# FAQs - Surgical Site Infections (SSI) in Maryland

*If you have unusual cases that you would like to contribute to this document, please contact the MHCC staff below. If you have submitted questions and/or scenarios to NHSN for response, please email the information to the MHCC staff and we will update this document for distribution to all Maryland hospitals.*

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## Frequently Asked Questions (FAQ)

The Maryland Health Care Commission (MHCC) has created this Frequently Asked Questions (FAQ) document to facilitate hospital compliance with State data reporting requirements regarding the collection and reporting of Surgical Site Infections (SSI) data through the CDC National Healthcare Safety Network (NHSN). This document will be updated as needed and will serve as a reference for hospital Infection Preventionists and others interested in this data collection initiative. For additional background information on the Commission's HAI data collection and reporting activities, please visit our website at http://mhcc.maryland.gov/healthcare_associated_infections/index.html.

**Q1. What is the purpose of this data collection initiative?**

In 2006, the General Assembly amended the MHCC's statute to give it authority to collect and report information on healthcare-associated infections in hospitals (HG 19-134(e)(6)). The Commission convened an HAI Technical Advisory Committee (TAC) composed of hospital infection preventionists, hospital epidemiologists, public health professionals, and patients/health care consumers to advise the staff in this effort. In December 2007, the TAC released a report, *Developing a System for Collecting and Publicly Reporting Data on Healthcare-Associated Infections in Maryland*, which may be accessed on the website: http://mhcc.maryland.gov/healthcare_associated_infections/index.html. The collection of SSI data from Maryland hospitals is a part of the first phase of implementation of the TAC recommendations.

**Q3. When is the denominator data collection and reporting due to NHSN?**

The CDC NHSN system requires that denominator data (i.e., procedure data) be entered within 30 days following the end of the month in which the surgery was performed.

**Q4. What Patient ID should be used?**

For this reporting requirement, the Patient ID is the patient medical record number.

**Q6. Is there a way to confer rights to MHCC for the required procedures only, if a hospital performs surveillance on additional procedures for internal monitoring?**

Yes. Hospitals are required to confer rights to CABG, KPRO, and HPRO procedures only. The NHSN system will only provide access to the data the hospital assigns to the MHCC Group. If you are reporting other procedures and associated SSIs through NHSN, MHCC will not be able to view or extract data for those procedures.

**Q7. Does NHSN have the ability to receive a file download that contains the data fields for the denominator data rather than manually reporting on every patient? If so, what is the format?**

For importing the denominator data, NHSN has certain file specifications that must be followed. The details are available at http://www.cdc.gov/nhsn/PDFs/ImportingProcedureData_current.pdf. Please review the denominator data form (available at http://www.cdc.gov/nhsn/psc_pa.html). It is important to note that data fields with an asterisk are mandatory for NHSN reporting.

**Q2. What is the effective date for reporting SSI data to the MHCC? What procedure categories are included in these requirements?**

Effective July 1, 2010, the Commission requires all Maryland acute care hospitals to report SSI data via the National Healthcare Safety Network (NHSN) system for the following operative categories (inpatient only): hip replacement surgery; knee replacement surgery; and coronary artery bypass graft surgery (CABG including chest and donor site incisions as well as chest incision only). NHSN defines "inpatient" as a patient whose date of hospital admission and date of discharge are different calendar days. Detailed information regarding the NHSN system and SSI module and reporting requirements, including procedure codes included in the operative categories, NHSN data elements and definitions are available from CDC at: http://www.cdc.gov/nhsn/ . Additional information on the NHSN procedure codes can be accessed at http://www.cdc.gov/nhsn/PDFs/pscManual/9pscSSIcurrent.pdf

For your convenience a table of the CDC procedure categories and associated ICD-9 codes that comprise the current SSI reporting requirements for Maryland is provided below:

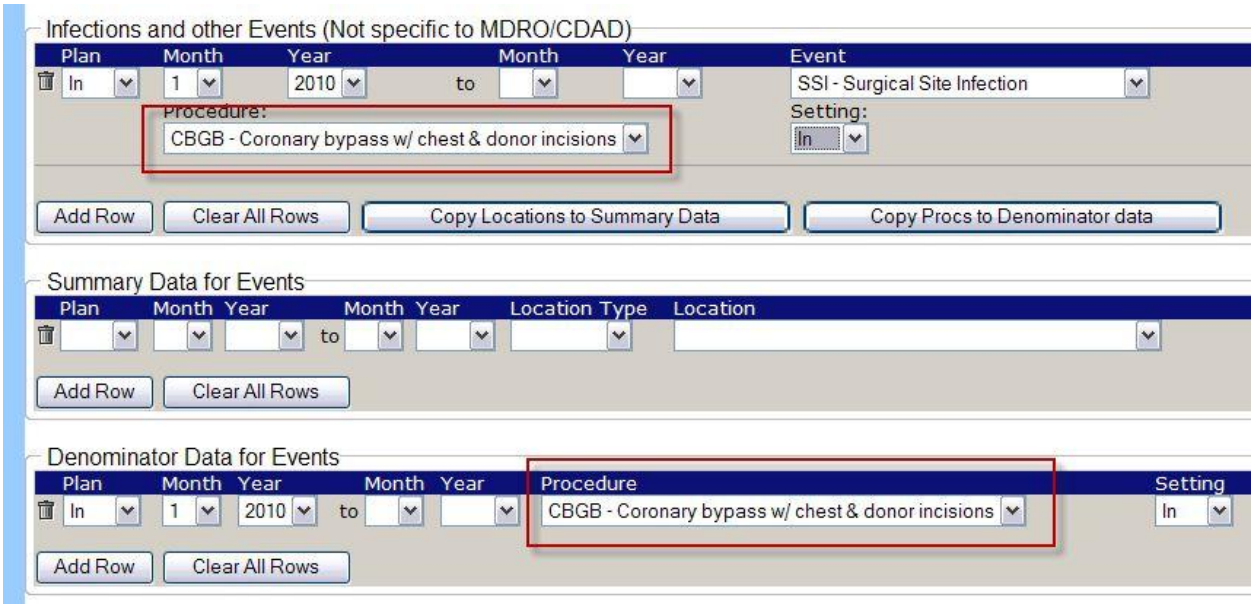
***NHSN Operative Procedure Categories – FY 2010 Update***

| **Legacy Code NHSN Procedure Code** | **New Code** | **Operative Procedure** | **Description** | **ICD-9-CM Codes** |
|---|---|---|---|---|
| CBGB | 2113-9 | 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. | 36.10-36.14, 36.19 |
| CBGC | 2114-7 | Coronary artery bypass graft with chest incision only | Chest procedure to perform direct vascularization of the heart using, for example the internal mammary (thoracid) artery | 36.15-36.17, 36.2 |
| HPRO | 2101-4 | Hip prosthesis | Arthroplasty of hip | 00.70-00.73, 00.85-00.87, 81.5181.53 |
| KPRO | 2124-6 | Knee prosthesis | Arthroplasty of knee | 00.80-00.84, 81.54, 81.55 |

Source: CDC NHSN Patient Safety Component Manual.
http://www.cdc.gov/nhsn/PDFs/pscManual/9pscSSIcurrent.pdf

**Q5. How is the data submitted to the MHCC? What steps must be taken to ensure the MHCC has access to my facility's SSI data?**

Each hospital must confer rights to MHCC to permit staff to view and extract SSI data. The process for conferring rights is similar to the process followed for conferring rights to CLASBI data. Each procedure must be identified (i.e., CBGB, CBGC, KPRO, HPRO) in your NHSN Reporting Plan. A sample CR screen for one surgical procedure would look like this:




**Note: For additional assistance regarding the process for Conferring Rights, please visit the CDC website at [http://www.cdc.gov/nhsn/wc_Rights_Groups_1.html](http://www.cdc.gov/nhsn/wc_Rights_Groups_1.html)**

**Q8. Since the NHSN procedure code is based on ICD-9-CM code, is the hospital expected to report the denominator procedure data after a patient is discharged (i.e., after the record is coded)? Or should we use the procedure name in the Operating Room records to assign the NHSN procedure code rather than wait for the ICD-9-CM code?**

You can use the procedure name to report procedures. However, the ICD-9-CM code would be preferred, as the codes provide a greater level of specificity.

