CORONARY ARTERY BYPASS GRAFT (CABG) MEASURES GROUP OVERVIEW

2016 PQRS OPTIONS FOR MEASURES GROUPS:

2016 PQRS MEASURES IN CORONARY ARTERY BYPASS GRAFT (CABG) MEASURES GROUP:
#43 Coronary Artery Bypass Graft (CABG): Use of Internal Mammary Artery (IMA) in Patients with Isolated CABG Surgery
#44 Coronary Artery Bypass Graft (CABG): Preoperative Beta-Blocker in Patients with Isolated CABG Surgery
#164 Coronary Artery Bypass Graft (CABG): Prolonged Intubation
#165 Coronary Artery Bypass Graft (CABG): Deep Sternal Wound Infection Rate
#166 Coronary Artery Bypass Graft (CABG): Stroke
#167 Coronary Artery Bypass Graft (CABG): Postoperative Renal Failure
#168 Coronary Artery Bypass Graft (CABG): Surgical Re-Exploration

INSTRUCTIONS FOR REPORTING:

- It is not necessary to submit the measures group-specific intent G-code for registry-based submissions. However, the measures group-specific intent G-code has been created for registry only measures groups for use by registries that utilize claims data.

G8544: I intend to report the Coronary Artery Bypass Graft (CABG) Measures Group

- Report the patient sample method:
  **20 Patient Sample Method:** 20 unique procedures (patients – a majority of which must be Medicare Part B FFS [fee for service] patients) meeting patient sample criteria for the measures group during the reporting period (January 1 through December 31, 2016).

- Patient sample criteria for the CABG Measures Group are patients aged 18 years and older that have a specific procedure for isolated CABG performed:

  **One of the following procedure codes indicating isolated coronary artery bypass graft:** 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33522, 33523, 33533, 33534, 33535, 33536

- To satisfactorily report the CABG Measures Group requires reporting a numerator option on all applicable measures, for each patient within the eligible professional’s patient sample, a minimum of once during the reporting period.

- Measure #167 need only be reported when the patient does not have a 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.

- Instructions for qualifying numerator option reporting for each of the measures within the Coronary Artery Bypass Graft (CABG) Measures Group are displayed on the next several pages. The following composite Quality Data Code (QDC) has been created for registries that utilize claims data. This QDC may be reported in lieu of individual QDCs when all quality clinical actions for all applicable measures within the group have been performed.

  **Composite QDC G8497:** All quality actions for the applicable measures in the Coronary Artery Bypass Graft (CABG) Measures Group have been performed for this patient

- This measures group contains one or more inverse measures. An inverse measure is a measure that represents a poor clinical quality action as meeting performance for the measure. For these measures, a lower performance rate indicates a higher quality of clinical care. Composite codes for measures groups that contain inverse measures are only utilized when the appropriate quality clinical care is given.
• The composite code for this measures group may be reported when codes in the summary table below are applicable for reporting of each measure within the measures group.

Table 5 - QDC Options

<table>
<thead>
<tr>
<th>Measure</th>
<th>#43</th>
<th>#44</th>
<th>#164*</th>
<th>#165*</th>
<th>#166*</th>
<th>#167*</th>
<th>#168*</th>
</tr>
</thead>
<tbody>
<tr>
<td>QDC options for acceptable use of the composite QDC</td>
<td>4110F</td>
<td>4115F</td>
<td>G8570</td>
<td>G8572</td>
<td>G8574</td>
<td>G8576</td>
<td>G8578</td>
</tr>
</tbody>
</table>

*Indicates an inverse measure.

• Measure Group Reporting Calculations:

Measures groups containing a measure with a 0% performance rate will not be counted as satisfactorily reporting the measures group. The recommended clinical quality action must be performed on at least one patient for each applicable measure within the measures group reported by the eligible professional.

Performance exclusion QDCs are not counted in the performance denominator. If the eligible professional submits all performance exclusion QDCs, the performance rate would be 0/0 (null) and would be considered satisfactorily reporting.

If a measure within a measures group is not applicable to a patient, the patient would not be counted in the performance denominator for that measure (e.g., Preventive Care Measures Group - Measure #39: Screening for Osteoporosis for Women Aged 65-85 Years of Age would not be applicable to male patients according to the patient sample criteria). If the measure is not applicable for all patients within the sample, the performance rate would be 0/0 (null) and would be considered satisfactorily reporting.

When a lower rate indicates better performance, such as Measure #164, a 0% performance rate will be counted as satisfactorily reporting (100% performance rate would not be considered satisfactorily reporting).

