NHSN Annual Training: Surgical Site Infection 2025

Housekeeping

- **This call is being recorded.**
- **Please use chat box for questions.**
- **Questions will be answered at the end or on the subsequent webinar.**

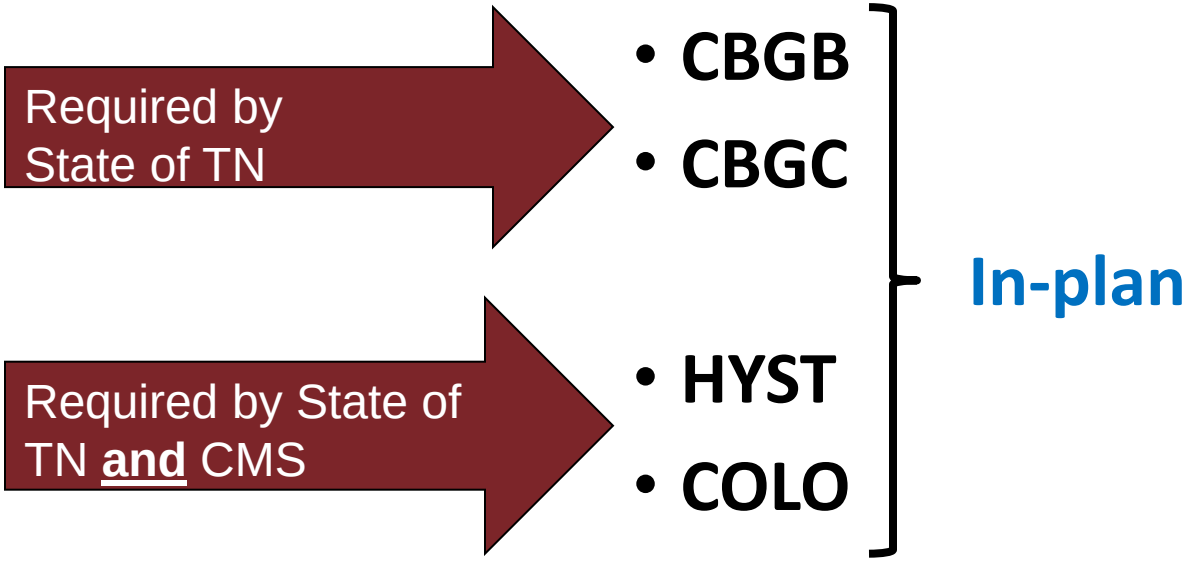
Agenda

- Reporting Requirements
- 2025 Updates
- Numerator data
  - SSI background
  - Case criteria
- NHSN Reporting Instructions
- Denominator data
- NHSN Analysis Options
- Resources

Reporting Requirements

Current CMS/State Reporting Requirements via NHSN

- **Acute Care Hospitals**



Note: **Reporting specifications – only inpatient procedures**

Exceptions?

What should my facility surveil?

- **As much as you can!**
- **30-day surveillance**
  - **26 options!**
- **90-day surveillance**
  - **13 options!**
- **Multiple event types per operative procedure**

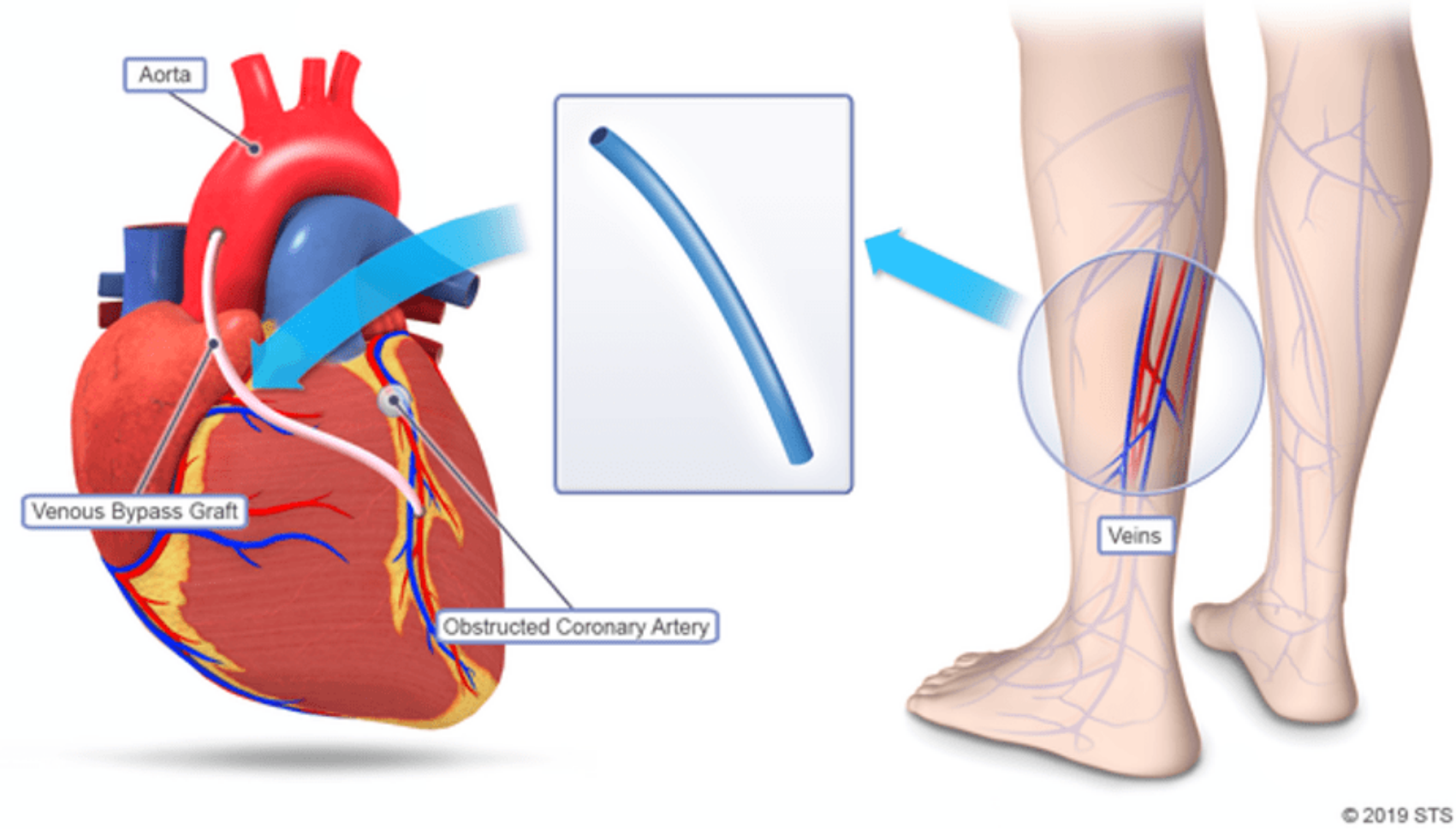
Surveillance for other SSIs

- **Off-plan Surveillance**
  - **Within facility tracking**
  - **Not for NHSN use**
  - **Can set specific criteria**
    - **NHSN protocol has definitions, but you can choose your own**
  - **Data are not included in CMS Quality Reporting Programs, NHSN annual reports or other NHSN publications.**

