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

I. Measure Overview[1]

CMIT ID	Title
Link to CMIT measure record: 00064-03-E-HIQR	Antithrombotic Therapy by the End of Hospital Day Two
Measure Steward	**CMS Program**
The Joint Commission	Hospital Inpatient Quality Reporting Link: Hospital Inpatient Quality Reporting Program | CMS

CBE Endorsement Status	CBE Endorsement History
Not Endorsed	While this eCQM has not received endorsement, the non-digital version of this measure has the following endorsement history: • Endorsed with Reserve Status Neurology Project, 2015-2016[2] • Initial Endorsement, 2008 Link to endorsement measure record: STK 05: Antithrombotic Therapy By End of Hospital Day Two

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 (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 as long as 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;

[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.

Measure Overview	
enoxaparin SQ 30 mg 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:** • 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:** • 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: • In Hospital Inpatient Quality Reporting since 2014. • Also currently active in Medicare Promoting Interoperability 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

 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.

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)

All available values for the score for *MeasureID* "STK_05" from the corresponding Timely_and_effective_Care-Hospital.csv file were analyzed.

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.

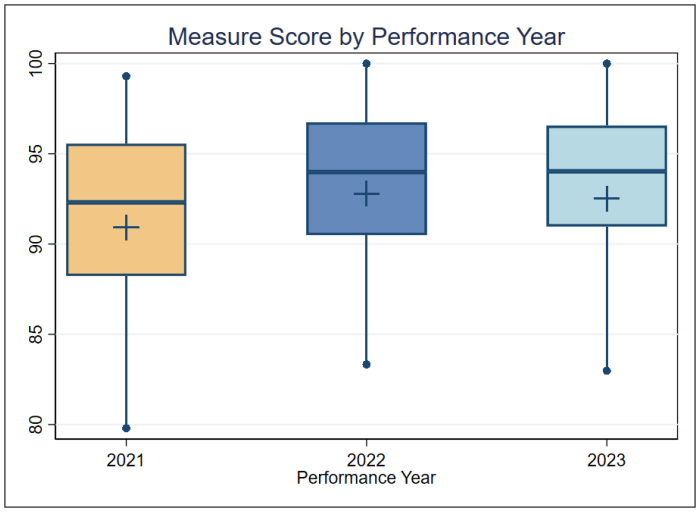

Figure 1. Boxplot of Measure Score by Year

Figure 1 Interpretation: In the boxplot above, the median score increased from 92.3% 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.

 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. It is important to note that the groups (referred to as deciles, each comprising 10% of the organizations) 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)	92.5 (8.60)	76.3	88.6	90.9	92.4	93.5	94.5	95.5	96.5	97.7	99.5
Organizations	1,193	120	119	119	120	119	119	120	119	119	119
Patients	196,156	21,627	24,382	22,872	25,729	24,075	20,475	20,956	13,534	13,635	8,871

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. For example, if the average performance of Decile 8 (96.5%) is considered a plausible, achievable score and the organizations 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 an additional 10,000 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 organization, 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.

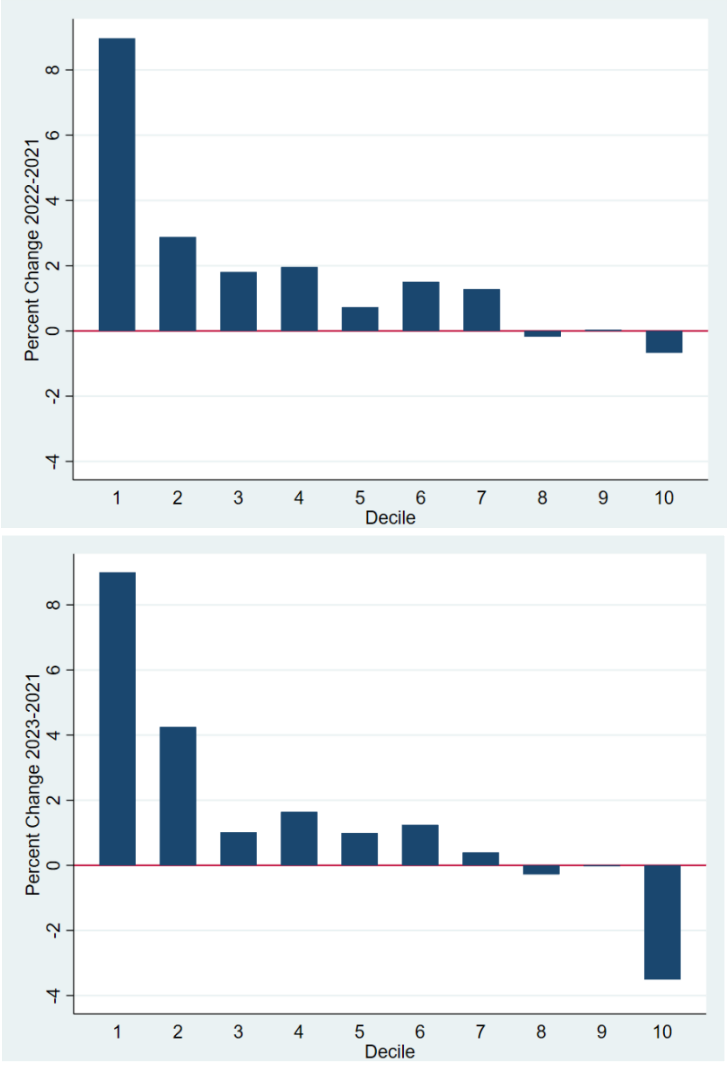

Figure 2. Mean Change in Performance by Decile

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 the 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
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?
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] 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 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 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. 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 HIQR program objectives of improving the quality of care that hospitals provide and distributing clearly defined and objective data

