



## Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to subcriterion 1b).

### Brief Measure Information

**NQF #:** 0436e

**Corresponding Measures:** 0436

**De.2. Measure Title:** STK-03: Anticoagulation Therapy for Atrial Fibrillation/Flutter

**Co.1.1. Measure Steward:** The Joint Commission

**De.3. Brief Description of Measure:** This measure captures the proportion of ischemic stroke patients with atrial fibrillation/flutter who are prescribed anticoagulation therapy at hospital discharge.

This measure is a part of a set of eight nationally implemented measures that address stroke care (STK-1: Venous Thromboembolism (VTE) Prophylaxis, STK-2: Discharged on Antithrombotic Therapy, STK-4: Thrombolytic Therapy, STK-5: Antithrombotic Therapy By End of Hospital Day 2, STK-6 Discharged on Statin Medication, STK-8: Stroke Education, and STK-10: Assessed for Rehabilitation) that are used in The Joint Commission's hospital accreditation and Disease-Specific Care certification programs. STK-3, Anticoagulation Therapy for Atrial Fibrillation/Flutter, is one of six of the measures in this set that have been reengineered as eQMs and are included in the EHR Incentive Program and Hospital Inpatient Quality Reporting Program.

**1b.1. Developer Rationale:** Stroke is the fourth leading cause of death in the United States and a leading cause of serious, long-term disability, associated with significant costs. Stroke risk is significantly increased for patients with a history of or current finding of atrial fibrillation/flutter. Antiplatelet medications alone do not significantly reduce stroke risk for this patient population. Anticoagulation through the administration of warfarin, low molecular-weight heparins, or newer anticoagulant medications approved for stroke prevention is the recommended therapy.

Multiple clinical trials have demonstrated the superior therapeutic effect of warfarin compared with placebo in the prevention of thromboembolic events among patients with nonvalvular atrial fibrillation. Based on data pooled from 5 primary prevention trials of warfarin versus control, it is possible to reduce the annual stroke rate from 4.5% for the control patients to 1.4% in patients treated with dose-adjusted warfarin. In other words, 31 ischemic strokes can be prevented each year for every 1,000 patients treated (Sacco RL, et al., 2006).

Healthcare organizations that track anticoagulation therapy for internal quality improvement purposes have seen a significant increase in the measure rate over time. The chart-abstracted measure has been included in the CMS Hospital Inpatient Quality Reporting Program for three years (i.e., FY 2015, FY 2016, FY 2017) to promote improvements in quality at the national level.

**S.4. Numerator Statement:** Patients prescribed anticoagulation therapy at hospital discharge.

**S.7. Denominator Statement:** Patients with a principal diagnosis of ischemic stroke, history of atrial ablation, and current or history of atrial fibrillation/flutter.

**S.10. Denominator Exclusions:** Denominator Exclusions:

- Patients with comfort measures documented.
- Patients admitted for elective carotid intervention. This exclusion is implicitly modeled by only including non-elective hospitalizations.
- Patients discharged to another hospital.
- Patients who left against medical advice.
- Patients who expired.
- Patients discharged to home for hospice care.
- Patients discharged to a health care facility for hospice care.

<b>Denominator Exceptions:</b> <ul style="list-style-type: none"> <li>Patients with a documented reason for not prescribing anticoagulation therapy at discharge.</li> </ul>
<b>De.1. Measure Type:</b> Process <b>S.23. Data Source:</b> Electronic Health Data, Electronic Health Records, Other <b>S.26. Level of Analysis:</b> Facility, Other
<b>IF Endorsement Maintenance – Original Endorsement Date: Most Recent Endorsement Date:</b>
<b>IF this measure is included in a composite, NQF Composite#/title:</b>  <b>IF this measure is paired/grouped, NQF#/title:</b>  <b>De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results?</b> Not applicable.

<b>1. Evidence, Performance Gap, Priority – Importance to Measure and Report</b>
Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. <i>Measures must be judged to meet all subcriteria to pass this criterion and be evaluated against the remaining criteria.</i>
<b>1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form</b> <a href="#">0436_Evidence_MSF5.0_Data-635827722551306673.doc</a>
<b>1b. Performance Gap</b> Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating: <ul style="list-style-type: none"> <li>considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or</li> <li>disparities in care across population groups.</li> </ul>
<b>1b.1. Briefly explain the rationale for this measure</b> (e.g., the benefits or improvements in quality envisioned by use of this measure) Stroke is the fourth leading cause of death in the United States and a leading cause of serious, long-term disability, associated with significant costs. Stroke risk is significantly increased for patients with a history of or current finding of atrial fibrillation/flutter. Antiplatelet medications alone do not significantly reduce stroke risk for this patient population. Anticoagulation through the administration of warfarin, low molecular-weight heparins, or newer anticoagulant medications approved for stroke prevention is the recommended therapy.  Multiple clinical trials have demonstrated the superior therapeutic effect of warfarin compared with placebo in the prevention of thromboembolic events among patients with nonvalvular atrial fibrillation. Based on data pooled from 5 primary prevention trials of warfarin versus control, it is possible to reduce the annual stroke rate from 4.5% for the control patients to 1.4% in patients treated with dose-adjusted warfarin. In other words, 31 ischemic strokes can be prevented each year for every 1,000 patients treated (Sacco RL, et al., 2006).  Healthcare organizations that track anticoagulation therapy for internal quality improvement purposes have seen a significant increase in the measure rate over time. The chart-abstracted measure has been included in the CMS Hospital Inpatient Quality Reporting Program for three years (i.e., FY 2015, FY 2016, FY 2017) to promote improvements in quality at the national level.
<b>1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis.</b> (This is required for endorsement maintenance. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included). This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use. This measure is a legacy eCQM that is currently included in the Hospital Inpatient Quality Reporting Program (HIQR) and the EHR Incentive Program. At present, no performance data for the electronic version of the measure are yet available.  In CY2016, CMS is requiring organizations participating in HIQR to electronically submit 1 quarter of data on 4 of 28 available eCQMs. This measure is one of the 28.

For more information, refer to CY2016 IPPS Final Rule, located here: <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/FY2016-IPPS-Final-Rule-Home-Page-Items/FY2016-IPPS-Final-Rule-Regulations.html>

**1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.**

In October, 2009, The Joint Commission added the chart-abstracted stroke (STK) measure set as a new core measure option to meet performance measure requirements for Joint Commission hospital accreditation purposes. Below is the specified level of analysis for STK-3 beginning with discharges 4Q 2009 through December 31, 2014.

4Q 2009: 325 denominator cases; 303 numerator cases; 43 hospitals; 0.93231 national aggregate rate; 0.90522 mean of hospital rates; 0.22409 standard deviation; 1.0 90th percentile rate; 1.0 75th percentile rate/upper quartile; 1.0 50th percentile rate/median rate; 0.875 25th percentile rate/lower quartile; and, 0.8 10th percentile rate.

