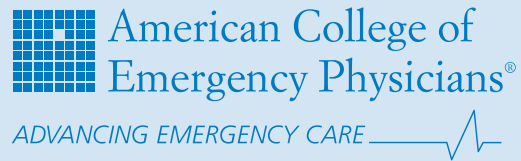


Emergency Department Discharge Toolkit For Patients with Atrial Fibrillation



Stroke Risk for Patients with Atrial Fibrillation: For Providers

Sponsored by Boehringer Ingelheim Pharmaceuticals, Inc.



Stroke Risk for Patients with Atrial Fibrillation

Fast Facts for Providers

What to do when a patient presents with atrial fibrillation in the emergency department

When an ED patient is diagnosed with atrial fibrillation, ED providers should assess whether atrial fibrillation is related to their reason of visit, or chief complaint, and treat the patient appropriately.

For all patients with atrial fibrillation, conducting brief risk-stratification with the CHADS₂ classification may help to communicate a patient's risk of stroke back to their personal physician or cardiologist.

Stratifying stroke risk can help ensure the patient is prescribed the optimum antithrombotic therapy for stroke prevention. In most cases, ED providers should not start patients on anti-thrombotic therapy and discharge the patient unless closely coordinated with a primary care provider or cardiologist.

Diagnose: Patient is found to have atrial fibrillation in the ED.

Stratify: Determine the patient's stroke risk using the CHADS₂ formula.

Assess: Is the patient currently on the most appropriate medication to prevent stroke risk?

Refer: If the patient is not on recommended treatment, determine a follow-up plan with a primary care physician or cardiologist.

The formula is additive, with the points next to the "Yes" of each corresponding question.

Congestive Heart Failure history?	Yes + 1	<input type="checkbox"/>
Hypertension history?	Yes + 1	<input type="checkbox"/>
Age ≥ 75?	Yes + 1	<input type="checkbox"/>
Diabetes Mellitus history?	Yes + 1	<input type="checkbox"/>
Stroke symptoms previously or TIA or thromboembolism?	Yes + 2	<input type="checkbox"/>
Patient has none of these	No Risk Present	<input type="checkbox"/>
SCORE		<input type="text"/>

CHADS ₂ Score	Stroke Risk (%/year)	95% CI
0	1.9	1.2-3.0
1	2.8	2.0-3.8
2	4.0	3.1-5.1
3	5.9	4.6-7.3
4	8.5	6.3-11.1
5	12.5	8.2-17.5
6	18.2	10.5-27.4

Use the score from the formula above to determine the patient's stroke risk

Use the CHADS₂ score to determine antithrombotic therapy

CHADS ₂ Score	Stroke Risk	Considerations
0	Low	No treatment (or aspirin 75-325mg/day)
1	Moderate	Oral anticoagulant, either warfarin with INR 2-3 or new oral anticoagulant (or aspirin 75-325 mg daily)
2 or higher	Moderate to High	Oral anticoagulant, either warfarin with INR 2-3 or new oral anticoagulant

Stroke Risk for Patients with Atrial Fibrillation: For Providers

Over 2 million Americans currently suffer from atrial fibrillation; this number is expected to rise to over 12 million by 2050. The main goals for managing atrial fibrillation are to reduce symptoms and lower the risk of ischemic stroke. Atrial fibrillation is an independent risk factor for stroke, carrying a risk of approximately five-fold compared to patients without atrial fibrillation. The pro-thrombotic effect of atrial fibrillation comes from several mechanisms; specifically, cardiac flow abnormalities that result in stasis in the left atrium, and changes in both the vessel walls and blood constituents.



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Why to stratify and treat stroke risk

Stratifying stroke risk is important because antithrombotic medications used to lower the incidence of atrial fibrillation-related stroke have side effects, including bleeding. For example, the risk of major bleeding from warfarin (1-12% per year), needs to be balanced with the risk of stroke. Therefore, it is reserved for patients at higher stroke risk.

Stratifying stroke risk can help ensure the patient is prescribed the optimum antithrombotic therapy for stroke prevention. In most cases, ED providers should not start patients on antithrombotic therapy and discharge the patient unless closely coordinated with a primary care provider or cardiologist.

