NHSN Surgical Definitions

Cheryl Richardson, RN, BSN, CIC

Conflict of Interest and Disclosure of Financial Relationships

- I'm an employee of CareFusion.
- No financial or in-kind contributions have been given by a commercial interest to pay all or part of the cost of this educational activity.
- I do not plan to discuss any unlabeled or investigational uses of products during this educational activity.

Objectives

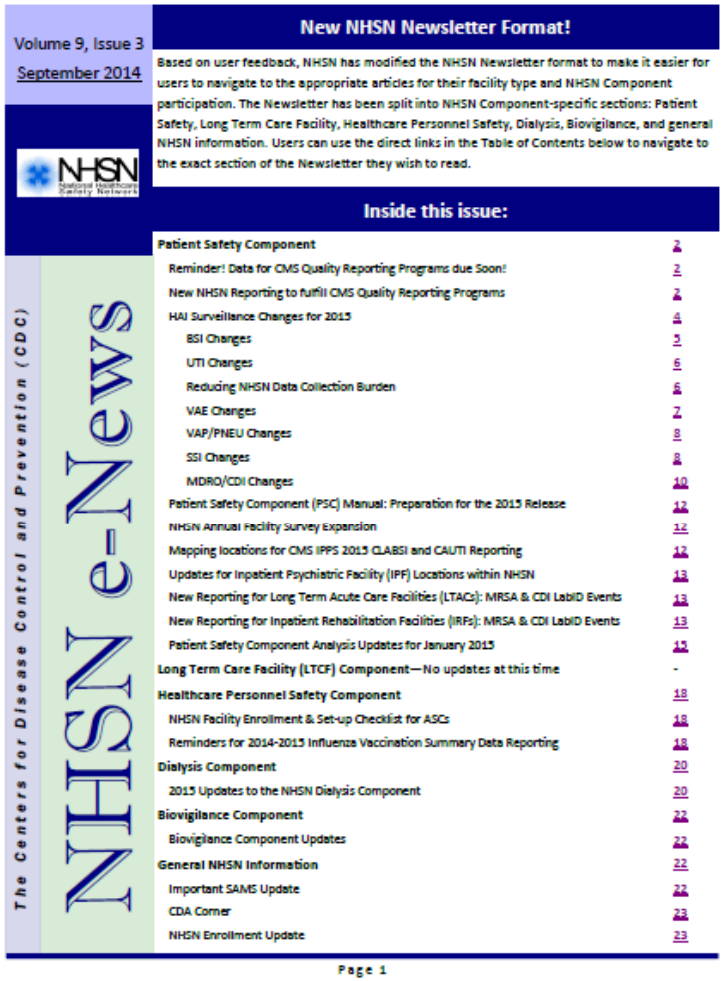
Upon completion of this program, participants will be able to:

- Utilize NHSN definitions to identify SSIs
- Identify SSI surveillance changes for 2015
- Apply NHSN SSI definitions to patient case studies

Surgical Procedure Denominator Forms

Transition to ICD-10-CM/PCS codes

- CDC continues to work on updated ICD-10-CM/PCS and CPT mappings. These mappings are anticipated to be available by March 2015.
- ICD-10-CM/PCS codes will replace ICD-9-CM codes on October 1, 2015 but NHSN will not have the ability to receive these codes until the January 2016 release.
- For the last quarter of 2015 enter the NHSN Procedure Code (e.g. COLO or HYST) but do not enter any ICD-10-CM/PCS codes associated with the procedure.



Volume 9, Issue 3
September 2014

NHSN

The Centers for Disease Control and Prevention (CDC)

NHSN e-News

New NHSN Newsletter Format!

Based on user feedback, NHSN has modified the NHSN Newsletter format to make it easier for users to navigate to the appropriate articles for their facility type and NHSN Component participation. The Newsletter has been split into NHSN Component-specific sections: Patient Safety, Long Term Care Facility, Healthcare Personnel Safety, Dialysis, Biovigilance, and general NHSN information. Users can use the direct links in the Table of Contents below to navigate to the exact section of the Newsletter they wish to read.

Inside this issue:

Page 1

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

This form is used for reporting data on each patient having one of the NHSN operative procedures selected for monitoring.

Data Field	Instructions for Data Collection
Facility ID	The NHSN-assigned facility ID will be auto-entered by the computer.
Procedure #	The NHSN-assigned Procedure # will be auto-entered by the computer.
Patient ID	Required. Enter the alphanumeric patient ID number. This is the patient identifier assigned by the hospital and may consist of any combination of numbers and/or letters.
Social Security #	Optional. Enter the 9-digit numeric patient Social Security Number.
Secondary ID #	Optional. Enter the alphanumeric ID number assigned by the facility.
Medicare #	Optional. Enter the patient's Medicare number.
Patient name	Optional. Enter the last, first, and middle name of the patient.
Gender	Required. Check Female, Male, or Other to indicate the gender of the patient.
Date of birth	Required. Record the date of the patient birth using this format: MM/DD/YYYY.
Ethnicity Hispanic or Latino Not Hispanic or Not Latino	Optional. If patient is Hispanic or Latino, check this box. If patient is not Hispanic or not Latino, check this box.
Race	Optional. Check all the boxes that apply to identify the patient's race.
Event type	Required. Enter the code for procedure (PROC).
NHSN Procedure code	Required. Enter the appropriate NHSN procedure code.
Date of procedure	Required. Record the date when the NHSN procedure was done using this format: MM/DD/YYYY.

Form Approved
OMB No. 0920-0666
Exp. Date: 10-31-2016
www.cdc.gov/nhsn

Denominator for Procedure

*required for saving

Facility ID	Procedure #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
Event Type: PROC	*NHSN Procedure Code:
*Date of Procedure:	ICD-9-CM Procedure Code:

Procedure Details

*Outpatient: Yes No

No "U"

*Wound Class: C CC CO D

ASA Score: 1 2 3 4 5

*Trauma: Yes No

*Scope: Yes No

*Height: _____feet _____inches

(choose one) _____meters

*Weight: _____lbs/kg (circle one)

*Duration: _____Hours _____Minutes

*General Anesthesia: Yes No

*Emergency: Yes No

*Diabetes Mellitus: Yes No

*Closure Technique: Primary Other than primary

Surgeon Code: _____

CSEC: *Duration of Labor: _____hours

Wound Class

- Must be assessed at the time of the operation by a person present during the surgical procedure
  - e.g., surgeon, circulating nurse, etc.
- Wound class assignment prior to surgery will lead to both inaccurate reporting and inaccurate risk adjustment!

Wound Class

Clean

Operation where no inflammation encountered

Respiratory, alimentary, genital, urinary tracts ***not*** entered

Operation following non-penetrating (blunt) trauma

Primarily closed with no open drainage

Clean - Contaminated

Operation entering respiratory, alimentary, genital, or urinary tracts

No evidence of infection, no major break in technique, no unusual contamination encountered

Operation involving biliary tract, appendix, vagina, and oropharynx

Contaminated

Operation following open, fresh, accidental wounds

Operation with major breaks in sterile technique (e.g., open cardiac massage) or gross spillage from GI tract

Includes operation where acute, non-purulent inflammation encountered

Dirty

Operation involving old traumatic wounds with retained devitalized tissue, **or** existing clinical infection **or** perforated viscera

Definition suggests the organisms causing post-op infection were present before the operation

NHSN Manual Ch16

Form Approved
OMB No. 0920-0666
Exp. Date: 10-31-2016
www.cdc.gov/nhsn

Denominator for Procedure

*required for saving

Facility ID	Procedure #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
Event Type: PROC	*NHSN Procedure Code:
*Date of Procedure:	ICD-9-CM Procedure Code:

Procedure Details

*Outpatient: Yes No

*Wound Class: C CC CO D

ASA Score: 1 2 3 4 5

No "6"

*Trauma: Yes No

*Scope: Yes No

*Height: _____feet _____inches

(choose one) _____meters

*Weight: _____lbs/kg (circle one)

*Duration: _____Hours _____Minutes

*General Anesthesia: Yes No

*Emergency: Yes No

*Diabetes Mellitus: Yes No

*Closure Technique: Primary Other than primary

Surgeon Code: _____

CSEC: *Duration of Labor: _____hours

Form Approved
OMB No. 0920-0666
Exp. Date: 10-31-2016
www.cdc.gov/nhsn

Denominator for Procedure

*required for saving

Facility ID	Procedure #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
Event Type: PROC	*NHSN Procedure Code:
*Date of Procedure:	ICD-9-CM Procedure Code:

Procedure Details

*Outpatient: Yes No

*Wound Class: C CC CO D

ASA Score: 1 2 3 4 5

*Trauma: Yes No

*Scope: Yes No

*Height: _____feet _____inches

(choose one) _____meters

*Weight: _____lbs/kg (circle one)

*Duration: _____Hours _____Minutes

*General Anesthesia: Yes No

*Emergency: Yes No

*Diabetes Mellitus: Yes No

*Closure Technique: Primary Other than primary

Surgeon Code: _____

CSEC: *Duration of Labor: _____hours

Change in "Scope" Field Reporting Instruction

- The instruction regarding the extension of a scope site will be removed.