CY 2010: 2952 denominator cases; 2785 numerator cases; 136 hospitals; 0.94343 national aggregate rate; 0.92168 mean of hospital rates; 0.13488 standard deviation; 1.0 90th percentile rate; 1.0 75th percentile rate/upper quartile; 1.0 50th percentile rate/median rate; 0.90767 25th percentile rate/lower quartile; and, 0.66667 10th percentile rate.

CY 2011: 3566 denominator cases; 3381 numerator cases; 150 hospitals; 0.94812 national aggregate rate; 0.92886 mean of hospital rates; 0.13698 standard deviation; 1.0 90th percentile rate; 1.0 75th percentile rate/upper quartile; 1.0 50th percentile rate/median rate; 0.90625 25th percentile rate/lower quartile; and, 0.7735 10th percentile rate.

CY 2012: 3685 denominator cases; 3530 numerator cases; 149 hospitals; 0.95794 national aggregate rate; 0.94795 mean of hospital rates; 0.11113 standard deviation; 1.0 90th percentile rate; 1.0 75th percentile rate/upper quartile; 1.0 50th percentile rate/median rate; 0.95522 25th percentile rate/lower quartile; and, 0.83333 10th percentile rate.

CY 2013: 5635 denominator cases; 5429 numerator cases; 257 hospitals; 0.96344 national aggregate rate; 0.95363 mean of hospital rates; 0.1165 standard deviation; 1.0 90th percentile rate; 1.0 75th percentile rate/upper quartile; 1.0 50th percentile rate/median rate; 0.95349 25th percentile rate/lower quartile; and, 0.88235 10th percentile rate.

CY 2014: 28,027 denominator cases; 27,261 numerator cases; 1256 hospitals; 0.97267 national aggregate rate; 0.96598 mean of hospital rates; 0.08548 standard deviation; 1.0 90th percentile rate; 1.0 75th percentile rate/upper quartile; 1.0 50th percentile rate/median rate; 0.96429 25th percentile rate/lower quartile; and, 0.88889 10th percentile rate.

**1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability.** *(This is required for endorsement maintenance. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.*  
Not applicable.

**1b.5. If no or limited data on disparities from the measure as specified is reported in 1b4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations.**

According to a 2011 report from the American Heart Association/American Stroke Association, racial disparities in stroke care exist and are more predominant among people < 65 years of age. Evidence of disparities in stroke care between minority groups and whites include: lack of knowledge about the risk factors for stroke; lack of awareness about stroke signs and symptoms and the need for urgent treatment; and, access to care respecting prevention services, acute stroke treatment, and rehabilitation. Differences in care are also related to the socioeconomic status of minorities, insurance coverage, cultural beliefs and attitudes, language barriers, immigration status, mistrust of the healthcare system, and the number of providers representing minority groups. These are all factors contributing to the quality of stroke care (Cruz-Flores, et al., 2011).

Each year in the United States, ~ 55,000 more women than men have a stroke. Statistics reveal that women have a higher "life-time risk of stroke" than men. (Mozaffarian D, et al., 2015). In the Framingham Heart Study, lifetime risk of stroke among those 55 to 75 years of age was 1 in 5 for women (20% to 21%) and ~1 in 6 for men (14% to 17%).

The burden of stroke is higher in Blacks or African Americans and Hispanics than whites. Racial and ethnic minorities have excess deaths from stroke and also experience greater years of potential life lost than non-Hispanic whites. The risk ratio for stroke mortality in all racial and ethnic minorities is higher in the 35-to-64-year-old age group, however, this risk decreases as people age. After age 64 non-Hispanic whites have an equal risk for stroke when compared to Hispanics and American Indian-Alaskan Natives. This equalization of rate of stroke presents again after age 85 in blacks or African Americans (Cruz-Flores, et al., 2011).

In the national REasons for Geographic and Racial Differences in Stroke (REGARDS) cohort, 27,744 black and white men and women, aged > 45 years, followed over 4.4 years, and stroke-free at baseline, reported an overall age-adjusted and sex-adjusted black/white incidence rate ratio of 1.51. At ages 45 to 54 years, the rate ratio increased to 4.02 compared to 0.86 for > 85 years. A higher incidence of stroke is reported for blacks at younger ages.

The REGARDS investigators found that approximately half of racial disparity in stroke risk is attributable to traditional risk factors (primarily systolic blood pressure) and socioeconomic factors (Howard, et al., 2011). Brown and colleagues (2011) found a higher incidence of ischemic stroke in disadvantaged white neighborhoods, but found no significant associations between neighborhood socioeconomic status and ischemic stroke among blacks. A recent large population-based Canadian study examined gender-adjusted, age-adjusted prevalence of cardiovascular risk factors, heart disease and stroke in four ethnic groups: white (n=154,653); South Asian (N=3364); Chinese (n=3038); and, blacks (n=2742). Stroke incidence was highest in the South Asian group (1.7%) and lowest in the Chinese population (0.6%). The increased risk in the South Asian population was attributed to high susceptibility to insulin resistance and metabolic syndrome, and a tendency to develop diabetes mellitus at younger ages in both men and women as compared to other ethnic groups (Chiu, et al., 2010).

The BASIC (Brain Attack Surveillance in Corpus Christi) project (NINDS) demonstrated an increased incidence of stroke among Mexican Americans compared with non-Hispanic whites in a community in southeast Texas. The crude 3-year cumulative incidence (2000-2003) was 16.8 per 1000 in Mexican Americans and 13.6 per 1000 in non-Hispanic whites. Specifically, Mexican Americans had a higher cumulative incidence for ischemic stroke at younger ages (45-59 years of age: RR 2.04, 95% CI 1.55-2.69; 60-74 years of age: RR 1.58, 95% CI 1.31-1.91) but not at older ages (> 75 years of age : RR 1.12, 95% CI 0.94-1.32). Mexican Americans also had a higher incidence of intracerebral hemorrhage and subarachnoid hemorrhage than non-Hispanic whites, adjusted for age.

Temporal trend data from the BASIC Project for the time period 2000 through 2010 demonstrated that ischemic stroke rates declined significantly in people aged =60 years but remained largely unchanged over time in those aged 45 to 59 years. Rates of decline did not differ significantly for non-Hispanic whites and Mexican Americans in any age group. Therefore, ethnic disparities in stroke rates in the 45- to 59-year-old and 60- to 74-year-old age groups persist (Morgenstern, et al., 2013).

Data from the most recent Greater Cincinnati Northern Kentucky Stroke Study (GCNKSS) show that compared with the 1990s, when incidence rates of stroke were stable, stroke incidence in 2005 was decreased for whites. A similar decline was not seen in blacks. These changes for whites were driven by a decline in ischemic strokes. There were no changes in incidence of ischemic stroke for blacks or of hemorrhagic strokes in blacks or whites (Kleindorfer, et al., 2010).

