

**Quality ID #43 (NQF 0134): Coronary Artery Bypass Graft (CABG): Use of Internal Mammary Artery (IMA) in Patients with Isolated CABG Surgery – National Quality Strategy Domain: Effective Clinical Care**

**2018 OPTIONS FOR INDIVIDUAL MEASURES:**  
**REGISTRY ONLY**

**MEASURE TYPE:**  
Process

**DESCRIPTION:**  
Percentage of patients aged 18 years and older undergoing isolated CABG surgery who received an IMA graft

**INSTRUCTIONS:**  
This measure is to be submitted **each time** an isolated CABG procedure is performed during the performance period. It is anticipated that 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 patients. Isolated CABG refers to CABG using arterial and/or venous grafts only.

**Measure Submission:**  
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 allowed by the measure. The quality-data codes listed do not need to be submitted for registry submissions; however, these codes may be submitted for those registries that utilize claims data.

**DENOMINATOR:**  
All patients undergoing isolated CABG

**Denominator Criteria (Eligible Cases):**  
Patients aged  $\geq$  18 years 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

**NUMERATOR:**  
Patients undergoing isolated CABG who received an IMA graft

**Numerator Options:**  
***Performance Met:***

Internal mammary artery graft performed for primary, isolated coronary artery bypass graft procedure (CABG) **(4110F)**

**OR**

***Denominator Exception:***

Documentation of medical reason(s) for not performing an internal mammary artery graft for primary, isolated coronary artery bypass graft procedure. Acceptable medical reasons include: subclavian stenosis, previous cardiac or thoracic surgery, previous mediastinal radiation, emergent or salvage procedure, no bypassable left anterior descending artery disease **(4110F with 1P)**

**OR**

***Performance Not Met:***

Internal mammary artery graft not performed for primary, isolated coronary artery bypass graft procedure, reason not otherwise specified (**4110F with 8P**)

**RATIONALE:**

A major innovation has been the introduction of off-bypass CABG, which has reduced the post-procedure length of stay in some centers to between 2 and 3 days. In some centers, this has led to a total 3-month cost for single-vessel coronary bypass that is not significantly different from the total 3-month cost for angioplasty of single-vessel disease. Considering the favorable long-term patency of an internal mammary artery (IMA) graft to the LAD, the cost reductions possible with off-bypass CABG may improve the relative cost-effectiveness of coronary bypass compared with either medical therapy or percutaneous techniques, particularly for symptomatic, proximal LAD disease.

**CLINICAL RECOMMENDATION STATEMENTS:**

Class I

In every patient undergoing CABG, the left internal mammary artery (IMA) should be given primary consideration for revascularization of the left anterior descending (LAD) artery.

*(Level of Evidence: B)*

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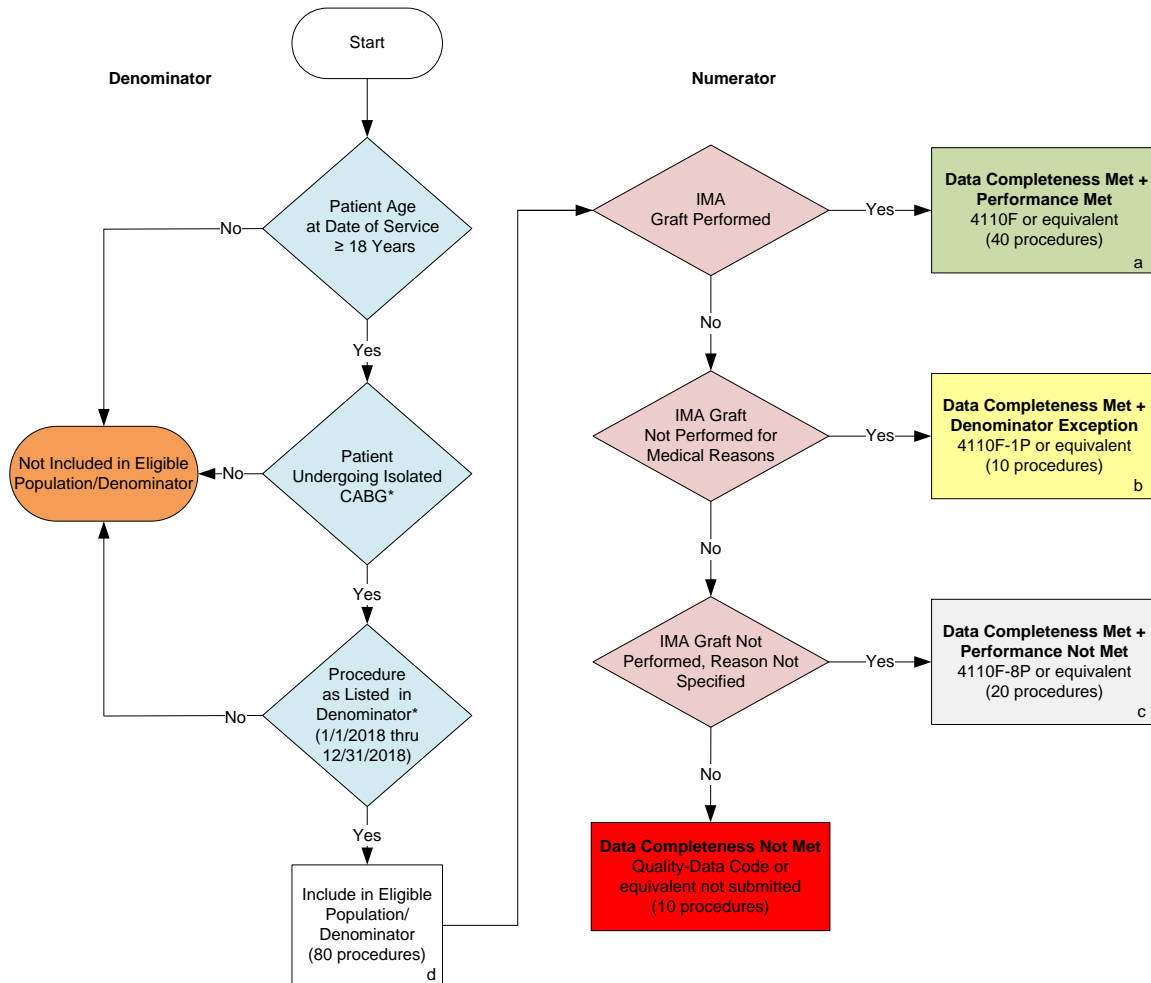
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**2018 Registry Flow for Quality ID #43 NQF #0134:  
Coronary Artery Bypass Graft (CABG): Use of Internal Mammary Artery (IMA) in Patients with Isolated CABG Surgery**