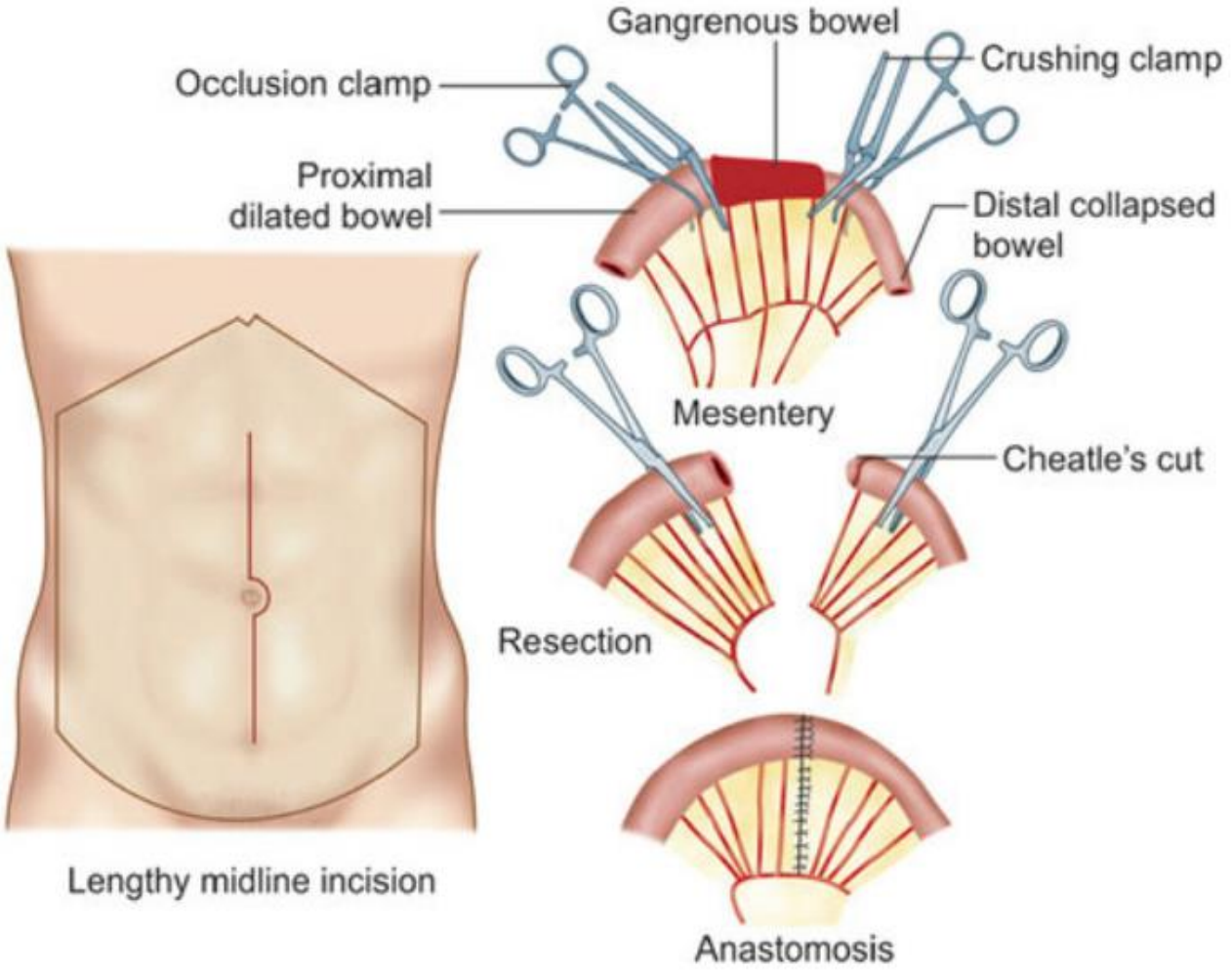
Reportable Procedure Descriptions

- **CBGB: Coronary artery bypass graft with BOTH chest and donor site incisions - Chest procedure to perform direct revascularization of the heart; includes obtaining suitable vein from donor site for grafting**
- **CBGC: Coronary artery bypass graft with chest incision only - Chest procedures to perform direct vascularization of the internal mammary (thoracic) artery**
- **COLO: Colon surgery - Incision, resection, or anastomosis of the large intestine; includes large-to-small and small-to-large bowel anastomosis;**
  - **Do Not include Rectal surgeries**
- **HYST: Abdominal hysterectomy - Abdominal hysterectomy; includes laparoscopic and robotic approach**

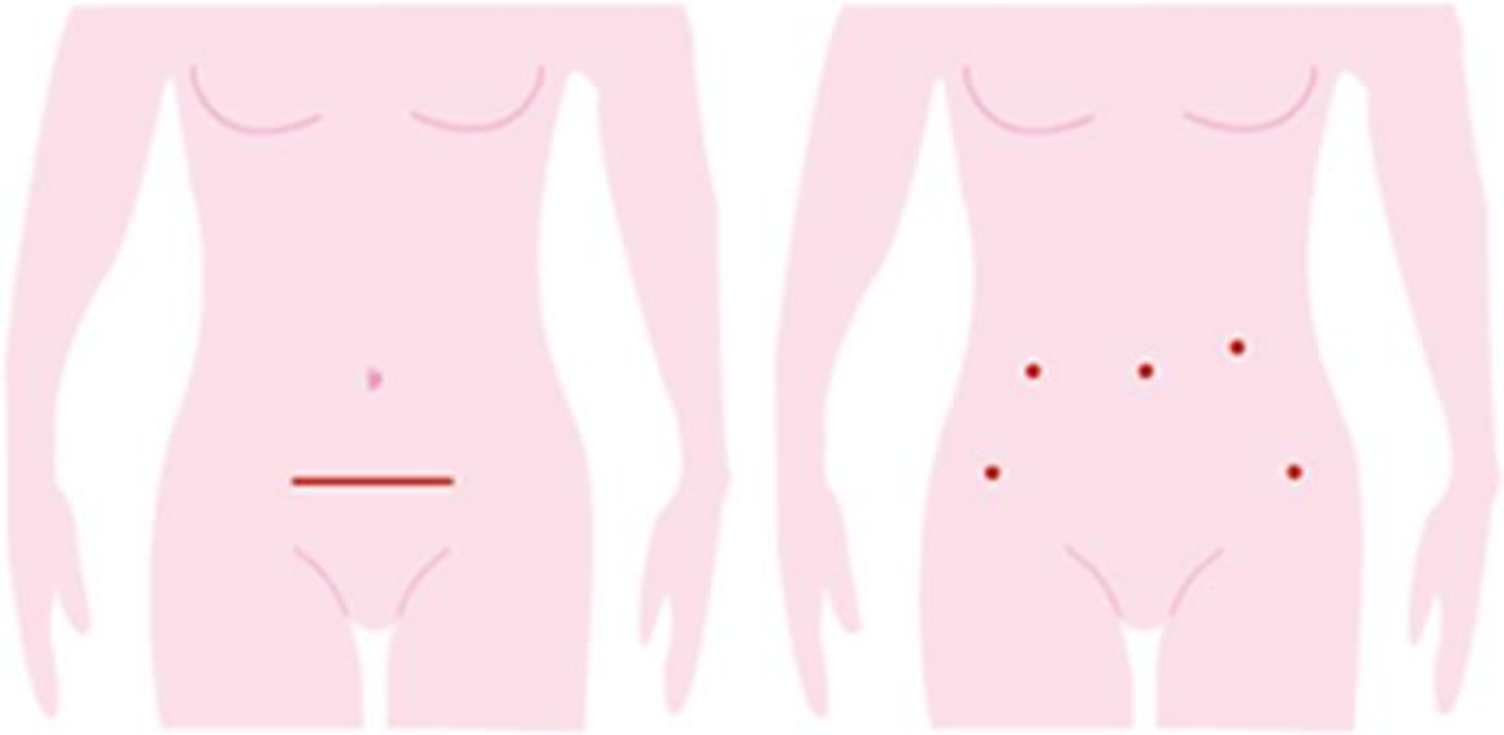
Procedure Descriptions – CBGB vs CBGC



Procedure Descriptions – COLO



Procedure Descriptions – HYST



Open Hysterectomy

Robotic Hysterectomy

2025 Protocol Updates

2025 Updates

- **Additions**
  - Added ‘or re-accessed’ to the deliberate opening element of Superficial Incisional SSI ‘c’ and Deep Incisional SSI ‘b’.
  - Added examples of gross anatomic evidence of organ/space infection in the comments of organ/space SSI.
  - Planned/staged returns to the OR will be excluded from consideration as ‘deliberate opening’ for Deep Incisional SSI ‘b’.
- **Clarifications**
  - Clarified that Organ/Space SSI involves the organ/space tissues [deeper than the muscle/fascia]
  - Clarified the DOE is the date of the first element used to meet the SSI criteria at the deepest tissue level for the criteria that is met.
- **Deletions**
  - Removed ‘redness/warmth/swelling’ from the diagnosis of cellulitis of the Superficial Incision SSI reporting instruction.
  - Removed ‘dry-gangrene’ from examples of PATOS.

Additions

- Added “or re-accessed” to the deliberate opening element of:
  - Superficial Incisional SSI “c”
  - Deep Incisional SSI “b”

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

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

Additions

- Added examples of gross anatomic evidence of organ/space infection in the comments of 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').

Additions

- Planned/staged returns to the OR will be excluded from consideration as ‘deliberate opening’ for Deep Incisional SSI ‘b’.

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

**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.*

Clarifications

- Clarified that Organ/Space SSI involves the organ/space tissues [deeper than the muscle/fascia]

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).

Clarifications

- Clarified the DOE is the date of the first element used to meet the SSI criteria at the deepest tissue level for the criteria that is met.

Clarifications

OLD

Timeframe for SSI elements:

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

NEW/CURRENT

Timeframe for SSI elements:

The Infection Window Period (IWP), Present on Admission (POA), Healthcare-associated Infection (HAI), and Repeat Infection Timeframe (RIT) definitions do not apply to SSI surveillance. SSI surveillance is based on a 30- or 90-day SSI surveillance period, which is determined by the NHSN operative procedure category and the tissue level of SSI event. **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.

Deletions

- Removed ‘redness/warmth/swelling’ from the diagnosis of cellulitis of the Superficial Incision SSI reporting instruction.

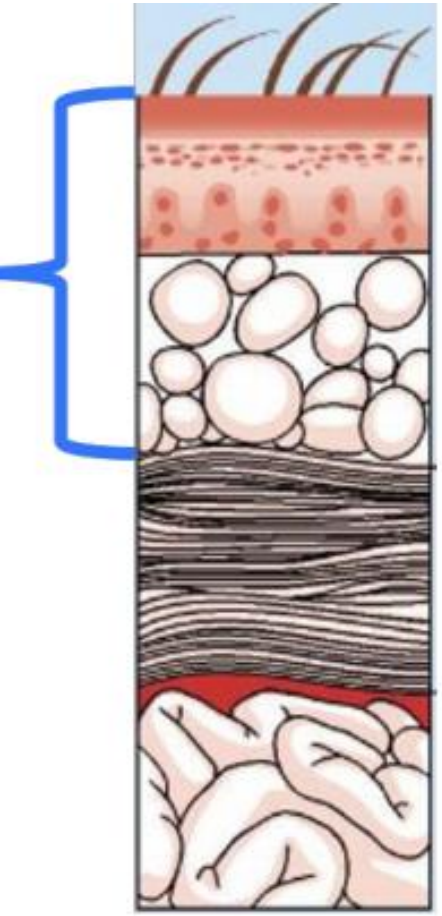
- Removed ‘dry-gangrene’ from examples of PATOS.