In an analysis of temporal trends in ischemic stroke incidence stratified by age, the GCNKSS found an increased incidence of ischemic stroke over time for both blacks and whites aged 20 to 54 years, especially in 2005 compared with earlier time periods. There were declining incidence rates in the oldest age groups for both race groups (Kissela, et al., 2012). Although blacks and African Americans have a lower incidence of atrial fibrillation than Non-Hispanic whites (Hajat, et al. 2001), blacks and African Americans are also less likely to undergo cardiac monitoring and noninvasive cerebrovascular testing (Mitchell, et al., 2000). In REGARDS, investigators found that blacks or African Americans were less likely to be aware that they had atrial fibrillation or to be treated with warfarin.

Furthermore, minorities are less likely to receive medications for secondary prevention. One report suggests that blacks or African Americans are less likely to have thorough diagnostic evaluation after first stroke and are less likely to receive guideline-concordant stroke preventive medications, such as warfarin or other anticoagulants. In another study which used the 2005 Behavioral Risk Factor Surveillance System (BRFSS) in 11, 862 stroke survivors, little difference was found among blacks or African Americans and non-Hispanic whites in terms of secondary prevention measures. The study found that secondary prevention measures were underutilized in both racial groups.

Studies have also noted a relationship between health literacy, particularly math skills and medication compliance. A study from Estrada and colleagues (2004), found that anticoagulation control was poorer for participants with lower literacy levels. The

international normalized ratio (INR) was 32% higher for participants in the lowest literacy group versus the highest ( $P=0.009$ ). Other studies have found no association between literacy and the proportion of time with the INR in the therapeutic range (OR 1.0, 95% CI 0.7 to 1.4); however, no genetic factors influencing response to anticoagulation were included in the analysis (Fang MC, et al., 2006).

Since the last endorsement date, Schwamm and colleagues (2010) reported that black patients had significantly lower adjusted odds compared with white patients of receiving anticoagulation for atrial fibrillation (OR, 0.84; 95% CI, 0.75 to 0.94). Findings from Qian and associates (2013) agreed that non-Hispanic black patients were less likely to receive anticoagulation for atrial fibrillation at discharge. Using patient data ( $n=200,900$ ) from the American Heart Association/American Stroke Association Get With The Guidelines (GWTG)-Stroke program from April 2003 through December 2008, Qian reported the following performance measure rates for discharged on anticoagulation for atrial fibrillation: non-Hispanic White ( $n=170,694$ ) 90.0%; non-Hispanic Black ( $n=20,514$ ) 88.3%; Hispanic ( $n=6632$ ) 89.0%; and non-Hispanic Asian American ( $n=3060$ ) 90.3%. According to data from the Paul Coverdell National Acute Stroke Registry (PCNASR) ( $n=9358$ ), patients who are not white are less likely to receive anticoagulation therapy for atrial fibrillation; White 96.2%; Other Race 94.0% (Centers for Disease Control and Prevention - Division for Heart Disease and Stroke Prevention, 2014).

White women with atrial fibrillation, as well as women of other races with atrial fibrillation, are slightly less likely to receive anticoagulation therapy than men (88% versus 89.7%; adjusted OR, 0.93; 95% CI, 0.88–0.98) (Bushnell, 2014). The attributable risk of stroke from atrial fibrillation increases with age, from 1.5% for those aged 50 to 59 years to nearly 25% for those aged  $\geq 80$  years. Whites carry the highest prevalence of atrial fibrillation compared with blacks, Hispanics, Asians, and other ethnic groups. The overall number of men and women with atrial fibrillation is similar, but  $\sim 60\%$  of atrial fibrillation patients aged  $>75$  years are women (15.6% of men and 20.4% of women ( $P<0.0001$ )).

- Brown AF, Liang LJ, Vassar SD, Stein-Merkin S, Longstreth WT Jr, Ovbiagele B, Yan T, Escarce JJ. Department of Neurology, UCLA GIM&HSR. Neighborhood disadvantage and ischemic stroke: the Cardiovascular Health Study (CHS). *Stroke*. 2011;42(12): 3363-8.
- Bushnell, C, McCullough LD, Awad IA, Chireau MV, Fedder WN, Furie KL, Howard VJ, Lichtman JH, Lisabeth LD, Piña IL, Teeves MJ, Rexrode KM, Saposnik G, Singh V, Towfighi A, Vaccarino V, Walters MR. Guidelines for the Prevention of Stroke in Women A Statement for Healthcare Professionals From the American Heart Association/American Stroke Association The American Academy of Neurology affirms the value of this guideline as an educational tool for neurologists. *Stroke*. 2014;45:24-25.
- Centers for Disease Control and Prevention - Division for Heart Disease and Stroke Prevention, Annual Report, 2014.
- Chiu M, Austin PC, Manuel DG, Tu JV. Comparison of cardiovascular risk profiles among ethnic groups using population health surveys between 1996 and 2007. *CMAJ*. 2010;182(8):E301-10.
- Cruz-Flores S, Rabinstein A, Biller J, Elkind MSV, Griffith P, Gorelick PB, Howard G, Leira EC, Morgenstern LB, Ovbiagele B, Peterson E, Rosamond W, Trimble B, Valderrama AL, on behalf of the American Heart Association Stroke Council, Council on Cardiovascular Nursing, Council on Epidemiology and Prevention, and Council on Quality of Care and Outcomes Research. Racial-ethnic disparities in stroke care: the American experience. *Stroke*. 2011;42:2091-2116.
- Estrada CA, Martin-Hryniewicz M, Peek BT, Collins C, Byrd JC. Literacy and numeracy skills and anticoagulation control. *Am J Med Sci*. 2004;328:88-93.
- Fang MC, Machtinger EL, Wang F, Schillinger D. Health literacy and anticoagulation-related outcomes among patients taking warfarin. *J Gen Intern Med*. 2006; 21:841-46.
- Gillum RF, Kwagyan J, Obisesan TO. Division of Geriatrics, Howard University College of Medicine, Washington, DC, USA. Ethnic and geographic variation in stroke mortality trends. *Stroke*. 2011;42(11):3294-6.
- Hajat C, Dundas R, Stewart JA, Lawrence E, Rudd AG, Howard R, Wolf CD. Cerebrovascular risk factors and stroke subtypes: differences between ethnic groups. *Stroke*. 2001;32:37-42.
- Howard G, Cushman M, Kissela BM, Kleindorfer DO, McClure LA, Safford MM, Rhodes JD, Soliman EZ, Moy CS, Judd SE, Howard VJ; REasons for Geographic and Racial Differences in Stroke (REGARDS) Investigators. Traditional risk factors as the underlying cause of racial disparities in stroke: lessons from the half-full (empty?) glass. *Stroke*. 2011;42(12):3369-75.
- Howard G, Howard VJ; Reasons for Geographic and Racial Differences in Stroke (REGARDS) Investigators. Ethnic disparities in stroke: the scope of the problem. *Ethn Dis*. 2001;11:761-768.
- Karve S, Balkrishnan R, Seiber E, Nahata M, Levine DA. Department of Health Economics, RTI Health Solutions, Research Triangle Park, North Carolina. Population trends and disparities in outpatient utilization of neurologists for ischemic stroke. *J Stroke Cerebrovasc Dis*. 2011.
- Levine DA, Kiefe CI, Howard G, Howard VJ, Williams OD, Allison JJ. Reduced medication access: a marker for vulnerability in US stroke survivors. *Stroke*. 2007;38:1557-64.
- Kissela BM, Khoury JC, Alwell K, Moomaw CJ, Woo D, Adeoye O, Flaherty ML, Khatri P, Ferioli S, De Los Rios La Rosa F, Broderick JP, Kleindorfer DO. Age at stroke: temporal trends in stroke incidence in a large, biracial population. *Neurology*. 2012;79:1781–1787.

