2020 Update to the 2016 ACC/AHA Clinical Performance and Quality Measures for Adults With Atrial Fibrillation or Atrial Flutter

A Report of the American College of Cardiology/American Heart Association Task Force on Performance Measures

Developed in Collaboration With the Heart Rhythm Society

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## APPENDIX C

### Reviewer Relationships With Industry and Other Entities (Comprehensive)

## TOP 5 TAKE-HOME MESSAGES FOR UPDATE OF ADULTS WITH ATRIAL FIBRILLATION OR ATRIAL FLUTTER

1. This document describes updates to the atrial fibrillation performance measures that are appropriate for public reporting or pay-for-performance programs.
2. The performance measures are taken from the 2019 American College of Cardiology/American Heart Association/Heart Rhythm Society atrial fibrillation guideline update and are selected from the strongest recommendations (Class 1 or 3).
3. Quality measures are provided that are not yet ready for public reporting or pay-for-performance programs but might be useful for clinicians and healthcare organizations for quality improvement.
4. The recent guideline change regarding the definition of valvular atrial fibrillation is now incorporated into the performance measures. This includes patients with moderate or severe mitral stenosis and those with a mechanical prosthetic heart valve.
5. The recent guideline changes regarding different CHA2DS2-VASc risk score treatment thresholds for men (>1) and women (>2) are now incorporated into the performance measures.

## PREAMBLE

The American College of Cardiology (ACC)/American Heart Association (AHA) performance measurement sets serve as vehicles to accelerate translation of scientific...
evidence into clinical practice. Measure sets developed by the ACC/AHA are intended to provide practitioners and institutions that deliver cardiovascular services with tools to measure the quality of care provided and identify opportunities for improvement.

Writing committees are instructed to consider the methodology of performance measure development (1,2) and to ensure that the measures developed are aligned with ACC/AHA clinical practice guidelines. The writing committees also are charged with constructing measures that maximally capture important aspects of care quality, including timeliness, safety, effectiveness, efficiency, equity, and patient-centeredness, while minimizing, when possible, the reporting burden imposed on hospitals, practices, and practitioners.

Potential challenges from measure implementation may lead to unintended consequences. The manner in which challenges are addressed is dependent on several factors, including the measure design, data collection method, performance attribution, baseline performance rates, reporting methods, and incentives linked to these reports.

The ACC/AHA Task Force on Performance Measures (Task Force) distinguishes quality measures from performance measures. Quality measures are those metrics that may be useful for local quality improvement but are not yet appropriate for public reporting or pay for performance programs (uses of performance measures). New measures are initially evaluated for potential inclusion as performance measures. In some cases, a measure is insufficiently supported by the guidelines. In other instances, when the guidelines support a measure, the writing committee may feel it is necessary to have the measure tested to identify the consequences of measure implementation. Quality measures may then be promoted to the status of performance measures as supporting evidence becomes available.

P. Michael Ho, MD, PhD, FACC, FAHA
Chair, ACC/AHA Task Force on Performance Measures

1. DECISION TO UPDATE THE ATRIAL FIBRILLATION MEASURE ON ANTICOAGULATION

1.1. Background

In 2020, the Task Force convened the writing committee to begin the process of updating the atrial fibrillation measure on chronic anticoagulation therapy from the 2016 atrial fibrillation measure set (3). The writing committee was also charged with the task of identifying any additional measures in need of updating to be in accordance with the 2019 AHA/ACC/Heart Rhythm Society (HRS) atrial fibrillation guideline update (4).

2. ACC/AHA UPDATED ATRIAL FIBRILLATION MEASURE ON ANTICOAGULATION AND UPDATED PERFORMANCE MEASURES

2.1. Discussion of Changes to the Atrial Fibrillation Measure on Anticoagulation

There were 2 changes to the performance measures, both prompted by recent changes to the 2019 AHA/ACC/HRS atrial fibrillation guideline update (4). The first, which impacts all the performance measures (see Appendix A, for the changes and measure specifications), is the clarification that valvular atrial fibrillation is atrial fibrillation with either moderate or severe mitral stenosis or a mechanical heart valve. The second change is the separation of a male and female threshold for the CHA2DS2-VASc score. This only applies to PM-5: Atrial Fibrillation/Atrial Flutter: Anticoagulation Prescribed.
REFERENCES


One meta-analysis has stratified ischemic stroke risk among patients with AF using the following point scoring system (10): AF Investigators, CHA2DS2 (congestive heart failure, hypertension, age ≥75 y, diabetes mellitus, prior stroke or transient ischemic attack or thromboembolism [doubled]), or CHA2DS2-VASc (congestive heart failure, hypertension, age ≥75 y [doubled], diabetes mellitus, prior stroke or TIA or thromboembolism [doubled], vascular disease, age 65–74 y, sex category). The appropriate use of anticoagulant therapy and the control of other risk factors, including hypertension and hypercholesterolemia, substantially reduce stroke risk.

