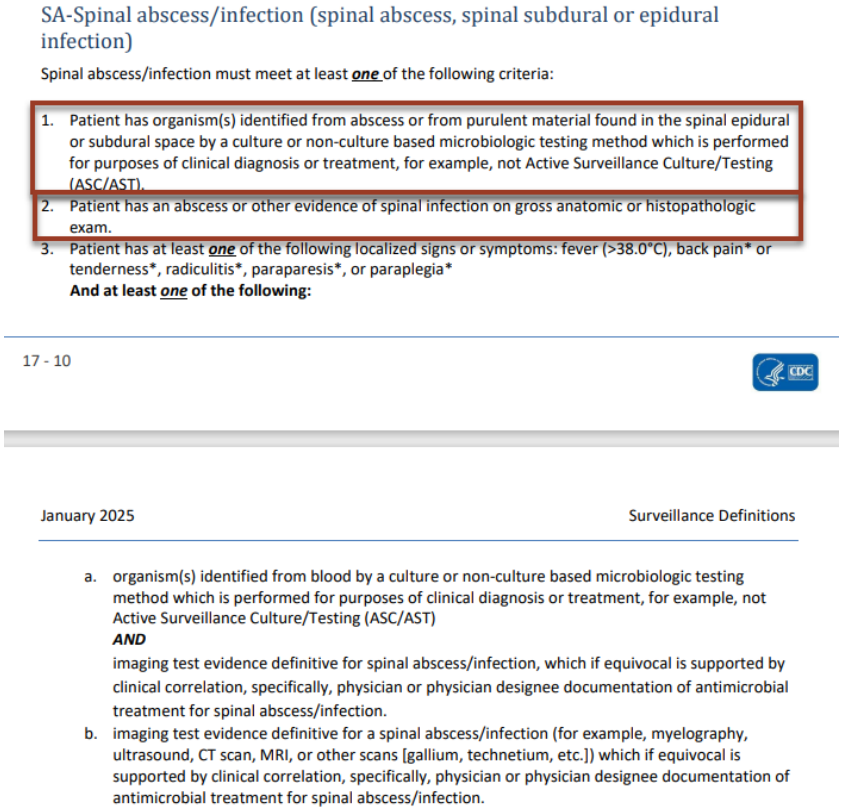
FUSN - Spinal fusion	BONE - Osteomyelitis DIP - Deep Incisional Primary DIS - Deep Incisional Secondary DISC - Disc space infection IAB - Intraabdominal, not specified elsewhere IC - Intracranial infection LUNG - Other infections of the lower respiratory tract MEN - Meningitis or ventriculitis SA - Spinal abscess/infection SIP - Superficial Incisional Primary SIS - Superficial Incisional Secondary

- **Eligible SSIs based on Appendix A of the SSI protocol.**
- **What does the evidence lead to?**

LAM - Laminectomy	BONE - Osteomyelitis DIP - Deep Incisional Primary DISC - Disc space infection IAB - Intraabdominal, not specified elsewhere IC - Intracranial infection MEN - Meningitis or ventriculitis SA - Spinal abscess/infection SIP - Superficial Incisional Primary

Scenario #4, Question #2, Rationale: What site-specific definition from Chapter 17 should we use in this scenario?

- Scenario meets SA 1. and 2.
- SA 3. a. and b. are not met, due to imaging not showing organ/space involvement.



SA-Spinal abscess/infection (spinal abscess, spinal subdural or epidural infection)

Spinal abscess/infection must meet at least ***one*** of the following criteria:

1. Patient has organism(s) identified from abscess or from purulent material found in the spinal epidural or subdural 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 an abscess or other evidence of spinal infection on gross anatomic or histopathologic exam.
3. Patient has at least ***one*** of the following localized signs or symptoms: fever (>38.0°C), back pain* or tenderness*, radiculitis*, paraparesis*, or paraplegia*

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)

AND

imaging test evidence definitive for spinal abscess/infection, which if equivocal is supported by clinical correlation, specifically, physician or physician designee documentation of antimicrobial treatment for spinal abscess/infection.

b. imaging test evidence definitive for a spinal abscess/infection (for example, myelography, ultrasound, CT scan, MRI, or other scans [gallium, technetium, etc.]) which if equivocal is supported by clinical correlation, specifically, physician or physician designee documentation of antimicrobial treatment for spinal abscess/infection.