- Kleindorfer DO, Khoury J, Moomaw CJ, Alwell K, Woo D, Flaherty ML, Khatri P, Adeoye O, Ferioli S, Broderick JP, Kissela BM. stroke incidence is decreasing in whites but not in blacks: a population-based estimate of temporal trends in stroke incidence from the Greater Cincinnati/Northern Kentucky Stroke Study. *Stroke*. 2010;41:1326–1331.
- Mitchell JB, Ballard DJ, Atchar DB, Whisart JP, Samsa GP. Racial variation in treatment for transient ischemic attacks: impact of participation by neurologists. *Health Serv Res*. 2000;34:1413-1428.
- Morgenstern LB, Smith MA, Sánchez BN, Brown DL, Zahuranec DB, Garcia N, Kerber KA, Skolarus LE, Meurer WJ, Burke JF, Adelman EE, Baek J, Lisabeth LD. Persistent ischemic stroke disparities despite declining incidence in Mexican Americans. *Ann Neurol*. 2013;74:778–785.
- Mozaffarian D, Benjamin EJ, Go AS, Arnett DK, Blaha MJ, Cushman M, de Ferranti S, Després JP, Fullerton HJ, Howard VJ, Huffman MD, Judd SE, Kissela BM, Lackland DT, Lichtman JH, Lisabeth LD, Simin L, Mackey RH, Matchar DB, McGuire DK, Mohler ER III, Moy CS, Muntner P, Mussolino ME, Nasir K, Neumar RW, Graham N, Palaniappan L, Pandey DK, Reeves MJ, Rodriguez CJ, Sorlie PD, Stein J, Towfighi A, Turan TN, Virani SS, Willey JZ, Woo D, Yeh RW, Turner JZ. Heart disease and stroke statistics--2015 update: a report from the American Heart Association. *Circulation*. 2015;131:e-151-e154.
- Qian F, Fonarow GC, Smith EE, et al. Racial and ethnic differences in outcomes in older patients with acute ischemic stroke. *Circ Cardiovasc Qual Outcomes*. 2013;6: 284-292.
- Roger VL, Go AS, Lloyd-Jones DM, Benjamin EJ, Berry JD, Borden WB, Bravata DM, Dai S, Ford ES, Fox CS, Fullerton HJ, Gillespie C, Hailpern SM, Heit JA, Howard VJ, Kissela BM, Kittner SJ, Lackland DT, Lichtman JH, Lisabeth LD, Makuc DM, Marcus GM, Marelli A, Matchar DB, Moy CS, Mozaffarian D, Mussolino ME, Nichol G, Paynter NP, Soliman EZ, Sorlie PD, Sotoodehnia N, Turan TN, Virani SS, Wong ND, Woo D, and Turner MB. Heart disease and stroke statistics--2012 update: a report from the American Heart Association. *Circulation*. 2012;125:e78-e82.
- Ross JS, Halm EA, Bravata DM. Use of stroke secondary prevention services: are there disparities in care? *Stroke*. 2009;40:1811-19.
- Schwamm LH, Syed FA, Reeves MJ, Smith EE, Saver JL, Messe S, Bhatt DL, Grau-Sepulveda MV, Peterson ED, Fonarow GC. Temporal trends in patient characteristics and treatment with intravenous thrombolysis among acute ischemic stroke patients at Get With the Guidelines-Stroke hospitals. *Circ Cardiovasc Quality Outcomes*. 2013;6:543-549
- Tuhim S, Cooperman A, Rojas M, Brust JC, Koppel B, Martin K, Chassin M. The association of race and sex with the underuse of stroke prevention measures. *J Cerebrovascular Dis*. 2008;17:226-234.

**1c. High Priority** (previously referred to as High Impact)

The measure addresses:

- a specific national health goal/priority identified by DHHS or the National Priorities Partnership convened by NQF; OR
- a demonstrated high-priority (high-impact) aspect of healthcare (e.g., affects large numbers of patients and/or has a substantial impact for a smaller population; leading cause of morbidity/mortality; high resource use (current and/or future); severity of illness; and severity of patient/societal consequences of poor quality).

**1c.1. Demonstrated high priority aspect of healthcare**

Affects large numbers, A leading cause of morbidity/mortality

**1c.2. If Other:**

**1c.3. Provide epidemiologic or resource use data that demonstrates the measure addresses a high priority aspect of healthcare.**

**List citations in 1c.4.**

Stroke ranks as the number four cause of death in the United States, following diseases of the heart, cancer, and chronic lung-related diseases. Each year, ~ 795,000 people experience a new or recurrent stroke. Approximately 610,000 of these are first attacks, and 185,000 are recurrent strokes. These numbers equate to one stroke victim every 40 seconds on average. From 2001 to 2011, the relative rate of stroke death fell by 35.1% and the actual number of stroke deaths declined by 21.2%; however, one of every 20 deaths in the United States is still attributable to stroke.. More women than men die of stroke each year. Women accounted for almost 60% of US stroke deaths in 2008 (Mozaffarian D, et al., 2015).

Stroke is also a leading cause of long-term disability (George M, 2009). Stroke was among the top 18 diseases contributing to years lived with disability in 2010; of these 18 causes, only the age-standardized rates for stroke increased significantly between 1990 and 2010 ( $P < 0.05$ ) (US Burden of Disease Collaborators, 2013) . Among Medicare patients discharged from the hospital after stroke, ~45% return directly home, 24% are discharged to inpatient rehabilitation facilities, and 31% are discharged to skilled nursing facilities. Of stroke patients returning directly home, 32% use home healthcare services. In 2011, the direct and indirect cost of stroke was \$33.6 billion (Mozaffarian D, et al., 2015).

