

**Quality ID #165 (NQF 0130): Coronary Artery Bypass Graft (CABG): Deep Sternal Wound Infection Rate**  
– National Quality Strategy Domain: Effective Clinical Care  
– Meaningful Measure Area: Healthcare Associated Infections

**2019 COLLECTION TYPE:**

**MIPS CLINICAL QUALITY MEASURES (CQMS)**

**MEASURE TYPE:**

Outcome – High Priority

**DESCRIPTION:**

Percentage of patients aged 18 years and older undergoing isolated CABG surgery who, within 30 days postoperatively, develop deep sternal wound infection involving muscle, bone, and/or mediastinum requiring operative intervention

**INSTRUCTIONS:**

This measure is to be submitted **each time** an isolated CABG procedure is performed during the performance period. It is anticipated that Merit-based Incentive Payment System (MIPS) eligible clinicians who provide services for isolated CABG will submit this measure. This measure is intended to reflect the quality of the surgical services provided for isolated CABG or isolated reoperation CABG patients. Isolated CABG refers to CABG using arterial and/or venous grafts only.

**Measure Submission Type:**

Measure data may be submitted by individual MIPS eligible clinicians, groups, or third-party intermediaries. The listed denominator criteria are used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions as allowed by the measure. The quality-data codes listed do not need to be submitted by MIPS eligible clinicians, groups, or third-party intermediaries that utilize this modality for submissions; however, these codes may be submitted for those third-party intermediaries that utilize Medicare Part B claims data. For more information regarding Application Programming Interface (API), please refer to the Quality Payment Program (QPP) website.

**DENOMINATOR:**

All patients undergoing isolated CABG surgery

**Denominator Criteria (Eligible Cases):**

All patients aged 18 years and older on date of encounter

**AND**

**Patient procedure during the performance period (CPT):** 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33522, 33523, 33533, 33534, 33535, 33536

**OR**

**Patient procedure during the performance period (CPT):** 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33522, 33523, 33533, 33534, 33535, 33536

**AND**

**Patient procedure during the performance period (CPT):** 33530

**NUMERATOR:**

Patients who, within 30 days postoperatively, develop deep sternal wound infection involving muscle, bone, and/or mediastinum requiring operative intervention. Patient must have **ALL** of the following conditions: 1.) wound opened with excision of tissue (incision and drainage) or re-exploration of mediastinum, 2.) positive culture unless patient is on antibiotics at time of culture or no culture obtained, and 3.) treatment with antibiotics beyond perioperative prophylaxis

**Numerator Instructions:**

**INVERSE MEASURE** - A lower calculated performance rate for this measure indicates better clinical care or control. The "Performance Not Met" numerator option for this measure is the representation of the better clinical quality or control. Submitting that numerator option will produce a performance rate that trends closer to 0%, as quality increases. For inverse measures, a rate of 100% means all of the denominator eligible patients did not receive the appropriate care or were not in proper control.

**Numerator Options:**

***Performance Met:***

Development of deep sternal wound infection/mediastinitis within 30 days postoperatively  
**(G8571)**

**OR**

***Performance Not Met:***

No deep sternal wound infection/mediastinitis **(G8572)**

**RATIONALE:**

The most serious hospital-acquired infection associated with coronary artery bypass graft (CABG) surgery is deep sternal wound or deep surgical site infection. The most common bacteria involved are *S. aureus* including increasingly more common methicillin resistant Staph (MRS). For CABG only outcomes 1997-1999 the STS dataset reported 0.63% deep sternal wound infection rate in 503,478 records. A report from an academic hospital reported 1.9% deep surgical site infections (Centers for Disease Control and Prevention National Nosocomial Infection Surveillance [CDC NNIS] criteria) in 1,980 patients undergoing isolated CABG or CABG+ procedures from 1996-1999. The Northern New England Cardiovascular Disease Study Group reported an incidence rate for mediastinitis of 1.25% and noted a marked increase in mortality during the first year post-CABG and a threefold increase during a 4-year follow-up period.