Scenario #4, Question #2, Rationale: Is there a Secondary BSI reported?

- Matching organism from blood culture and culture from organ/space, and meeting SA 1 and 2.

- O/S SSI b., and c. with SA 1 and 2, with secondary BSI

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

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

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

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

Scenario #4, Question #3

A 44-year-old patient had a scheduled LAM and FUSN procedure involving the lower thoracic and upper lumbar region on 2/4. Patient presents to the ED on 2/15 with severe backpain, fever 39.0 degrees Celsius. Blood cultures are collected that later result with Serratia marcescens. A CT report outlines findings of "fluid collection in the paraspinal musculature overlying the surgical site along the lower thoracic and upper lumbar region, centered at L1-L2"…"findings presumably represent either an abscess or post-op collection such as evolving hematoma".

The patient is taken to the OR for exploration of the prior surgical site. An abscess with purulent material are found in the musculature, reaching down to the spinal canal and surgical hardware. Cultures collected from the spinal abscess reveal Serratia marcescens.

4/3. Is this SSI attributed to the FUSN or the LAM procedure?

a. LAM
b. FUSN

Scenario #4, Question #3, Answer

A 44-year-old patient had a scheduled LAM and FUSN procedure involving the lower thoracic and upper lumbar region on 2/4. Patient presents to the ED on 2/15 with severe backpain, fever 39.0 degrees Celsius. Blood cultures are collected that later result with Serratia marcescens. A CT report outlines findings of "fluid collection in the paraspinal musculature overlying the surgical site along the lower thoracic and upper lumbar region, centered at L1-L2"…"findings presumably represent either an abscess or post-op collection such as evolving hematoma".

The patient is taken to the OR for exploration of the prior surgical site. An abscess with purulent material are found in the musculature, reaching down to the spinal canal and surgical hardware. Cultures collected from the spinal abscess reveal Serratia marcescens.

4/3. Is this SSI attributed to the FUSN or the LAM procedure?

a. LAM

b. FUSN

Scenario #4, Question #3, Rationale

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, 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 #4, Question #3, Rationale

- Table 4: Page 9-23
- In this scenario there is no evidence to attribute to one or the other procedure.
- Table 4 hierarchy
- Attribution to the FUSN procedure.

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

Scenario #4, Question #4

FUSN is in the facility's reporting plan. The SSI is discussed in the SSI committee. Lively discussion evolves, including a surgeon outlining that best practices were followed in the OR and exceptional operative technique was used. The team suspects that the patient bathed postoperatively and removed the dressing, against postoperative instructions.

4/4. Knowing about this discussion, should the SSI be reported?

a. Yes
b. No

Scenario #4, Question #4, Answer

FUSN is in the facility's reporting plan. The SSI is discussed in the SSI committee. Lively discussion evolves, including a surgeon outlining that best practices were followed in the OR and exceptional operative technique was used. The team suspects that the patient bathed postoperatively and removed the dressing, against postoperative instructions.

4/4. Knowing about this discussion, should the SSI be reported?

a. **Yes**

b. No

Scenario #4, Question #4, Rationale

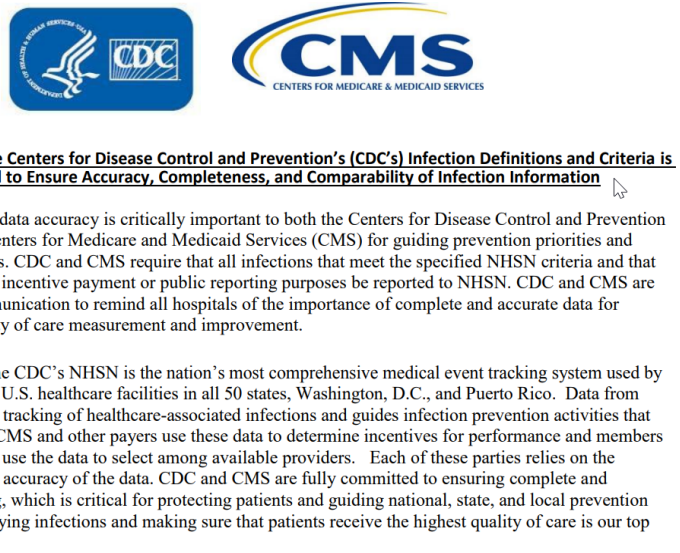
Reporting Instruction #11: Page 9-22

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 #4, Question #4, Rationale

NHSN/CMS joint statement:

https://www.cdc.gov/nhsn/pdfs/cms/NHSN-Reporting-signed.pdf



Adherence to the Centers for Disease Control and Prevention's (CDC's) Infection Definitions and Criteria is Needed to Ensure Accuracy, Completeness, and Comparability of Infection Information