**Q11. How should I enter data for a patient who has more than one infection?**

Each event (infection) must be entered separately.

**Q9. Does a blood transfusion count as a transplant under CDC's SSI definition?**

Although a blood transfusion involves an infusion of human cells, NHSN has indicated to MHCC that a blood transfusion does not count as a transplant. The NHSN definition of a transplant is provided below:

Human cells, tissues, organs, or cellular- or tissue-based products that are placed into a human recipient via grafting, infusion, or transfer. Examples include: heart valves, organs, ligaments, bone, blood vessels, skin, corneas, and bone marrow cells.

**Q10. If a patient had two procedures in 24 hours, such as a left and right KPRO, would that count as one or two procedures? How would I know which procedure to link an infection to?**

A left and right KPRO, done at the same time and under the same anesthesia, requires two incisions and two closures and is therefore counted as two reportable procedures. The duration of each procedure is calculated by equally dividing the total time for both procedures. Following the bilateral KPRO, if the left knee shows signs of infection, you link the infection to the left knee and if the right knee shows signs of infection, you link the infection to the right knee.

**Q12. If an infection is found during re-admission, which date should be used for the infection event date? Would that be the readmission date or the date of the original procedure?**

The readmission date might happen to be the same as the event date in this case, but regardless, the infection or event date is the "date when the first clinical evidence of the SSI appeared or the date the specimen used to make or confirm the diagnosis was collected, whichever comes first".

**Q13. If a patient has a mediport placed in the OR for chemotherapy and then is discharged, but 8 weeks later, after 6 weeks of outpatient chemotherapy, develops fever, malaise and has 2/2 blood cultures positive for *Staphylococcus aureus*, is this infection a surgical site infection (SSI) related to the implant?**

No. The NHSN definition of an implant is "A nonhuman-derived material, or tissue that is permanently placed in a patient during an operative procedure and is not routinely manipulated for diagnostic or therapeutic purposes." Therefore, once this device has been accessed for therapy, it ceases to be an implant. This means that a subsequent infection cannot be an SSI regardless of the amount of time elapsed since surgery.

**Q14. Are sternal wires considered implants?**

Yes. Sternal wires are considered implants. The NHSN definition of an implant is provided below:

A nonhuman-derived object, material, or tissue that is permanently placed in a patient during an operative procedure and is not routinely manipulated for diagnostic or therapeutic purposes. Examples include: porcine or synthetic heart valves, mechanical heart, metal rods, mesh, **sternal wires,** screws, cements, and other devices.

**Q15. Under NHSN, the drop down box for KPRO does not provide an option to select Primary (partial knee replacement). One of our orthopedic surgeons performs a partial knee replacement called Oxford, minimally invasive medial unicompartmental replacement, knee. He tells me that this is considered a partial replacement and the CPT is 27446, rather than a total knee replacement with a CPT of 27447. Please clarify how this should be entered since there is no option for a primary, partial knee replacement in the drop down box.**

Those primary surgeries are coded as ICD-9-CM 81.54. NHSN uses ICD-9-CM codes in its categorization process. Currently, ICD-9-CM code 81.54 includes both unicompartmental as well as bicompartmental and tricompartmental. Therefore we do not have a distinction between complete and partial primary arthroplasties. Until there is a separate ICD-9-CM we are not able to make such a distinction. However, all NHSN users should be categorizing and reporting these in the same way.

