Quality ID #167 (NQF 0114): Coronary Artery Bypass Graft (CABG): Postoperative Renal Failure – National Quality Strategy Domain: Effective Clinical Care

<u>2018 OPTIONS FOR INDIVIDUAL MEASURES:</u>
REGISTRY ONLY

<u>MEASURE TYPE:</u>
Outcome

<u>DESCRIPTION:</u>
Percentage of patients aged 18 years and older undergoing isolated CABG surgery (without pre-existing renal failure) who develop postoperative renal failure or require dialysis

<u>INSTRUCTIONS:</u>
This measure is to be submitted <u>each time</u> 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 or isolated reoperation 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.

<u>DENOMINATOR:</u>
All patients undergoing isolated CABG surgery

>   <u>Denominator Criteria (Eligible Cases):</u>
>   All patients aged 18 years and older on date of encounter
>   <u>AND</u>
>   **Patient procedure during the performance period (CPT):** 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33522, 33523, 33533, 33534, 33535, 33536
>
> <div align="center"><u>OR</u></div>
>
>   **Patient procedure during the performance period (CPT):** 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33522, 33523, 33533, 33534, 33535, 33536
>   <u>AND</u>
>   **Patient procedure during the performance period (CPT):** 33530
>   <u>AND NOT</u>
>   <u>DENOMINATOR EXCLUSION:</u>
>   **Documented history of renal failure or baseline serum creatinine ≥ 4.0 mg/dL; renal transplant** recipients are not considered to have preoperative renal failure, unless, since transplantation the Cr has been or is 4.0 or higher: G9722

<u>NUMERATOR:</u>
Patients who develop postoperative renal failure or require dialysis; (Definition of renal failure/dialysis requirement - patient had acute renal failure or worsening renal function resulting in one of the following: 1) increase of serum creatinine to ≥ 4.0 mg/dL or 3x most recent preoperative creatinine level (acute rise must be at least 0.5 mg/dL), or 2) a new requirement for dialysis postoperatively)

>   **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.

<u>Numerator Options:</u>
Performance Met: Developed postoperative renal failure or required dialysis
                                                                       (G8575)

<u>OR</u>

Performance Not Met: No postoperative renal failure/dialysis not required
                                                                       (G8576)

RATIONALE:
In 2000, coronary artery bypass graft (CABG) surgery was performed on more than 350,000 patients at a cost of close to $20 billion. Some degree of Acute Renal Dysfunction (ARD) occurs in about 8% of patients following CABG, and dialysis-dependent renal failure occurs in 0.7% to 3.5% of patients receiving CABG. The latter is associated with substantial increases in morbidity, length of stay, and mortality (odds ratios for mortality range from 15 to 27). ARD is associated with increased morbidity, mortality and length of stay in an ICU following surgery. In addition, Acute Renal Failure occurs in 1.5% of patients undergoing any type of cardiac surgery. There has been a substantial increase in postoperative morbidity, mortality, and cost associated with this relatively common complication, regardless of whether or not this incidence varies much between providers, and there are implications of even a modest decrease in its incidence.

