2025 Measure Set Review (MSR): 00211-02-E-PI Preliminary Assessment

I. Measure Overview[1]

CMIT ID	Title
Link to CMIT measure record: 00211-02-E-PI	Discharged on Antithrombotic Therapy
Measure Steward	**CMS Program**
The Joint Commission	Medicare Promoting Interoperability Program Link: Promoting Interoperability Programs | CMS

CBE Endorsement Status	CBE Endorsement History
Not Endorsed	Not Endorsed, Neurology Project, 2015-2016 • Link to endorsement measure record: STK 02: Discharged on Antithrombotic Therapy There is also a non-digital version of this measure, which was: • Endorsed with Reserve Status, Neurology Project, 2015-2016.[2] • Initial endorsement, 2008. Link to non-digital version endorsement measure record: STK 02: Discharged on Antithrombotic Therapy

Measure Overview
Rationale for Use: The effectiveness of antithrombotic agents in reducing stroke mortality, stroke-related morbidity and recurrence rates has been studied in several large clinical trials. While the use of these agents for patients with acute ischemic stroke and transient ischemic attacks continues to be the subject of study, substantial evidence is available from completed studies. Data at this time suggest that antithrombotic therapy should be prescribed at discharge following acute ischemic stroke to reduce stroke mortality and morbidity if no contraindications exist. For patients with a stroke due to a cardioembolic source (e.g., atrial fibrillation, mechanical heart valve), warfarin is recommended unless contraindicated. In recent years, novel oral anticoagulant agents (NOACs) have been developed and

[1] The information in this PA is sourced from the CMS Measures Inventory Tool (CMIT) and the PQM Submission Tool and Repository (STAR) Measure Database. This document reflects the content available as of September 2025.
[2] Historically, the National Quality Forum (NQF) assigned "reserve" status to measures that consistently demonstrated high performance with little variation, indicating minimal room for improvement. This status allowed these measures to be retained for monitoring to ensure performance did not decline, while signaling to committee members that they no longer addressed significant gaps in care. Although not actively endorsed, these measures remained in the NQF portfolio for periodic review and potential future use, ensuring they were available for monitoring and harmonization with other measures. PQM plans to follow up with the stewards of measures in "reserve" status to plan for appropriate endorsement/maintenance review in coming cycles.

Measure Overview	
approved by the U.S. Food and Drug Administration (FDA) for stroke prevention and may be considered as an alternative to warfarin for select patients. Anticoagulation therapy is not generally recommended for secondary stroke prevention in patients presumed to have a non-cardioembolic stroke. Anticoagulants at doses to prevent venous thromboembolism are insufficient antithrombotic therapy to prevent recurrent ischemic stroke or transient ischemic attack (TIA).	
CMS-Provided Rationale for Use in Program: Long-term antithrombotic usage is a key therapy recommended by the American Heart Association (AHA) and other professional societies to reduce the occurrence of another stroke following an acute ischemic stroke event. It should be prescribed prior to hospital discharge for secondary stroke prevention. According to Behavioral Risk Factor Surveillance System (BRFSS) 2022 data (unpublished National Heart, Lung, and Blood Institute [NHLBI] tabulation), stroke prevalence in adults was 3.4% (median) in the United States with the lowest prevalence in Puerto Rico (1.8%) and South Dakota (2.1%) and the highest prevalence in Arkansas (4.8%) (AHA, 2025 Heart Disease and Stroke Statistics).	
Description: Ischemic stroke patients prescribed or continuing to take antithrombotic therapy at hospital discharge.	
Numerator: Inpatient hospitalizations for patients prescribed or continuing to take antithrombotic therapy at hospital discharge. **Exclusions:** None	
Denominator: Inpatient hospitalizations (non-elective admissions) for patients age 18 and older, discharged from inpatient care with a principal diagnosis of ischemic stroke, ending during the measurement period. **Exclusions:** • Inpatient hospitalizations for patients admitted for elective carotid intervention. This exclusion is implicitly modeled by only including non-elective hospitalizations. • Inpatient hospitalizations for patients discharged to another hospital. • Inpatient hospitalizations for patients who left against medical advice. • Inpatient hospitalizations for patients who expired. • Inpatient hospitalizations for patients discharged to home for hospice care. • Inpatient hospitalizations for patients discharged to a health care facility for hospice care. • Inpatient hospitalizations for patients with comfort measures documented. **Exceptions:** • Inpatient hospitalizations for patients with a reason for not prescribing antithrombotic therapy at discharge. • Inpatient hospitalizations for patients who receive Prasugrel as an antithrombotic therapy at discharge.	
CMS Program History: • Active in the Promoting Interoperability Program since 2014. • Also in the Hospital Inpatient Quality Reporting Program since 2014.	**Cascade of Meaningful Measures Priority:** Chronic Conditions and Related Acute Events
Measure Type: Process	**Is the Measure Digital or an Electronic Clinical Quality Measure (eCQM)?** Yes
Level(s) of Analysis/Measured Entity: Facility/Hospital/Agency	**Care Setting(s):** Hospital: Inpatient Acute Care Facility
Does the Measure Fill a Statutorily Required Category for the Program? No	**Is the Measure Included in Upcoming Rulemaking?** No