- "YES" if the NHSN operative procedure was coded as a laparoscopic procedure performed using a laparoscope/robotic assist.

Form Approved
OMB No. 0920-0666
Exp. Date: 10-31-2016
www.cdc.gov/nhsn

Denominator for Procedure

*required for saving

Facility ID	Procedure #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
Event Type: PROC	*NHSN Procedure Code:
*Date of Procedure:	ICD-9-CM Procedure Code:

Procedure Details

*Outpatient: Yes No

*Wound Class: C CC CO D

ASA Score: 1 2 3 4 5

*Trauma: Yes No

*Scope: Yes No

*Height: _____feet _____inches

(choose one) _____meters

*Weight: _____lbs/kg (circle one)

*Duration: _____Hours _____Minutes

*General Anesthesia: Yes No

*Emergency: Yes No

*Diabetes Mellitus: Yes No

*Closure Technique: Primary Other than primary

Surgeon Code: _____

CSEC: *Duration of Labor: _____hours

Form Approved
OMB No. 0920-0666
Exp. Date: 10-31-2016
www.cdc.gov/nhsn

Denominator for Procedure

*required for saving

Facility ID	Procedure #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
Event Type: PROC	*NHSN Procedure Code:
*Date of Procedure:	ICD-9-CM Procedure Code:

Procedure Details

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

CSEC: *Duration of Labor: _____hours

Duration of Operative Procedure

- The interval in hours and minutes between the Procedure/Surgery Start Time, and the Procedure/Surgery Finish Time, as defined by the Association of Anesthesia Clinical Directors.

PS-PF=Duration

Procedure/Surgery Finish (PF)

Time when all instrument and sponge counts are completed and verified as correct, all postoperative radiologic studies to be done in the OR are completed, all dressings and drains are secured, and the physicians/surgeons have completed all procedure-related activities on the patient.

Form Approved
OMB No. 0920-0666
Exp. Date: 10-31-2016
www.cdc.gov/nhsn

Denominator for Procedure

*required for saving

Facility ID	Procedure #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
Event Type: PROC	*NHSN Procedure Code:
*Date of Procedure:	ICD-9-CM Procedure Code:

Procedure Details

*Outpatient: Yes No

*Wound Class: C CC CO D

ASA Score: 1 2 3 4 5

*Trauma: Yes No *Scope: Yes No

*Height: _____feet _____inches

(choose one) _____meters
*Weight: _____lbs/kg (circle one)

*Duration: _____Hours _____Minutes

*General Anesthesia: Yes No

*Emergency: Yes No

*Diabetes Mellitus: Yes No

"YES" if ICD-9 Codes 250-250.93

*Closure Technique: Primary Other than primary

Surgeon Code: _____

CSEC: *Duration of Labor: _____hours

Diabetes

- "YES" if:
  - The patient has a diagnosis of diabetes requiring management with insulin or a non-insulin anti-diabetic agent. This includes patients with "insulin resistance" who are on management with an anti-diabetic agent. This also includes patients with a diagnosis of diabetes requiring management with an anti-diabetic agent, but who are noted to be non-compliant with their prescribed medications.
- "NO" if:
  - The patient has no known diagnosis of diabetes, or a diagnosis of diabetes that is controlled by diet alone. Also indicate N if the patient receives insulin for perioperative control of hyperglycemia but has no diagnosis of diabetes

Form Approved
OMB No. 0920-0666
Exp. Date: 10-31-2016
www.cdc.gov/nhsn

Denominator for Procedure

*required for saving

Facility ID	Procedure #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
Event Type: PROC	*NHSN Procedure Code:
*Date of Procedure:	ICD-9-CM Procedure Code:

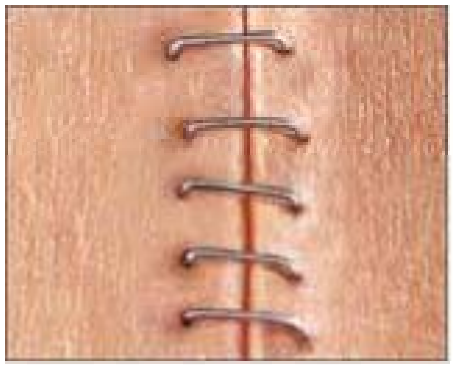
Procedure Details

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

CSEC: *Duration of Labor: _____hours

Incisional Closure

NO LONGER a part of the NHSN operative procedure definition.



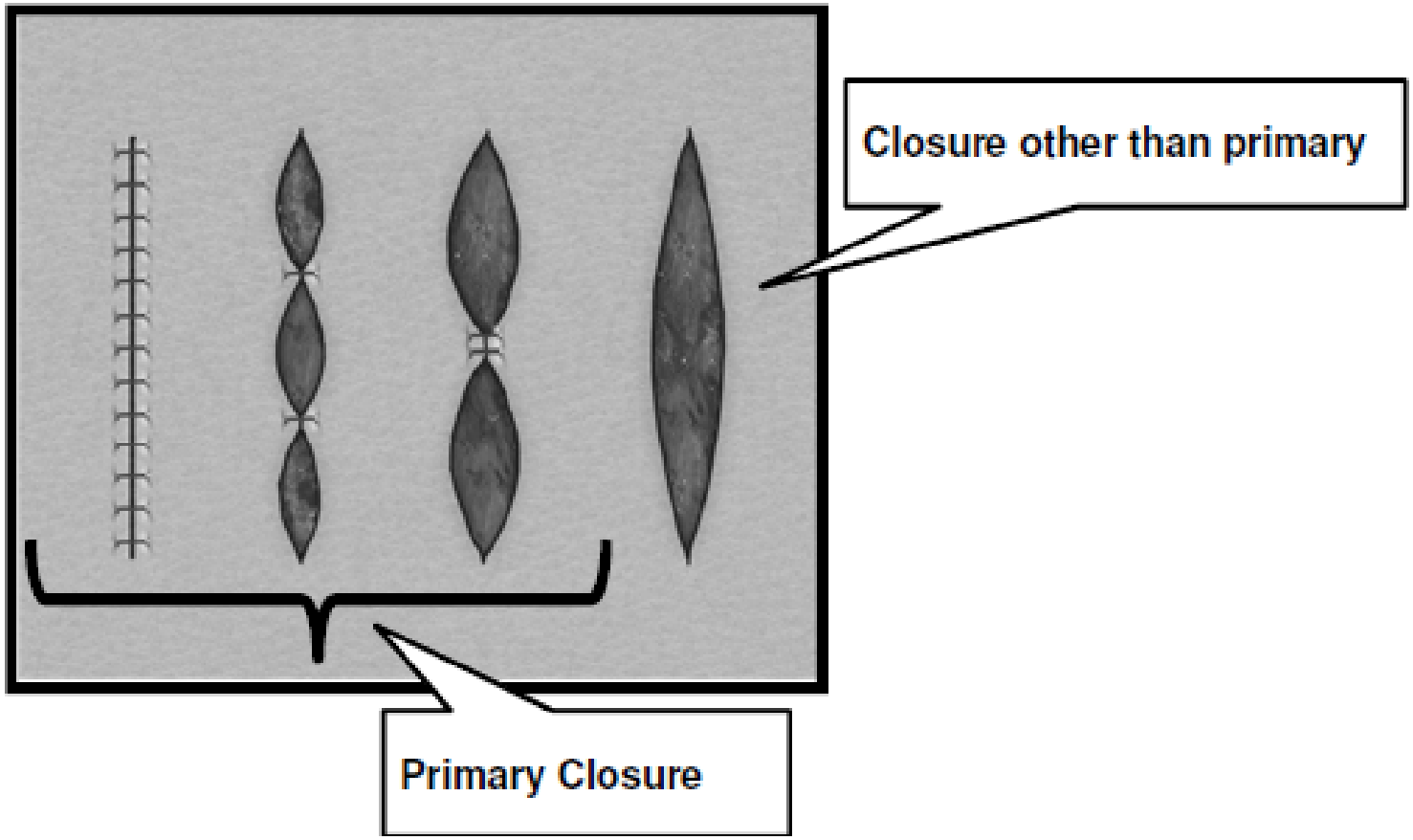
Non-Primary Closure may Include

- Superficial layers (skin) left completely open
- Deep may be closed by some means (partially) with superficial left open
- Deep and superficial left completely open
- Fascial layers or deep fascia closed with skin left open
- Open abdomen
- Deep fascial levels left open with skin closed
- Plans to be closed (secondarily) at a later date
- Surgical incision is expected to heal by secondary intention
  - May or may not have wound vacs or packing
  - may also have wires wicks or drains

