

2025 Measure Set Review (MSR): 00064-03-E-PI Preliminary Assessment

I. Measure Overview¹

CMIT ID	Title
Link to CMIT measure record: 00064-03-E-PI	Antithrombotic Therapy by the End of Hospital Day Two
Measure Steward	CMS Program
The Joint Commission	Medicare Promoting Interoperability Program Link: Promoting Interoperability Programs CMS

CBE Endorsement Status	CBE Endorsement History
Not Endorsed	<p>While this eCQM has not received endorsement, the non-digital version of this measure has the following endorsement history:</p> <ul style="list-style-type: none"> Endorsed with Reserve Status Neurology Project, 2015-2016² Initial Endorsement, 2008 <p>Link to endorsement measure record: STK 05: Antithrombotic Therapy By End of Hospital Day Two</p>

Measure Overview
<p>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 (TIA) continues to be the subject of study, substantial evidence is available from completed studies. Data at this time suggest that antithrombotic therapy should be administered within 2 days of symptom onset in acute ischemic stroke patients to reduce stroke mortality and morbidity if no contraindications exist. Aspirin is the recommended antithrombotic medication for early antithrombotic therapy and most frequently administered unless contraindicated. Anticoagulants at doses to prevent venous thromboembolism (VTE) are insufficient. Subcutaneous Lovenox (enoxaparin) and unfractionated heparin (UFH) SQ at lower dosages used for VTE prophylaxis (i.e., enoxaparin SQ 40 mg once daily; enoxaparin SQ 30 mg</p>

¹ The information in these measure information sheets is sourced from the [CMS Measures Inventory Tool \(CMIT\)](#) and the [PQM Submission Tool and Repository \(STAR\) Measure Database](#) for endorsement history. 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.

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Measure Overview	
Q12 hours; UFH 5,000 units or less two or three times daily) are not sufficient for early antithrombotic therapy. Anticoagulants at doses to prevent VTE are insufficient antithrombotic therapy to prevent recurrent ischemic stroke or TIA.	
CMS-Provided Rationale for Use in Program: Early antithrombotic therapy is recommended by the American Heart Association and other professional societies to increase the likelihood of favorable patient outcomes following an acute ischemic stroke event. The recommended timeframe for administration is within 24 to 48 hours of stroke onset.	
Description: Ischemic stroke patients administered antithrombotic therapy by the end of hospital day 2.	
Numerator: Inpatient hospitalization for patients who had antithrombotic therapy administered the day of or day after hospital arrival.	
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: <ul style="list-style-type: none"> • Inpatient hospitalizations for patients who have a duration of stay less than 2 days. • Inpatient hospitalization for patients with comfort measures documented day of or the day after arrival. • Inpatient hospitalization for patients with intra-venous or intra-arterial Thrombolytic (t-PA) Therapy administered within 24 hours prior to arrival or anytime during hospitalization. Exceptions: <ul style="list-style-type: none"> • Inpatient hospitalizations for patients with a documented reason for not administering antithrombotic therapy the day of or day after hospital arrival. • Inpatient hospitalizations for patients who receive Prasugrel as an antithrombotic therapy the day of or day after hospital arrival. • Inpatient hospitalizations for patients with an international normalized ratio (INR) greater than 3.5. 	
CMS Program History: <ul style="list-style-type: none"> • In Medicare Promoting Interoperability Program since 2013. • Also currently active in Hospital Inpatient Quality Reporting Program. 	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, or Agency Level	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)

A list of facilities that meet criteria for promoting interoperability of electronic health records (EHRs) were identified by sub-setting the file Promoting_Interoperability-Hospital.csv from [hospitals_04_2025.zip](#) to Facility IDs with a “Y” in the “Meets criteria for promoting interoperability of EHRs” column. All available values for the score for *MeasureID* “STK_05” from the corresponding Timely_and_effective_Care-Hospital.csv file were analyzed. It is important to highlight that only two hospitals do not participate in both the Hospital Inpatient Quality Reporting (HIQR) and Promoting Interoperability (PI) programs. Consequently, the analysis and assessment presented in this PA will closely align with the HIQR PA.