II. Measure Performance in Program

For this measure, the MSR evaluation and analysis team reviewed the publicly available datasets:

- hospitals_04_2025.zip (which contains data from January 2023-December 2023 and is referred to as PY2023 in this assessment)
- hospitals_07_2024.zip (which contains data from January 2022-December 2022 and is referred to as PY2022 in this assessment)
- hospitals_10_2023.zip (which contains data from January 2021-December 2021 and is referred to as PY2021 in this assessment)

This measure was also analyzed in the Hospital Inpatient Reporting Program, with a difference between programs of three entities. Results for the Medicare Promoting Interoperability Program are shown below.

About Figure 1: Figure 1 uses boxplots to show how scores have changed over the past 3 years of publicly available data. For each year, the boxplot displays a box with lines and dots to help visualize the range and distribution of scores. The dots represent the points where the lowest 5% and highest 5% of scores fall, and the line connecting them shows where 90% of the scores are located. The box itself covers the middle half of the scores, from the 25th to the 75th percentile. Inside the box, a horizontal line marks the median score, which is the middle value, while a "+" sign shows the average score. This type of graph makes overall trends in scores over time as well as the consistency and spread of the results easier to understand.

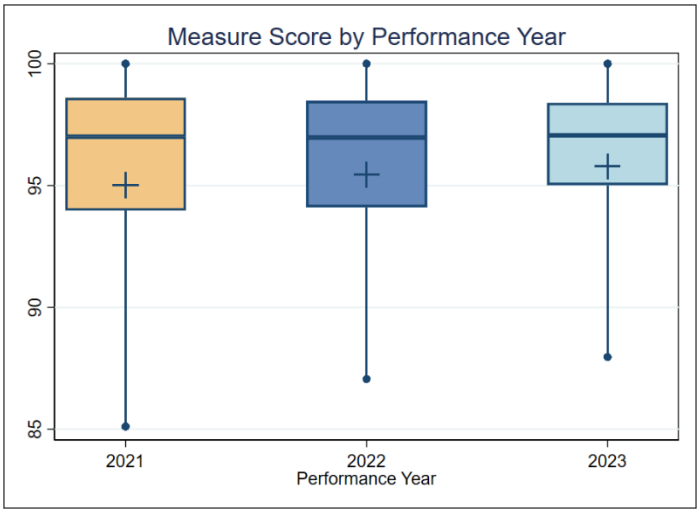

Figure 1. Boxplot of Measure Score by Year

Figure 1 Interpretation: In the boxplot above, the median score is approximately the same, about 97% for PY2021, PY2022, and PY2023. For this measure, a higher score indicates better quality of care. The narrowing of the box over the 3 years suggests that entities below the median are improving while those above the median are staying the same.

 The analyses upon which this publication (or document) is based were performed under Contract Number 75FCMC23C0010, entitled, "National Consensus Development and Strategic Planning for Health Care Quality Measurement," sponsored by the Department of Health and Human Services, Centers for Medicare & Medicaid Services. Restricted: Use, duplication, or disclosure is subject to the restrictions as stated in Contract Number 75FCMC23C0010 between the Government and Battelle.

About Table 1: Table 1 illustrates the distribution of scores and the number of patients represented within each group. Note: groups with the lowest or highest scores (referred to as deciles, each comprising 10% of the organizations) may contain more or fewer patients than other groups. For example, if the lowest-scoring decile includes only 5% of the total patient population, this smaller group size may be associated with lower performance scores.