Approximately 20% of ischemic strokes result from a cerebral embolism secondary to a cardiac arrhythmia or disorder. Atrial fibrillation (AF) is the most common sustained cardiac rhythm disturbance (CDC, 2010). Paroxysmal, persistent, and permanent atrial fibrillation are strong predictors of first and recurrent stroke, increasing ischemic stroke risk four to five-fold. It is estimated that over 2.3 million Americans have atrial fibrillation, and the incidence becomes more prevalent with age. AF accounts for ~ 1.5% of stroke in individuals 50 to 59 years of age to nearly 25% in those aged > 80 years (Bushnell C, et al., 2014).

Patients who have suffered an ischemic stroke who have a high-risk source of cardiogenic embolism should generally be treated with anticoagulant drugs to prevent reoccurrence. For most patients with ischemic stroke and atrial fibrillation, it is reasonable to initiate anticoagulation therapy within 14 days of stroke onset (Kernan WN, et al, 2014). Warfarin, dabigatran, and apixaban are all indicate for the prevention of recurrent stroke in patients with nonvalvular atrial fibrillation, whether paroxysmal or permanent. Rivaroxaban is a reasonable alternative (Kernan WN, 2014). Ischemic stroke rates per 1000 patient-years declined in AF patients taking anticoagulants, from 46.7% in 1992 to 19.1% in 2002 (AHA 2012). According to the Framingham Study (1996), AF is also an independent risk factor for ischemic stroke severity, recurrence, and mortality (Lin HJ, et al., 1996). In a study from Penado and associates (2003), people who had AF and were not treated with anticoagulants had a 2.1-fold increase in risk for recurrent stroke and a 2.4-fold increase in risk for recurrent severe stroke.

In addition to the costs attributed to stroke, the treatment of atrial fibrillation alone represents a significant health care burden. The estimated cost of treatment of atrial fibrillation in 2005 was \$6.65 billion per year, including the costs of hospitalization, inpatient and outpatient physician care, and medications (Roger VL, et al., 2012).

#### 1c.4. Citations for data demonstrating high priority provided in 1a.3

- Bushnell C, McCullough LD, Awad IA, Chireau MV, Fedder WN, Furie KL, Howard VJ, Lichtman JH, Lisabeth LD, Piña IL, Teeves MJ, Rexrode KM, Saposnik G, Singh V, Towfighi A, Vaccarino V, Walters MR. Guidelines for the Prevention of Stroke in Women A Statement for Healthcare Professionals From the American Heart Association/American Stroke Association The American Academy of Neurology affirms the value of this guideline as an educational tool for neurologists. *Stroke*. 2014;45:24-25.
- Centers for Disease Control and Prevention - Division for Heart Disease and Stroke Prevention, Annual Report, 2014.
- Centers for Disease Control and Prevention, Division for Heart Disease and Stroke Prevention, National Center for Chronic Disease Prevention and Health Promotion. Fact sheets and at-a-glance reports: atrial fibrillation fact sheet. 2010.
- George M., Xin Tong, McGruder H., Yoon P., Rosamond W., Winkquist A., Hinchey J., Wall H., Pandey D. Centers for Disease Control and Prevention (CDC). Prevalence and most common causes of disability among adults-United States 2005. *MMWR*. 2009;58:421-26.
- Kernan WN, Ovbiagele B, Black HR, Bravata DM, Chimowitz MI, Ezekowitz MD, Fang MC, Fisher M, Furie KL, Heck DV, Johnston SC, Kasner SE, Kittner SJ, mitchell PH, Rich MW, Richardson D, Schwamm LH, Wilson JA. Guidelines for the Prevention of Stroke in Patients With Stroke or Transient Ischemic Attack: A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association. *Stroke*. 2014;45:241-2160-2236.
- Lin HJ, Wolf PA, Kelly-Hayes M, Beiser AS, Kase CS, Benjamin EJ, D'Agostino RB. Stroke severity in atrial fibrillation: The Framingham Study. *Stroke*. 1996;27:1760-64.
- Mozaffarian D, Benjamin EJ, Go AS, Arnett DK, Blaha MJ, Cushman M, de Ferranti S, Després JP, Fullerton HJ, Howard VJ, Huffman MD, Judd SE, Kissela BM, Lackland DT, Lichtman JH, Lisabeth LD, Simin L, Mackey RH, matchar DB, McGuire DK, Mohler ER III, Moy CS, Muntner P, Mussolino ME, Nasir K, Neumar RW, Graham N, Palaniappan L, Pandey DK, Reeves MJ, Rodriguez CJ, Sorlie PD, Stein J, Towfighi A, Turan TN, Virani SS, Willey JZ, Woo D, Yeh RW, Turner JZ. Heart disease and stroke statistics--2015 update: a report from the American Heart Association. *Circulation*. 2015;131:e-151-e154.
- Penado S, Cano M, Acha O, Hernández JL, Riancho JA. Atrial fibrillation as a risk factor for stroke recurrence. *Am J Med*. 2003;114:206-210.
- Roger VL, Go AS, Lloyd-Jones DM, Benjamin EJ, Berry JD, Borden WB, Bravata DM, Dai S, Ford ES, Fox CS, Fullerton HJ, Gillespie C, Hailpern SM, Heit JA, Howard VJ, Kissela BM, Kittner SJ, Lackland DT, Lichtman JH, Lisabeth LD, Makuc DM, Marcus GM, Marelli A, Matchar DB, Moy CS, Mozaffarian D, Mussolino ME, Nichol G, Paynter NP, Soliman EZ, Sorlie PD, Sotoodehnia N, Turan TN, Virani SS, Wong ND, Woo D, and Turner MB. Heart disease and stroke statistics--2012 update: a report from the American Heart Association. *Circulation*. 2012;125:e-78-82, e-119-127.

**1c.5. If a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)**

Not applicable.

**2. Reliability and Validity—Scientific Acceptability of Measure Properties**

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the subcriteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

**2a.1. Specifications** The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

**De.5. Subject/Topic Area** (check all the areas that apply):

Neurology : Stroke/Transient Ischemic Attack (TIA)

**De.6. Non-Condition Specific** (check all the areas that apply):

Primary Prevention, Safety : Complications

**S.1. Measure-specific Web Page** (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

[https://www.cms.gov/regulations-and-guidance/legislation/ehrincentiveprograms/ecqm\\_library.html](https://www.cms.gov/regulations-and-guidance/legislation/ehrincentiveprograms/ecqm_library.html)

**S.2a. If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

This is an eMeasure Attachment: STK3\_MAT.zip

**S.2b. Data Dictionary, Code Table, or Value Sets** (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

Attachment Attachment: STK3Stroke\_v5\_Wed\_Apr\_01\_12.13.27\_CDT\_2015.xls

**S.3. For endorsement maintenance**, please briefly describe any changes to the measure specifications since last endorsement date and explain the reasons.

Changes have been made to the eCQM specifications in order to reflect revisions to the chart abstracted measure from which this measure is derived.

**S.4. Numerator Statement** (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome)

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.

Patients prescribed anticoagulation therapy at hospital discharge.