CLINICAL RECOMMENDATION STATEMENTS:
Acute renal failure following CABG is an intermediate outcome measure for mortality since this complication is independently associated (OR=27) with early mortality following cardiac surgery, even after adjustment for co-morbidity and postoperative complications.
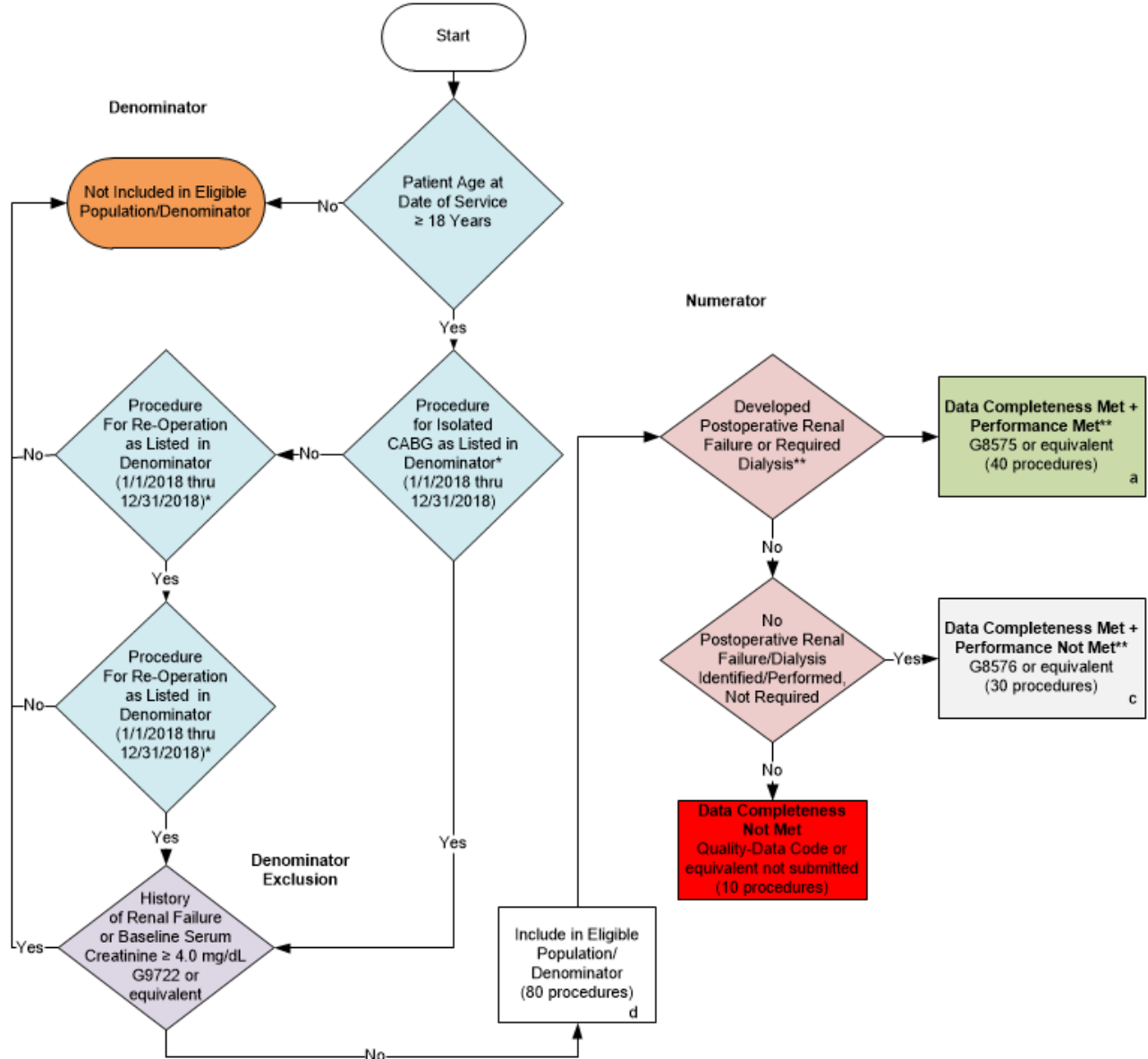
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2018 Registry Flow for Quality ID #167 NQF #0114:
Coronary Artery Bypass Graft (CABG): Postoperative Renal Failure

Start

Denominator

Patient Age at Date of Service ≥ 18 Years — No → **Not Included in Eligible Population/Denominator**

Yes ↓

Procedure for Isolated CABG as Listed in Denominator* (1/1/2018 thru 12/31/2018) — No →

Procedure For Re-Operation as Listed in Denominator (1/1/2018 thru 12/31/2018)* — No → (No) —

Yes ↓

Procedure For Re-Operation as Listed in Denominator (1/1/2018 thru 12/31/2018)* — No →

Yes ↓

Denominator Exclusion

History of Renal Failure or Baseline Serum Creatinine ≥ 4.0 mg/dL G9722 or equivalent — Yes →