About Figure 1: Figure 1 is a boxplot that shows 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.

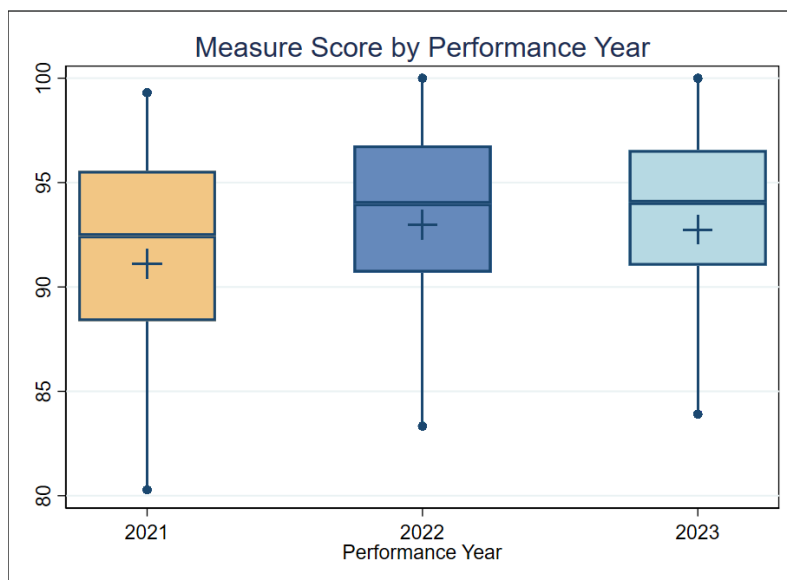


Figure 1. Boxplot of Measure Score by Year

Figure 1 Interpretation: In the boxplot above, the median score increased from 92.5% in 2021 to about 94% in 2022 and then remained at about 94% in 2023. For this measure, a higher score indicates better quality of care. There is wide variation in scores across the measured entities, indicating opportunities for improvement in lower performers while entities scoring near 100 have little room for improvement.

About Table 1: Table 1 illustrates the distribution of scores and the number of patients represented within each group. It is important to note that the groups (referred to as deciles, each comprising 10% of the entities) with the lowest or highest scores 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 below denotes improving performance on the measure.

Table 1. Importance (Decile by Measure Score, PY2023)

		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)	92.7 (7.82)	77.9	88.7	91.0	92.4	93.5	94.5	95.5	96.6	97.7	99.6
Entities	1,166	117	117	116	117	116	117	117	116	117	116
Patients	193,178	22,289	23,271	21,997	26,225	23,906	20,170	20,001	13,898	12,787	8,634

Table 1 Interpretation: To estimate the number of positive outcomes (appropriate administration 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 180,000. Assuming it would be plausible for entities in deciles 1-7 to improve and reach the average score of the 8th decile (which more than 20% of the entities have already achieved), we can use that score to estimate possible improvement in outcomes. For example, if the average performance of Decile 8 (96.6%) 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 receiving antithrombotic therapy by the end of hospital day 2 for qualifying visits would go up by about 5%, which translates to a potential total of about 10,000 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.

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.