SSI Event (Numerator) Data

SSI Review

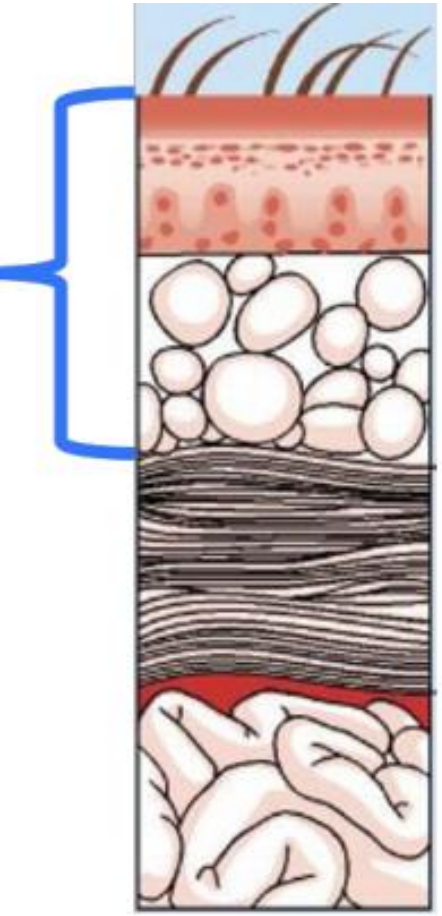
- **Three types of surgical site infections (SSIs):**
  - **Superficial Incisional SSI (Primary or Secondary)**
  - **Deep Incisional SSI (Primary or Secondary)**
  - **Organ/Space SSI**

Superficial incisional SSI



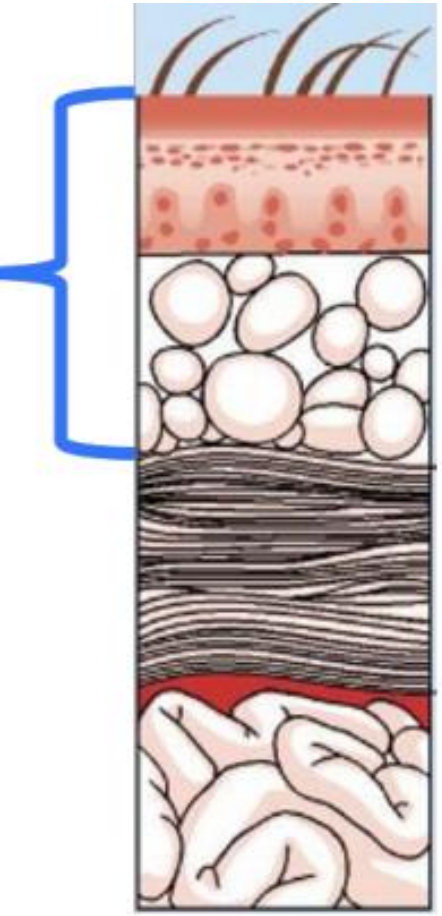
Criterion	Surgical Site Infection (SSI)
	Superficial incisional SSI Must meet the following criteria:
	Date of event occurs within 30 days following the NHSN operative procedure (where day 1 = the procedure date) **AND** involves only skin and subcutaneous tissue of the incision **AND** patient has at 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



	Superficial incisional SSI
Comments	There are two specific types of superficial incisional SSIs: 1. Superficial Incisional Primary (SIP) – a superficial incisional SSI that is identified in the primary incision in a patient that has had an operation with one or more incisions (for example, C-section incision or chest incision for CBGB) 2. Superficial Incisional Secondary (SIS) – a superficial incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (for example, donor site incision for CBGB) **Note:** Refer to SSI Event Reporting Instruction #7 for NHSN operative procedure categories with secondary incision sites available for SSI attribution.

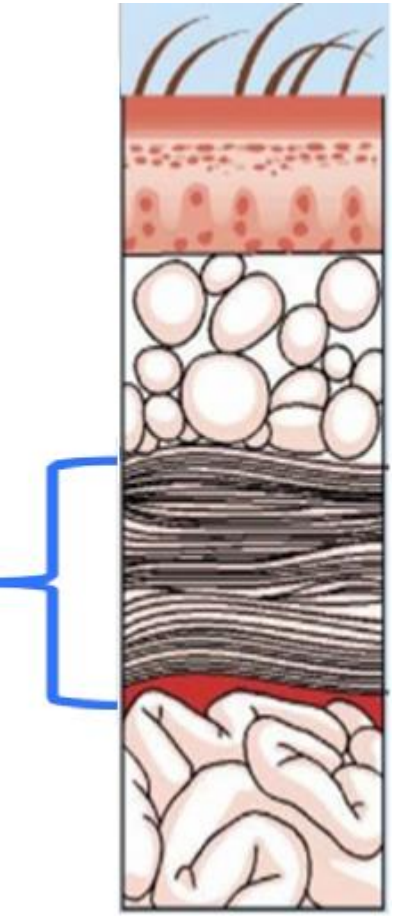
NOT a Superficial incisional SSI



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.

Deep Incisional SSI



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

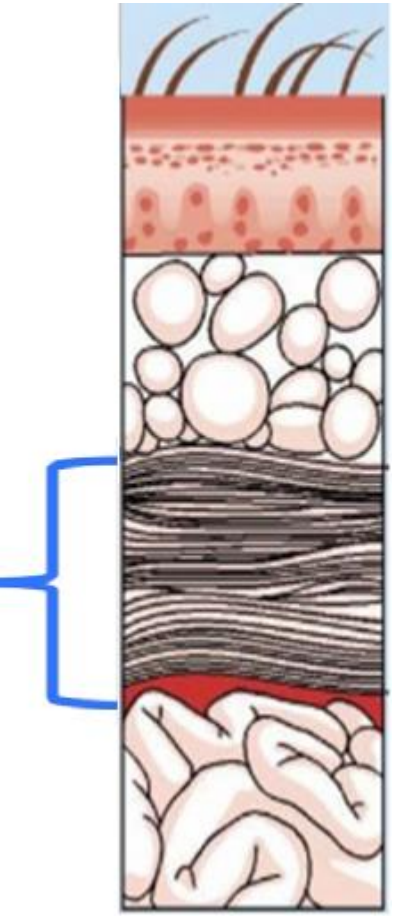
organism(s) identified from the deep soft tissues of the incision by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing [ASC/AST]) or culture or non-culture based microbiologic 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

Deep Incisional SSI



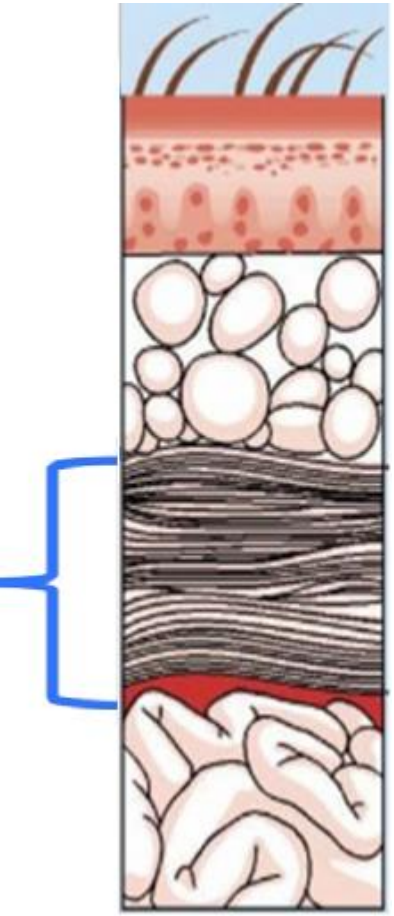
b. a deep incision that is deliberately opened*, re-accessed, or aspirated by a surgeon, physician** or physician designee or spontaneously dehisces

AND

**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).**

Deep Incisional SSI



Deep incisional SSI

There are two specific types of deep incisional SSIs:

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

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

SSI Review – Organ/Space SSI

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).

SSI Review – Organ/Space SSI

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').

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		

Appendix A: Specific Event Types for CABG

- **APPENDIX A has SSI specific event types attributed to each NHSN procedure category**

Operative Procedure Category	Specific Event Type
CBGB - Coronary bypass with chest & donor incisions	BONE - Osteomyelitis CARD - Myocarditis or pericarditis DIP - Deep Incisional Primary DIS - Deep Incisional Secondary ENDO - Endocarditis IAB - Intraabdominal, not specified elsewhere LUNG - Other infections of the lower respiratory tract MED - Mediastinitis SIP - Superficial Incisional Primary SIS - Superficial Incisional Secondary VASC - Arterial or venous infection
CBGC - Coronary bypass graft with chest incision	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