• NOTE: The detailed instructions in this specification apply exclusively to the reporting and analysis of the included measures under the measures group option.
Measure #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

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

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

Medical Performance Exclusion: 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)
Measure #44 (NQF 0236): Coronary Artery Bypass Graft (CABG): Preoperative Beta-Blocker in Patients with Isolated CABG Surgery -- National Quality Strategy Domain: Effective Clinical Care

**DESCRIPTION:**
Percentage of isolated Coronary Artery Bypass Graft (CABG) surgeries for patients aged 18 years and older who received a beta-blocker within 24 hours prior to surgical incision.

**NUMERATOR:**
Patients who received a beta-blocker within 24 hours prior to surgical incision of isolated CABG surgeries.

**Definitions:**
- **Isolated CABG** – Refers to CABG using arterial and/or venous grafts only.
- **Medical Reason** - Eligible professional must document specific reason(s) for not administering beta-blockers.

**Numerator Options:**

**Performance Met:**
- Beta blocker administered within 24 hours prior to surgical incision (4115F)

**Medical Performance Exclusion:**
- Documentation of medical reason(s) for not administering beta blocker within 24 hours prior to surgical incision (eg, not indicated, contraindicated, other medical reason (4115F with 1P)

**Performance Not Met:**
- Beta blocker not administered within 24 hours prior to surgical incision, reason not otherwise specified (4115F with 8P)
Measure #164 (NQF 0129): Coronary Artery Bypass Graft (CABG): Prolonged Intubation --
National Quality Strategy Domain: Effective Clinical Care

DESCRIPTION:
Percentage of patients aged 18 years and older undergoing isolated CABG surgery who require postoperative
intubation > 24 hours

NUMERATOR:
Patients undergoing isolated CABG who require intubation > 24 hours following exit from the operating room

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. Reporting 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, and therefore an inverse measure
at 100% does not qualify for reporting purposes, however any reporting rate less than 100% does qualify.

Numerator Options:
Performance Met: Prolonged postoperative intubation (> 24 hrs) required (G8569)

OR
Performance Not Met: Prolonged postoperative intubation (> 24 hrs) not required (G8570)

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

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. Reporting 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, and therefore an inverse measure at 100% does not qualify for reporting purposes, however any reporting rate less than 100% does qualify.

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)
DESCRIPTION:
Percentage of patients aged 18 years and older undergoing isolated CABG surgery who have a *postoperative* stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that did not resolve within 24 hours.

NUMERATOR:
Patients undergoing isolated CABG surgery who have a postoperative stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that did not resolve within 24 hours.

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. Reporting 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, and therefore an inverse measure at 100% does not qualify for reporting purposes, however any reporting rate less than 100% does qualify.

Numerator Options:
*Performance Met:* Stroke following isolated CABG surgery (G8573)

OR

*Performance Not Met:* No stroke following isolated CABG surgery (G8574)
Measure #167 (NQF 0114): Coronary Artery Bypass Graft (CABG): Postoperative Renal Failure --
National Quality Strategy Domain: Effective Clinical Care

DESCRIPTION:
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

NUMERATOR:
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. Reporting 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, and therefore an inverse measure
at 100% does not qualify for reporting purposes, however any reporting rate less than 100% does qualify.

Numerator Options:
Performance Met: Developed postoperative renal failure or required
dialysis (G8575)

OR
Performance Not Met: No postoperative renal failure/dialysis not required
(G8576)
Measure #168 (NQF 0115): Coronary Artery Bypass Graft (CABG): Surgical Re-Exploration --
National Quality Strategy Domain: Effective Clinical Care

DESCRIPTION:
Percentage of patients aged 18 years and older undergoing isolated CABG surgery who require a return to the
operating room (OR) during the current hospitalization for mediastinal bleeding with or without tamponade, graft
occlusion, valve dysfunction, or other cardiac reason

NUMERATOR:
Patients undergoing isolated CABG surgery who require a return to the OR during the current hospitalization for
mediastinal bleeding with or without tamponade, graft occlusion, valve dysfunction, or other cardiac reason

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. Reporting 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, and therefore an inverse measure
at 100% does not qualify for reporting purposes, however any reporting rate less than 100% does qualify.

