




Growth. Performance. Success.

NCPA 2025 ANNUAL CONVENTION



1



**Empowering Pharmacy Teams to
Prevent, Detect, and Manage
Cardiovascular Disease**

➤ **NCPA 2025 Annual Convention and Expo**



2



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Professor

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3

Disclosure Statement

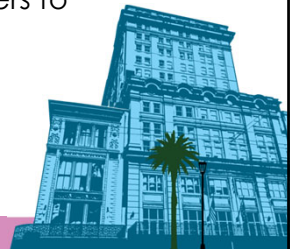
There are no relevant financial relationships with ACPE defined commercial interests for anyone who was in control of the content of the activity.



4

Pharmacist Learning Objectives

1. Describe the role of community pharmacists in screening and early detection of cardiovascular disease
2. Discuss evidence-based strategies for stroke prevention, including AFib screening and oral anticoagulation therapy management
3. Recognize signs and screening protocols for hypertrophic cardiomyopathy, especially in patients with a family history
4. Recall social determinants of health screening tools that can be integrated into pharmacy workflows to identify barriers to cardiovascular health and medication adherence
5. Describe approaches for collaborating with interdisciplinary teams to support patient-centered care



5

Pharmacy Technician Learning Objectives

1. List common cardiovascular conditions such as AFib, hypertrophic cardiomyopathy, and stroke risk relevant to pharmacy practice
2. Describe technician roles in cardiovascular screening, including patient intake and documentation
3. Explain how technicians support anticoagulation therapy through record-keeping and adherence monitoring
4. Identify social determinants of health that affect cardiovascular outcomes and medication use
5. Summarize how technicians can contribute to team-based care through communication and referral coordination



6

Agenda

- CV Landscape
- Guideline Refreshers and Updates
 - Atrial Fibrillation (AFib)
 - Stroke
 - Hypertrophic Cardiomyopathy (HCM)
- Published Evidence
- Strategies for Patient Care
 - Screening
- Putting it to Practice!!!



8

Let's Move!

Images from:
<https://www.health.harvard.edu/staying-healthy/5-tools-to-help-you-stand-up-on-your-own>;
<https://www.istockphoto.com/photos/person-turning-around>;
<https://hbr.org/2020/03/how-to-avoid-shaking-hands>



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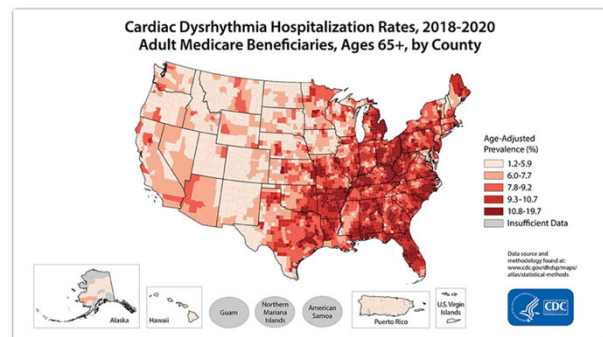
CV Landscape



10

CV Significance

- One person has a stroke every **40 seconds** and dies of stroke every **3 min 11 sec**
- AFib increases the risk of stroke by **5-fold**
- 2022: Heart disease and stroke claimed more lives than all forms of cancer and chronic respiratory diseases combined at **17.5% (1 in 6)**
- From 2012-2022, stroke deaths increased by **28.7%**

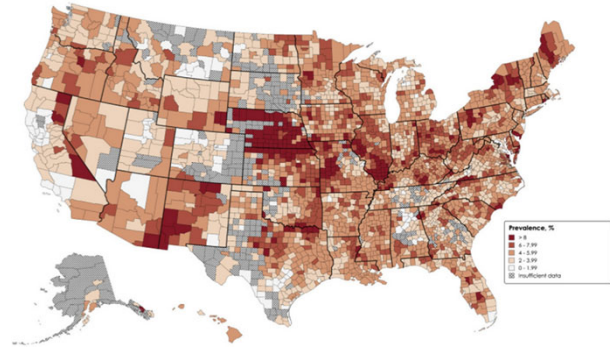


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AFib Prevalence

- Estimated 12.1 million people have AFib
- In 2015, estimated >5.6 million AFib cases were undiagnosed
- AFib is highly prevalent in people who have hypertrophic cardiomyopathy (HCM)



<https://www.cdc.gov/heart-disease/about/atrial-fibrillation.html>; Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156; Image from: Oltman CG, et al. JACC Adv. 2024;3(11)