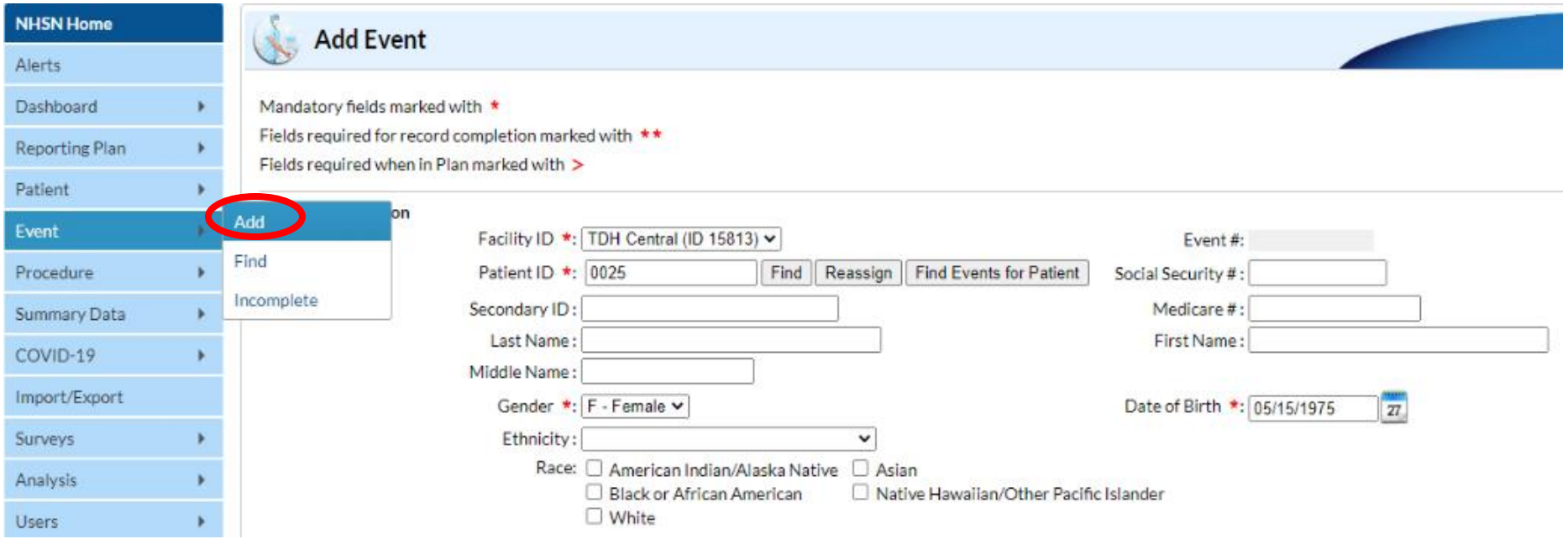
Appendix A: Specific Event Types for COLO

Operative Procedure Category	Specific Event Type
COLO - Colon surgery	DIP - Deep Incisional Primary GIT - Gastrointestinal tract IAB - Intraabdominal, not specified elsewhere OREP - Deep pelvic tissue infection or other infection of the male or female reproductive tract SIP - Superficial Incisional Primary USI - Urinary System Infection

Appendix A: Specific Event Types for HYST

Operative Procedure Category	Specific Event Type
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

Report an SSI Event



Report an SSI event

Event Information

Event Type *: SSI - Surgical Site Infection

Date of Event *: 01/03/2023

NHSN Procedure Code *: COLO - Colon surgery

Select button for system used

- ICD-10 PCS

Outpatient Procedure *: N - No

- CPT Code

Procedure Date *: 12/15/2022 **Event Linked**

MDRO Infection Surveillance *: No, this infection's pathogen/location are not in-plan for Infection Surveillance in the MDRO/CDI Module

Location :

Date Admitted to Facility *: 12/14/2022

Report an SSI event

Event Details

Specific Event *: IAB - Intraabdominal, not specified elsewhere

Infection present at the time of surgery *: N - No

Specify Criteria Used * (check all that apply)

Signs & Symptoms (check all that apply)

Any patient

- [ ] Purulent drainage from affected area
- [x] Pain or tenderness
- [ ] Swelling or inflammation
- [ ] Erythema or redness
- [ ] Heat
- [ ] Fever
- [ ] Incision deliberately opened/drained
- [ ] Wound spontaneously dehisces
- [x] Abscess

<=1 year old

- [ ] Fever
- [ ] Hypothermia
- [ ] Apnea
- [ ] Bradycardia
- [ ] Lethargy
- [ ] Vomiting
- [ ] Suprapubic tenderness

Laboratory

- [x] Organism(s) identified
- [ ] Culture or non-culture based testing not performed
- [ ] Organism(s) identified from blood specimen
- [ ] Organism(s) identified from >= 2 periprosthetic specimens
- [ ] Other positive laboratory tests
- [x] Imaging test evidence of infection

Clinical Diagnosis

- [ ] Physician diagnosis of this event

Report an SSI event

Detected *: A - Admission

Secondary Bloodstream Infection *: N - No

COVID-19 *: N - No

Died **: N - No

Discharge Date: 01/18/2023

Pathogens Identified *: Y - Yes If Yes, specify below ->

Pathogens

Pathogen 1: *Pseudomonas aeruginosa* - *PA* 12 drugs required

* AMK	* AZT	* CEFEP	* CEFTAVI	* CEFTAZ	* CEFTOTAZ
(●) S ( ) R ( ) I ( ) N	(●) S ( ) R ( ) I ( ) N	(●) S ( ) R ( ) I ( ) N	( ) S ( ) R (●) N	(●) S ( ) R ( ) I ( ) N	( ) S ( ) R ( ) I (●) N

* CIPRO	LEVO	* COL	PB
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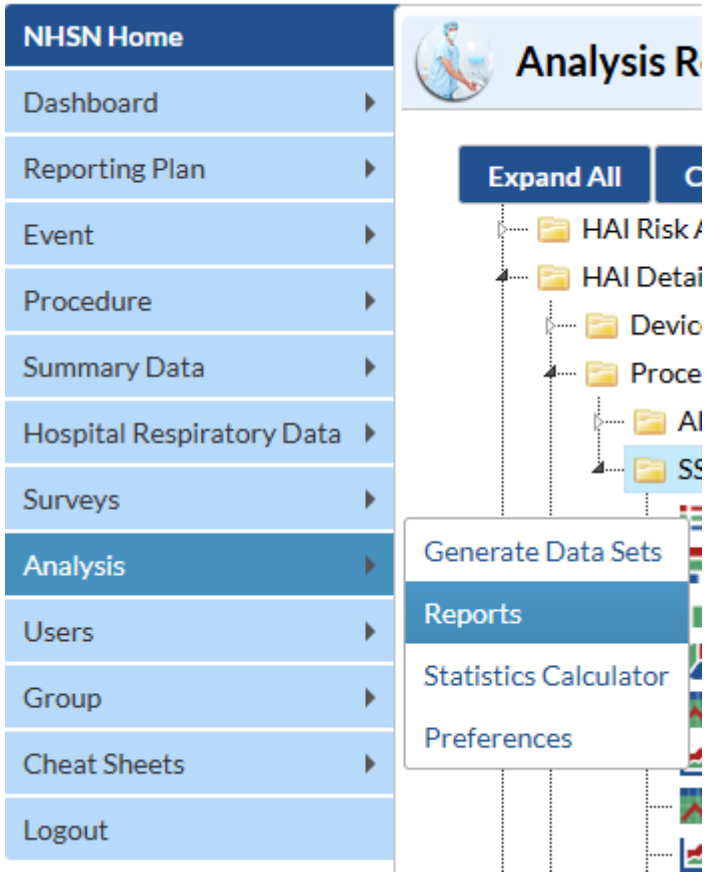
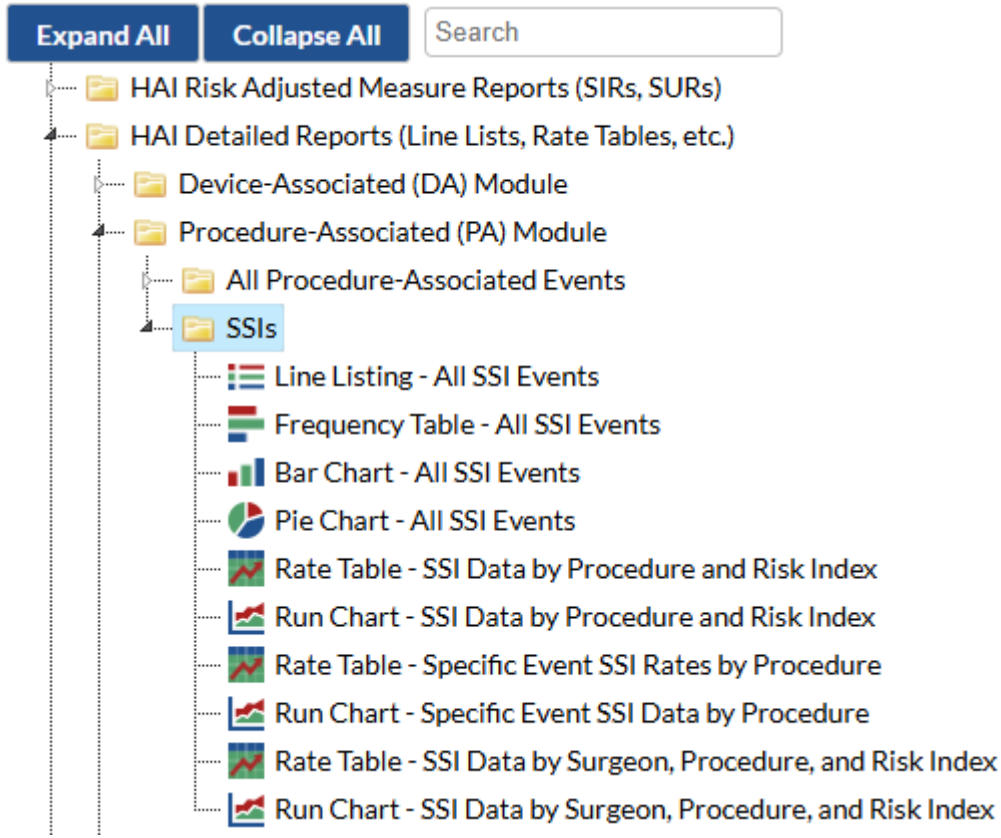
NHSN Analysis Tree: SSI Events





SSI Reporting Instructions

SSI Reporting Instructions

- Definitions that do NOT apply to the SSI protocol:
  - Infection Window Period (IWP)
  - Healthcare-associated Infection (HAI) vs Present on Admission (POA)
- Date of Event (DOE): date when the first element used to meet the SSI occurs for the first time during the surveillance period
  - Type of SSI and assigned DOE must reflect the deepest tissue level where criteria are met during the surveillance period
- Timeframe not strict like other HAIs
  - Generally 7-10 day window
    - Must be within surveillance window

30-day Surveillance Period

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

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.