**Q16. Does NHSN consider a bipolar hip procedure a reportable procedure under the joint replacement? The procedure may involve the use of components, but sometimes they are not cemented in place and sometimes they are. Are these procedures required for reporting?**

Yes.

**Q17. Is a fall considered "trauma" when completing the Denominator for Procedure form for surgical site infection surveillance?**

Yes, trauma is defined in NHSN as "blunt or penetrating traumatic injury." Therefore, if the surgery was performed because of a fall, for example, a hip arthroplasty following a fall, then indicate "yes" for the trauma field. Falls can be the source of trauma.

**Q18. What types of surgical site infections must be reported to NHSN?**

Superficial, deep incision and organ/space infections are all three types of infections that must be reported to NHSN. This includes primary and secondary incision sites as well. Please refer to the NHSN Patient Safety Component Manual (Procedure Associated Module) for more information at http://www.cdc.gov/nhsn/PDFs/pscManual/9pscSSIcurrent.pdf

**Q20. What types of surgical site infections will be publicly reported?**

The MHCC under the guidance of the HAI Advisory Committee will develop an approach to publicly report the SSI data in a manner that is consumer friendly, accurate, appropriate and timely. Hospitals will be provided a preview of how the data will be displayed as soon as it is available. It is estimated that the first release of SSI data will occur in FY 2012.

**Q19. Is a crosswalk available that translates CPT to ICD-9 Codes to ensure comparability in reporting Hip, Knee, and CABG procedures across all hospitals?**

The MHCC under the guidance of the HAI Advisory Committee is developing a Draft CPT – ICD9 crosswalk for use by Maryland Hospitals. The draft document will be distributed to hospitals for review and comment. After the review and comment period, a final CPT - ICD-9 crosswalk for Maryland hospital use will be attached to the FAQ document.

**Q21. If a patient has a CABG and the operative note does not indicate that the surgeon manipulated the lung, then the patient develops an empyema in the pleural space between the lung and the inside of the chest wall, is this counted as a post-op SSI for CABG since the CABG procedure exposes the lungs and the inside of the chest wall? Or is this a secondary infection not related to the CABG procedure?**

This would be reported as an SSI since the thoracic cavity was opened and the lung resides within the thoracic cavity.

**Q22. Are pin site infections considered SSI?**

According to NHSN, pin site infections are not considered SSI unless they communicate to cause osteomyelitis or other deep infections.

**Q23. What are the recommended methods for SSI surveillance?**

NHSN recommends that both inpatient admission and post-discharge surveillance methods should be used to detect SSIs following inpatient operative procedures. In addition, readmission surveillance methods should also be used to detect SSIs following inpatient operative procedures. Surveillance should be continued for up to 30 days in post-surgical patients without implants and for up to 1 year for post-surgical patients with implant(s). All animal-derived tissue as well as synthetic prosthetics, including sternal wire closures, pins, screws, and even cement, fit the NHSN definition of an implant.

Inpatient admission surveillance methods:

1) Direct observation of the surgical site by the surgeon, trained nurse surveyor, or the infection control personnel
2) Indirect detection by infection control personnel through the following methods:
    a. Review of admission/discharge/transfer reports
    b. Review of laboratory reports (including microbiology, histopathology and radiology reports)
    c. Review of surgical reports of procedures done
    d. Review of hospital pharmacy reports of antimicrobial orders
    e. Review of patient records (History & Physical, Nurse/Physician Notes, temperature charts, etc)
    f. Discussions with primary care providers (during surveillance rounds, etc)

Post-Discharge surveillance methods:

3) Direct examination of patients' wounds during follow up visits to either surgery clinics or physicians' offices
4) Review of medical records or surgery clinic patient records
5) Surgeon surveys by mail, telephone
6) Patient surveys by mail, telephone
7) Emergency room visit (without being admitted) records
8) Clinic visit records
9) Clinic/Community Pharmacy records for specific antimicrobial prescriptions
10) Hospital IPs communication with other facilities' hospital IPs