Primary Closure may Include

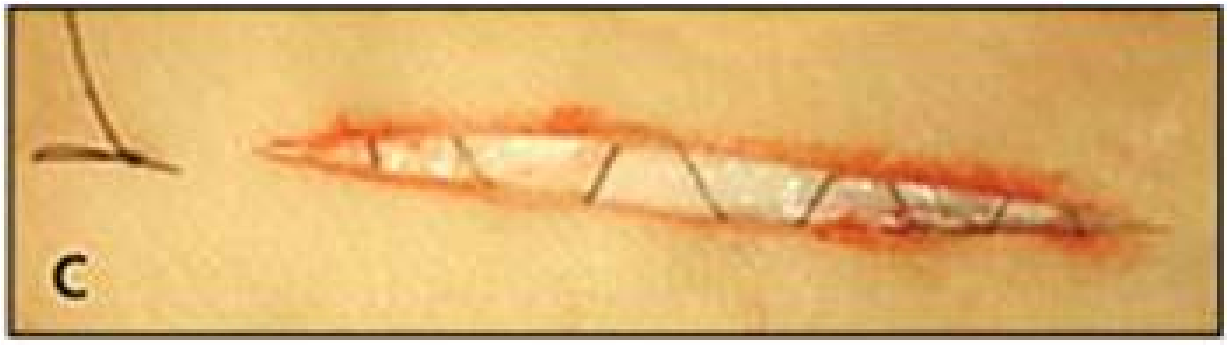
- Closure at all levels of tissue (fascia is closed)
- Any portion at skin level is closed, if the fascia has been closed even if partially it should be considered primarily closed
  - Loosely closed at skin level
  - Left open at bottom for drainage purposes
  - May have wires wicks or drains
  - May have packing
  - May have wound VAC

Wound Closure Examples



Closure Technique

- *If any part of the skin is sutured (the epidermis, the dermis, or the hypodermis/subcutis), would it be considered a primary closure?*
- ***NHSN answer**: This would not be a primary closure because at no point are the skin edges approximated.*



Closure Technique

- *If any part of the incision is approximated, but one part is left open would it be considered a primary closure?*

- ***NHSN Answer:*** *Yes, that would be a primary closure. The skin is approximated for much of the wound area. Even if it were more open than this but that at some point it is closed at the skin level it is a primary closure.*

FUSN & RFUSN

New Spinal Level and Approach Options

- Lateral Transverse and Not Specified were removed.

Circle one: FUSN RFUSN

*Spinal Level (check one)

- ☐ Atlas-axis
- ☐ Atlas-axis/Cervical
- ☐ Cervical
- ☐ Cervical/Dorsal/Dorsolumbar
- ☐ Dorsal/Dorsolumbar
- ☐ Lumbar/Lumbosacral

*Approach/Technique (check one)

- ☐ Anterior
- ☐ Posterior
- ☐ Anterior and Posterior
- ☐ Transoral

Circle one: HPRO KPRO

*Check one: ☐ Total ☐ Hemi ☐ Resurfacing (HPRO only)

If Total: ☐ Total Primary ☐ Total Revision ☐ Partial Revision

If Hemi: ☐ Partial Primary ☐ Total Revision ☐ Partial Revision

If Resurfacing (HPRO only) : ☐ Total Primary ☐ Total Revision ☐ Partial Primary ☐ Partial Revision

Circle one: FUSN RFUSN

*Spinal Level (check one)

- ☐ Atlas-axis
- ☐ Atlas-axis/Cervical
- ☐ Cervical
- ☐ Cervical/Dorsal/Dorsolumbar
- ☐ Dorsal/Dorsolumbar
- ☐ Lumbar/Lumbosacral

*Approach/Technique (check one)

- ☐ Anterior
- ☐ Posterior
- ☐ Anterior and Posterior
- ☐ Transoral

Circle one: HPRO KPRO

*Check one: ☐ Total ☐ Hemi ☐ Resurfacing (HPRO only)

If Total: ☐ Total Primary ☐ Total Revision ☐ Partial Revision

If Hemi: ☐ Partial Primary ☐ Total Revision ☐ Partial Revision

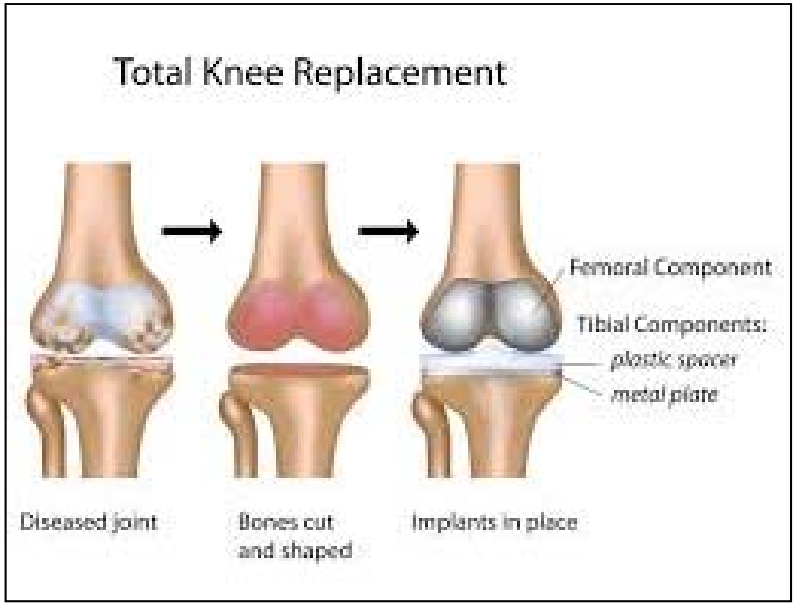
If Resurfacing (HPRO only) : ☐ Total Primary ☐ Total Revision ☐ Partial Primary ☐ Partial Revision

HPRO Mapping

- 81.51: HPRO -> Total -> Total Primary
- 81.52: HPRO -> Hemi -> Partial Primary
- 81.53: HPRO -> Total -> Total Revision
- 00.70: HPRO -> Total -> Total Revision
- 00.71-00.73: HPRO -> HEMI -> Partial Revision
- 00.85: HPRO -> Resurfacing -> Total Primary
- 00.86-00.87: HPRO -> Resurfacing -> Partial Primary

KPRO Mapping

- 81.54: KPRO -> Total -> Total Primary
- 81.55: KPRO -> Total -> Total Revision
- 00.80: KPRO -> Total -> Total Revision
- 00.81-00.84: KPRO -> Hemi -> Partial Revision



HPRO and KPRO Revision Procedures

If total or partial revision HRPO or KPRO is performed, evaluate if any of the following ICD-9 diagnosis or procedure codes (below) were coded in the 90 days prior to and including the index HPRO or KPRO revision.

HPRO and KPRO Revision Procedures (cont)

- If any of the specified codes are recorded, mark yes to the data field "...was the revision associated with prior infection at index joint?"
- This variable is defined solely by the presence of one or more of the following ICD-9 codes associated with the index HPRO or KPRO procedure in the 90-day preoperative (including index revision) period.
- This will be a new Yes/No field on the Denominator for Procedure form.