[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
about hospital performance **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 Hospital IQR 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 organizations indicates that there is room for improvement in lower performers. Measured organizations that score 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 organizations 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 organizations 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 organizations 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	164	30	42	58	77	103	127	163	220	304	524
Mean Reliability	81.9	59.4	67.3	73.9	79.0	83.5	86.2	88.8	91.5	93.7	96.0
Organizations	1,193	120	119	119	120	119	119	120	119	119	119
Total Patients	196,156	3,577	5,000	6,884	9,199	12,234	15,112	19,505	26,141	36,161	62,343

[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.

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
81.9	11.5	59.4	67.3	73.9	79.0	83.5	86.2	88.8	91.5	93.7	96.0	17.7

Tables 2 and 3 Interpretation: Reliability was estimated using a modification of the Adams[8] signal-to-noise method where the reliability for each entity *i* is estimated by[9] $100 * \frac{n_i}{\hat{\alpha}+\hat{\beta}+n_i}$ 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, 94% 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.

[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.

Reliability
Guiding Question: Does the evidence show that changes in performance measure 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?
Reliability analysis shows that 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?
This measure is reported annually to the Hospital IQR 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 organizations' ability to improve on the measure. However, without more granular data, the extent and significance of these barriers are unclear. **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. 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 organizations. There is no overlap with other active measures within the Hospital IQR Program. **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

Patient Health Journey
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 administration of antithrombotic 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 Hospital Inpatient Quality Reporting Program

Measures Included in Hospital Inpatient Quality Reporting Program	
CMIT ID	**Measure Title**
01800-01-C-HIQR	Patient Safety Structural Measure
01802-01-C-HIQR	Age Friendly Hospital Measure
00678-01-C-HIQR	Severe Sepsis and Septic Shock: Management Bundle (Composite Measure)
00418-01-C-HIQR	Maternal Morbidity Structural Measure
00062-04-E-HIQR	Anticoagulation Therapy for Atrial Fibrillation/Flutter
00064-03-E-HIQR	*Antithrombotic Therapy by the End of Hospital Day Two*
00134-02-C-HIQR	Death Rate among Surgical Inpatients with Serious Treatable Complications
00211-02-E-HIQR	Discharged on Antithrombotic Therapy
00343-02-E-HIQR	Hospital Harm -Severe Hyperglycemia
00399-03-E-HIQR	Intensive Care Unit Venous Thromboembolism Prophylaxis
00247-01-C-HIQR	Excess Days in Acute Care (EDAC) after Hospitalization for Acute Myocardial Infarction (AMI)
00248-01-C-HIQR	Excess Days in Acute Care after Hospitalization for Heart Failure
00249-01-C-HIQR	Excess Days in Acute Care after Hospitalization for Pneumonia
00339-01-E-HIQR	Hospital Harm - Acute Kidney Injury
00341-01-E-HIQR	Hospital Harm - Pressure Injury
00338-01-C-HIQR	Hospital Consumer Assessment of Healthcare Providers and Systems Survey (HCAHPS)
00669-01-E-HIQR	Safe Use of Opioids - Concurrent Prescribing
00696-04-E-HIQR	Hybrid Hospital-Wide All-Cause Risk Standardized Mortality Measure (HWM)
00758-06-E-HIQR	Venous Thromboembolism Prophylaxis
01660-01-C-HIQR	Hospital Commitment to Health Equity
00342-02-E-HIQR	Hospital Harm - Severe Hypoglycemia
01633-01-E-HIQR	Severe Obstetric Complications (eCQM)
01611-01-E-HIQR	Global Malnutrition Composite Score (eCQM)
01662-01-C-HIQR	Screen Positive Rate for Social Drivers of Health
00180-02-C-HIQR	COVID-19 Vaccination Coverage among Healthcare Personnel (HCP) (2022 revision)
00350-02-C-HIQR	Hospital-Level Risk-Standardized Complication Rate (RSCR) Following Elective Primary Total Hip Arthroplasty (THA) and/or Total Knee Arthroplasty (TKA)
00250-01-E-HIQR	Excessive Radiation Dose or Inadequate Image Quality for Diagnostic Computed Tomography (CT) in Adults for use in Hospital Quality Programs
00333-01-C-HIQR	Hospital 30-Day, All-Cause, Risk-Standardized Mortality - Rate Following Acute

Measures Included in Hospital Inpatient Quality Reporting Program	
CMIT ID	**Measure Title**
	Ischemic Stroke
00390-01-C-HIQR	Influenza Vaccination Coverage among Healthcare Personnel
00356-11-E-HIQR	Hybrid Hospital-Wide All-Cause Readmission Measure (HWR)
00434-12-C-HIQR	Medicare Spending Per Beneficiary (MSPB) - Hospital
00508-03-E-HIQR	Cesarean Birth (eCQM)
01308-01-E-HIQR	Hospital Harm - Opioid-Related Adverse Events (eCQM)
01664-01-C-HIQR	Screening for Social Drivers of Health