12

12

Risk Factors for AFib



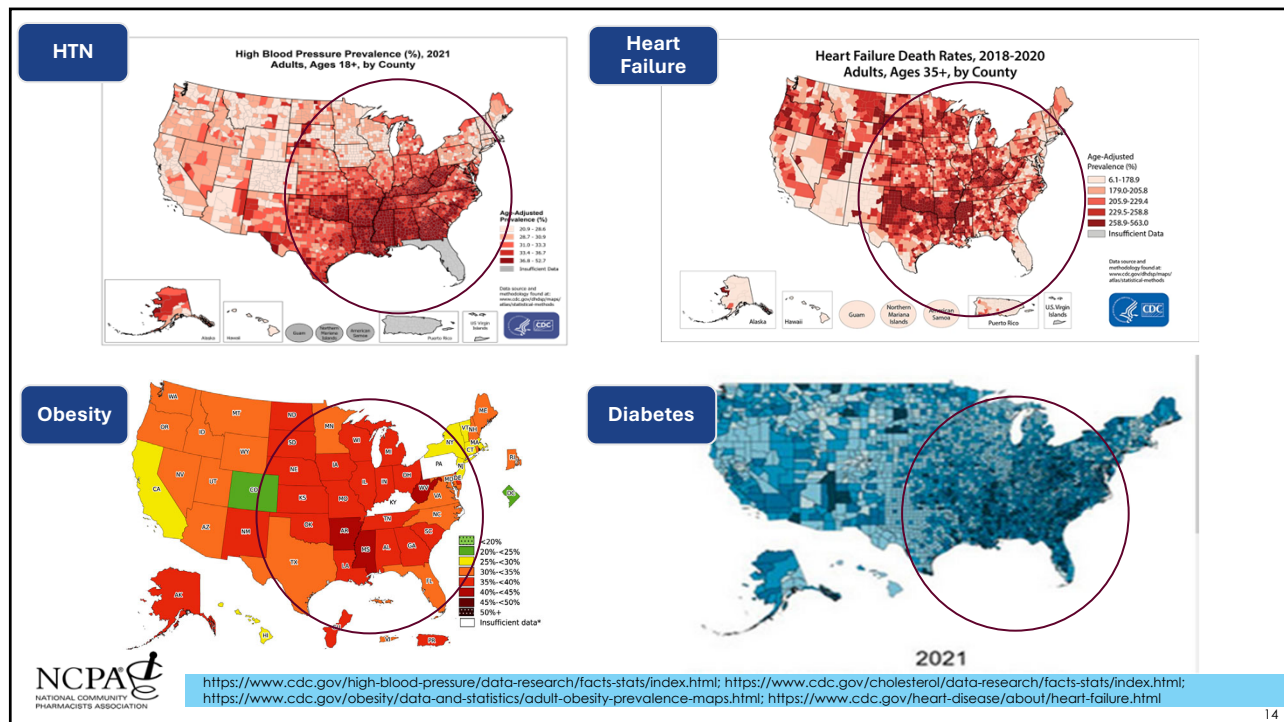
- ✓ Advancing age
- ✓ High blood pressure
- ✓ Obesity
- ✓ Diabetes
- ✓ Heart Failure
- ✓ Hyperthyroidism
- ✓ Chronic Kidney Disease
- ✓ Smoking
- ✓ Moderate to heavy alcohol use
- ✓ European ancestry
- ✓ Ischemic heart disease
- ✓ Enlargement of the chambers of the left side of the heart

<https://www.cdc.gov/heart-disease/about/atrial-fibrillation.html>; Image from:
<https://blog.difflearn.com/2015/06/11/simplifying-the-science-teaching-hand-raising-to-children-with-autism/>