Thromboembolism occurring with AF is associated with a greater risk of recurrent stroke, more severe disability, and mortality (5). Silent AF is also associated with increased ischemic stroke risk among patients with AF (6–9). The appropriate use of anticoagulant therapy and the control of other risk factors, including hypertension and hypercholesterolemia, substantially reduce stroke risk.

For patients with AF or atrial flutter, assessment of thromboembolic risk should include:

- Congestive HF
- Hypertension
- Age ≥65–74 y
- Diabetes mellitus
- Stroke, TIA, or thromboembolism
- Vascular disease (prior myocardial infarction, peripheral artery disease, or aortic plaque)
- Sex category (i.e., female)

**Clinical Recommendation(s)**

1. For patients with AF and an elevated CHA2DS2-VASc score of 2 or greater in men or 3 or greater in women, oral anticoagulants are recommended. Options include:

   - Warfarin (Class 1, Level of Evidence: A) (15–17)
   - Dabigatran (Class 1, Level of Evidence: B) (18)
   - Rivaroxaban (Class 1, Level of Evidence: B) (19)
   - Apixaban (Class 1, Level of Evidence: B) (20), or Edoxaban (Class 1, Level of Evidence: B-R) (21)

   MODIFIED: This recommendation has been updated in response to the approval of edoxaban, a new factor Xa inhibitor. More precision in the use of CHA2DS2-VASc scores is specified in subsequent recommendations. The LOEs for warfarin, dabigatran, rivaroxaban, and apixaban have not been updated for greater granularity as per the new LOE system (Section 4.1, in the 2019 AF Guideline (4)). The original text can be found in Section 4.2.2.2.
Clinical Recommendation(s)

2. DOACs (dabigatran, rivaroxaban, apixaban, and edoxaban) are recommended over warfarin in DOAC-eligible patients with AF (except with moderate or severe mitral stenosis or a mechanical heart valve) (18-21). (Class 1, Level of Evidence: A) NEW: Exclusion criteria are now defined as moderate or severe mitral stenosis or a mechanical heart valve. When the DOAC trials are considered as a group, the direct thrombin inhibitor and factor Xa inhibitors were at least noninferior and, in some trials, superior to warfarin for preventing stroke and systemic embolism and were associated with lower risks of serious bleeding.

3. Among patients treated with warfarin, the INR should be determined at least weekly during initiation of anticoagulant therapy and at least monthly when anticoagulation (INR in range) is stable (23-25). (Class 1, Level of Evidence: A) MODIFIED: “Antithrombotic” was changed to “anticoagulant.”

4. In patients with AF (except with moderate or severe mitral stenosis or a mechanical heart valve), the CHA2DS2-VASc score is recommended for assessment of stroke risk (15-17). (Class 1, Level of Evidence: B) MODIFIED: Exclusion criteria are now defined as moderate or severe mitral stenosis or a mechanical heart valve.

5. For patients with AF who have mechanical heart valves, warfarin is recommended (26-30). (Class 1, Level of Evidence: B) MODIFIED: “Antithrombotic” was changed to “anticoagulant.”

6. Selection of anticoagulant therapy should be based on the risk of thromboembolism, irrespective of whether the AF pattern is paroxysmal, persistent, or permanent (31-34). (Class 1, Level of Evidence: B) MODIFIED: “Antithrombotic” was changed to “anticoagulant.”

7. In patients with AF, anticoagulant therapy should be individualized on the basis of shared decision-making after discussion of the absolute risks and relative risks of stroke and bleeding, as well as the patient’s values and preferences. (Class 1, Level of Evidence: C) MODIFIED: “Antithrombotic” was changed to “anticoagulant.”

8. For patients with atrial flutter, anticoagulant therapy is recommended according to the same risk profile used for AF. (Class 1, Level of Evidence: C) MODIFIED: “Antithrombotic” was changed to “anticoagulant.”