HPRO and KPRO Revision Procedures (cont)

- 84.56 - Insertion or replacement of (cement) spacer
- 84.57 - Removal of (cement) spacer
- V88.21 - Acquired absence of hip joint, with or without the presence of an antibiotic-impregnated spacer
- V88.22 - Acquired absence of knee joint, with or without the presence of an antibiotic-impregnated spacer

HPRO and KPRO Revision Procedures (cont)

- Complications peculiar to certain specified procedures, infection and inflammatory reaction due to internal prosthetic device, implant and graft (extensions of 996, 996.6):
  - 996.60 - Due to unspecified device, implant and graft
  - 996.66 - Due to internal joint prosthesis
  - 996.67 - Due to other internal orthopedic device, implant, and graft
  - 996.69 - Due to other internal prosthetic device, implant, and graft

HPRO and KPRO Revision Procedures (cont)

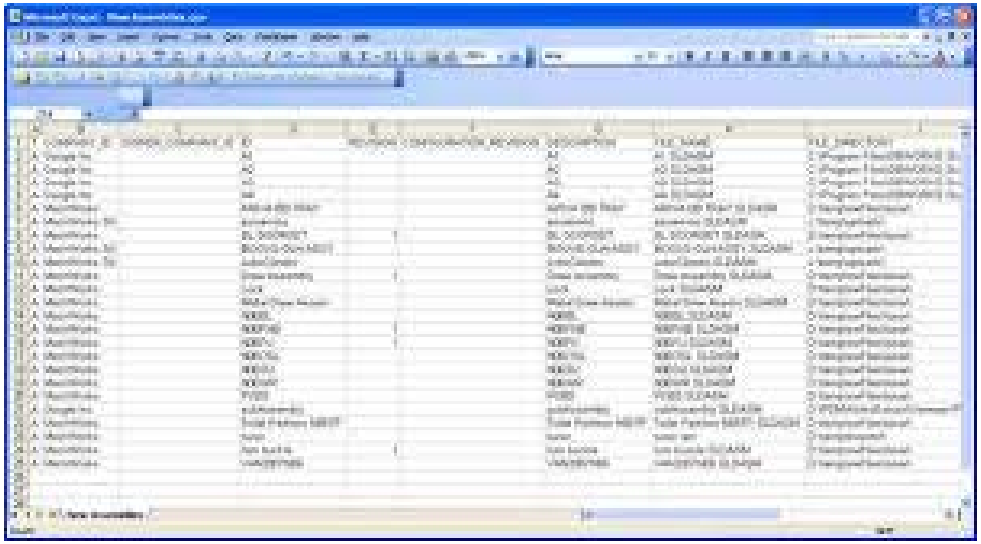
- The prior infection at index joint field will be used as a new risk factor to be considered in the risk adjustment models for the new HPRO and KPRO 2015 baselines.

- Any appendectomy (APPY) should be reported regardless of whether it is incidental.

- Any exploratory laparotomy (XLAP) should be reported regardless of whether it results in a procedure from another category being performed.

Importing Procedure Data

- If importing procedure data using a .csv file, note that the file specifications have been updated in order to accommodate the changes to the procedure denominator form.



Surgical Site Infection Surveillance

"Ah, Mr. Smith! We'll get started as soon as I finish my warmup."

NHSN
National Healthcare Safety Network

Form Approved
OMB No. 0920-0666
Exp. Date: 10-31-2016
www.cdc.gov/nhsn

Surgical Site Infection (SSI)

*required for saving **required for completion

Facility ID:	Event #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
*Event Type: SSI	*Date of Event:
*NHSN Procedure Code:	ICD-9-CM Procedure Code:
*Date of Procedure:	*Outpatient Procedure: Yes No

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

*Date Admitted to Facility:	Location:

Event Details

*Specific Event:

- ☐ Superficial Incisional Primary (SIP)
- ☐ Superficial Incisional Secondary (SIS)
- ☐ Organ/Space (specify site): _____
- ☐ Deep Incisional Primary (DIP)
- ☐ Deep Incisional Secondary (DIS)

*Specify Criteria Used (check all that apply):

Signs & Symptoms

- ☐ Purulent drainage or material
- ☐ Pain or tenderness
- ☐ Localized swelling
- ☐ Redness
- ☐ Heat
- ☐ Fever
- ☐ Incision deliberately opened/drained
- ☐ Wound spontaneously dehisces
- ☐ Abscess
- ☐ Other evidence of infection found on direct exam, during invasive procedure, or by diagnostic tests‡
- ☐ Other signs & symptoms‡
- ☐ Sinus tract
- ☐ Hypothermia
- ☐ Apnea
- ☐ Bradycardia
- ☐ Lethargy
- ☐ Cough
- ☐ Nausea
- ☐ Vomiting
- ☐ Dysuria

Laboratory

- ☐ Positive culture
- ☐ Not cultured
- ☐ Positive blood culture
- ☐ Blood culture not done or no organisms detected in blood
- ☐ Positive Gram stain when culture is negative or not done
- ☐ Positive culture from ≥ 2 separate tissue or fluid samples from affected joint
- ☐ Other positive laboratory tests‡
- ☐ Imaging test evidence of infection

Clinical Diagnosis

- ☐ Physician diagnosis of this event type
- ☐ Physician institutes appropriate antimicrobial therapy‡

‡per organ/space specific site criteria

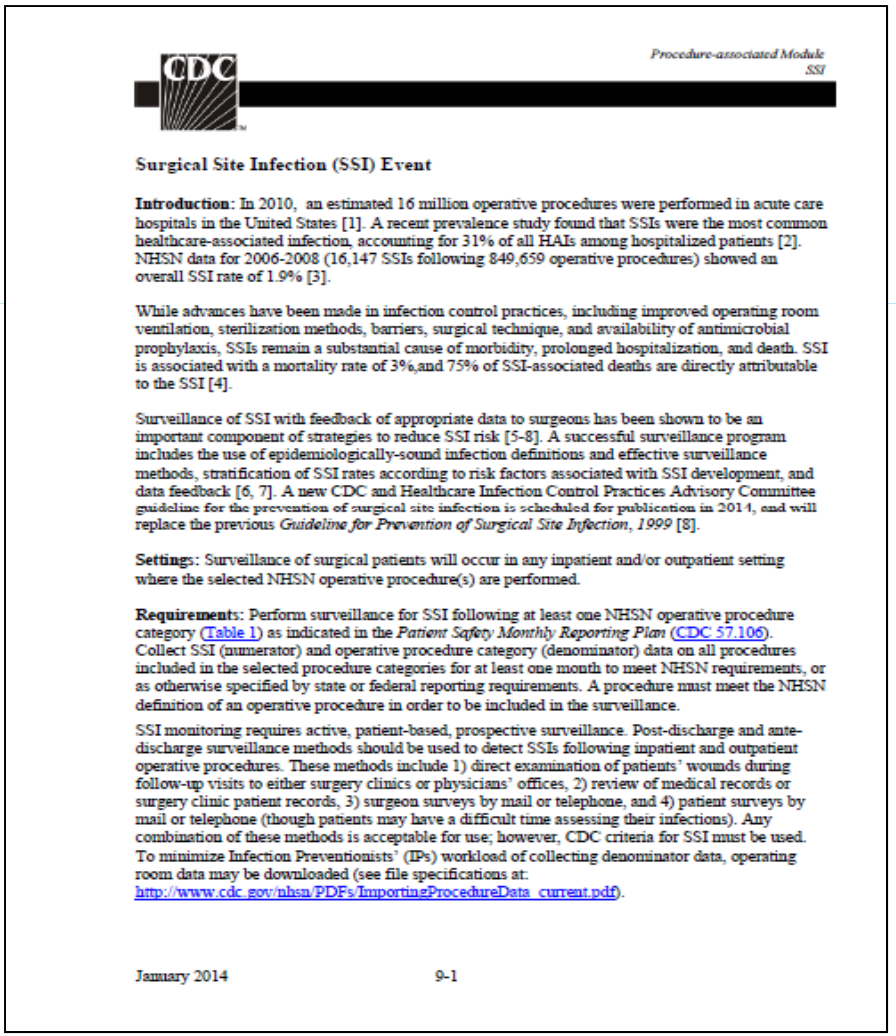
*Detected:
- ☐ A (During admission)
- ☐ P (Post-discharge surveillance)
- ☐ RF (Readmission to facility where procedure performed)
- ☐ RO (Readmission to facility other than where procedure was performed)

*Secondary Bloodstream Infection: Yes No	**Died: Yes No SSI Contributed to Death: Yes No
Discharge Date:	*Pathogens Identified: Yes No *If Yes, specify on pages 2-3.