No →

Include in Eligible Population/ Denominator (80 procedures) — d

Numerator

Developed Postoperative Renal Failure or Required Dialysis** — Yes → **Data Completeness Met + Performance Met** G8575 or equivalent (40 procedures)** — a

No ↓

No Postoperative Renal Failure/Dialysis Identified/Performed, Not Required — Yes → **Data Completeness Met + Performance Not Met** G8576 or equivalent (30 procedures)** — c

No ↓

Data Completeness Not Met Quality-Data Code or equivalent not submitted (10 procedures)

SAMPLE CALCULATIONS:

Data Completeness=

$$\frac{\text{Performance Met (a=40 procedures) + Performance Not Met (c=30 procedures)}}{\text{Eligible Population / Denominator (d=80 procedures)}} = \frac{70 \text{ procedures}}{80 \text{ procedures}} = 87.50\%$$

Performance Rate**=

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

*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

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v2

2018 Registry Flow For Quality ID
#167 NQF #0114: Coronary Artery Bypass Graft (CABG): Postoperative Renal Failure

Please refer to the specific section of the specification to identify the denominator and numerator information for use in submitting this Individual Specification. A lower calculated performance rate for this measure indicates better clinical care or control. 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 Encounter performed.

3. Check Procedure Performed:

    a. If Procedure for CABG as Listed in Denominator equals No, proceed to Procedure for Re-Operation as Listed in Denominator.

    b. If Procedure for CABG as Listed in Denominator equals Yes, Proceed to History of Renal Failure or **Baseline Serum Creatinine ≥ 4.0 mg/dL.**

4. Check Procedure for Re-Operation as Listed in Denominator:

    a. If Procedure for Re-Operation as Listed in Denominator equals No, do not include in Eligible Patient Population. Stop Processing.

    b. If Procedure for Re-Operation as Listed in Denominator equals Yes, proceed to Procedure for Re-Operation as Listed in Denominator.

5. Check Procedure for Re-Operation as Listed in Denominator:

    a. If Procedure for Re-Operation as Listed in Denominator equals No, do not include in Eligible Patient Population. Stop Processing.

    b. If Procedure for Re-Operation as Listed in Denominator equals Yes, proceed to History of Renal Failure or **Baseline Serum Creatinine ≥ 4.0** mg/dL.

6. **Check History of Renal Failure or Baseline Serum Creatinine ≥ 4.0 mg/dL:**

    a. If History of Renal Failure or Baseline Serum Creatinine ≥ 4.0 mg/dL equals Yes, do not include in Eligible Patient Population. Stop Processing.

    b. If History of Renal Failure or Baseline Serum Creatinine ≥ 4.0 mg/dL equals No, include in the Eligible Population.

7. 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.

8. Start Numerator

9. Check Developed Postoperative Renal Failure or Required Dialysis:

    a. If Developed Postoperative Renal Failure or Required Dialysis 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 Developed Postoperative Renal Failure or Required Dialysis equals No, proceed to No Postoperative Renal Failure/Dialysis Identified/Performed, Not Required.

10. Check No Postoperative Renal Failure/Dialysis Identified/Performed, Not Required:

    a. If No Postoperative Renal Failure/Dialysis Identified/Performed, Not Required 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 and Performance Rate in the Sample Calculation listed at the end of this document. Letter c equals 30 procedures in the Sample Calculation.

    c. If No Postoperative Renal Failure/Dialysis Identified/Performed, Not Required equals No, proceed to Data Completeness Not Met.

11. Check Data Completeness Not Met:

    a. If Data Completeness Not Met equals No, Quality Data Code or equivalent not submitted. 10 procedures have been subtracted from the Data Completeness Numerator in the Sample Calculation.

SAMPLE CALCULATIONS:

Data Completeness=

$$\frac{\text{Performance Met (a=40 patients) + Performance Not Met (c=30 patients)}}{\text{Eligible Population / Denominator (d=80 patients)}} = \frac{70 \text{ patients}}{80 \text{ patients}} = \mathbf{87.50\%}$$

Performance Rate=

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