9. Reevaluation of the need for and choice of anticoagulant therapy at periodic intervals is recommended to reassess stroke and bleeding risks. (Class 1, Level of Evidence: C) MODIFIED: “Antithrombotic” was changed to “anticoagulant.”

All patients with exclusions are removed from the denominator. Patients with exceptions are removed from the denominator only if the numerator is not met.

ACC indicates American College of Cardiology; AF, atrial fibrillation; AHA, American Heart Association; DOAC, direct-acting oral anticoagulant; HF, heart failure; HRS, Heart Rhythm Society; INR, international normalized ratio; LOE, level of evidence; PM, performance measure; and TIA, transient ischemic attack.
Compared with the CHA2DS2 score (12), the CHA2DS2-VASc score for AF has a broader score range (0 to 9) and includes a larger number of risk factors (female sex, 65

Denominator Exclusions
- Patients age <18 y
- Patients with moderate or severe mitral stenosis
- Patients with a mechanical prosthetic heart valve
- Patients with transient or reversible causes of AF (e.g., pneumonia, hyperthyroidism, pregnancy, cardiac surgery)
- Patients who leave against medical advice
- Patients who die during hospitalization
- Patients who are on comfort care measures only
- Patients who are transferred to another acute care hospital

Denominator Exceptions
- Documentation of a medical reason for not prescribing an FDA-approved anticoagulant to a patient with a CHA2DS2-VASc score of ≥2 for men and ≥3 for women, including present or planned left atrial appendage occlusion or ligation
- Documentation of a patient reason for not prescribing an FDA-approved anticoagulant drug for the prevention of thromboembolism, including patient preference for not receiving anticoagulation
- Documentation of a patient being enrolled in a clinical trial related to AF or atrial flutter

Sources of Data
Medical record or other database (e.g., administrative, clinical, registry)

Measurement Period
Encounter

Care Setting
Inpatient

Rationale
AF, whether paroxysmal, persistent, or permanent and whether symptomatic or silent, significantly increases the risk of thromboembolic ischemic stroke. AF increases the risk of stroke 5-fold, and AF in the setting of mitral stenosis increases the risk of stroke 20-fold over that of patients in sinus rhythm. Thromboembolism occurring with AF is associated with a greater risk of recurrent stroke, more severe disability, and mortality (5). Silent AF is also associated with ischemic stroke (6–9). The appropriate use of anticoagulant therapy and the control of other risk factors, including hypertension and hypercholesterolemia, substantially reduce stroke risk.

One meta-analysis has stratified ischemic stroke risk among patients with AF using the following point scoring system (10): AF Investigators, CHA2DS2 (congestive heart failure, hypertension, age ≥75 y, diabetes mellitus, prior stroke or TIA or thromboembolism [doubled]), or CHA2DS2-VASc (congestive heart failure, hypertension, age ≥75 y [doubled], [11], diabetes mellitus, prior stroke or TIA or thromboembolism [doubled], vascular disease, age 65–74 y, sex category). Compared with the CHA2DS2 score (12), the CHA2DS2-VASc score for AF has a broader score range (0 to 9) and includes a larger number of risk factors (female sex, 65–74 y of age, and vascular disease (13,14)).

The selection of an anticoagulant agent should be based on shared decision-making that takes into account risk factors, cost, tolerability, patient preference, potential for drug interactions, and other clinical characteristics, including time in the INR therapeutic range if the patient has been on warfarin, irrespective of whether the AF pattern is paroxysmal, persistent, or permanent.

Clinical Recommendation(s)


1. For patients with AF and an elevated CHA2DS2-VASc score of 2 or greater in men or 3 or greater in women, oral anticoagulants are recommended. Options include:
   - Warfarin (Class 1, Level of Evidence: A) (15–17)
   - Dabigatran (Class 1, Level of Evidence: B) (18)
   - Rivaroxaban (Class 1, Level of Evidence: B) (19)
   - Apixaban (Class 1, Level of Evidence: B) (20), or Edoxaban (Class 1, Level of Evidence: B-R) (21)
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2. DOACs (dabigatran, rivaroxaban, apixaban, and edoxaban) are recommended over warfarin in DOAC-eligible patients with AF (except with moderate or severe mitral stenosis or a mechanical heart valve) (18–21). (Class 1, Level of Evidence: A)

   NEW: Exclusion criteria are now defined as moderate or severe mitral stenosis or a mechanical heart valve. When the DOAC trials are considered as a group, the direct thrombin inhibitor and factor Xa inhibitors were at least noninferior and, in some trials, superior to warfarin for preventing stroke and systemic embolism and were associated with lower risks of serious bleeding.