NHSN Recommended SSI Surveillance Methods

- Direct examination of wounds
- Review of medical records
- Surgeon surveys by mail or telephone
- Patient surveys by mail or telephone

- Know the HAI surveillance definitions (refer to them often !)
- Apply definitions with confidence the same way every time
- Seek assistance for ambiguity*



Surgical Site Infection (SSI) Event

Introduction: In 2010, an estimated 16 million operative procedures were performed in acute care hospitals in the United States [1]. A recent prevalence study found that SSIs were the most common healthcare-associated infection, accounting for 31% of all HAIs among hospitalized patients [2]. NHSN data for 2006-2008 (16,147 SSIs following 849,659 operative procedures) showed an overall SSI rate of 1.9% [3].

While advances have been made in infection control practices, including improved operating room ventilation, sterilization methods, barriers, surgical technique, and availability of antimicrobial prophylaxis, SSIs remain a substantial cause of morbidity, prolonged hospitalization, and death. SSI is associated with a mortality rate of 3%,and 75% of SSI-associated deaths are directly attributable to the SSI [4].

Surveillance of SSI with feedback of appropriate data to surgeons has been shown to be an important component of strategies to reduce SSI risk [5-8]. A successful surveillance program includes the use of epidemiologically-sound infection definitions and effective surveillance methods, stratification of SSI rates according to risk factors associated with SSI development, and data feedback [6, 7]. A new CDC and Healthcare Infection Control Practices Advisory Committee guideline for the prevention of surgical site infection is scheduled for publication in 2014, and will replace the previous *Guideline for Prevention of Surgical Site Infection, 1999* [8].

Settings: Surveillance of surgical patients will occur in any inpatient and/or outpatient setting where the selected NHSN operative procedure(s) are performed.

Requirements: Perform surveillance for SSI following at least one NHSN operative procedure category (Table 1) as indicated in the *Patient Safety Monthly Reporting Plan* (CDC 57.106). Collect SSI (numerator) and operative procedure category (denominator) data on all procedures included in the selected procedure categories for at least one month to meet NHSN requirements, or as otherwise specified by state or federal reporting requirements. A procedure must meet the NHSN definition of an operative procedure in order to be included in the surveillance.

SSI monitoring requires active, patient-based, prospective surveillance. Post-discharge and ante-discharge surveillance methods should be used to detect SSIs following inpatient and outpatient operative procedures. These methods include 1) direct examination of patients' wounds during follow-up visits to either surgery clinics or physicians' offices, 2) review of medical records or surgery clinic patient records, 3) surgeon surveys by mail or telephone, and 4) patient surveys by mail or telephone (though patients may have a difficult time assessing their infections). Any combination of these methods is acceptable for use; however, CDC criteria for SSI must be used. To minimize Infection Preventionists' (IPs) workload of collecting denominator data, operating room data may be downloaded (see file specifications at: http://www.cdc.gov/nhsn/PDFs/ImportingProcedureData_current.pdf).

Complete case - finding requires a comprehensive evaluation of a minimum clinical data set

Step #1 (Always)

- Identify and review:
  - All returns to OR
  - All post-op hospital readmissions (30d or 90d)
  - ICD9 post-op diagnosis and procedure "flag" codes

Step #2

- Realize that culture based surveillance alone misses 50%-60% of SSIs
- Consider review of post-op imaging, such as CT/MRI

Post-Operative ICD-9 Procedure Codes for "Flagging" Possible COLO SSI

ICD9 Procedure Codes That MIGHT Indicate a Colon SSI	
54.0	Incision and drainage (I&D) of abdominal wall
54.11	Exploratory laparotomy
54.19	Drainage of intraperitoneal abscess or hematoma
86.04	Skin and subcutaneous I&D NEC
86.22	Excision debridement of wound, infection, burn
86.28	Non-excision debridement of wound, infection, burn

Post-Operative ICD-9 Diagnosis Codes for "Flagging" Possible COLO SSI

ICD-9 Diagnosis Codes That MIGHT Indicate a Colon SSI	
567.21, 567.22	Intra-abdominal abscess, intra-or retroperitoneal abscess
567.29	Other suppurative peritonitis
567.38	Pelvic abscess
569.5	Intestinal abscess
569.61	Infection of colostomy or enterotomy
569.81	Fistula of intestine
682.2	Abdominal wall abscess, cellulitis of trunk

Post-Operative ICD-9 Diagnosis Codes for "Flagging" Possible COLO SSI

ICD-9 Diagnosis Codes That MIGHT Indicate a Colon SSI (cont)	
879.9	Open wound of unspecified site, complicated
998.31, 998.32	Disruption of internal or external surgical wound
998.51	Postoperative infection, seroma
998.59	Postoperative infection, abscess
998.6	Non-healing surgical wound, persistent post op fistula

Post-Operative ICD-9 Diagnosis Codes for "Flagging" Possible HYST SSI

ICD-9 Diagnosis Codes That MIGHT Indicate a HYST SSI	
567.21, 567.22	Peritonitis, intra-abdominal abscess, intraperitoneal or retroperitoneal abscess
567.29	Other suppurative peritonitis
682.2	Abdominal wall abscess, cellulitis of trunk
998.31, 998.32	Disruption of internal or external surgical wound
998.51	Postoperative infection, seroma
998.59	Postoperative infection, abscess

HPRO & KPRO Post Operative ICD9 "Flag" Codes

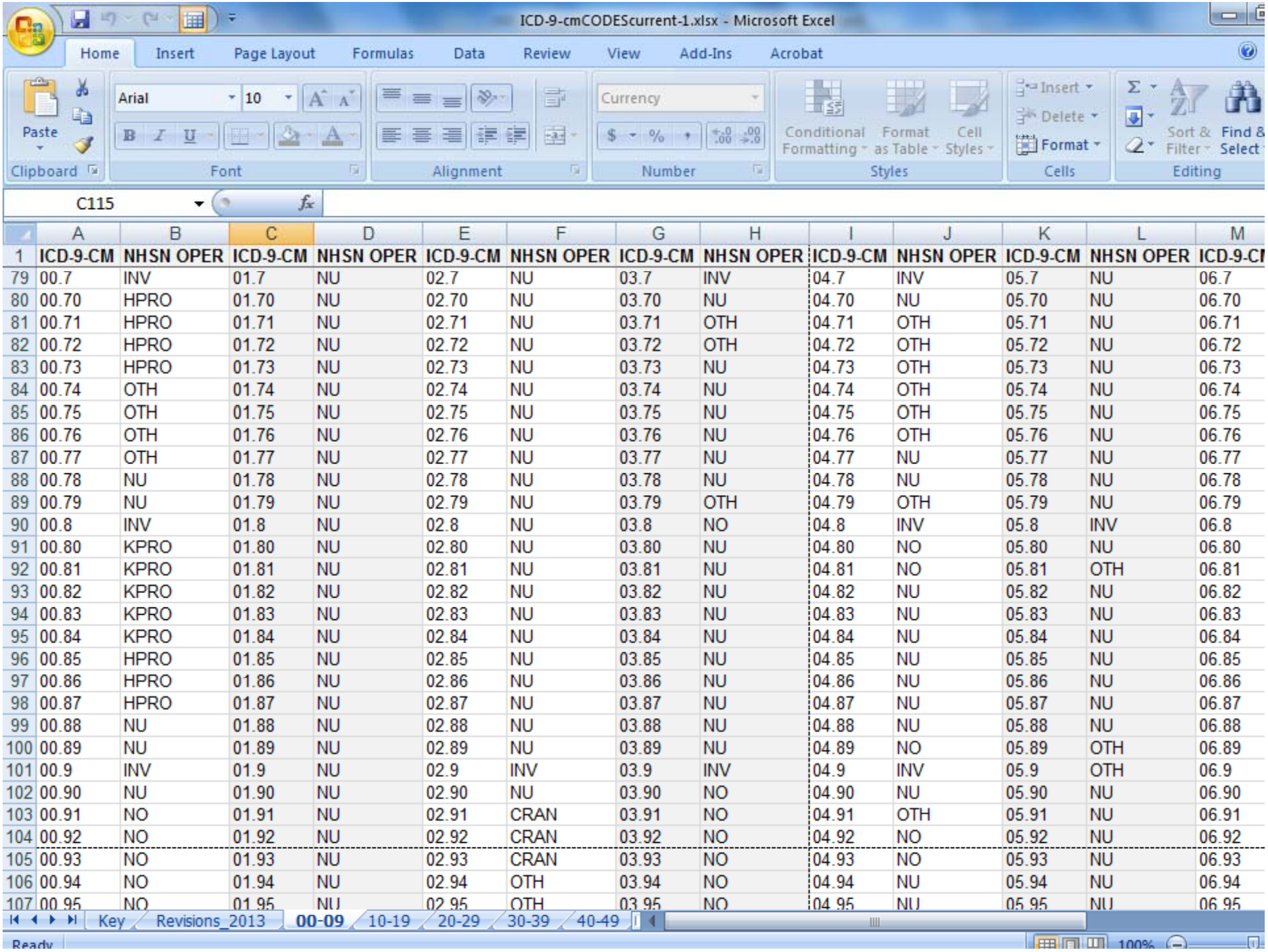
Post Operative Diagnostic Codes That MIGHT Indicate a HPRO or KPRO SSI			
996.66	998.5	998.51	998.59