Issue: Ensuring data accuracy is critically important to both the Centers for Disease Control and Prevention (CDC) and the Centers for Medicare and Medicaid Services (CMS) for guiding prevention priorities and protecting patients. CDC and CMS require that all infections that meet the specified NHSN criteria and that CMS requires for incentive payment or public reporting purposes be reported to NHSN. CDC and CMS are issuing this communication to remind all hospitals of the importance of complete and accurate data for purposes of quality of care measurement and improvement.

Background: The CDC's NHSN is the nation's most comprehensive medical event tracking system used by more than 16,000 U.S. healthcare facilities in all 50 states, Washington, D.C., and Puerto Rico. Data from NHSN is used for tracking of healthcare-associated infections and guides infection prevention activities that protect patients. CMS and other payers use these data to determine incentives for performance and members of the public may use the data to select among available providers. Each of these parties relies on the completeness and accuracy of the data. CDC and CMS are fully committed to ensuring complete and accurate reporting, which is critical for protecting patients and guiding national, state, and local prevention priorities. Identifying infections and making sure that patients receive the highest quality of care is our top priority.

Scenario #5

A 67-year-old patient with a history of end stage heart disease is taken to the OR for a CARD operative procedure where a left ventricular access device (LVAD) is implanted on 7/16. The case goes as planned without any documented complications and the patient is subsequently admitted to the cardiovascular ICU (CICU). One week later, on 7/23, the patient reports itching and serous drainage at the incision site. At the bedside, the surgeon visually inspects the incision and decides to take cultures from the superficial incision. There is no growth from the superficial incision culture. The surgeon documents a diagnosis of cellulitis at the superficial incision. On 7/25, the patient is taken back to the OR for a pocket washout where all three tissue levels are entered, and codes as a non-NHSN operative procedure. On 7/27, serosanguinous drainage is noted from the superficial incision which is cultured and subsequently resulted positive for *Pseudomonas aeruginosa*.

Scenario #5, Question #1

A 67-year-old patient with a history of end stage heart disease is taken to the OR for a CARD operative procedure where a left ventricular access device (LVAD) is implanted on 7/16. The case goes as planned without any documented complications and the patient is subsequently admitted to the cardiovascular ICU (CICU). One week later, on 7/23, the patient reports itching and serous drainage at the incision site. At the bedside, the surgeon visually inspects the incision and decides to take cultures from the superficial incision. There is no growth from the superficial incision culture. The surgeon documents a diagnosis of cellulitis at the superficial incision. On 7/25, the patient is taken back to the OR for a pocket washout where all three tissue levels are entered, and codes as a non-NHSN operative procedure. On 7/27, there was serosanguinous drainage noted from the superficial incision which was cultured, and subsequently resulted positive for *Pseudomonas aeruginosa*.

5/1. Are SSI criteria met on 7/23?

a. Yes – superficial incisional SSI ‘c’
b. Yes – superficial incisional SSI ‘d’
c. Yes – deep incisional SSI ‘b’
d. No SSI identified

Scenario #5, Question #1, Answer

A 67-year-old patient with a history of end stage heart disease is taken to the OR for a CARD operative procedure where a left ventricular access device (LVAD) is implanted on 7/16. The case goes as planned without any documented complications and the patient is subsequently admitted to the cardiovascular ICU (CICU). One week later, on 7/23, the patient reports itching and serous drainage at the incision site. At the bedside, the surgeon visually inspects the incision and decides to take cultures from the superficial incision. There is no growth from the superficial incision culture. The surgeon documents a diagnosis of cellulitis at the superficial incision. On 7/25, the patient is taken back to the OR for a pocket washout where all three tissue levels are entered, and codes as a non-NHSN operative procedure. On 7/27, there was serosanguinous drainage noted from the superficial incision which was cultured, and subsequently resulted positive for *Pseudomonas aeruginosa*.