3. Among patients treated with warfarin, the INR should be determined at least weekly during initiation of anticoagulant therapy and at least monthly when anticoagulation (INR in range) is stable (23–25). (Class 1, Level of Evidence: A)

   MODIFIED: “Antithrombotic” was changed to “anticoagulant.”

4. In patients with AF (except with moderate or severe mitral stenosis or a mechanical heart valve), the CHA2DS2-VASc score is recommended for assessment of stroke risk (15–17). (Class 1, Level of Evidence: B)

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APPENDIX A. CONTINUED

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ACC indicates American College of Cardiology; AF, atrial fibrillation; AHA, American Heart Association; DOAC, direct-acting oral anticoagulant; FDA, U.S. Food and Drug Administration; HRS, Heart Rhythm Society; INR, international normalized ratio; LOE, level of evidence; PM, performance measure; and TIA, transient ischemic attack.
Frequent monitoring of INR level is essential to guiding warfarin dose adjustment to maintain anticoagulation intensity in the desired target range. More frequent monitoring may be required during initiation of warfarin therapy or when other drugs that interact with warfarin are started or stopped.

**Clinical Recommendation(s)**

1. For patients with AF and an elevated CHA2DS2-VASc score of 2 or greater in men or 3 or greater in women, oral anticoagulants are recommended. Options include:
   - Warfarin (Class 1, Level of Evidence: A) (15-17)
   - Dabigatran (Class 1, Level of Evidence: B) (18)
   - Rivaroxaban (Class 1, Level of Evidence: B) (19)
   - Apixaban (Class 1, Level of Evidence: B) (20), or Edoxaban (Class 1, Level of Evidence: B-R) (21).
   - MODIFIED: This recommendation has been updated in response to the approval of edoxaban, a new factor Xa inhibitor. More precision in the use of CHA2DS2-VASc scores is specified in subsequent recommendations. The LOEs for warfarin, dabigatran, rivaroxaban, and apixaban have not been updated for greater granularity as per the new LOE system in the 2019 AF Guideline (4). The original text can be found in Section 4.1 of the 2014 AF guideline (22). Additional information about the comparative effectiveness and bleeding risk of DOACs can be found in Section 4.2.2.2.

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3. Among patients treated with warfarin, the INR should be determined at least weekly during initiation of anticoagulant therapy and at least monthly when anticoagulation (INR in range) is stable (23-25). (Class 1, Level of Evidence: A)

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5. For patients with AF who have mechanical heart valves, warfarin is recommended (26-30). (Class 1, Level of Evidence: B)

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6. Selection of anticoagulant therapy should be based on the risk of thromboembolism, irrespective of whether the AF pattern is paroxysmal, persistent, or permanent (31-34). (Class 1, Level of Evidence: B)

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7. In patients with AF, anticoagulant therapy should be individualized on the basis of shared decision-making after discussion of the absolute risks and relative risks of stroke and bleeding, as well as the patient's values and preferences. (Class 1, Level of Evidence: C)

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8. For patients with atrial flutter, anticoagulant therapy is recommended according to the same risk profile used for AF. (Class 1, Level of Evidence: C)

   - MODIFIED: "Antithrombotic" was changed to "anticoagulant."

9. Reevaluation of the need for and choice of anticoagulant therapy at periodic intervals is recommended to reassess stroke and bleeding risks. (Class 1, Level of Evidence: C)

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All patients with exclusions are removed from the denominator. Patients with exceptions are removed from the denominator only if the numerator is not met.

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APPENDIX A. CONTINUED

**SHORT TITLE: PM-4 CHA2DS2-VASc Risk Score Documented (Outpatient)**

**PM-4: Atrial Fibrillation or Atrial Flutter: CHA2DS2-VASc Risk Score Documented (Outpatient)**

**Measure Description:** Percentage of patients, age ≥18 y, with AF or atrial flutter for whom a CHA2DS2-VASc risk score is documented.