CABG SSI CABG Post Operative ICD9 "Flag" Codes

Post Operative Diagnostic Codes That MIGHT Indicate a CABG SSI				
34.0	34.1-34.2	34.10	86.01	86.04
86.09	86.22	86.28	91.71-91.73	519.1-519.2
682.2-682.3	382.8	686.8-686.9	730.0	730.08-730.09
730.20	730.28-730.30	730.38-730.39	730.80	730.88-730.90
730.98-730.99	785.52	790.7	875.0	879.8-879.9
891.0-891.1	966.60-966.62	966.71	998.31-998.32	998.51
998.83	998.9			

Superficial Incisional SSI

Criterion	Surgical Site Infection (SSI)
	Superficial incisional SSI Must meet the following criteria:
	Infection occurs within 30 days after any NHSN operative procedure (where day 1 = the procedure date), including those coded as 'OTH'* *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. organisms isolated from an aseptically-obtained culture of fluid or tissue from the superficial incision. c. superficial incision that is deliberately opened by a surgeon, attending physician** or other designee and is culture positive or not cultured *and* patient has at least one of the following signs or symptoms: pain or tenderness; localized swelling; redness; or heat. A culture negative finding does not meet this criterion. d. diagnosis of a superficial incisional SSI by the surgeon or attending physician** or other designee . *http://www.cdc.gov/nhsn/XLS/ICD-9-cmCODEScurrent.xlsx ** The term attending physician for the purposes of application of the NHSN SSI criteria may be interpreted to mean the surgeon(s), infectious disease, other physician on the case, emergency physician or physician's designee (nurse practitioner or physician's assistant).



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	ICD-9-CM	NHSN OPER	ICD-9-CM	NHSN OPER	ICD-9-CM	NHSN OPER	ICD-9-CM	NHSN OPER	ICD-9-CM	NHSN OPER	ICD-9-CM	NHSN OPER	ICD-9-CI
79	00.7	INV	01.7	NU	02.7	NU	03.7	INV	04.7	INV	05.7	NU	06.7
80	00.70	HPRO	01.70	NU	02.70	NU	03.70	NU	04.70	NU	05.70	NU	06.70
81	00.71	HPRO	01.71	NU	02.71	NU	03.71	OTH	04.71	OTH	05.71	NU	06.71
82	00.72	HPRO	01.72	NU	02.72	NU	03.72	OTH	04.72	OTH	05.72	NU	06.72
83	00.73	HPRO	01.73	NU	02.73	NU	03.73	NU	04.73	OTH	05.73	NU	06.73
84	00.74	OTH	01.74	NU	02.74	NU	03.74	NU	04.74	OTH	05.74	NU	06.74
85	00.75	OTH	01.75	NU	02.75	NU	03.75	NU	04.75	OTH	05.75	NU	06.75
86	00.76	OTH	01.76	NU	02.76	NU	03.76	NU	04.76	OTH	05.76	NU	06.76
87	00.77	OTH	01.77	NU	02.77	NU	03.77	NU	04.77	NU	05.77	NU	06.77
88	00.78	NU	01.78	NU	02.78	NU	03.78	NU	04.78	NU	05.78	NU	06.78
89	00.79	NU	01.79	NU	02.79	NU	03.79	OTH	04.79	OTH	05.79	NU	06.79
90	00.8	INV	01.8	NU	02.8	NU	03.8	NO	04.8	INV	05.8	INV	06.8
91	00.80	KPRO	01.80	NU	02.80	NU	03.80	NU	04.80	NO	05.80	NU	06.80
92	00.81	KPRO	01.81	NU	02.81	NU	03.81	NU	04.81	NO	05.81	OTH	06.81
93	00.82	KPRO	01.82	NU	02.82	NU	03.82	NU	04.82	NU	05.82	NU	06.82
94	00.83	KPRO	01.83	NU	02.83	NU	03.83	NU	04.83	NU	05.83	NU	06.83
95	00.84	KPRO	01.84	NU	02.84	NU	03.84	NU	04.84	NU	05.84	NU	06.84
96	00.85	HPRO	01.85	NU	02.85	NU	03.85	NU	04.85	NU	05.85	NU	06.85
97	00.86	HPRO	01.86	NU	02.86	NU	03.86	NU	04.86	NU	05.86	NU	06.86
98	00.87	HPRO	01.87	NU	02.87	NU	03.87	NU	04.87	NU	05.87	NU	06.87
99	00.88	NU	01.88	NU	02.88	NU	03.88	NU	04.88	NU	05.88	NU	06.88
100	00.89	NU	01.89	NU	02.89	NU	03.89	NU	04.89	NO	05.89	OTH	06.89
101	00.9	INV	01.9	NU	02.9	INV	03.9	INV	04.9	INV	05.9	OTH	06.9
102	00.90	NU	01.90	NU	02.90	NU	03.90	NO	04.90	NU	05.90	NU	06.90
103	00.91	NO	01.91	NU	02.91	CRAN	03.91	NO	04.91	OTH	05.91	NU	06.91
104	00.92	NO	01.92	NU	02.92	CRAN	03.92	NO	04.92	NO	05.92	NU	06.92
105	00.93	NO	01.93	NU	02.93	CRAN	03.93	NO	04.93	NO	05.93	NU	06.93
106	00.94	NO	01.94	NU	02.94	OTH	03.94	NO	04.94	NU	05.94	NU	06.94
107	00.95	NO	01.95	NU	02.95	OTH	03.95	NO	04.95	NU	05.95	NU	06.95

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 (e.g., 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 (e.g., donor site incision for CBGB)
REPORTING INSTRUCTIONS for Superficial SSI	**The following do not qualify as criteria for meeting the NHSN definition of superficial SSI:** • A stitch abscess alone (minimal inflammation and discharge confined to the points of suture penetration) • A localized stab wound or pin site infection. While it would be considered either a skin (SKIN) or soft tissue (ST) infection, depending on its depth, it is not reportable under this module.
	• Diagnosis of "cellulitis", by itself, does not meet criterion d for superficial incisional SSI. • Circumcision is not an NHSN operative procedure. An infected circumcision site in newborns is classified as CIRC and is not reportable under this module. • An infected burn wound is classified as BURN and is not reportable under this module.