Numerator Options:
Performance Met: Re-exploration required due to mediastinal bleeding with or without tamponade, graft occlusion, valve
dysfunction, or other cardiac reason (G8577)

OR

Performance Not Met: Re-exploration not required due to mediastinal bleeding with or without tamponade, graft occlusion, valve
dysfunction, or other cardiac reason (G8578)
MEASURE #43 - CORONARY ARTERY BYPASS GRAFT (CABG): USE OF INTERNAL MAMMARY ARTERY (IMA) IN PATIENTS WITH ISOLATED CABG SURGERY

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)

MEASURE #44 - CORONARY ARTERY BYPASS GRAFT (CABG): PREOPERATIVE BETA-BLOCKER IN PATIENTS WITH ISOLATED CABG SURGERY

RATIONALE:
Since its introduction in 1962, coronary artery bypass grafting (CABG) has continued to be the gold standard for revascularization of CAD, particularly in high-risk patients with multivessel disease. Evidence from multiple studies suggests that CABG prolongs survival especially in complex patients with diabetes, those aged 65 years or more, those with left main stem or triple-vessel disease, and those with impaired left ventricular function (El Bardissi et al., 2012)
The NHDS (NCHS) estimates that in 2010, in the United States, 219,000 patients underwent a total of 397,000 coronary artery bypass procedures (defined by procedure codes) (Go et al., 2014). Despite significant developments in PCI, CABG remains the most commonly used treatment option for patients with complex CAD and high-risk patients (El Bardissi et al., 2012).

Coronary revascularization, comprising coronary artery bypass graft (CABG) surgery and percutaneous coronary intervention (PCI), is among the most common major medical procedures provided by the US health care system, with more than 1 million procedures performed annually. It is also among the most costly procedure. Medicare inpatient payments to hospitals for coronary revascularizations exceeded $6.7 billion in fiscal year 2006 and is larger than the reimbursement for any other medical or surgical procedure (Epstein, 2011).

Postoperative atrial fibrillation (POAF) is a common complication following cardiac surgery, occurring in 25-40% of patients (Crystal, 2004, Burgess, 2006). POAF has been associated with increased rates of post-operative morbidity and mortality and consequently, increased costs (Mariscalco, 2008, Crystal, 2004, Bramer, 2010).Prophylactic administration of beta-blockers have been shown to reduce the risk of POAF and mortality following isolated coronary artery bypass graft surgery (Connolly, 2003, Mariscalco, 2008, Ferguson, 2002). Khan’s meta-analysis of RCTs found that "Preoperative BB initiation resulted in 52% reduction in the incidence of AF as compared to controls, however these results were not statistically significant." El Bardissi (2012) showed a 19.5% increase in preoperative use of beta-blockers from 2000-2009.

Prophylaxis to prevent atrial fibrillation after cardiac surgery with any of the studied pharmacological or non-pharmacological interventions may be favored because of its reduction in the rate of atrial fibrillation, decrease in the length of stay and cost of hospital treatment and a possible decrease in the rate of stroke (Arsenault et al., 2013). "According to our findings, perioperative application of beta-blockers still plays a pivotal role in cardiac surgery, as they can substantially reduce the high burden of supraventricular and ventricular arrhythmias in the aftermath of
surgery. Their influence on mortality, AMI, stroke, congestive heart failure, hypotension and bradycardia in this setting remains unclear (Blessberger et al., 2014)."

Postoperative AF after cardiac operations is associated with postoperative morbidities such as cerebrovascular accidents (CVA), infections (eg, septicemia, pneumonia and mediastinitis), and renal failure. Previous studies have suggested that POAF after CABG is related to early and late mortality (Bramer et al., 2010). Development of AF immediately after coronary artery bypass surgery (CABG) results in a longer stay in the intensive care unit and in hospital, together with a significantly higher (two-to-three-fold) risk of post-operative stroke (Burgess et al., 2006).

AF complicates up to 40% of the 500,000 patients per year undergoing CABG and increase the cost of the procedure by 10,055 per case resulting in incremental cost of about & 2 billion annually. It also increases the length of stay to additional 4-5 days and identifies a subset of patients at increased risk of morbidity, strokes and in-hospital and long-term mortality (Khan et al., 2013)

**CLINICAL RECOMMENDATION STATEMENTS:**

**Preoperative Beta-blockers (ACCF/AHA, 2011):**

*Class I*

1) Beta-blockers should be administered for at least 24 hours before CABG to all patients without contraindications to reduce the incidence or clinical sequelae of postoperative AF. (Level of Evidence: B), (ACCF/AHA, 2011)

*Class IIa*

1) Preoperative use of beta-blockers in patients without contraindications, particularly in those with an LV ejection fraction (LVEF) greater than 30%, can be effective in reducing the risk of in-hospital mortality. (Level of Evidence: B), (ACCF/AHA, 2011)

2) Beta-blockers can be effective in reducing the incidence of perioperative myocardial ischemia. (Level of Evidence: B), (ACCF/AHA, 2011)