For this measure, Decile 1 represents a grouping of organizations who have the lowest measure scores and Decile 10 shows those with the highest measure scores. The arrow denotes improving performance on the measure.

Table 1. Importance (Decile by Measure Score, 2023)

Lowest Performers → **Highest Performers**

	Overall	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
Average Score (Standard Deviation)	95.8 (5.96)	83.7	93.1	95.0	96.1	96.9	97.5	98.0	98.5	99.2	100.0
Organizations	1,617	162	162	162	161	162	162	161	162	162	161
Patients	335,752	21,250	29,521	29,216	40,220	43,418	24,677	60,583	24,321	45,015	17,531

Table 1 Interpretation: To estimate the number of positive outcomes (appropriate prescription of antithrombotic therapy for eligible patients), the number of patients is multiplied by the average score for each decile. Right now, the total estimated number of positive outcomes across all deciles is about 323,000. If the average performance of Decile 8 (98.5%) is considered a plausible, achievable score and the entities in Deciles 1 through 7 improved to reach that score, the estimated number of eligible patients discharged on antithrombotic therapy would go up by about 2.4%, which translates to a potential total of about 2,000 additional positive outcomes." This means that improving performance on this measure could help ensure that thousands more patients receive the appropriate antithrombotic therapy they need, potentially leading to better health outcomes.

 The analyses upon which this publication (or document) is based were performed under Contract Number 75FCMC23C0010, entitled, "National Consensus Development and Strategic Planning for Health Care Quality Measurement," sponsored by the Department of Health and Human Services, Centers for Medicare & Medicaid Services. Restricted: Use, duplication, or disclosure is subject to the restrictions as stated in Contract Number 75FCMC23C0010 between the Government and Battelle.

About Figure 2: Figure 2 is a bar graph displaying average change in performance by performance decile on this measure. Battelle developed this graph by first assigning each entity's year 1 performance score to a decile (1-10). For each entity, the change in performance score from year 1 was then calculated for both year 2 and year 3. The resulting changes in performance for year 2 and year 3 were plotted against the year 1 decile assignments, allowing for visualization of performance trends over time by initial performance level.