Deep Incisional SSI

	Deep incisional SSI Must meet the following criteria:
	Infection occurs within 30 or 90 days after the NHSN operative procedure (where day 1 = the procedure date) according to the list in Table 3 *and* involves deep soft tissues of the incision (e.g., 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 spontaneously dehisces or is deliberately opened by a surgeon, attending physician** or other designee and is culture-positive or not cultured *and* patient has at least one of the following signs or symptoms: fever (>38°C); localized pain or tenderness. A culture-negative finding does not meet this criterion. c. an abscess or other evidence of infection involving the deep incision that is detected on direct examination, during invasive procedure, or by histopathologic examination or imaging test. ** The term attending physician for the purposes of application of the NHSN SSI criteria may be interpreted to mean the surgeon(s), infectious disease, other physician on the case, emergency physician or physician's designee (nurse practitioner or physician's assistant).
Comments	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 (e.g., 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 (e.g., donor site incision for CBGB)

30-day Surveillance Table 3

30-day Surveillance			
Code	**Operative Procedure**	**Code**	**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
		OTH	Other operative procedures not included in the NHSN categories

90-day Surveillance Table 3

90-day Surveillance	
Code	**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
RFUSN	Refusion of spine
VSHN	Ventricular shunt

Organ/Space SSI

	Organ/Space SSI Must meet the following criteria:
	Infection occurs within 30 or 90 days after the NHSN operative procedure (where day 1 = the procedure date) according to the list in Table 3 *and* infection involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure *and* patient has at least one of the following: a. purulent drainage from a drain that is placed into the organ/space b. organisms isolated from an aseptically-obtained culture of fluid or tissue in the organ/space c. an abscess or other evidence of infection involving the organ/space that is detected on direct examination, during invasive procedure, or by histopathologic examination or imaging test *and* meets at least one criterion for a specific organ/space infection site listed in Table 4.

Specific Sites of an Organ/Space SSI Table 4

Code	Site	Code	Site
BONE	Osteomyelitis	LUNG	Other infections of the respiratory tract
BRST	Breast abscess or mastitis	MED	Mediastinitis
CARD	Myocarditis or pericarditis	MEN	Meningitis or ventriculitis
DISC	Disc space	ORAL	Oral cavity (mouth, tongue, or gums)
EAR	Ear, mastoid	OREP	Other infections of the male or female reproductive tract
EMET	Endometritis	OUTI	Other infections of the urinary tract
ENDO	Endocarditis	PJI	Periprosthetic Joint Infection
EYE	Eye, other than conjunctivitis	SA	Spinal abscess without meningitis
GIT	GI tract	SINU	Sinusitis
HEP	Hepatitis	UR	Upper respiratory tract
IAB	Intraabdominal, not specified	VASC	Arterial or venous infection
IC	Intracranial, brain abscess or dura	VCUF	Vaginal cuff
JNT	Joint or bursa		

Specific Organ Space

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. Comments and reporting instructions that follow the site-specific criteria provide further explanation and are integral to the correct application of the criteria. This chapter also provides further required criteria for the specific infection types that constitute organ/space surgical site infections (SSI) (e.g., mediastinitis [MED] that may follow a coronary artery bypass graft, intra-abdominal abscess [IAB] after colon surgery).

Additionally, it is necessary to refer to the criteria in this chapter when determining whether a positive blood culture represents a primary bloodstream infection (BSI) or is secondary to a different type of HAI (see Appendix 1 Secondary Bloodstream Infection (BSI) Guide). A BSI that is identified as secondary to another site of HAI must meet one of the criteria of HAI detailed in this chapter. Secondary BSIs are not reported as separate events in NHSN, nor can they be associated with the use of a central line.

Also included in this chapter are the criteria for Ventilator-Associated Events (VAEs). It should be noted that Ventilator-Associated Condition (VAC), the first definition within the VAE surveillance definition algorithm and the foundation for the other definitions within the algorithm (IVAC, Possible VAP, Probable VAP) may or may not be infection-related.

CDC/NHSN SURVEILLANCE DEFINITIONS OF HEALTHCARE–ASSOCIATED INFECTION

Present on Admission (POA) Infections

To standardize the classification of an infection as present on admission (POA) or a healthcare-associated infection (HAI), the following objective surveillance criteria have been adopted by NHSN. NOTE: This classification should not be applied to SSI, VAE, or LabID Events.

If all of the elements used to meet a CDC/NHSN site-specific infection criterion are present during the two calendar days before the day of admission, the first day of admission (day 1) and/or the day after admission (day 2) and are documented in the medical record, the infection is considered POA. Infections that are POA should not be reported as HAIs. Acceptable documentation does not include patient-reported signs and/or symptoms (e.g., patient reporting having a fever prior to arrival to the hospital). Instead, symptoms must be documented in the chart by a healthcare professional during the POA time frame (e.g., nursing home documents fever prior to arrival to the hospital). Physician diagnosis can be accepted as evidence of an infection that is POA only when physician diagnosis is an element of the specific infection definition.

Table 2. CDC/NHSN Major and Specific Types of Healthcare-Associated Infections

NHSN Principal Operative Procedure Category Selection List

Priority	Code	Abdominal Operations
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	**Code**	**Thoracic Operations**
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	**Code**	**Neurosurgical (Brain/Spine) Operations**
1	VSHN	Ventricular shunt
2	RFUSN	Refusion of spine
3	CRAN	Craniotomy
4	FUSN	Spinal fusion
5	LAM	Laminectomy
Priority	**Code**	**Neck Operations**
1	NECK	Neck surgery
2	THYR	Thyroid and or parathyroid surgery

Reporting Specific Post-operative Infection

- An SSI that meets the NHSN definitions should be reported 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.

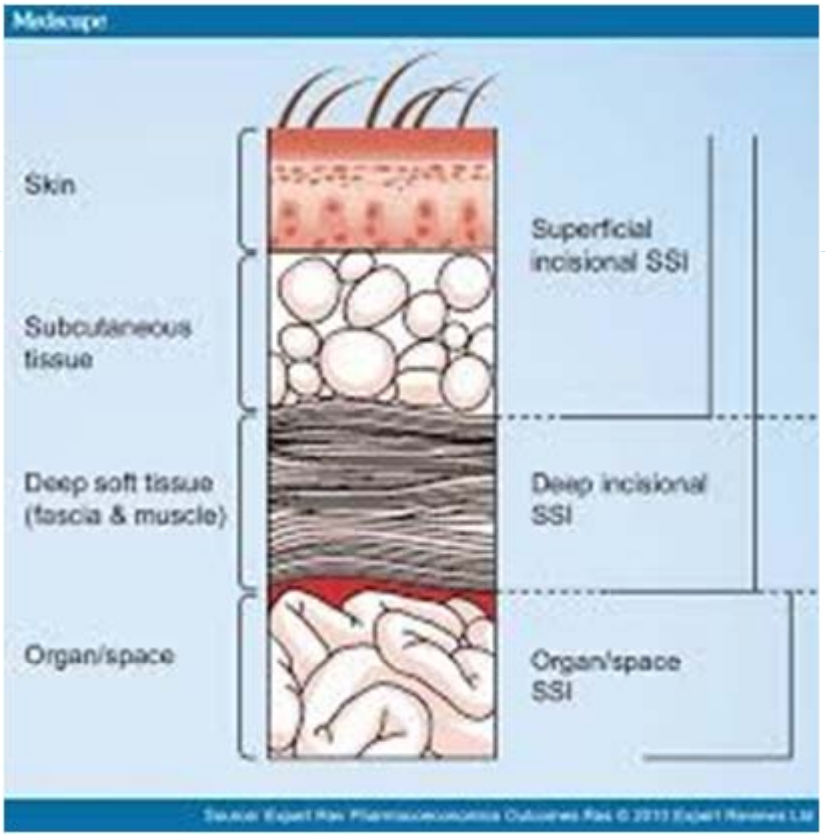
New Periprosthetic Joint Infection (HPRO and KPRO Only)

Joint or bursa infections must meet at least *1 of the following criteria:*

1. Two positive periprosthetic (*tissue or fluid) cultures with identical organisms*
2. A sinus tract communicating with the joint
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. A single positive periprosthetic (*tissue or fluid) culture.*

Multiple Tissue Level SSIs

- The type of SSI (superficial incisional, deep incisional, or organ/space) reported should reflect the **deepest tissue layer involved in the infection.**



Infection Present at Time of Surgery (PATOS)

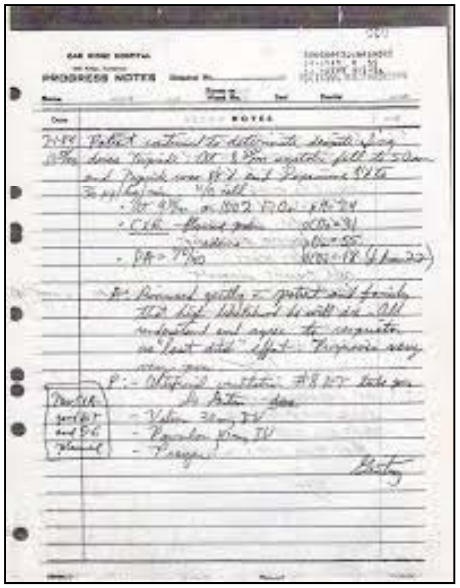
- Infection present at time of surgery (PATOS) will be a new field on the SSI Event form.
- PATOS denotes that an infection is present at the start of, or during, the index surgical procedure (in other words, it is present preoperatively).
- This will be a new Yes/No field on the SSI Event form.