*Class IIb*

1) The effectiveness of preoperative beta-blockers in reducing in-hospital mortality rate in patients with LVEF less than 30% is uncertain. (Level of Evidence: B), (ACCF/AHA, 2011)

Treatment of arrhythmias after revascularization (ESC/EACTS, 2014)

*Class I*

1) Beta-blockers are recommended to decrease the incidence of atrial fibrillation after CABG in the absence of contraindications. (Level of Evidence: A), (ESC/EACTS, 2014)

**MEASURE #164 - CORONARY ARTERY BYPASS GRAFT (CABG): PROLONGED INTUBATION**

**RATIONALE:**

Based on the STS coronary artery bypass graft (CABG) study population, the morbidity rate associated with prolonged intubation following CABG is 5.96%. Also, prolonged ventilation (defined as > 24 hours) was an independent predictor for readmission to the ICU following CABG surgery (OR=10.53; CI: 6.18 to 17.91). Shorter ventilation times are linked to high quality of care (i.e., reduced in-hospital and operative mortality, as well as better long-term outcomes as compared to prolonged ventilation).

**CLINICAL RECOMMENDATION STATEMENTS:**

Extubation greater than (> ) 24 hours postoperatively is considered a “pulmonary complication.” Patients who were extubated more than 24 hours after surgery had a longer duration of hospital stay and a greater incidence of postoperative complications.
MEASURE #165 - CORONARY ARTERY BYPASS GRAFT (CABG): DEEP STERNAL WOUND INFECTION RATE
RATIONAL:
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.

MEASURE #166 - CORONARY ARTERY BYPASS GRAFT (CABG): STROKE
RATIONAL:
Stroke is a devastating complication after coronary bypass surgery. The 1999 American College of Cardiology/American Heart Association (ACC/AHA) guidelines indicate that adverse cerebral outcomes are observed in ~6% of patients after bypass surgery equally divided between 2 types:

1) associated with major, focal neurological defects, stupor or coma and 2) evidence of deterioration in intellectual function. Type 1 deficits occur in ~3% of patients and are responsible for 21% mortality.

Reports in the literature on postoperative stroke incidence are difficult to compare because the conditions included in the term “stroke” vary. A standardized definition of stroke will provide common language to compare stroke incidence and evaluate management strategies for reducing this devastating complication.

Reported rates of postoperative cerebral dysfunction range from 0.4% to 13.8% following coronary operations. Complications for patients undergoing emergent CABG or valve surgery were greater than the complication rate for patients undergoing elective CABG or valve surgery. As bypass times increased, so did the incidence of stroke. When bypass time was 90 to 113 minutes, OR =1.59, p=0.022 and when bypass time was > 114 minutes, the OR =2.59, p < 0.001. Outcomes are better when patient age is younger and with beating-heart surgery rather than on-pump surgery.

CLINICAL RECOMMENDATION STATEMENTS:
The 1999 ACC/AHA guidelines describe strategies for reducing the risk of postoperative stroke such as an aggressive approach to the management of patients with severely diseased ascending aortas identified by intraoperative echocardiographic imaging, prevention or aggressive management of postoperative atrial fibrillation, delay of bypass surgery in the case of a left ventricular mural thrombus or a recent, preoperative CVA and preoperative carotid screening. Patients should carefully be screened for cerebrovascular disease to help prevent stroke and its associated morbidities.

Use of beta-adrenergic antagonists was associated with a lower incidence of stroke in patients undergoing elective CABG (OR=0.45; 95% CI 0.23 to 0.83; p=0.016). Use of antiplatelet agents within 48 hours of surgery is associated with a decreased risk of stroke (OR=0.51, p=0.01). Increased use of beating-heart surgery without cardiopulmonary bypass may lead to a lower prevalence of stroke following cardiac surgery and thus improve patient outcomes.
MEASURE #167 - CORONARY ARTERY BYPASS GRAFT (CABG): POSTOPERATIVE RENAL FAILURE
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.

MEASURE #168 - CORONARY ARTERY BYPASS GRAFT (CABG): SURGICAL RE-EXPLORATION
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. Re-exploration after surgery is a serious complication that impacts length of stay, efficient use of resources, and increases risk for additional complications and death. As one of several major complications of cardiac surgery, repeat surgery is particularly worrisome for consumers and is an inefficient use of resources.

CLINICAL RECOMMENDATION STATEMENTS:
Re-exploration after surgery is a serious complication that impacts length of stay, efficient use of resources, and increases risk for additional complications and death. This measure is currently in use by approximately 65% of providers in the United States who perform cardiac surgery and report data to the STS National Database.