90-day Surveillance Period

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

SSI Reporting Instructions: Excluded Organisms

- Organisms excluded from meeting SSI criteria:
  - Blastomyces
  - Histoplasma
  - Coccidioides
  - Paracoccidioides
  - Cryptococcus
  - Pneumocystis

  OR

  - Organisms associated with latent infections:
    - Herpes
    - Shingles
    - Syphilis
    - Tuberculosis

SSI Reporting Instructions: PATOS

- Present on admission definition doesn't apply to SSI protocol.

IF

- There is evidence of infection at the time of the procedure

AND

- Patient meets the criteria for an SSI within the surveillance window

THEN

- An SSI is attributed to the procedure, but is marked present at time of surgery (PATOS)

SSI Reporting Instructions: PATOS

- PATOS is a Yes/No field on the SSI event form.

- It denotes evidence of infection that was directly seen during the surgical procedure, where an SSI was then attributed.
  - This evidence MUST be noted intraoperatively and documented within the narrative portion of the operative note or report of surgery

  - Pre- or Post-op diagnoses, indications for surgery, and other headings routinely included in an operative note are NOT eligible

SSI Reporting Instructions: PATOS

- Only select PATOS = Yes when it applies to the depth of the SSI that is being attributed to the procedure.
  - Documentation of an intraabdominal infection at time of surgery and then later returns with an organ/space SSI?
    - PATOS = YES.
  - Documentation of an intraabdominal infection at time of surgery and then later returns with a superficial or deep incisional SSI?
    - PATOS = NO.

SSI Reporting Instructions: PATOS

- Evidence of infection:
  - Abscess
  - Infection
  - purulence/pus
  - Phlegmon
  - osteomyelitis
  - “feculent peritonitis”

- A ruptured/perforated appendix is evidence of infection at the organ/space level.

SSI Reporting Instructions: PATOS

- NOT evidence of infection:
  - colon perforation
  - Contamination
  - Necrosis
  - Gangrene
  - fecal spillage
  - nicked bowel during procedure
  - murky fluid
  - documentation of inflammation

- The use of the ending “itis” in an operative note/report of surgery does not automatically meet PATOS
  - It may only reflect inflammation which is not infectious in nature (for example, diverticulitis, peritonitis, and appendicitis)

SSI Reporting Instructions: PATOS

- Can’t be used to determine PATOS:
  - Pathology report findings
  - imaging tests
  - microbiological testing from surgical specimens (culture or non-culture)
  - Wound class
  - Trauma resulting in contamination

SSI Reporting Instructions: PATOS Examples

- A patient undergoes an XLAP where there is a finding of a ruptured appendix and an APPY is performed. Two weeks later the patient meets criteria for an organ/space IAB SSI. The PATOS field is selected as YES since a ruptured appendix is noted at time of surgery in the same tissue level as the subsequent SSI.

- During a COLO procedure the surgeon documents multiple abscesses in the intraabdominal cavity. Patient returns three weeks later and meets criteria for a superficial incisional SSI. The PATOS field is selected as NO since there was no documentation of evidence of infection of the superficial tissues at time of the COLO.

SSI Reporting Instructions: Multiple Tissue Levels

- The type of SSI must reflect the deepest tissue level where SSI criteria are met during the surveillance period.
  - Report infection that meets criteria for organ/space SSI as an organ/space SSI, regardless of superficial or deep tissue involvement
  - Report infection that meets criteria for deep incisional SSI as a deep incisional SSI, regardless of superficial tissue involvement.
  - If 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.

SSI Reporting Instructions: Multiple Procedures I

- When a patient has several NHSN operative procedures performed on different dates, attribute the SSI to the most recently performed NHSN operative procedure.

SSI Reporting Instructions: Primary Sites

- Multiple primary incision sites of the same NHSN operative procedure become infected
  - Report as a single SSI
  - Assign the type of SSI by deepest tissue level where SSI criteria are met at any primary incision sites during the surveillance period

SSI Reporting Instructions: Primary Sites Examples

- If one laparoscopic incision meets criteria for a superficial SSI and another incision meets criteria for a deep incisional SSI?
  - Report one deep incisional 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

SSI Reporting Instructions: Secondary Incisions

- Secondary incision sites are monitored for Superficial Incisional Secondary (SIS) SSI and Deep Incisional Secondary (DIS) SSI.
  - Surveillance period is always 30 days
- Reported as one operative procedure
  - Up to two SSI events can be reported linked to the procedure (primary & secondary SSIs)
- Procedures involving secondary incisions:
  - BRST
  - CBGB
  - CEA
  - FUSN
  - PVBY
  - REC
  - VSHN

SSI Reporting Instructions: Secondary Incisions

- A saphenous vein harvest incision site in a CBGB procedure is the secondary incision site.
  - One CBGB procedure is reported
  - The saphenous vein harvest site is monitored for 30 days following surgery for SSI
  - 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.

SSI Reporting Instructions: Multiple Procedures II

- If more than one NHSN operative procedure category is performed through a single site 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 to select procedure

SSI Reporting Instructions: Multiple Procedures II

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

SSI Reporting Instructions: Multiple Procedures II

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 Reporting Instructions: Detection

- What if 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.

SSI Reporting Instructions: Invasive Manipulation

- 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.

SSI Reporting Instructions: Invasive Manipulation

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

SSI Reporting: Post-op Scenario

- 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.

SSI Reporting Instructions

- Secondary BSI attribution Scenarios
  - Scenario 1
    - Organism identified from blood matches organism identified from site-specific specimen used to meet SSI criterion **and** blood specimen collected during secondary BSI attribution period
      - 17 days total: 3 days prior and 13 days after DOE
  - Scenario 2
    - An organism identified in the blood is an element used to meet the NHSN Organ/Space SSI site-specific criterion and collected during timeframe for SSI elements

Denominator Data

Denominator Reporting

- Complete a denominator form for each NHSN Operative Procedure performed, even if performed during same trip to the OR

- If multiple procedures are performed during same trip to the OR through the same incision, combine the duration of all the procedures.

- If multiple procedures are performed during same trip to the OR through *different* incisions, determine each procedure start/finish or split total procedure time by the number of procedures

Denominator Example 1a

- Patient A undergoes a CARD and CGBC procedure through the same chest incision. The PST for the CGBC is noted as 8:30 AM. No PF is listed for the CGBC. The CARD procedure is noted to start at 1:00 PM, and the PF is listed as 3:00 PM. CBGC are required reporting, and CARD is on your facility's monthly reporting plan. **What denominator and duration reporting would this require?**

Report the combined duration of all procedures through the same incision, during the same trip to the OR.

Denominator Example 1a

- Patient A undergoes a CARD and CGBC procedure through the same chest incision. The PST for the CGBC is noted as 8:30 AM. No PF is listed for the CGBC. The CARD procedure is noted to start at 1:00 PM, and the PF is listed as 3:00 PM. CBGC are required reporting, and CARD is on your facility's monthly reporting plan. **What denominator and duration reporting would this require?**

You would have two procedures:

1. CARD Procedure – 6 hours 30 minutes
2. CBGC Procedure – 6 hours 30 minutes

Denominator Example 1b

- Patient B, who has tandem spinal stenosis, undergoes a lumbar laminectomy (LAM) as well as a cervical spinal fusion at a different incision (FUSN) during the same trip to the OR. The PST is listed as 11:20 AM and the PF is listed as 2:40 PM. The are no notes for when one procedure ends and the other starts. **What denominator reporting would this require?**

You would have two procedures:

1. LAM Procedure – 1 hour 40 minutes
2. FUSN Procedure – 1 hour 40 minutes

Denominator Reporting

- If same NHSN Operative Procedure but *different* ICD-10-PCS or CPT codes, complete one Denominator for Procedure form.
  - Check the **Operative Procedure Code Documents.**

CBGB--Coronary bypass with chest & donor incisions - Chest procedure to perform direct revascularization of the heart; includes obtaining suitable vein from donor site for grafting			
Procedure Code Category	**ICD-10-PCS Codes**	**Procedure Code Descriptions**	**Code Status**
CBGB	021008F	Bypass Coronary Artery, One Artery from Abdominal Artery with Zooplastic Tissue, Open Approach	No change
CBGB	0210093	Bypass Coronary Artery, One Artery from Coronary Artery with Autologous Venous Tissue, Open Approach	No change
CBGB	0210098	Bypass Coronary Artery, One Artery from Right Internal Mammary with Autologous Venous Tissue, Open Approach	No change
CBGB	0210099	Bypass Coronary Artery, One Artery from Left Internal Mammary with Autologous Venous Tissue, Open Approach	No change
CBGB	021009C	Bypass Coronary Artery, One Artery from Thoracic Artery with Autologous Venous Tissue, Open Approach	No change
CBGB	021009F	Bypass Coronary Artery, One Artery from Abdominal Artery with Autologous Venous Tissue, Open Approach	No change
CBGB	021009W	Bypass Coronary Artery, One Artery from Aorta with Autologous Venous Tissue, Open Approach	No change

Denominator Reporting

- For more than one procedure through same incision/surgical space within 24 hours, combine both durations and complete Denominator for Procedure form for original procedure.