PATOS (continued)

- PATOS doesn't apply if there is a period of wellness between the time of a preoperative condition and surgery.
- The infection must be noted/documented preoperatively or found intraoperatively in a preoperative or intraoperative note.
- Only select PATOS = YES if it applies to the depth of SSI that is being attributed to the procedure (e.g., if a patient had evidence of an intraabdominal infection at the time of surgery and then later returns with an organ space SSI the PATOS field would be selected as a YES. If the patient returned with a superficial or deep incisional SSI the PATOS field would be selected as a NO).

PATOS (continued)

- The patient does not have to meet the NHSN definition of an SSI at the time of the primary procedure but there must be surgeon notation that there is evidence of infection or abscess present at the time of surgery.

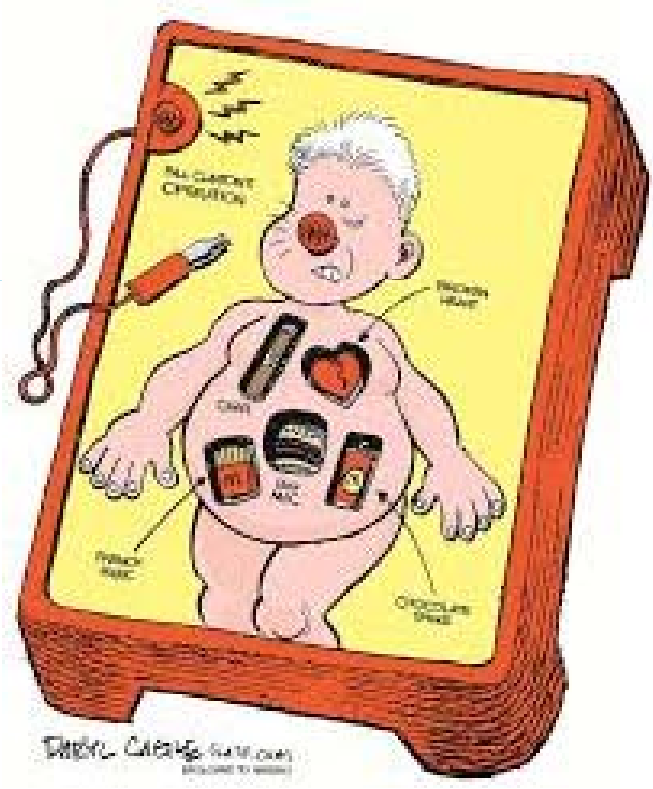


Example #1

- Patient admitted with an acute abdomen, to OR for XLAP with finding of an abscess due to ruptured appendix, and an APPY is performed. Patient returns 2 weeks later and meets criteria for an organ space IAB SSI.
- The PATOS field would be selected as YES on the SSI event.

Example #2

- Patient is admitted with a ruptured diverticulum and the surgeon notes that there are multiple abscesses in the intraabdominal space. Patient returns 3 weeks later and meets criteria for a superficial SSI.
- The PATOS field would be selected as NO, since there was no documentation of evidence of infection or abscess of the superficial area at the time of the procedure.



PATOS SIR

- SSIs reported with PATOS = YES will be excluded from the SSI SIRs beginning with 2016 data and the new baseline.
- These excluded SSIs will be analyzed separately.

References

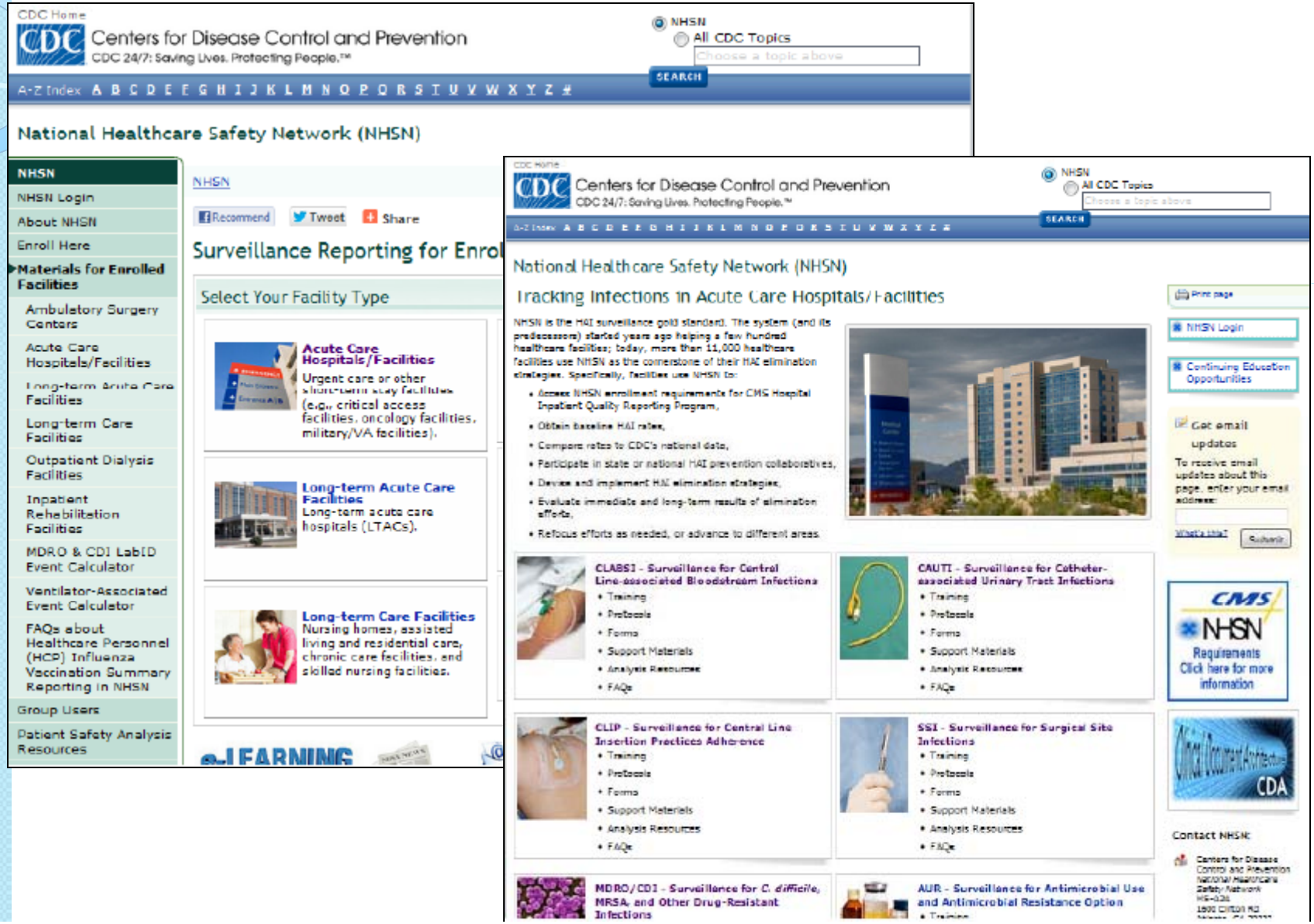
- NHSN Newsletter, Volume 9, Issue 3 September 2014 http://www.cdc.gov/nhsn/PDFs/Newsletters/vol9-3-eNL-Sept-2014.pdf
- Using 2013 Validation Findings to Improve SSI Surveillance – July 16th and 18th http://www.cdph.ca.gov/programs/hai/Documents/2013SSIValidationFindingsCORRECTEDVERSION091014%282%29.pdf

References

- Instructions for Completion of Denominator for Procedure Form (CDC 57.121) http://www.cdc.gov/nhsn/forms/instr/57_121.pdf
- ICD9-CM Procedure Code Mapping to NHSN Operative Procedure Categories http://www.cdc.gov/nhsn/acute-care-hospital/ssi/index.html

References

http://www.cdc.gov/nhsn/settings.html



Questions?

"Nurse, get on the internet, go to SURGERY.COM, scroll down and click on the 'Are you totally lost?' icon."