**S.5. Time Period for Data** (What is the time period in which data will be aggregated for the measure, e.g., 12 mo, 3 years, look back to August for flu vaccination? Note if there are different time periods for the numerator and denominator.)

Episode of care

**S.6. Numerator Details** (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.

Anticoagulation Therapy Prescribed at Discharge

- Anticoagulant Therapy is represented with the QDM datatype and value set of Medication, Discharge: Anticoagulant Therapy (OID: 2.16.840.1.113883.3.117.1.7.1.200)

Non-Elective Inpatient Encounter

- Non-Elective Inpatient Encounter is represented with the QDM datatype and value set of Encounter, Performed: Non-Elective Inpatient Encounter (OID: 2.16.840.1.113883.3.117.1.7.1.424)

To access the value sets for the measure, please visit the Value Set Authority Center (VSAC), sponsored by the National Library of Medicine, at this link: <https://vsac.nlm.nih.gov/>.

**S.7. Denominator Statement** *(Brief, narrative description of the target population being measured)*

Patients with a principal diagnosis of ischemic stroke, history of atrial ablation, and current or history of atrial fibrillation/flutter.

**S.8. Target Population Category** *(Check all the populations for which the measure is specified and tested if any):*

Elderly

**S.9. Denominator Details** *(All information required to identify and calculate the target population/denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*

Principal Diagnosis of Ischemic Stroke

- Ischemic Stroke is represented with the QDM datatype and value set of Diagnosis, Active: Ischemic Stroke (OID: 2.16.840.1.113883.3.117.1.7.1.247)
- Ordinality: Principal (OID: 2.16.840.1.113883.3.117.1.7.1.14)

Non-Elective Inpatient Encounter

- Non-Elective Inpatient Encounter is represented with the QDM datatype and value set of Encounter, Performed: Non-Elective Inpatient Encounter (OID: 2.16.840.1.113883.3.117.1.7.1.424)

History of Atrial Ablation

- Atrial Ablation is represented with the QDM datatype and value set of Procedure, Performed: Atrial Ablation (OID: 2.16.840.1.113883.3.117.1.7.1.203)

Current or Historical Diagnosis of Atrial Fibrillation/Flutter

- Current Diagnosis of Atrial Fibrillation/Flutter is represented with the QDM datatype and value set of Diagnosis, Active: Atrial Fibrillation/Flutter (OID: 2.16.840.1.113883.3.117.1.7.1.202)
- Historical Diagnosis of Atrial Fibrillation/Flutter is represented with the QDM datatype and value set of Diagnosis, Inactive: Atrial Fibrillation/Flutter (OID: 2.16.840.1.113883.3.117.1.7.1.202)

To access the value sets for the measure, please visit the Value Set Authority Center (VSAC), sponsored by the National Library of Medicine, at this link: <https://vsac.nlm.nih.gov/>.

**S.10. Denominator Exclusions** *(Brief narrative description of exclusions from the target population)*

Denominator Exclusions:

- Patients with comfort measures documented.
- Patients admitted for elective carotid intervention. This exclusion is implicitly modeled by only including non-elective hospitalizations.
- Patients discharged to another hospital.
- Patients who left against medical advice.
- Patients who expired.
- Patients discharged to home for hospice care.
- Patients discharged to a health care facility for hospice care.

Denominator Exceptions:

- Patients with a documented reason for not prescribing anticoagulation therapy at discharge.

**S.11. Denominator Exclusion Details** *(All information required to identify and calculate exclusions from the denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*

Denominator Exclusions Data Elements:

Non-Elective Inpatient Encounter

- Non-Elective Inpatient Encounter is represented with the QDM datatype and value set of Encounter, Performed: Non-Elective Inpatient Encounter (OID: 2.16.840.1.113883.3.117.1.7.1.424)

Discharge Status (modeled as Attributes of the above Non-Elective Inpatient Encounter)

- Discharge status: Left Against Medical Advice (OID: 2.16.840.1.113883.3.117.1.7.1.308)
- Discharge status: Patient Expired (OID: 2.16.840.1.113883.3.117.1.7.1.309)
- Discharge status: Discharge To Acute Care Facility (OID: 2.16.840.1.113883.3.117.1.7.1.87)
- Discharge status: Discharged to Home for Hospice Care (OID: 2.16.840.1.113883.3.117.1.7.1.209)
- Discharge status: Discharged to Health Care Facility for Hospice Care (OID: 2.16.840.1.113883.3.117.1.7.1.207)

Comfort Measures

- Comfort Measures are represented with the QDM datatypes and value set of:
- Intervention, Order: Comfort Measures (OID: 1.3.6.1.4.1.33895.1.3.0.45)
- Intervention, Performed: Comfort Measures (OID: 1.3.6.1.4.1.33895.1.3.0.45)

Emergency Department Visit

- Emergency Department Visit is represented with the QDM datatype and value set of Encounter, Performed: Emergency Department Visit (OID: 2.16.840.1.113883.3.117.1.7.1.292)

Denominator Exceptions Data Elements:

Reasons for Not Prescribing Anticoagulation Therapy

- Anticoagulant Ingredient Specific Medication is represented with the QDM datatype and value set of Medication, Discharge: Anticoagulant ingredient specific (OID: 2.16.840.1.113762.1.4.1021.9)
- Medical Reason is represented with the QDM datatype and value set of Medication, Discharge not done: Medical Reason (OID: 2.16.840.1.113883.3.117.1.7.1.473)
- Patient Refusal is represented with the QDM datatype and value set of Medication, Discharge not done: Patient Refusal (OID: 2.16.840.1.113883.3.117.1.7.1.93)

Non-Elective Inpatient Encounter

- Non-Elective Inpatient Encounter is represented with the QDM datatype and value set of Encounter, Performed: Non-Elective Inpatient Encounter (OID: 2.16.840.1.113883.3.117.1.7.1.424)

To access the value sets for the measure, please visit the Value Set Authority Center (VSAC), sponsored by the National Library of Medicine, at this link: <https://vsac.nlm.nih.gov/>.

**S.12. Stratification Details/Variables** (All information required to stratify the measure results including the stratification variables, definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b)  
Not applicable, the measure is not stratified.

**S.13. Risk Adjustment Type** (Select type. Provide specifications for risk stratification in S.12 and for statistical model in S.14-15)  
No risk adjustment or risk stratification  
If other:

**S.14. Identify the statistical risk model method and variables** (Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development and testing should be addressed with measure testing under Scientific Acceptability)  
Not applicable.

**S.15. Detailed risk model specifications** (must be in attached data dictionary/code list Excel or csv file. Also indicate if available at measure-specific URL identified in S.1.)  
Note: Risk model details (including coefficients, equations, codes with descriptors, definitions), should be provided on a separate worksheet in the suggested format in the Excel or csv file with data dictionary/code lists at S.2b.