5/1. Are SSI criteria met on 7/23?

a. Yes – superficial incisional SSI ‘c’
b. Yes – superficial incisional SSI ‘d’
c. Yes – deep incisional SSI ‘b’
d. No SSI identified

Scenario #5, Question #1, Rationale

A 67-year-old patient with a history of end stage heart disease is taken to the OR for a CARD operative procedure where a left ventricular access device (LVAD) is implanted on 7/16. The case goes as planned without any documented complications and the patient is subsequently admitted to the cardiovascular ICU (CICU). One week later, on 7/23, the patient reports **itching and serous drainage at the incision site. At the bedside, the surgeon visually inspects the incision and decides to take cultures from the superficial incision. There is no growth from the superficial incision culture. The surgeon documents a diagnosis of cellulitis at the superficial incision.** On 7/25, the patient is taken back to the OR for a pocket washout where all three tissue levels are entered, and codes as a non-NHSN operative procedure. On 7/27, there was serosanguinous drainage noted from the superficial incision which was cultured, and subsequently resulted positive for *Pseudomonas aeruginosa*.

- **Superficial incision not deliberately opened, no qualifying symptoms to meet SI SSI ‘c’**
- **Negative superficial culture**
- **Diagnosis of cellulitis does NOT meet SI SSI ‘d’**
- **No DI SSI criteria met**

Scenario #5, Question #2

A 67-year-old patient with a history of end stage heart disease is taken to the OR for a CARD operative procedure where a left ventricular access device (LVAD) is implanted on 7/16. The case goes as planned without any documented complications and the patient is subsequently admitted to the cardiovascular ICU (CICU). One week later, on 7/23, the patient reports itching and serous drainage at the incision site. At the bedside, the surgeon visually inspects the incision and decides to take cultures from the superficial incision. There is no growth from the superficial incision culture. The surgeon documents a diagnosis of cellulitis at the superficial incision. On 7/25, the patient is taken back to the OR for a pocket washout where all three tissue levels are entered, and codes as a non-NHSN operative procedure. On 7/27, there was serosanguinous drainage noted from the superficial incision which was cultured, and subsequently resulted positive for *Pseudomonas aeruginosa*.

5/2. Are SSI criteria met on 7/25?

a. Yes – deep incisional SSI ‘b’
b. Yes – organ/space SSI ‘b’; MED-1
c. Yes – organ/space SSI ‘c’; CARD-1
d. No SSI identified

Scenario #5, Question #2, Answer

A 67-year-old patient with a history of end stage heart disease is taken to the OR for a CARD operative procedure where a left ventricular access device (LVAD) is implanted on 7/16. The case goes as planned without any documented complications and the patient is subsequently admitted to the cardiovascular ICU (CICU). One week later, on 7/23, the patient reports itching and serous drainage at the incision site. At the bedside, the surgeon visually inspects the incision and decides to take cultures from the superficial incision. There is no growth from the superficial incision culture. The surgeon documents a diagnosis of cellulitis at the superficial incision. On 7/25, the patient is taken back to the OR for a pocket washout where all three tissue levels are entered, and codes as a non-NHSN operative procedure. On 7/27, there was serosanguinous drainage noted from the superficial incision which was cultured and subsequently resulted positive for *Pseudomonas aeruginosa*.

5/2. Are SSI criteria met on 7/25?

a. Yes – deep incisional SSI ‘b’
b. Yes – organ/space SSI ‘b’; MED-1
c. Yes – organ/space SSI ‘c’; CARD-1
d. No SSI identified

Scenario #5, Question #2, Rationale

A 67-year-old patient with a history of end stage heart disease is taken to the OR for a CARD operative procedure where a left ventricular access device (LVAD) is implanted on 7/16. The case goes as planned without any documented complications and the patient is subsequently admitted to the cardiovascular ICU (CICU). One week later, on 7/23, the patient reports itching and serous drainage at the incision site. At the bedside, the surgeon visually inspects the incision and decides to take cultures from the superficial incision. There is no growth from the superficial incision culture. The surgeon documents a diagnosis of cellulitis at the superficial incision. On 7/25, the patient was taken back to the OR for a pocket washout where all three tissue levels are entered, and codes as a non-NHSN operative procedure. On 7/27, there was serosanguinous drainage noted from the superficial incision which was cultured and subsequently resulted positive for *Pseudomonas aeruginosa*.