Denominator Example 2

- Patient C required a COLO procedure the morning of January 26 for an obstruction. Resection and anastomosis was required. PST was reported as 6:15 AM and PF was 7:45 AM. By that evening, there is evidence that the anastomosis had failed and the patient is returned to surgery for revision. PST is reported as 5:50 PM and PF at 9:20 PM. **What denominator reporting is required?**

You would have one procedure form:

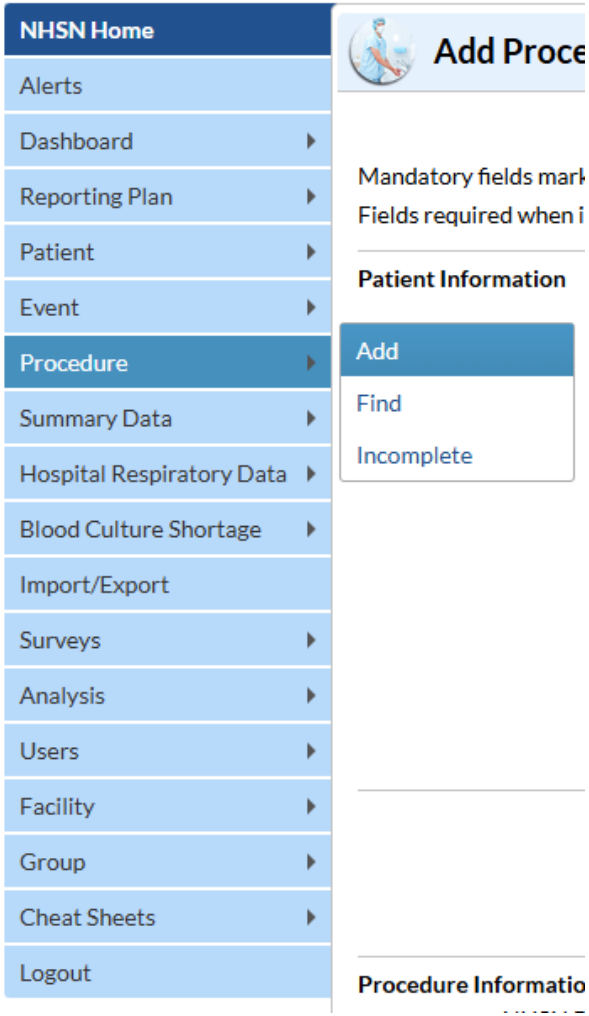
1. COLO Procedure – (1.5 hrs + 3.5 hrs) = 5 hours

Denominator Reporting

- HYST or VHYS determined by ICD-10 5th character, which indicates the approach for the procedure
  - Assigned by facility's medical coder to the 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

Denominator Reporting



Denominator Reporting

Add Procedure

Mandatory fields marked with *
Fields required when in Plan marked with >

Patient Information

Facility ID *: TDH Central (ID 15813)
Patient ID *: Find | Reassign | Find Procedures for Patient
Secondary ID:
Last Name:
Middle Name:
Gender *:
Sex at Birth:
Ethnicity:
Race:
- American Indian/Alaska Native
- Black or African American
- White
- Declined to respond
- Asian
- Native Hawaiian/Other Pacific Islander
- Middle Eastern or North African
- Unknown

Procedure #:
Social Security #:
Medicare #:
First Name:
Date of Birth *:

Gender Identity:
- Male
- Female-to-male transgender
- Identifies as non-conforming
- Asked but unknown
- Female
- Male-to-female transgender
- Other

Procedure Information

NHSN Procedure Code *:
Select button for system used
- ICD-10 PCS
- CPT Code

Procedure Date *: Link/Unlink to Event

Denominator Reporting

Procedure Details

Outpatient *: Duration (Hrs:Mins) *: :

Wound Class *: General Anesthesia *:

ASA Score:

Emergency *: Trauma *: Scope *:

Diabetes Mellitus *: Closure Technique *:

Surgeon Code:

Height *: or m

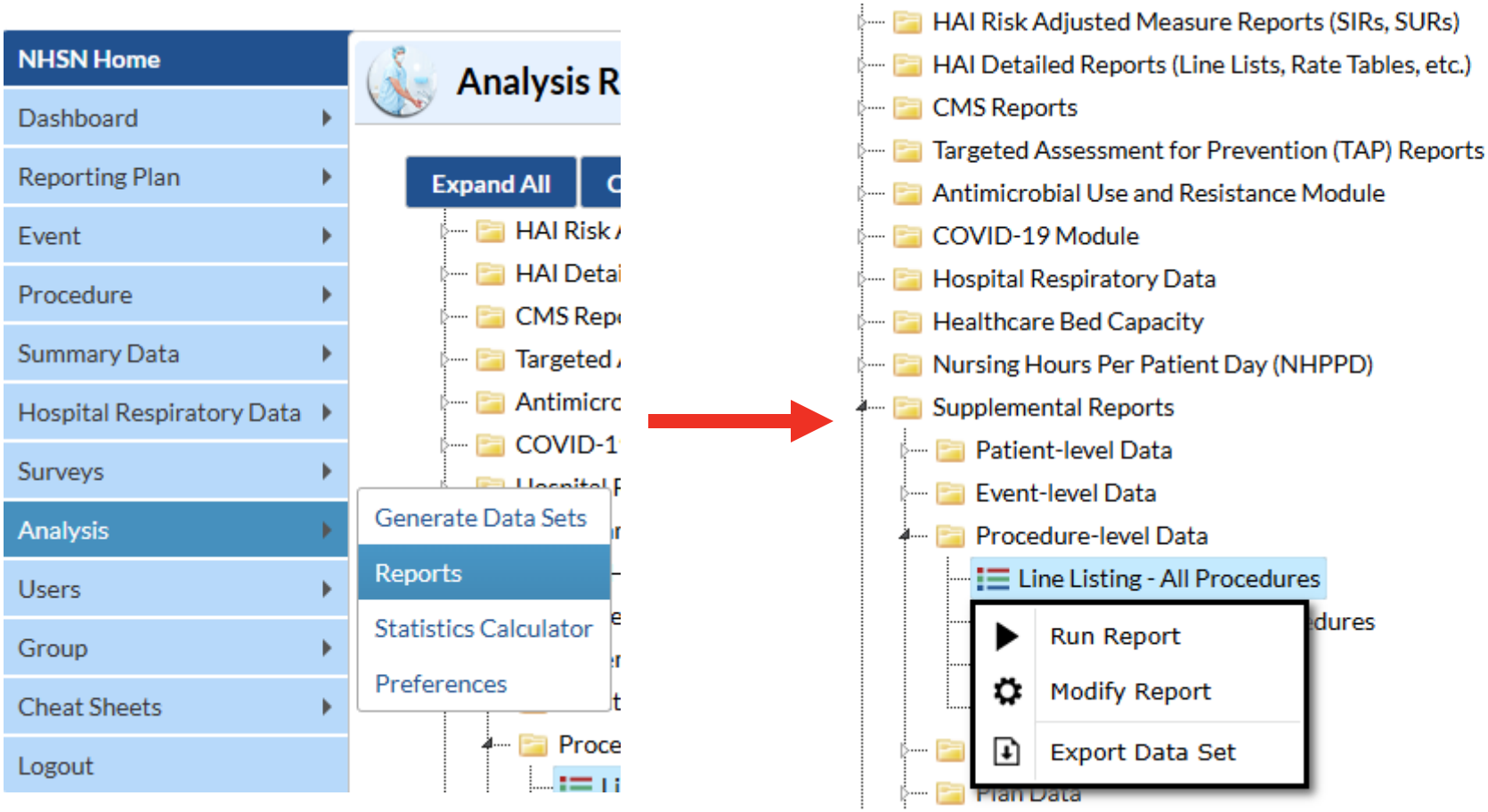
Weight *: lbs or kg BMI

Custom Fields

Comments

Save Back

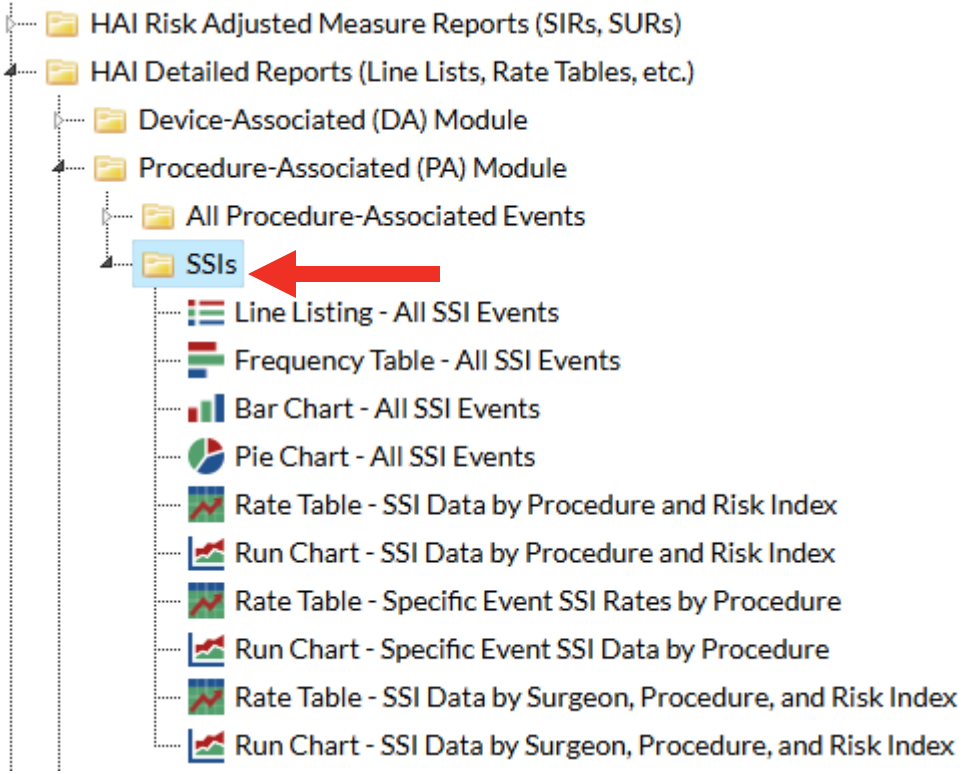
Denominator Reporting



NHSN Analysis Options

SSI Analysis Options

- What analyses do NHSN provide?
  - Descriptive Analysis Reports
    - Line Lists
    - Frequency Tables
    - Bar charts
    - Pie charts
  - Basic Rate Index Reports
    - SSI Rates per 100 operative procedures
  - SIR Reports