**Numerator:** Patients with AF or atrial flutter for whom a CHA2DS2-VASc risk score is documented.

**Denominator:** Patients with AF or atrial flutter

**Denominator Exclusions:**
- Patients age <18 y
- Patients with moderate or severe mitral stenosis
- Patients with a mechanical prosthetic heart valve
- Patients with transient or reversible causes of AF (e.g., pneumonia, hyperthyroidism, pregnancy, cardiac surgery)
- Patients who are on comfort care measures only
- Patients with another indication for anticoagulation

**Denominator Exceptions:**
- Documentation of a medical reason for not prescribing an FDA-approved anticoagulant to a patient with a CHA2DS2-VASc score of ≥2 for men and ≥3 for women, including present or planned left atrial appendage occlusion or ligation, hypertrophic cardiomyopathy, or other reasons
- Documentation of patient preference for not receiving anticoagulation

**Measurement Period:** Reporting year

**Sources of Data:** Medical record or other database (e.g., administrative, clinical, registry)

**Attribution:** Measure reportable at the facility or provider level

**Care Setting:** Outpatient

**Rationale**

AF, whether paroxysmal, persistent, or permanent and whether symptomatic or silent, significantly increases the risk of thromboembolic ischemic stroke. AF increases the risk of stroke 5-fold, and AF in the setting of mitral stenosis increases the risk of stroke 20-fold over that of patients in sinus rhythm. Thromboembolism occurring with AF is associated with a greater risk of recurrent stroke, more severe disability, and mortality (5). Silent AF is also associated with ischemic stroke (6-9). The appropriate use of anticoagulant therapy and the control of other risk factors, including hypertension and hypercholesterolemia, substantially reduce stroke risk.

One meta-analysis has stratified ischemic stroke risk among patients with AF using the following point scoring system (10): AF Investigators; CHA2DS2 (congestive heart failure, hypertension, age ≥75 y, diabetes mellitus, prior stroke or TIA or thromboembolism [doubled]), or CHA2DS2-VASc (congestive heart failure, hypertension, age ≥75 y [doubled]) (11), diabetes mellitus, prior stroke or TIA or thromboembolism [doubled], vascular disease, age 65-74 y, sex category.

When compared with the CHA2DS2 score (12), the CHA2DS2-VASc score for AF has a broader score range (0 to 9) and includes a larger number of risk factors (female sex, 65-74 y of age, and vascular disease) (13,14).

The selection of an anticoagulant agent should be based on shared decision-making that takes into account risk factors, cost, tolerability, patient preference, potential for drug interactions, and other clinical characteristics, including time in the INR therapeutic range if the patient has been on warfarin, irrespective of whether the AF pattern is paroxysmal, persistent, or permanent.

**Clinical Recommendation(s)**

2019 AHA/ACC/HRS Focused Update of the 2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation (14)

1. For patients with AF and an elevated CHA2DS2-VASc score of 2 or greater in men or 3 or greater in women, oral anticoagulants are recommended. Options include:
   - Warfarin (Class 1, Level of Evidence: A) (15-17)
   - Dabigatran (Class 1, Level of Evidence: B) (18)
   - Rivaroxaban (Class 1, Level of Evidence: B) (19)
   - Apixaban (Class 1, Level of Evidence: B) (20), or Edoxaban (Class 1, Level of Evidence: B-R) (21)

2. For patients with AF and a CHA2DS2-VASc score of ≥2 for men and ≥3 for women, including present or planned left atrial appendage occlusion or ligation, hypertrophic cardiomyopathy, or other reasons (e.g., female sex, age 65-74 y of age, and vascular disease) (13,14).

The selection of an anticoagulant agent should be based on shared decision-making that takes into account risk factors, cost, tolerability, patient preference, potential for drug interactions, and other clinical characteristics, including time in the INR therapeutic range if the patient has been on warfarin, irrespective of whether the AF pattern is paroxysmal, persistent, or permanent.

**Continued on the next page**
### Clinical Recommendation(s)

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ACC indicates American College of Cardiology; AF, atrial fibrillation; AHA, American Heart Association; DOAC, direct-acting oral anticoagulant; FDA, U.S. Food and Drug Administration; HRS, Heart Rhythm Society; INR, international normalized ratio; LOE, level of evidence; PM, performance measure; and TIA, transient ischemic attack.
APPENDIX A. CONTINUED

SHORT TITLE: PM-5

Anticoagulation Prescribed (Outpatient)

**PM-5: Atrial Fibrillation or Atrial Flutter: Anticoagulation Prescribed (Outpatient)**

Measure Description: Percentage of patients, age ≥18 y, who were prescribed an FDA-approved anticoagulant drug for the prevention of thromboembolism during the measurement period.