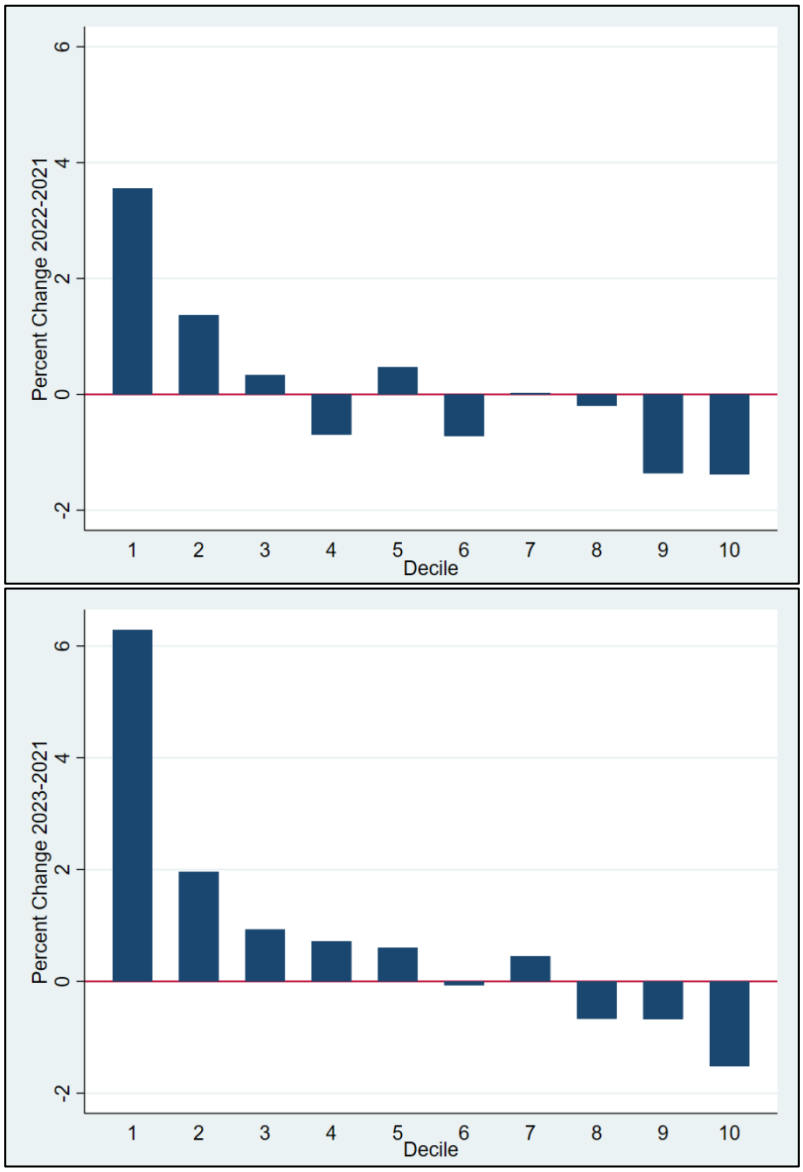

Figure 2. Mean Change in Performance by Decile

Figure 2 Interpretation: The upper graph shows that the improvement in average performance from PY2021 to PY2022 is inversely proportional to the performance score in PY2021. Deciles with lower scores in PY2021 showed an average increase in performance while deciles with high scores in PY2021 showed an average decrease in performance. The lower graph looks very similar, indicating that there was little change on average between PY2022 and PY2023

except for Decile 1, the 10% lowest scores in PY2021, which had an additional average increase in performance between PY2022 and PY2023.

III. Evaluation Criteria

Meaningfulness

Importance
Guiding Questions: Does the evidence show that the focus of the measure is linked to meaningful outcomes for patients and health care organizations? Do the data demonstrate that using this measure within the quality program results in benefits that outweigh any associated burdens or costs?
Published clinical literature supports the importance of antithrombotic for reducing mortality and morbidity associated with ischemic stroke.[3] Most entities have achieved higher performance on this measure (97%). However, lower-performing entities still have opportunities to improve their scores. While high performance indicates that entities are implementing procedures to appropriately meet measure targets, improvement in the lower-scoring deciles could help ensure that thousands more patients receive the appropriate antithrombotic therapy they need. **Committee Member Considerations:** Based on reviewing measure performance and professional and personal experiences, consider the balance of implementation costs or burdens with the benefit of measure use within the program. Committee members will have a chance to share these thoughts with the broader committee via Pre-Meeting Initial Evaluation (PIE) Forms and group discussion.
Staff Rating: Met

Conformance
Guiding Question: Do measure components and specifications align with the measure intent and target population?
The intent of this measure is to ensure patients discharged from inpatient care with a principal diagnosis of ischemic stroke are prescribed antithrombotic therapy. The specifications align with this intent. The denominator for this measure includes patients aged 18 years and older discharged from inpatient care with a principal diagnosis of ischemic stroke during the measurement period. The numerator is the number of patients prescribed or continuing to take antithrombotic therapy at hospital discharge. The measure only includes non-elective hospitalizations. There are also discharge conditions that cause patients to be excluded from the denominator. This eCQM aligns with the PI objective of promoting and prioritizing interoperability and exchange of health care data as well as improving care delivered in hospital settings. **Committee Member Considerations:** Committee members should review the list of active measures within this CMS program in the appendix and consider this measure's alignment with the group. The appendix lists all active measures reported in this program.
Staff Rating: Met

[3] Sun, L. C. Y., Li, W. S., Chen, W., Ren, Z., Li, C. X., Jiang, Z., & Xie, Q. (2025). Thrombolytic therapy for patients with acute ischemic stroke: systematic review and network meta-analysis of randomized trials. *Frontiers in Neurology*, *15*, 1490476.

Feasibility
Guiding Question: Are the tools, processes, and people necessary to implement and report on the measure reasonably available for measured entities in the CMS program?
All required data elements are routinely captured in electronic health records, and reporting is integrated into existing digital workflows. No additional resources are needed for implementation. **Committee Member Considerations:** Committee members with experience implementing this or similar measures in acute care hospital settings should reflect on potential challenges to feasibility of data collection and reporting.
Staff Rating: Met

Validity
Guiding Question: Do the data and/or logic support the idea that the measured entity can improve their performance on the measure?
Data from clinical trials suggest antithrombotic therapy should be prescribed at discharge following acute ischemic stroke to reduce stroke mortality and morbidity if no contraindications exist. While average performance on this measure is high (97%), lower-performing entities have improved their scores over the last 3 years. **Committee Member Considerations:** Committee members with experience implementing this or similar measures in relevant settings should reflect on potential methods to improve administration of antithrombotic therapy at discharge.
Staff Rating: Met