Readmission surveillance methods:

11) Review of inpatient readmission records (including direct observation and indirect detection surveillance methods listed in 1 & 2 above)

NHSN considers any combination of these methods to be acceptable for use; however, CDC criteria for SSI must be used. MHCC encourages all hospitals to implement and maintain surveillance processes. For additional information on surveillance methods please refer to the following NHSN link: www.cdc.gov/nhsn/PDFs/pscManual/1PSC_OverviewCurrent.pdf
Or the following CDC link: www.cdc.gov/ncidod/dhqp/pdf/guidelines/SSI.pdf
Or the following OHCQ link: www.dsd.state.md.us/comar/comarhtml/10/10.07.01.34.htm

*The following case scenarios are included to provide additional guidance on SSI reporting requirements. These cases and the associated responses have been reviewed by NHSN and MHCC HAI Advisory Committee.*

**Case Scenario 1**

A patient has a total knee arthroplasty at hospital A. The surgeon takes the patient to Hospital B and opens the knee (may or may not describe possible infection) and leaves hardware in place. Cultures grow MRSA. The patient is then again readmitted to the same hospital B for hardware removal and grows same organism.

**A. How should this case be reported?**
If you are stating that cultures obtained in the surgery done at Hosp B grew an organism from a sterile site, then it appears this patient meets Organ/space SSI- JNT criteria and it is attributed to the original surgery at hospital A.

**B. Using the same scenario, how should the case be reported if, after removal of the hardware, a different organism (not MRSA) was growing?**
If the first infection had resolved completely before the second culture, then you would attribute the second SSI to the second surgery done at hospital B. If not, it would be an extension of the first SSI.

**Case Scenario 2**

A patient goes to the OR more than once during the same admission and two procedures are performed through the same incision on the same date as the original operative incision; report only one procedure on the Denominator for Procedure (CDC 57.121) combining the durations for both procedures.

**For example:**
A patient has a CBGB lasting 4 hours. He returns to the OR six hours later to correct a bleeding vessel. The surgeon reopens the initial incision, makes the repairs, and recloses in 1.5 hours. Record the operative procedure as one CBGB and the duration of operation as 5 hour 30 minutes. If the wound class has changed, report the higher wound class. If the ASA class has changed, report the higher ASA class.
**Reference: CDC Surgical Events Procedure-associated Events SSI. Denominator Data Page 9-13. October 2010**

**Case Scenario 3**

When a patient presents with an existing infected hip prosthesis that requires replacement, the surgeon removes the hip, does all due diligence to clear the infection, places an interim prosthesis with an antibiotic spacer, and after the infection is resolved, a permanent prosthesis is placed.

**A. Should the interim prosthesis with the antibiotic spacer be counted as a revision and included in the denominator of cases?**

The interim prosthesis should not be counted as a revision and should not be included in the denominator of cases.

**B. Also, should the permanent prosthesis be counted as another revision and also included in the denominator of cases?**

The permanent prosthesis is counted as a revision, and yes, it should also be included in the denominator of cases. There can only be one, primary joint prosthesis. All subsequent procedures are considered revisions.

**C. What if the wrong size hip prosthesis is placed on a given date and requires the surgeon to reopen the original incision on the same date, to place the correct size hip prosthesis, should the wrong size prosthesis be counted in the denominator of cases?**

No. Because these procedures occurred within 24 hours, count this only as 1 HPRO. The first prosthetic will not be able to be identified as developing an SSI, so it should not be included in the denominator.

**D. Also, should the correct size hip prosthesis be counted as a revision and also included in the denominator of cases? Finally, if the correct size hip prosthesis is placed on a different date, but through reopening the original incision, should the wrong size and the correct size hip prostheses both be counted in the denominator of cases?**

This depends on how far apart the surgeries occur. If enough time has passed that an SSI could be expected to develop, then count both. If not, then only count the second, since this is the case that any subsequent SSIs would be attributed to. Hopefully this will rarely if ever occur.