Standardized Infection Ratio (SIR)

$$\text{SIR} = \frac{\textbf{Observed (O) SSIs}}{\textbf{Predicted (P) SSIs}}$$

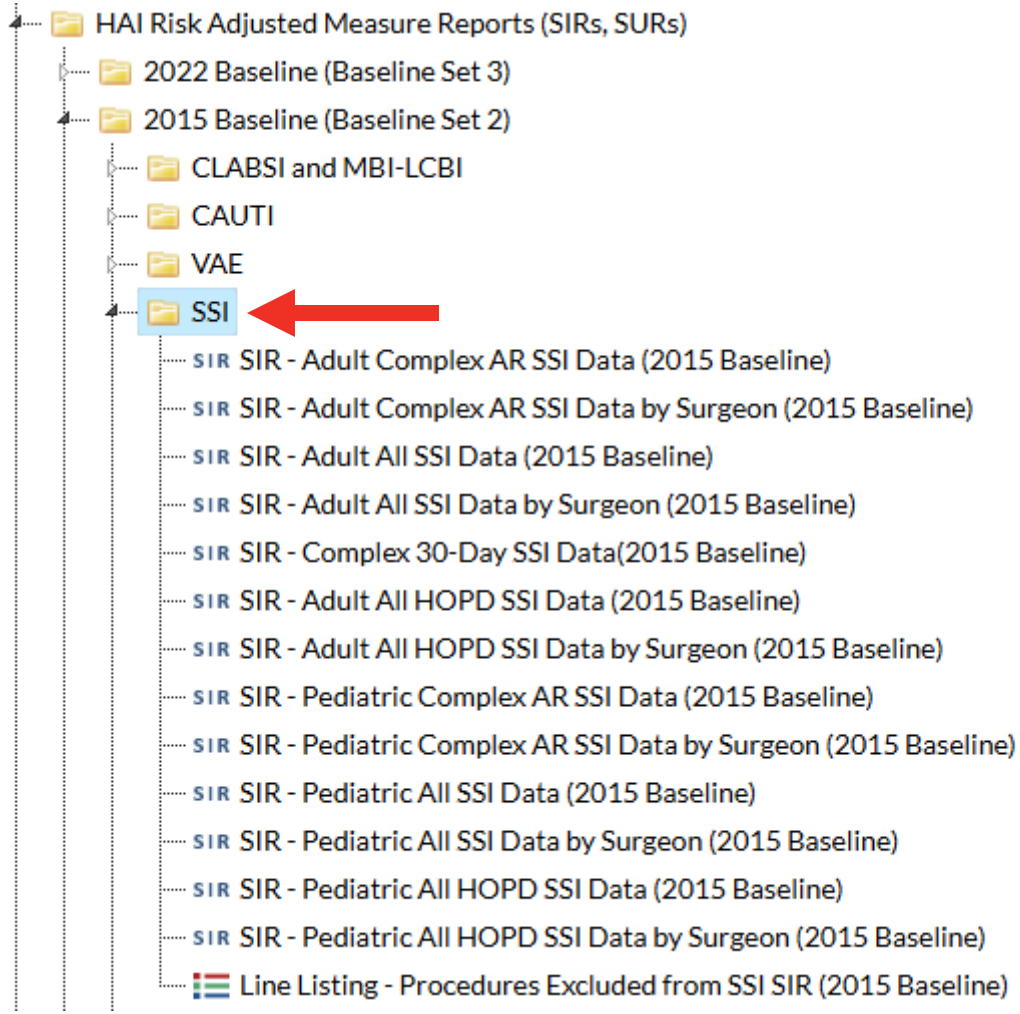
- Observed SSIs = sum of all SSIs
- Predicted SSIs = sum of factors from model used

- SIR < 1.0 : Actual infections are LESS than predicted infections
- SIR > 1.0 : Actual infections are MORE than predicted infections
- SIR = 1.0 : Actual infections are EQUAL to predicted infections

SSI SIR Models

SSI SIR Model	Inclusion Criteria	Patient Population
All SSI SIR Model	• Includes only inpatient procedures • Includes Superficial, Deep & Organ/Space SSIs • Superficial & Deep Incisional SSIs limited to primary incisional SSIs only • Includes SSIs identified on admission, readmission & via post-discharge surveillance	• Procedures in adult patients • Procedures in pediatric patients
Complex Admission/Readmission (A/R) SSI Model	• Includes only inpatient procedures • Includes only Deep Incisional Primary SSIs & Organ/Space SSIs • Includes only SSIs identified on Admission/Readmission to facility where procedure was performed • Used for the annual CDC publication of national benchmarks	• Procedures in adult patients • Procedures in pediatric patients
Complex 30-Day SSI model (used for CMS IPPS)	• Includes only in-plan, inpatient COLO and HYST procedures in adult patients (i.e., ≥ 18 years of age) • Includes only Deep Incisional Primary SSIs and Organ/Space SSIs with an event date within 30 days of the procedure • Includes SSIs regardless of detection method • Used only for CMS IPPS reporting and for public reporting on the CMS Care Compare website	• Procedures in adult patients

SSI SIR Models



SSI SIR Inclusion Criteria

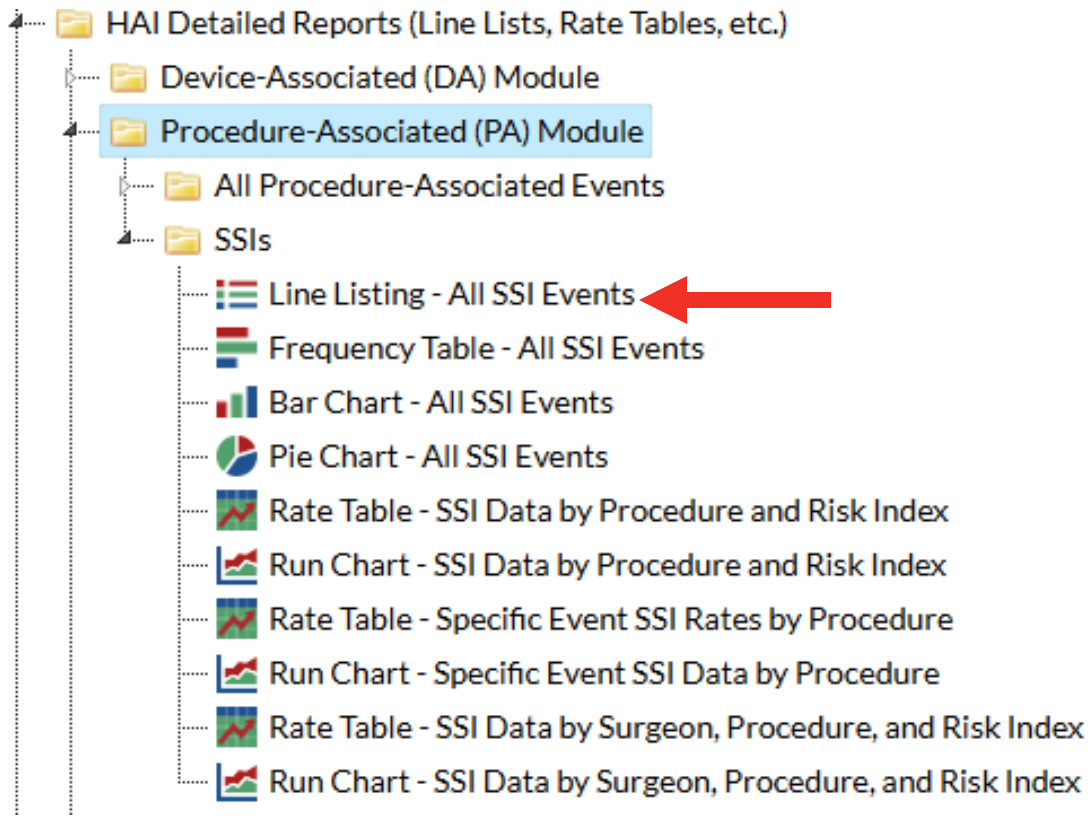
Included in model: Under 2015 Baseline	All SSI Model-Adult	Complex A/R SSI Model- Adult	All SSI Model- Pediatric	Complex A/R SSI Model- Pediatric	Complex 30-Day
All NHSN procedure categories	✓	✓	✓	✓	COLO HYST
Procedures in patients <18 years			✓	✓	
Procedures in patients >=18 years	✓	✓			✓
Inpatient procedures only	✓	✓	✓	✓	✓
Outpatient procedures	EXCLUDED FROM ALL PATIENT SAFETY SSI SIR MODELS				
Superficial incisional primary (SIP) SSIs	✓		✓		
Deep incisional primary (DIP) SSIs	✓	✓	✓	✓	✓
Organ/space (O/S) SSIs	✓	✓	✓	✓	✓
DIP and O/S SSIs identified > 30 days after procedure (per protocol)	✓	✓	✓	✓	
SSIs detected on current admission (A)	✓	✓	✓	✓	✓
SSIs detected on follow-up admission to the same facility (RF)	✓	✓	✓	✓	✓
SSI detected on follow-up admission to different facility (RO)	✓		✓		✓
SSIs detected through post-discharge surveillance efforts (P)	✓		✓		✓

SIR Exclusions

- There are 9 universal exclusions for SSI SIR Models.