**SAMPLE CALCULATIONS:**

**Data Completeness=**  

$$\frac{\text{Performance Met (a=40 procedures)} + \text{Denominator Exception (b=10 procedures)} + \text{Performance Not Met (c=20 procedures)}}{\text{Eligible Population / Denominator (d=80 procedures)}} = \frac{70 \text{ procedures}}{80 \text{ procedures}} = 87.50\%$$

**Performance Rate=**  

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (70 procedures) - Denominator Exception (b=10 procedures)}} = \frac{40 \text{ procedures}}{60 \text{ procedures}} = 66.67\%$$

\*See the posted Measure Specification for specific coding and instructions to submit this measure.  
 NOTE: Submission Frequency - Procedure

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 The measure diagrams were developed by CMS as a supplemental resource to be used in conjunction with the measure specifications. They should not be used alone or as a substitution for the measure specification.

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**2018 Registry Flow for Quality ID  
#43 NQF #0134: Coronary Artery Bypass Graft (CABG): Use of Internal Mammary Artery (IMA) in  
Patients with Isolated CABG Surgery**

Please refer to the specific section of the Specification to identify the denominator and numerator information for use in submitting this Individual Specification. This flow is for registry- data submission.

1. Start with Denominator
2. Check Patient Age:
  - a. If the Age is greater than or equal to 18 years of age on Date of Service and equals No during the measurement period, do not include in Eligible Patient Population. Stop Processing.
  - b. If the Age is greater than or equal to 18 years of age on Date of Service and equals Yes during the measurement period, proceed to check Patient Undergoing Isolated CABG.
3. Check Patient Undergoing Isolated CABG:
  - a. If Patient Undergoing Isolated CABG equals No, do not include in Eligible Patient Population. Stop Processing.
  - b. If Patient Undergoing Isolated CABG equals Yes, proceed to check Encounter Performed.
4. Check Procedure Performed:
  - a. If Procedure as Listed in the Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
  - b. If Procedure as Listed in the Denominator equals Yes, include in the Eligible Population.
5. Denominator Population
  - a. Denominator population is all Eligible Patients in the denominator. Denominator is represented as Denominator in the Sample Calculation listed at the end of this document. Letter d equals 80 procedures in the Sample Calculation.
6. Start Numerator
7. Check IMA Graft Performed:
  - a. If IMA Graft Performed 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 Sample Calculation.
  - c. If IMA Graft Performed equals No, proceed to IMA Graft Not Performed for Medical Reason(s).
8. Check if IMA Graft Not Performed for Medical Reason(s):
  - a. If IMA Graft Not Performed for Medical Reason(s) equals Yes, include in the Data Completeness Met and Denominator Exception.

- b. Data Completeness Met and Denominator Exception letter is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter b equals 10 procedures in the Sample Calculation.
  - c. If IMA Graft Not Performed for Medical Reason(s) equals No, proceed to IMA Graft Not Performed, Reason Not Specified.
9. Check IMA Graft Not Performed, Reason Not Specified:
- a. If IMA Graft Not Performed, Reason Not Specified 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 20 procedures in the Sample Calculation.
  - c. If IMA Graft Not Performed, Reason Not Specified equals No, proceed to Data Completeness Not Met.
10. Check Data Completeness Not Met:
- a. If Data Completeness Not Met equals No, Quality Data Code or equivalent not submitted. 10 patients have been subtracted from the Data Completeness Numerator in Sample Calculation.

**SAMPLE CALCULATIONS:**

**Data Completeness=**  

$$\frac{\text{Performance Met (a=40 procedures)} + \text{Denominator Exception (b=10 procedures)} + \text{Performance Not Met (c=20 procedures)}}{\text{Eligible Population / Denominator (d=80 procedures)}} = \frac{70 \text{ procedures}}{80 \text{ procedures}} = 87.50\%$$

**Performance Rate=**  

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (70 procedures) - Denominator Exception (b=10 procedures)}} = \frac{40 \text{ procedures}}{60 \text{ procedures}} = 66.67\%$$