<p><b>S.15a. Detailed risk model specifications</b> (if not provided in excel or csv file at S.2b)  <a href="#">Not applicable.</a></p>
<p><b>S.16. Type of score:</b>  <a href="#">Rate/proportion</a>          If other:</p> <p><b>S.17. Interpretation of Score</b> (Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)  <a href="#">Better quality = Higher score</a></p> <p><b>S.18. Calculation Algorithm/Measure Logic</b> (Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.)  <a href="#">See attached HQMF file.</a></p> <p><b>S.19. Calculation Algorithm/Measure Logic Diagram URL or Attachment</b> (You also may provide a diagram of the Calculation Algorithm/Measure Logic described above at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)  <a href="#">Available at measure-specific web page URL identified in S.1</a></p>
<p><b>S.20. Sampling</b> (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)          IF a PRO-PM, identify whether (and how) proxy responses are allowed.  <a href="#">Not applicable.</a></p> <p><b>S.21. Survey/Patient-reported data</b> (If measure is based on a survey, provide instructions for conducting the survey and guidance on minimum response rate.)          IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.  <a href="#">Not applicable. This measure is not based on a survey or a PRO-PM.</a></p> <p><b>S.22. Missing data</b> (specify how missing data are handled, e.g., imputation, delete case.)  <a href="#">Required for Composites and PRO-PMs.</a>  <a href="#">eMeasures are calculated using only the structured data collected in certified EHR technology (CEHRT). Data not present in the structured field from which the measure draws will not be included in the measure calculation.</a></p>
<p><b>S.23. Data Source</b> (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).          If other, please describe in S.24.  <a href="#">Electronic Health Data, Electronic Health Records, Other</a></p> <p><b>S.24. Data Source or Collection Instrument</b> (Identify the specific data source/data collection instrument e.g. name of database, clinical registry, collection instrument, etc.)          IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.  <a href="#">Hospitals report EHR data using Certified Electronic Health Record Technology (CEHRT), and by submitting Quality Reporting Document Architecture Category 1 (QRDA-1).</a></p> <p><b>S.25. Data Source or Collection Instrument</b> (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)  <a href="#">No data collection instrument provided</a></p> <p><b>S.26. Level of Analysis</b> (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)  <a href="#">Facility, Other</a></p> <p><b>S.27. Care Setting</b> (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)  <a href="#">Inpatient/Hospital</a>          If other:</p>

**S.28. COMPOSITE Performance Measure** - Additional Specifications *(Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)*  
[Not applicable.](#)

**2a. Reliability** – See attached Measure Testing Submission Form

**2b. Validity** – See attached Measure Testing Submission Form

[NQF0436\\_CMS71v4\\_STK3\\_Bonnie\\_Testing.xlsx,STK3\\_eCQM\\_testing\\_attachment-635944383256209008.docx](#)

### 3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

#### 3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

##### 3a.1. Data Elements Generated as Byproduct of Care Processes.

[Generated or collected by and used by healthcare personnel during the provision of care \(e.g., blood pressure, lab value, diagnosis, depression score\)](#)

If other:

#### 3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

**3b.1. To what extent are the specified data elements available electronically in defined fields?** *(i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields)*

[ALL data elements are in defined fields in electronic health records \(EHRs\)](#)

**3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.**

**3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL.**

[Attachment Attachment: STK3\\_eCQM\\_NQF\\_Measure\\_Feasibility\\_Assessment\\_Report.docx](#)

#### 3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

**3c.1. Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**

**IF a PRO-PM, consider implications for both individuals providing PROM data (patients, service recipients, respondents) and those whose performance is being measured.**

[Not applicable.](#)

**3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified** *(e.g., value/code set, risk model, programming code, algorithm).*

[Value sets are housed in the Value Set Authority Center \(VSAC\), which is provided by the National Library of Medicine \(NLM\), in coordination with the Office of the National Coordinator for Health Information Technology and the Centers for Medicare & Medicaid Services.](#)

Viewing or downloading value sets requires a free Unified Medical Language System® (UMLS) Metathesaurus License, due to usage restrictions on some of the codes included in the value sets. Individuals interested in accessing value set content can request a UMLS license at (<https://uts.nlm.nih.gov/license.html>)

There are no other fees or licensing requirements to use the Joint Commission performance measures, all of which are in the public domain.

## 4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

### 4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

#### 4.1. Current and Planned Use

*NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.*

Planned	Current Use (for current use provide URL)
	<p>Payment Program Hospital Inpatient Quality Reporting Program <a href="https://www.cms.gov/medicare/quality-initiatives-patient-assessment-instruments/hospitalqualityinits/hospitalrhqdapu.html">https://www.cms.gov/medicare/quality-initiatives-patient-assessment-instruments/hospitalqualityinits/hospitalrhqdapu.html</a></p> <p>Regulatory and Accreditation Programs Hospital Accreditation Program <a href="http://www.jointcommission.org/">http://www.jointcommission.org/</a> EHR Incentive Program <a href="https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/index.html?redirect=/ehrincentiveprogram">https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/index.html?redirect=/ehrincentiveprogram</a></p>

#### 4a.1. For each CURRENT use, checked above, provide:

- Name of program and sponsor
  - Purpose
  - Geographic area and number and percentage of accountable entities and patients included
- Name of program and sponsor: Hospital Inpatient Quality Reporting Program; Centers for Medicare & Medicaid Services
  - Purpose: The Hospital Inpatient Quality Reporting (Hospital IQR) program was mandated by Section 501(b) of the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003. This section of the MMA authorized CMS to pay hospitals that successfully report designated quality measures a higher annual update to their payment rates.
  - Geographic area and number and percentage of accountable entities and patients included: Nationwide; 3500 hospitals (2015)
- Name of program and sponsor: EHR Incentive Program; Centers for Medicare & Medicaid Services
  - Purpose: The American Recovery and Reinvestment Act of 2009 (ARRA) (Pub.L. 111–5) was enacted on February 17, 2009. Title IV of Division B of ARRA amends Titles XVIII and XIX of the Social Security Act (the Act) by establishing incentive payments to eligible professionals (EPs), eligible hospitals, and critical access hospitals (CAHs), and Medicare Advantage Organizations to promote the adoption and meaningful use of interoperable health information technology (HIT) and qualified electronic health records (EHRs). These incentive payments are part of a broader effort under the HITECH Act to accelerate the adoption of HIT and utilization

of qualified EHRs.

- Geographic area and number and percentage of accountable entities and patients included: Nationwide; 4,847 active registrations (September, 2015)
- Name of program and sponsor Hospital Accreditation Program; The Joint Commission
- Purpose: An accreditation program that recognizes hospitals that meet standard requirements to provide safe and effective patient care.
- Geographic area and number and percentage of accountable entities and patients included Nationwide; 3300 Joint Commission-accredited hospitals (2014)

**4a.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons?** (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

Not applicable.

**4a.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement.** (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

Not applicable.