Universal Exclusion Criteria Variables	Definition of Variables
exclMissingVarInd	Procedure excluded for missing risk factors used in risk adjustment of applicable procedure category for SSI models
exclMissingVarList	List of missing risk factors used in risk adjustment of applicable procedure category for SSI models
exclDurThresholdInd	Procedure excluded due to procedure duration being less than 5 minutes or exceeding the IQR5 value. Please see the list of procedure duration cutoff points in the SSI section of the SIR Guide: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf
exclAgeGT109Ind	Procedure excluded if the patient's age at time of procedure is 109 years or older
exclOutpatientInd	Procedure excluded because it was reported as an outpatient procedure; NOTE: all outpatient procedures are excluded from the inpatient SSI SIRs calculated using the 2015 baseline. There are separate SIR reports for procedures performed in Hospital Outpatient Procedure Departments (HOPD).
exclPedIndcmpx30d	Procedures performed in pediatric patients are excluded from the Complex 30-day model
exclGenderOth	Procedure excluded because patient's gender was not reported as male or female (specifically, gender = Other)
exclInvalidJointRepHemi	Procedure is excluded if procedure code is KPRO or HPRO and (procedure type is a hemi joint replacement reported as a total revision or a total joint replacement reported as a partial revision) and procedure date is January 1, 2015-December 31, 2015.
exclBMIThresholdInd	Procedure excluded if the adult patient's BMI is less than 12 or greater than 60. In pediatric patients > 18 years if BMI is less than 10.49 or greater than 65.79**

Excluded Events



All SSI Events Report

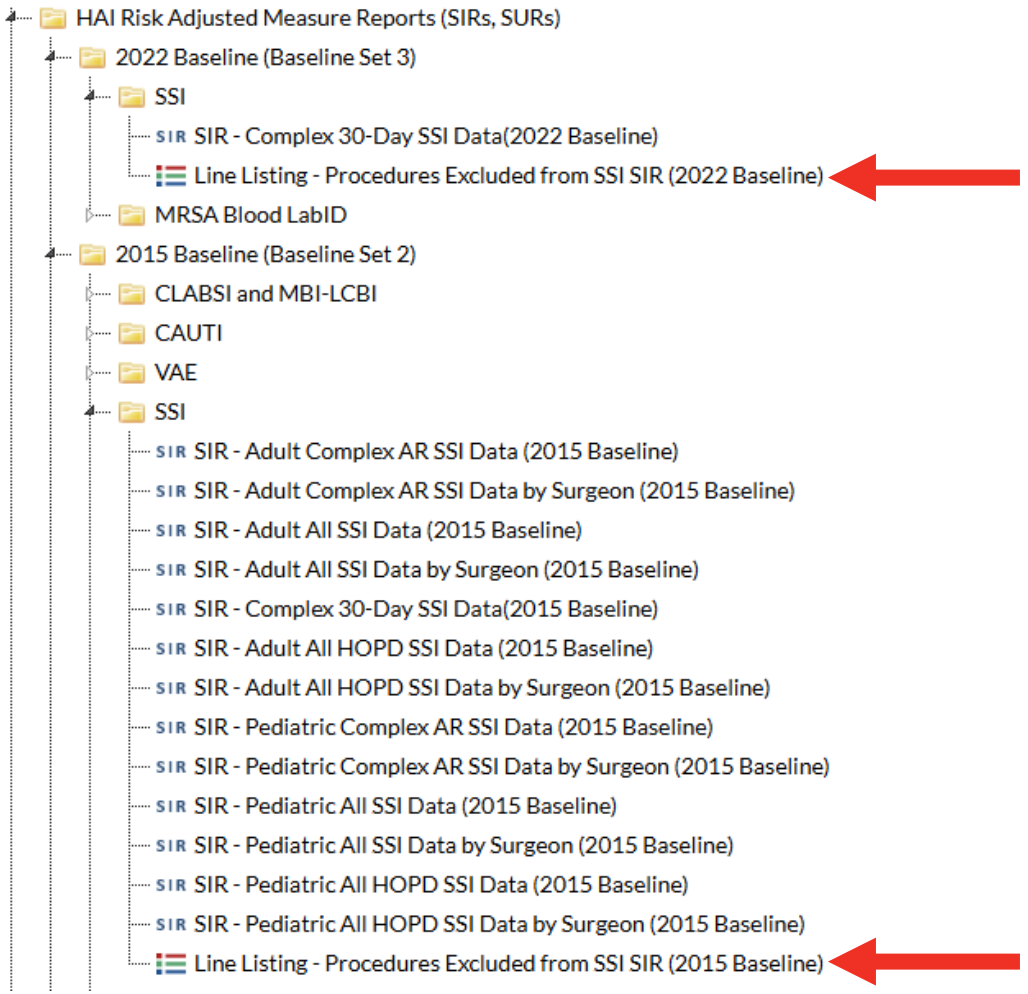
National Healthcare Safety Network
Line Listing for All Surgical Site Infection Events
As of: January 27, 2025 at 8:31 PM UTC
Date Range: All SSI_EVENTS
if (orgid = 15813)

orgID	patID	eventType	spcEvent	procDate	procCode	dob	ageAtProc	gender	procDurationHr	procDurationMin	outpatient	closure	whenDetected	bs2_allAdultExcl	bs2_cmpxAdultExcl	bs2_cmpx30dExcl	bs2_SSIAll	bs2_SSIpedAll	bs2_SSIComplex	bs2_SSIComplex30d
15813	P123459	SSI	DIP	01/14/2015	COLO	07/02/1932	82	F	4	16	N	PRI	A	1	0	1	0	0	1	0
15813	P123467	SSI	IAB	01/26/2015	COLO	01/17/1986	29	M	4	36	N	PRI	A	1	0	1	0	0	1	0
15813	P123474	SSI	SIP	02/15/2015	COLO	11/10/1952	62	M	1	16	N	PRI	A	1	0	1	0	0	0	0
15813	P123485	SSI	GIT	03/09/2015	COLO	12/28/1928	86	F	3	36	N	PRI	A	1	0	1	0	0	1	0
15813	P123488	SSI	DIP	03/12/2015	COLO	02/23/1945	70	M	2	36	N	PRI	A	1	1	1	0	0	0	0
15813	P123493	SSI	OREP	03/20/2015	COLO	01/17/1986	29	M	2	10	N	PRI	A	1	0	1	0	0	1	0
15813	P123510	SSI	IAB	05/23/2015	COLO	11/10/1952	62	M	3	16	N	PRI	A	1	1	1	0	0	0	0
15813	P123539	SSI	IAB	04/30/2015	COLO	01/07/1947	68	F	3	36	N	PRI	A	1	1	1	0	0	0	0
15813	002	SSI	IAB	09/15/2021	COLO	11/08/1945	75	F	4	20	N	PRI	A	0	0	0	1	0	1	1
15813	002	SSI	IAB	09/16/2021	COLO	11/08/1945	75	F	4	32	N	PRI	A	1	1	1	0	0	0	0
15813	0015	SSI	OREP	12/07/2022	HYST	06/03/2003	19	F	4	30	N	PRI	RF	0	0	0	1	0	1	1
15813	0025	SSI	IAB	12/15/2022	COLO	05/15/1975	47	F	3	50	N	PRI	A	0	0	0	1	0	1	1
15813	7739	SSI	SIP	12/12/2024	KPRO	08/31/1950	74	F	4	50	Y	PRI	RF	1	1	1	0	0	0	0

bs2_cmpxAdultExcl	bs2_cmpx30dExcl
0	1
0	1
0	1
0	1
1	1
0	1
1	1
1	1
0	0
1	1

Excluded Procedures

- Line lists show:
  - Which SIR procedure was excluded from
  - Procedure Details
  - Reason(s) for Exclusion



How can I see my data?

- **National (Deidentified)**
  - National HAI Progress Report (CDC NHSN 2023)
- **State (Deidentified)**
  - TDH HAI/AR Annual Aggregate Report
- **State (Identified)**
  - TDH HAI/AR Annual Technical Report

Upcoming Webinars

- **AU/AR Events**
  - **Monday, February 10th, 10 a.m. CT**
- **VAE**
  - **Tuesday, February 18th, 10 a.m. CT**
- **NHSN Analysis**
  - **Monday, February 24th, 10 a.m. CT**

Upcoming Trainings

- **Case Study Sessions –same scenarios**
  - **Same content, several time offerings**

  - **March 12, 2025 – 1:00 p.m. – 4:30 p.m.**
  - **March 13, 2025 – 8:00 a.m. – 11:30 a.m.**
  - **March 18, 2025 – 8:00 a.m. – 11:30 a.m.**

- **Registration for case-based trainings will occur later via the Tennessee TRAIN Learning Network.**

This activity has been submitted to Georgia Nurses Association for approval to award contact hours. Georgia Nurses Association is accredited as an approver of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation.

Resources

- NHSN Patient Safety Component
  - Chapter 9. Surgical Site Infections

- NHSN SSI Hub
  - SSI Checklist
  - SSI Collection Form
  - Procedure Reporting Form (Denominator)

Questions?

Contact Information

HAI.Health@tn.gov