Reliability

The two tables below summarize reliability. Tables 2 and 3 sort entities by the number of patients, and the tables report average reliability along with the number of entities and average number and total patients for each decile. These tables can be used to assess the impact of population size on the reliability of an entity's measure score. Population size can impact reliability estimates because larger populations generally provide more stable and consistent measure scores, while smaller populations can lead to greater variation. In cases where reliability has a strong relationship to population size, reliability will be the lowest at Decile 1 and progressively increase up to Decile 10.

Table 3 sorts entities by reliability and reports the average reliability by decile. The table also includes the mean, standard deviation,[4] minimum and maximum reliability, and interquartile range (IQR).[5] This table can be used to see the distribution of the reliability of the entities. A measure is generally considered reliable when the reliability for at least 70% of the individual entities is above 60%.

Table 2. Reliability (Decile by Denominator – Target Population Size)

	Overall	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
Mean Target Population Size	208	32	50	70	96	126	161	207	280	390	668
Mean Reliability	78.7	51.0	61.7	69.4	75.7	80.3	84.0	87.1	90.1	92.7	95.3
Entities	1,617	162	162	162	161	162	162	161	162	162	161
Total Patients	335,752	5,211	8,037	11,330	15,394	20,342	26,140	33,285	45,319	63,152	107,542

Table 3. Mean Reliability (By Reliability Decile)

Mean	SD	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	IQR
78.7	13.7	51.0	61.7	69.4	75.7	80.3	84.0	87.1	90.1	92.7	95.3	20.6

[4] Standard deviation is a number that shows how spread out the values in a group of numbers are. If the standard deviation is small, most values are close to the average; if it's large, the values are more spread out and indicate greater variation in performance.
[5] IQR, or interquartile range, is a number that shows how spread out the middle half of a group of numbers is. It measures the range between the value at the 25th percentile and the value at the 75th percentile, indicating how tightly or loosely the middle values are grouped.

Tables 2 and 3 Interpretation: Reliability was estimated using a modification of the Adams[6] signal-to-noise method where the reliability for each entity *i* is estimated by[7] $100 * \frac{n_i}{\hat{\alpha}+\hat{\beta}+n_i}$ here n_i is the total number of patients for entity *i*, and $\hat{\alpha}$ and $\hat{\beta}$ are estimates of the beta binomial parameters. This method helps show how much the difference in scores between groups is due to real differences in quality, rather than just random chance. In this case, 87% of all entities had a reliability score higher than 60%. This means that, for most entities, the measure can reliably tell the difference between those who are performing better or worse, making it a useful tool for comparing quality of care.

Reliability
Guiding Question: Does the evidence show that changes in measure performance are due to improvements in quality of care? In other words, do the data demonstrate that variation in measure performance is linked to changes made to processes or behaviors to improve care?
Most entities have reliability scores above the accepted threshold, indicating that the measure consistently reflects true differences in care quality and can be used confidently for quality improvement. **Committee Member Considerations:** Committee members should reflect on implications of the measure's reliability on program use and what the reliability may mean for individual measured entities.
Staff Rating: Met

Usability
Guiding Questions: Are there any known barriers or facilitators that determine whether the person or entity could improve on the measure focus? Are these barriers addressable?
Based on the limited information available, the measure appears to be integrated into existing reporting processes and is generally understood by participating entities. No significant barriers to use or improvement have been identified, although unreported challenges may exist. **Committee Member Considerations:** Based on professional/personal experiences, committee members should consider any barriers to using this measure for certain measured entities as well as any potential facilitators that might promote usability within the program.
Staff Rating: Met

Data Stream Parsimony

Data Stream Parsimony
Guiding Question: Does the data flow required for the measure promote non-burdensome data collection and reporting?
The measure uses data elements that are already routinely collected in the electronic health record (EHR), requiring no additional manual data entry or special data collection processes. Electronic reporting further streamlines the process and minimizes staff burden.

[6] Adams, John L., The Reliability of Provider Profiling: A Tutorial. Santa Monica, CA: RAND Corporation, 2009.
[7] Nieser, K.J. and Harris, H.S. Comparing methods for assessing the reliability of health care quality measures. Statistics in Medicine: 43(23), 2024.