Using the CHADS₂ score¹

The CHADS₂ helps risk-stratify patients and determine the most appropriate antithrombotic therapy. CHADS₂ assigns one point each for congestive heart failure (C), high blood pressure (H), age 75 or older (A), and diabetes (D), and two points for a previous stroke (S2) or transient ischemic attack (TIA) or thromboembolism. Higher CHADS₂ scores mean a greater risk of stroke.

The formula is additive, with the points next to the "Yes" of each corresponding question.

Congestive Heart Failure history?	Yes + 1	<input type="checkbox"/>
Hypertension history?	Yes + 1	<input type="checkbox"/>
Age ≥ 75?	Yes + 1	<input type="checkbox"/>
Diabetes Mellitus history?	Yes + 1	<input type="checkbox"/>
Stroke symptoms previously or TIA or thromboembolism?	Yes + 2	<input type="checkbox"/>
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What if your ED patient is not currently taking appropriate medications to reduce stroke risk?

Consider determining your patient's stroke risk using the CHADS₂ classification system above and asking your patient to take this information along with Stroke Risk for Patients with Atrial Fibrillation: For Patients to his or her personal physician or cardiologist.

For physicians who manage stroke risk, there are some considerations:*

1. Adjusted-dose warfarin (target INR, 2.0 –3.0) is recommended for all patients with nonvalvular atrial fibrillation deemed moderate to high risk for stroke who can receive it safely (Class I; Level of Evidence A).
2. Antiplatelet therapy with aspirin is recommended for low-risk and some moderate-risk patients with atrial fibrillation on the basis of patient preference, estimated bleeding risk if anticoagulated, and access to high-quality anticoagulation monitoring (Class I; Level of Evidence A).
3. For high-risk patients with atrial fibrillation deemed unsuitable for anticoagulation, dual-antiplatelet therapy with clopidogrel and aspirin offers more protection against stroke than aspirin alone but with an increased risk of major bleeding and might not be reasonable (Class IIb; Level of Evidence B)

Issues with new oral anticoagulants (NOAC): dabigatran, rivaroxaban, and apixaban

- There are no published data directly comparing NOAC to each other, just to warfarin.
- The follow-up duration in NOAC is limited in clinical trials and real-world adherence is unknown, outside of formal systems to monitor adherence (i.e. anticoagulation clinics, primary care providers)
- Because of the short half-life, missing NOAC medication doses may increase risk of stroke
- Treatment decisions should account for cost differences to patients
- A transition from warfarin to NOAC should be managed carefully; this period may constitute increased risk of stroke or hemorrhage
- Whether patients on NOAC can be safely treated with thrombolytics during acute ischemic stroke is unknown
- There are no antidotes to emergently reverse NOAC during hemorrhage
- Data on clinical effectiveness for dabigatran in the real world are just beginning to emerge; data on apixiban and rivaroxaban are unavailable

References and Additional Information

1. CHADS₂ Score for Atrial Fibrillation Stroke Risk. Singer DE, et al. Antithrombotic therapy in atrial fibrillation: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest. 2008 Jun;133(6 Suppl):546S-592S. <http://www.mdcalc.com/chads2-score-for-atrial-fibrillation-stroke-risk/>
 2. Current AHA/ASA recommendations on vitamin K antagonists/antithrombotics for prevention of a first stroke
 3. Loewen P, Dahri K. Risk of bleeding with oral anticoagulants: an updated systematic review and performance analysis of clinical prediction rules. Ann Hematol. 2011;90:1191–1200
 4. Goldstein LB, et al. Guidelines for the primary prevention of stroke: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. Stroke. 2011;42:517–584.
 5. Gage BF, et al. Validation of clinical classification schemes for predicting stroke: results from the National Registry of Atrial Fibrillation. JAMA. 2001; 285:2864–2870.
 6. Furie KL, et al. Oral antithrombotic agents for the prevention of stroke in nonvalvular atrial -fibrillation: a science advisory for healthcare professionals from the American Heart Association/American Stroke Association. Stroke. 2012;43:3442-53.
- from the American Heart Association/American Stroke Association. Stroke. 2012;43:3442-53.