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*, re-accessed, 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

Scenario #5, Question #3

A 67-year-old patient with a history of end stage heart disease is taken to the OR for a CARD operative procedure where a left ventricular access device (LVAD) is implanted on 7/16. The case goes as planned without any documented complications and the patient is subsequently admitted to the cardiovascular ICU (CICU). One week later, on 7/23, the patient reports itching and serous drainage at the incision site. At the bedside, the surgeon visually inspects the incision and decides to take cultures from the superficial incision. There is no growth from the superficial incision culture. The surgeon documents a diagnosis of cellulitis at the superficial incision. On 7/25, the patient was taken back to the OR for a pocket washout where all three tissue levels are entered, and codes as a non-NHSN operative procedure. On 7/27, there was serosanguinous drainage noted from the superficial incision which was cultured and subsequently resulted positive for *Pseudomonas aeruginosa*.

5/3. When does the SSI surveillance period for the 7/16 CARD operative procedure end?

a. 30 days after the procedure (procedure date = day 1)
b. 90 days after the procedure (procedure date = day 1)
c. At the conclusion of the 7/25 pocket washout

Scenario #5, Question #3, Answer

A 67-year-old patient with a history of end stage heart disease is taken to the OR for a CARD operative procedure where a left ventricular access device (LVAD) is implanted on 7/16. The case goes as planned without any documented complications and the patient is subsequently admitted to the cardiovascular ICU (CICU). One week later, on 7/23, the patient reports itching and serous drainage at the incision site. At the bedside, the surgeon visually inspects the incision and decides to take cultures from the superficial incision. There is no growth from the superficial incision culture. The surgeon documents a diagnosis of cellulitis at the superficial incision. On 7/25, the patient was taken back to the OR for a pocket washout where all three tissue levels are entered, and codes as a non-NHSN operative procedure. On 7/27, there was serosanguinous drainage noted from the superficial incision which was cultured, and subsequently resulted positive for Pseudomonas aeruginosa.

5/3. When does the SSI surveillance period for the 7/16 CARD operative procedure end?

a. 30 days after the procedure (procedure date = day 1)
b. 90 days after the procedure (procedure date = day 1)
c. **At the conclusion of the 7/25 pocket washout**

Scenario #5, Question #3, Rationale

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 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. No new surveillance period is set following a non-NHSN operative procedure.

5/3. When does the SSI surveillance period for the 7/16 CARD operative procedure end?

a. 30 days after the procedure (procedure date = day 1)

b. 90 days after the procedure (procedure date = day 1)

c. At the conclusion of the 7/25 pocket washout

Scenario #5, Question #3, Rationale

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

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

Bonus: What ends a surveillance period?

- The 30-day or 90-day surveillance period has passed. (Remember, only NHSN operative procedures start a surveillance period). Page 9-15

- Patient returns to the OR for another **NHSN operative procedure** in the same surgical area (i.e. abdomen). Page 9-5

- Patient returns to the OR for a **non-NHSN operative procedure** – surveillance period ends for all tissue levels entered (and continues for those tissue levels not entered). Page 9-5

- Invasive manipulation (remember, no suspicion of infection can be present to meet the invasive manipulation exclusion). Page 9-22

Bonus: What ends a surveillance period?

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.

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 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. No new surveillance period is set following a non-NHSN operative procedure.

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.

Teaching Points Summary

- PATOS
- Operative procedure identification and reporting
- Surveillance periods
- Date of event
- Invasive manipulation
- Imaging findings and application to SSI definitions
- Gross anatomic evidence of infection
- Purulence definition
- Attribution of SSIs
- NHSN/non-NHSN operative procedures
- Secondary BSI

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/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
  - Surgical Site Procedure Codes
    - https://www.cdc.gov/nhsn/faqs/faq-ssi-proc-codes.html
- **Secondary BSI table B1, page 4-34**
  - https://www.cdc.gov/nhsn/pdfs/pscmanual/4psc_clabscurrent.pdf

Thank you for your attendance and participation today.
We hope this presentation will help you to **SAIL THROUGH YOUR SSI SURVEILLANCE**

For NHSN questions or concerns related to the Annual Training

Post questions in the Annual Training Community

Please submit questions to the NHSN Help Desk.

- Access new portal at **https://servicedesk.cdc.gov/nhsncsp** .
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