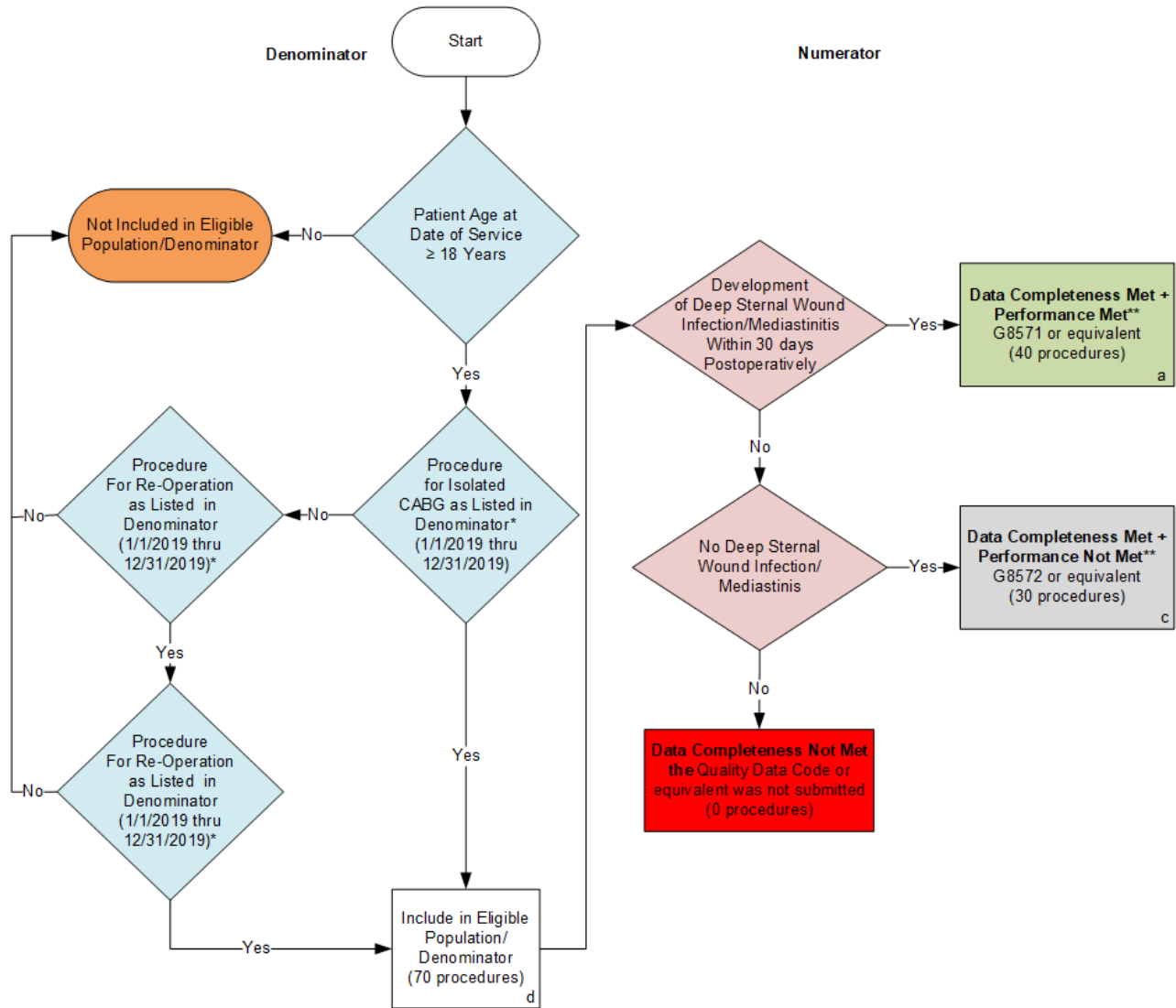
**CLINICAL RECOMMENDATION STATEMENTS:**

Several risk factors for sternal wound infection have been identified that can be optimized with good care practices: prophylactic antibiotics within 1 hour before incision time (odds ratio 5.3) [see antibiotic timing process measure] and avoiding elevated blood glucose levels (odds ratio 10.2). Surveillance for surgical site infections is a critical hospital function to monitor infection control practices and direct improvement activity.