Data Stream Parsimony
Committee Member Considerations: Based on professional/personal experiences, committee members should reflect on any additional barriers to the clinical data flow that collection may add as well as potential mitigation strategies.

Patient Journey

Patient Health Journey
Guiding Question: Does the measure address the appropriate aspects of care to align with the patient health care journey?
By focusing on the prescription or continuation of therapy at discharge, the measure targets a key transition in the patient's care journey. This helps ensure patients receive necessary treatment as they move from hospital to home, supporting safer and more effective long-term outcomes. **Committee Member Considerations:** Based on professional/personal experiences, committee members should consider if the measure identifies an appropriate and critical time to assess use of antithrombotic therapy at discharge. Reflect on if this timepoint is meaningful to patients and any potential barriers or burdens associated with this timepoint in the care journey.

Appendix: Active Measures in the Medicare Promoting Interoperability (PI) Program

Measures Included in Medicare Promoting Interoperability Program	
CMIT ID	**Measure Title**
00241-01-E-PI	HIE: Bi-Directional Exchange
01678-02-E-PI	Antimicrobial Use (AU) Surveillance Reporting
01678-03-E-PI	Antimicrobial Resistance (AR) Surveillance Reporting
01677-02-C-PI	Enabling Exchange under TEFCA
00062-04-E-PI	Anticoagulation Therapy for Atrial Fibrillation/Flutter
00064-03-E-PI	Antithrombotic Therapy by End of Hospital Day Two
00211-02-E-PI	*Discharged on Antithrombotic Therapy*
00244-01-E-PI	e-Prescribing
00230-01-E-PI	Electronic Reportable Laboratory (ELR) Result Reporting
00343-02-E-PI	Hospital Harm - Severe Hyperglycemia
00399-03-E-PI	Intensive Care Unit Venous Thromboembolism Prophylaxis
00339-01-E-PI	Hospital Harm - Acute Kidney Injury
00341-01-E-PI	Hospital Harm - Pressure Injury
00669-01-E-PI	Safe Use of Opioids - Concurrent Prescribing
00670-01-E-PI	SAFER Guides
00709-01-E-PI	Support Electronic Referral Loops by Receiving and Reconciling Health Information
00710-01-E-PI	Support Electronic Referral Loops by Sending Health Information
00758-06-E-PI	Venous Thromboembolism Prophylaxis
00616-01-E-PI	Provide Patients Electronic Access to Their Health Information
00342-02-E-PI	Hospital Harm - Severe Hypoglycemia
01585-01-C-PI	Query of PDMP
01602-01-C-PI	Immunization Registry Reporting
01607-01-C-PI	Security Risk Analysis
01633-01-E-PI	Severe Obstetric Complications
01611-01-E-PI	Global Malnutrition Composite Score (eCQM)
01603-01-C-PI	Syndromic Surveillance Reporting
01606-01-C-PI	Clinical Data Registry Reporting
01604-01-C-PI	Electronic Case Reporting
01605-01-C-PI	Public Health Registry Reporting

 The analyses upon which this publication (or document) is based were performed under Contract Number 75FCMC23C0010, entitled, "National Consensus Development and Strategic Planning for Health Care Quality Measurement," sponsored by the Department of Health and Human Services, Centers for Medicare & Medicaid Services. Restricted: Use, duplication, or disclosure is subject to the restrictions as stated in Contract Number 75FCMC23C0010 between the Government and Battelle.

Measures Included in Medicare Promoting Interoperability Program	
CMIT ID	**Measure Title**
00250-01-E-PI	Excessive Radiation Dose or Inadequate Image Quality for Diagnostic Computed Tomography (CT) in Adults (Facility IQR)
00508-03-E-PI	Cesarean Birth
01308-01-E-PI	Hospital Harm - Opioid-Related Adverse Events

 The analyses upon which this publication (or document) is based were performed under Contract Number 75FCMC23C0010, entitled, "National Consensus Development and Strategic Planning for Health Care Quality Measurement," sponsored by the Department of Health and Human Services, Centers for Medicare & Medicaid Services. Restricted: Use, duplication, or disclosure is subject to the restrictions as stated in Contract Number 75FCMC23C0010 between the Government and Battelle.