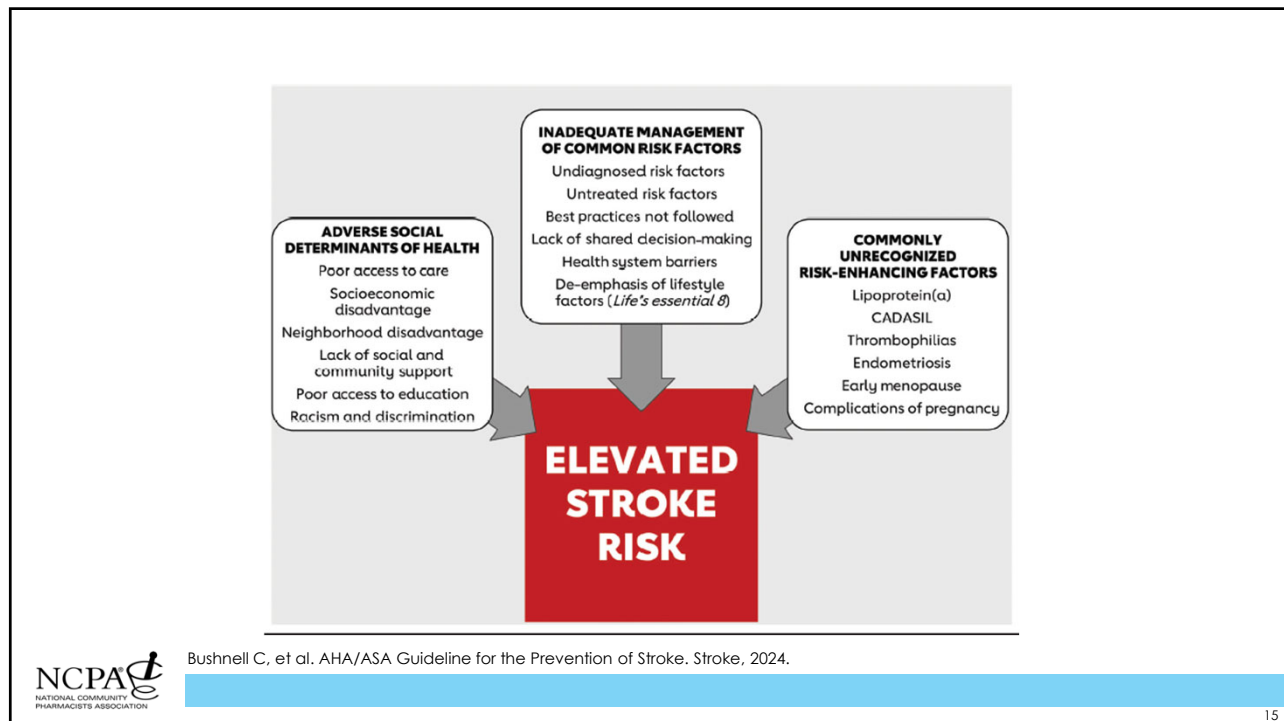


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HCM Risk Factors

It is inherited - If one parent has it, 50% chance child will have genes that cause HCM

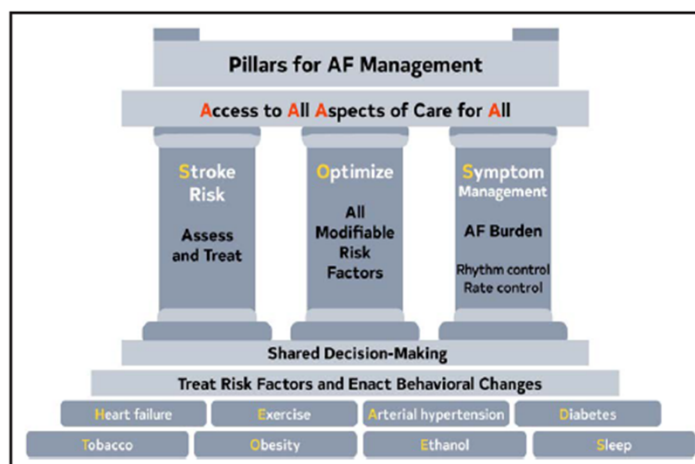
Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156;
Asif I, et al. AHA/ACC/AMSSM/HRS/PACES Guideline for the management of hypertrophic cardiomyopathy. 2024. J Am Coll Cardiol