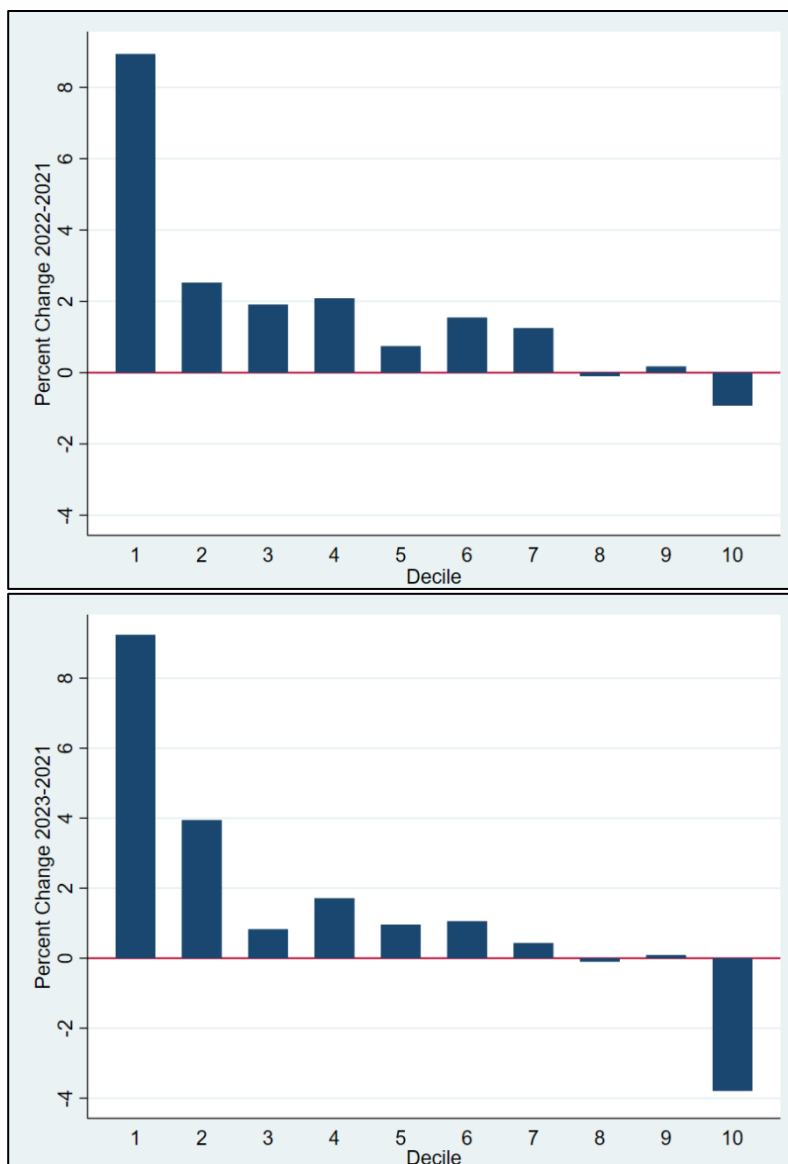


Figure 2. Mean Change in Performance by Decile

Figure 2 Interpretation: The upper graph shows that the improvement in average performance from PY2021 to PY2022 decreases with 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 no change or a slight decrease in performance. The lower graph looks very similar indicating that there was little change on average between PY2022 and PY2023 except for Decile 10, the 10% highest scores in PY2021, which shows a decrease in average

performance between PY2022 and PY2023. These figures indicate that lower-performing entities made the most significant gains over time, suggesting effective opportunities for improvement, while higher-performing entities saw a modest decline, highlighting potential challenges in sustaining top-tier performance from 2021 to 2023.

III. Evaluation Criteria

Meaningfulness

Importance
<p>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?</p>
<p>This measure is guided by the clinical recommendation that antithrombotic therapy should be administered within 2 days of symptom onset in acute ischemic stroke patients to reduce stroke mortality and morbidity if no contraindications exist.^{3,4} Published clinical literature supports the importance of antithrombotic medications for reducing mortality and morbidity associated with ischemic stroke.⁵</p> <p>Performance data show that there is consistently high performance on this measure across measured entities during the lookback period 2021-2023. There is wide variation in scores across the measured entities, indicating opportunities for improvement in lower performers while entities scoring near 100 have little room for improvement. While high performance indicates that facilities 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 medications they need.</p> <p>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.</p>
<p>Staff Rating: Met</p>

Conformance
<p>Guiding Question: Do measure components and specifications align with the measure intent and target population?</p>
<p>The measure's numerator, denominator, and exclusions are clearly defined and directly support its focus: ensuring that patients with acute ischemic stroke or transient ischemic attack (TIA) receive timely and appropriate antithrombotic therapy within two days of symptom onset, unless contraindicated. Specifically, the numerator includes patients who are administered antithrombotic medication within two days of hospital admission, provided no contraindications exist.</p>

³ American Heart Association. (n.d.). Acute ischemic stroke protocol guidelines. American Heart Association. Retrieved from <https://www.heart.org>

⁴ American College of Emergency Physicians. (2024). Clinical policy: Use of thrombolytics for the management of acute ischemic stroke in the emergency department. *Annals of Emergency Medicine*, 84, e57–e86. <https://doi.org/10.1016/j.annemergmed.2024.07.023>

⁵ 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.