Numerator
Patients with AF or atrial flutter for whom an FDA-approved anticoagulant was prescribed*  
*Prescribed—also satisfied by documentation in current medication list

Denominator
Patients with AF or atrial flutter who do not have a documented CHA2DS2-VASc risk score of 0 or 1, if male, and 0-2, if female.

Denominator Exclusions
- Patients age <18 y  
- Patients with moderate or severe mitral stenosis  
- Patients with a mechanical prosthetic heart valve  
- Patients with transient or reversible causes of AF (e.g., pneumonia, hyperthyroidism, pregnancy, cardiac surgery)  
- Patients who are on comfort care measures only

Denominator Exceptions
- Documentation of a medical reason for not prescribing an FDA-approved anticoagulant drug to a patient with a CHA2DS2-VASc score of ≥2 for men and ≥3 for women, including present or planned left atrial appendage occlusion or ligation
- Documentation of a patient for not prescribing an FDA-approved anticoagulant drug for the prevention of thromboembolism, including patient preference for not receiving anticoagulation
- Documentation of a patient being enrolled in a clinical trial related to AF or atrial flutter treatment

Measurement Period
Reporting year

Sources of Data
Medical record or other database (e.g., administrative, clinical, registry)

Attribution
Measure reportable at the facility or provider level

Care Setting
Outpatient

Rationale
AF, whether paroxysmal, persistent, or permanent and whether symptomatic or silent, significantly increases the risk of thromboembolic ischemic stroke. AF increases the risk of stroke 5-fold, and AF in the setting of mitral stenosis increases the risk of stroke 20-fold over that of patients in sinus rhythm. Thromboembolism occurring with AF is associated with a greater risk of recurrent stroke, more severe disability, and mortality (5). Silent AF is also associated with ischemic stroke (6-9). The appropriate use of anticoagulant therapy and the control of other risk factors, including hypertension and hypercholesterolemia, substantially reduce stroke risk.

One meta-analysis has stratified ischemic stroke risk among patients with nonvalvular AF using the following point scoring system (10): AF Investigators; CHA2DS2 (congestive heart failure, hypertension, age ≥75 y, diabetes mellitus, prior stroke or TIA or thromboembolism [doubled]), or CHA2DS2-VASc (congestive heart failure, hypertension, age ≥75 y [doubled] (11), diabetes mellitus, prior stroke or TIA or thromboembolism [doubled], vascular disease, age 65-74 y, sex category). Subsequent work demonstrated that the risk differs for men and women (4).

When compared with the CHA2DS2 score (12), the CHA2DS2-VASc score for nonvalvular AF has a broader score range (0 to 9) and includes a larger number of risk factors (female sex, 65-74 y of age, and vascular disease) (13,14). The selection of an anticoagulant agent should be based on shared decision-making that takes into account risk factors, cost, tolerability, patient preference, potential for drug interactions, and other clinical characteristics, including time in the INR therapeutic range if the patient has been on warfarin, irrespective of whether the AF pattern is paroxysmal, persistent, or permanent.

The term “nonvalvular AF” was clarified in the 2019 update and does not imply the absence of valvular heart disease. Instead, as used in the 2019 guideline update, nonvalvular AF is “AF in the absence of moderate or severe mitral stenosis or a mechanical heart valve” (4).

Clinical Recommendation(s)


1. For patients with AF and an elevated CHA2DS2-VASc score of 2 or greater in men or 3 or greater in women, oral anticoagulants are recommended. Options include:
   - Warfarin (Class 1, Level of Evidence: A) (15-17)
   - Dabigatran (Class 1, Level of Evidence: B) (18)
   - Rivaroxaban (Class 1, Level of Evidence: B) (19)
   - Apixaban (Class 1, Level of Evidence: B) (20), or Edoxaban (Class 1, Level of Evidence: B-R) (21)

   MODIFIED: This recommendation has been updated in response to the approval of edoxaban, a new factor Xa inhibitor. More precision in the use of CHA2DS2-VASc scores is specified in subsequent recommendations. The LOEs for warfarin, dabigatran, rivaroxaban, and apixaban have not been updated for greater granularity as per the new LOE system (Section 4.1. in the 2019 AF Guideline (4)). The original text can be found in Section 4.1 of the 2014 AF guideline (22). Additional information about the comparative effectiveness and bleeding risk of DOACs can be found in Section 4.2.2.2.