#### 4b. Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

**4b.1. Progress on Improvement. (Not required for initial endorsement unless available.)**

Performance results on this measure (current and over time) should be provided in 1b.2 and 1b.4. Discuss:

- Progress (trends in performance results, number and percentage of people receiving high-quality healthcare)
- Geographic area and number and percentage of accountable entities and patients included

While the chart-abstracted version of this measure has indicated improvement over time, this measure is a legacy eQM that is currently in use in the Hospital Inpatient Quality Reporting Program (HIQR) and the EHR Incentive Program. At present, no performance data are currently available.

In CY2016, CMS is requiring organizations participating in HIQR to electronically submit 1 quarter of data on 4 of 28 available eQMs, one of which is this measure. Data will be accepted through February 28th, 2017.

For more information, refer to CY2016 IPPS Final Rule, located here: <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/FY2016-IPPS-Final-Rule-Home-Page-Items/FY2016-IPPS-Final-Rule-Regulations.html>

**4b.2. If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.**

Not applicable.

#### 4c. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

**4c.1. Were any unintended negative consequences to individuals or populations identified during testing; OR has evidence of unintended negative consequences to individuals or populations been reported since implementation? If so, identify the negative unintended consequences and describe how benefits outweigh them or actions taken to mitigate them.**

Not applicable.

## 5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

### 5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

Yes

#### 5.1a. List of related or competing measures (selected from NQF-endorsed measures)

0084 : Heart Failure (HF) : Warfarin Therapy Patients with Atrial Fibrillation

0241 : Stroke and Stroke Rehabilitation: Anticoagulant Therapy Prescribed for Atrial Fibrillation (AF) at Discharge

0436 : STK-03: Anticoagulation Therapy for Atrial Fibrillation/Flutter

0624 : Atrial Fibrillation - Anticoagulation Therapy

1525 : Atrial Fibrillation and Atrial Flutter: Chronic Anticoagulation Therapy

#### 5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.

0624 : Atrial Fibrillation - Anticoagulation Therapy; Active Health Management – no longer NQF-endorsed.

0084 : Heart Failure (HF) : Warfarin Therapy Patients with Atrial Fibrillation –status unspecified; AMAPCPI

0241 : Stroke and Stroke Rehabilitation: Anticoagulant Therapy Prescribed for Atrial Fibrillation (AF) at Discharge- status unspecified; AAN

### 5a. Harmonization

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

#### 5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):

Are the measure specifications completely harmonized?

No

#### 5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.

Measure 1525 from the American College of Cardiology is a physician performance measures identified through CPT codes and could extend to the outpatient setting. The measure evaluates physician practice as opposed to hospital processes. The target population for measure 1525 differs from measure 0436 Anticoagulation Therapy for Atrial Fibrillation/Flutter in that it includes in the denominator population all patients age 18 years and older with a diagnosis of nonvalvular atrial fibrillation or atrial flutter whose assessment of the specified thromboembolic risk factors indicate one or more high-risk factors or more than one moderate risk factor, as determined by CHADS2 risk stratification. It is not specified for ischemic stroke patients with atrial fibrillation/flutter only. NQF#0436: STK-03: Anticoagulation Therapy for Atrial Fibrillation/Flutter: The measures are completely harmonized to the extent possible, given the fact that the data source for #0436 is the paper medical record, and the data source for #2833 is the electronic health record.

### 5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

OR

Multiple measures are justified.

#### 5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):

Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

Not applicable.

## Appendix

**A.1 Supplemental materials may be provided in an appendix.** All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

Available at measure-specific web page URL identified in S.1 Attachment:

## Contact Information

**Co.1 Measure Steward (Intellectual Property Owner):** [The Joint Commission](#)

**Co.2 Point of Contact:** [JohnMarc, Alban, \[jalban@jointcommission.org\]\(mailto:jalban@jointcommission.org\), 630-792-5304-](#)

**Co.3 Measure Developer if different from Measure Steward:** [The Joint Commission](#)

**Co.4 Point of Contact:** [Lisa, Anderson, \[landerson2@jointcommission.org\]\(mailto:landerson2@jointcommission.org\), 630-792-5008-](#)

## Additional Information

**Ad.1 Workgroup/Expert Panel involved in measure development**

**Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**

The role of the Technical Advisory Panel (TAP) is to provide advisory oversight in literature review, measure content and maintenance of the specifications.

Members are:

[Harold P. Adams, Jr., MD](#)  
University of Iowa Health Care  
Iowa City, IA

[Mark J. Alberts, MD](#)  
University of Texas Southwestern  
Dallas, TX

[Anne W. Alexandrov, RN](#)  
Health Outcomes Institute  
Fountain Hills, AZ

[Nadine Allyn, RD](#)  
American Heart Association  
Dallas, Texas

[Mary G. George, MD](#)  
Centers for Disease Control and Prevention  
Atlanta, GA

[Martin Gizzi, MD](#)  
Legacy Health System  
Portland, OR

[Marianna Gorbaty](#)  
Mathematica Policy Research, Inc.  
Washington, DC

[Judith Hinchey, MD](#)  
Tuft's Medical School  
Steward St. Elizabeth's Medical Center  
Boston, MA

Edward C. Jauch, MD  
Medical University of South Carolina  
Charleston, SC 2946

Irene Katzan, MD  
Cleveland Clinic  
Cleveland, OH

Kimberly E. Levasseur-Franklin, PharmD  
Northwestern Memorial Hospital  
Chicago, IL

Kathy Morrison, RN  
Penn State Hershey Medical Center  
Hershey, PA

Marilyn M. Rymer, MD  
University of Kansas  
Kansas City, MO

Jeffrey Saver, MD  
UCLA Medical Center  
Los Angeles, CA

Lee H. Schwamm, MD  
Harvard Medical School  
Massachusetts General Hospital  
Boston, MA

Deborah, Summers, RN  
St. Luke's Brain and Stroke Institute  
Kansas City, MO

Osama O. Zaidat, MD  
St. Vincent Mercy Hospital  
Toledo, OH

Richard D. Zorowitz, MD  
Medstar National Rehabilitation Network  
Washington, DC

**Measure Developer/Steward Updates and Ongoing Maintenance**

**Ad.2 Year the measure was first released:** 2012

**Ad.3 Month and Year of most recent revision:** 04, 2015

**Ad.4 What is your frequency for review/update of this measure?** Annual

**Ad.5 When is the next scheduled review/update for this measure?** 04, 2016

**Ad.6 Copyright statement:** Measure specifications are in the Public Domain

LOINC(R) is a registered trademark of the Regenstrief Institute.

This material contains SNOMED Clinical Terms (R) (SNOMED CT(c)) copyright 2004-2014 International Health Terminology Standards Development Organization. All rights reserved.

**Ad.7 Disclaimers:** These performance measures are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. The measures and specifications are provided without warranty.

**Ad.8 Additional Information/Comments:** [Not applicable.](#)