Conformance

The denominator includes all patients admitted with acute ischemic stroke or TIA, excluding those for whom antithrombotic therapy is contraindicated. This measure aligns with the PI program objectives 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

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?

This measure is a digital measure/eCQM, and all data are collected electronically from the patient's health record. Data elements required for this measure are collected routinely as part of acute care. This measure is reported annually as part of the Medicare Promoting Interoperability Program.

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?

The wide variation in scores seen across the measured entities indicates that there is room for improvement in lower performers. Measured entities scoring closer to 100 demonstrate that there is opportunity for effective implementation of clinical best practices for antithrombotic medications administration to achieve high performance on this measure.

Committee Member Considerations: Committee members with experience implementing this or similar measures in acute care settings should reflect on potential methods to improve administration of antithrombotic medications within the recommended time period.

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,⁶ minimum and maximum reliability, and interquartile range (IQR).⁷ 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	166	30	42	58	77	104	128	165	222	306	527
Mean Reliability	79.3	54.8	63.0	70.2	75.8	80.8	83.9	86.9516	90.0	92.5	95.3
Entities	1,166	117	117	116	117	116	117	117	116	117	116
Total Patients	193,178	3,497	4,930	6,731	9,041	12,018	14,967	19,272	25,755	35,848	61,119

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
79.3	12.7	54.8	63.0	70.2	75.8	80.8	83.9	86.9516	90.0	92.5	95.3	20.1

⁶ 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.

⁷ 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.

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Tables 2 and 3 Interpretation: Reliability was estimated using a modification of the Adams⁸

signal-to-noise method where the reliability for each entity i is estimated by⁹ $100 * \frac{n_i}{\hat{\alpha} + \hat{\beta} + n_i}$ where 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 of the difference in scores between groups is due to real differences in quality, rather than just random chance. In this case, 89% of all groups had a reliability score higher than 60%. This means that, for most groups, 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?
<p>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.</p> <p>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.</p>
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?
<p>This measure is reported annually to the Medicare Promoting Interoperability Program and is a pay-for-reporting measure. Annual reporting may delay feedback and limit timely recognition of improvement efforts. While this could reduce the measure's usefulness for rapid change, there is insufficient detail to fully assess the impact of this barrier with the information currently available. Additionally, variation in resource availability and staffing across entities may limit some entities' ability to improve on the measure. However, without more granular data, the extent and significance of these barriers are unclear.</p> <p>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.</p>
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?

⁸ Adams, John L., *The Reliability of Provider Profiling: A Tutorial*. Santa Monica, CA: RAND Corporation, 2009.

⁹ Nieser, K.J. and Harris, H.S. *Comparing methods for assessing the reliability of health care quality measures*. Statistics in Medicine: 43(23), 2024.

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Data Stream Parsimony

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. The measure is included in another CMS program, which may result in entities having to report the same data more than once. While the data are digital, this redundancy could increase reporting workload for some entities. There is some overlap with other active measures within the Medicare Promoting Interoperability Program; however, this does not significantly increase reporting burden.

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 timely administration of antithrombotic therapy for patients with acute ischemic stroke or transient ischemic attack (TIA), specifically within 2 days of symptom onset, the measure is limited to processes within a single care setting and does not address transitions or coordination with other providers. However, this measure is part of a set, with STK-2 addressing antithrombotic therapy after discharge from the hospital. Taken together, these measures do address relevant aspects of the health journey.

Committee Member Considerations: Based on professional/personal experiences, committee members should consider if the measure identifies an appropriate and critical time to assess continued [measure focus, example: use of anticoagulation therapy]. 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 Program

Measures Used in the 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
00250-01-E-PI	Excessive Radiation Dose or Inadequate Image Quality for Diagnostic Computed Tomography (CT) in Adults (Facility IQR)

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Measures Used in the Medicare Promoting Interoperability Program	
CMIT ID	Measure Title
00508-03-E-PI	Cesarean Birth
01308-01-E-PI	Hospital Harm - Opioid-Related Adverse Events