All patients with exclusions are removed from the denominator. Patients with exceptions are removed from the denominator only if the numerator is not met. Physician performance measures and related data specifications were developed by the American Medical Association (AMA) convened Physician Consortium for Performance Improvement® (PCPI®), the American College of Cardiology (ACC), and the American Heart Association (AHA) to facilitate quality improvement activities by physicians. 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. While copyrighted, they can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the performance measures for commercial gain, or incorporation of the performance measures into a product or service that is sold, licensed or distributed for commercial gain. Commercial uses of the measures require a license agreement between the user and the AMA (on behalf of the PCPI) or the ACC or the AHA. Neither the AMA, ACC, AHA, the PCPI nor its members shall be responsible for any use of these measures. THE MEASURES AND SPECIFICATIONS ARE PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND. © 2020 American College of Cardiology, American Heart Association, and American Medical Association. All Rights Reserved. Limited proprietary coding is contained in the measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets. The AMA, the ACC, the AHA, the PCPI and its members disclaim all liability for use or accuracy of any Current Procedural Terminology (CPT®) or other coding contained in the specifications. CPT® contained in the measures specifications is copyright 2020 American Medical Association. LONICer copyright 2004-2020 Regenstrief Institute, Inc. This material contains SNOMED CLINICAL TERMS (SNOMED CT®) copyright 2004-2020 International Health Terminology Standards Development Organisation. All Rights Reserved. Use of SNOMED CT® is only authorized within the United States. ACC indicates American College of Cardiology; AF, atrial fibrillation; AHA, American Heart Association; DOAC, direct-acting oral anticoagulant; FDA, U.S. Food and Drug Administration; HRS, Heart Rhythm Society; INR, international normalized ratio; LOE, level of evidence; PM, performance measure; and TIA, transient ischemic attack.
APPENDIX B. AUTHOR RELATIONSHIPS WITH INDUSTRY AND OTHER ENTITIES (RELEVANT)—
2020 UPDATE TO THE 2016 ACC/AHA CLINICAL PERFORMANCE AND QUALITY MEASURES FOR
ADULTS WITH ATRIAL FIBRILLATION OR ATRIAL FLUTTER

The Task Force makes every effort to avoid actual, potential, or perceived conflicts of interest that could arise as a result of RWI. Detailed information on the ACC/AHA policy on RWI can be found online. All members of the writing committee, as well as those selected to serve as peer reviewers of this document, were required to disclose all current relationships and those existing within the 12 months before the initiation of this writing effort. ACC/AHA policy also requires that the writing committee chair and at least 50% of the writing committee have no relevant RWI.

Any writing committee member who develops new RWI during his or her tenure on the writing committee is required to notify staff in writing. These statements are reviewed periodically by the Task Force and by members of the writing committee. Author and peer reviewer RWI that are pertinent to the document are included in the appendixes: Appendix B for relevant writing committee RWI and Appendix C for comprehensive peer reviewer RWI. Additionally, to ensure complete transparency, the writing committee members’ comprehensive disclosure information, including RWI not relevant to the present document, is available online. Disclosure information for the Task Force is also available online.

The work of the writing committee was supported exclusively by the ACC and the AHA without commercial support. Members of the writing committee volunteered their time for this effort. Meetings of the writing committee were confidential and attended only by writing committee members and staff from the ACC, AHA, and the HRS, which served as a collaborator on this project.
## APPENDIX B. CONTINUED

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ACC indicates American College of Cardiology; AHA, American Heart Association; HRS, Heart Rhythm Society; RWI, relationships with industry or other entities; UCLA, University of California, Los Angeles; and VA, Veterans Affairs.
### APPENDIX C. REVIEWER RELATIONSHIPS WITH INDUSTRY AND OTHER ENTITIES (COMPREHENSIVE) — 2020 UPDATE TO THE 2016 ACC/AHA CLINICAL PERFORMANCE AND QUALITY MEASURES FOR ADULTS WITH ATRIAL FIBRILLATION OR ATRIAL FLUTTER

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