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**2019 Clinical Quality Measure Flow for Quality ID #165 NQF #0130:  
Coronary Artery Bypass Graft (CABG): Deep Sternal Wound Infection Rate**



**SAMPLE CALCULATIONS:**

**Data Completeness =**  

$$\frac{\text{Performance Met (a=40 procedures)} + \text{Performance Not Met (c=30 procedures)}}{\text{Eligible Population / Denominator (d=70 procedures)}} = \frac{70 \text{ procedures}}{70 \text{ procedures}} = 100.00\%$$

**Performance Rate\*\* =**  

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (70 procedures)}} = \frac{40 \text{ procedures}}{70 \text{ procedures}} = 57.14\%$$

\*See the posted Measure Specification for specific coding and instructions to submit this measure.  
 \*\*A lower calculated performance rate for this measure indicates better clinical care or control.

NOTE: Submission Frequency – Procedure

**2019 Clinical Quality Measure Flow Narrative for Quality ID #165 NQF #0130:  
Coronary Artery Bypass Graft (CABG): Deep Sternal Wound Infection Rate**

Please refer to the specific section of the specification to identify the denominator and numerator information for use in submitting this Individual Specification.

1. Start with Denominator
2. Check Patient Age:
  - a. If Patient Age at Date of Service is greater than or equal to 18 Years equals No, do not include in Eligible Population. Stop Processing.
  - b. If Patient Age at Date of Service is greater than or equal to 18 Years equals Yes, proceed to check Procedure Performed.
3. Check Procedure Performed:
  - a. If Procedure for Isolated CABG as Listed in the Denominator equals No, proceed to Procedure for Re-Operation.
  - b. If Procedure for Isolated CABG as Listed in the Denominator equals Yes, include in Eligible Population.
4. Check Procedure for Re-Operation:
  - a. If Procedure for Re-Operation as Listed in the Denominator equals No, do not include in Eligible Population. Stop Processing.
  - b. If Procedure for Re-Operation as Listed in the Denominator equals Yes, proceed to check Procedure for Re-Operation.
5. Check Procedure for Re-Operation:
  - a. If Procedure for Re-Operation as Listed in the Denominator equals No, do not include in Eligible Population. Stop Processing.
  - b. If Procedure for Re-Operation as Listed in the Denominator equals Yes, include in Eligible Population.
6. Denominator Population
  - a. Denominator Population is all Eligible Procedures in the Denominator. Denominator is represented as Denominator in the Sample Calculation listed at the end of this document. Letter d equals 70 procedures in the Sample Calculation.
7. Start Numerator
8. Check Development of Deep Sternal Wound Infection/Mediastinitis within 30 Days Postoperatively:
  - a. If Development of Deep Sternal Wound Infection/Mediastinitis within 30 Days Postoperatively equals Yes, include in Data Completeness Met and Performance Met.
  - b. Data Completeness Met and Performance Met letter is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter a equals 40 procedures in the Sample Calculation.

- c. If Development of Deep Sternal Wound Infection/Mediastinitis within 30 Days Postoperatively equals No, proceed to check No Deep Sternal Wound Infection/Mediastinitis.
9. Check No Deep Sternal Wound Infection/Mediastinitis:
- a. If No Deep Sternal Wound Infection/Mediastinitis equals Yes, include in Data Completeness Met and Performance Not Met.
  - b. Data Completeness Met and Performance Not Met letter is represented in the Data Completeness in the Sample Calculation listed at the end of this document. Letter c equals 30 procedures in the Sample Calculation.
  - c. If No Deep Sternal Wound Infection/Mediastinitis equals No, proceed to check Data Completeness Not Met.
10. Check Data Completeness Not Met:
- a. If Data Completeness Not Met, the Quality Data Code or equivalent was not submitted. 0 procedures have been subtracted from the Data Completeness Numerator in the Sample Calculation.

**SAMPLE CALCULATIONS:**

**Data Completeness =**  

$$\frac{\text{Performance Met (a=40 procedures)} + \text{Performance Not Met (c=30 procedures)}}{\text{Eligible Population / Denominator (d=70 procedures)}} = \frac{70 \text{ procedures}}{70 \text{ procedures}} = 100.00\%$$

**Performance Rate\*\* =**  

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (70 procedures)}} = \frac{40 \text{ procedures}}{70 \text{ procedures}} = 57.14\%$$