16

16

Prevention Principles

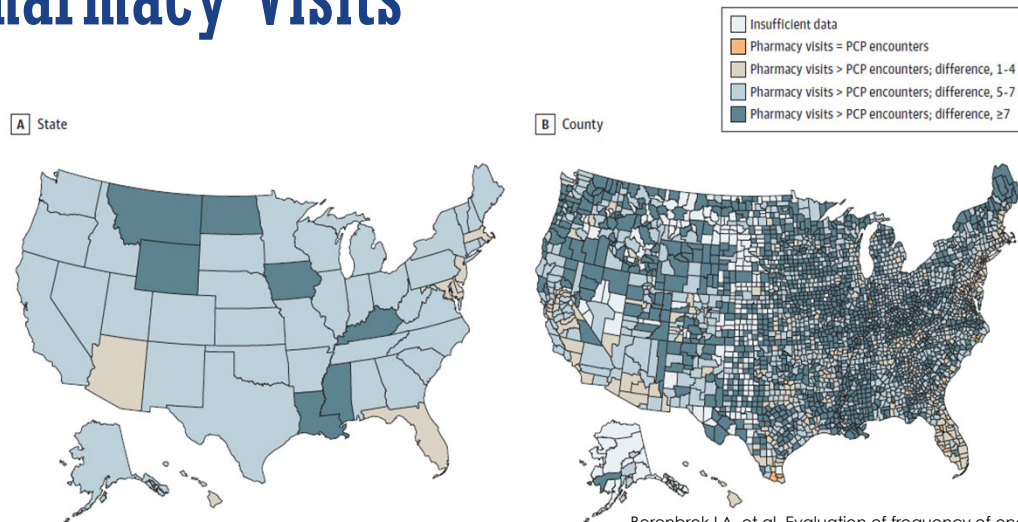


Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke. 2024; Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156; Image Fig 5 from guidelines

17

17

Pharmacy Visits



Berenbrok LA, et al. Evaluation of frequency of encounters with PCP vs visits to community pharmacies among medicare beneficiaries. JAMA Network Open. 2020;3(7)

18



https://nabp.pharmacy/news/blog/regulatory_news/pharmacists-ranked-third-trusted-medical-professionals/;
Valliant S, et al. Pharmacists as accessible health care providers. J Manag Care Spec Pharm. 2022; 28(1):85;
Strand M, et al. Community pharmacists' contributions to disease management. Prev Chronic Dis 2020;17; Image from:
<https://pharmakondotme.wordpress.com/2012/04/30/pharmaceutical-symbols-around-the-world/>

- ❖ Pharmacists are 3rd most trusted medical professional
- ❖ Patients visit pharmacies 1 ½ to 2 times as often as they visit their physician
- ❖ More than 90% of the US population live within 5 miles of a pharmacy



YOU can have an impact!!!!

19

Guideline Refreshers and Updates



20

Circulation

CLINICAL PRACTICE GUIDELINES

AFib

2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Atrial Fibrillation: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines

Developed in Collaboration With and Endorsed by the American College of Clinical Pharmacy and the Heart Rhythm Society

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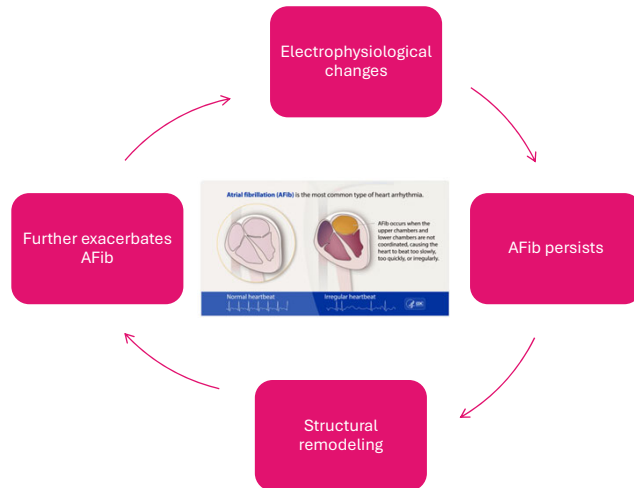
Joglar J, et al. 2023
ACC/AHA/ACCP/HRS Guideline for
the Diagnosis and Management of
AFib. *Circulation*. 2024; 149:e1-e156



21

21

AFib Pathophysiology

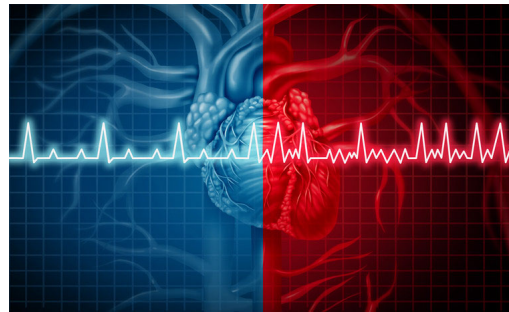


1 At risk for AF	2 Pre-AF	3 AF	4 Persistent AF
Patients may transition among different subtypes of AF			
Presence of modifiable and nonmodifiable risk factors associated with AF Modifiable risk factors: • Obesity • Lack of fitness • Hypertension • Sleep apnea • Alcohol • Diabetes Nonmodifiable risk factors: • Genetics • Male sex • Age	Evidence of structural or electrical findings further predisposing a patient to AF: • Atrial enlargement • Prolonged QT interval • Short bursts of atrial tachycardia • Atrial flutter • Other high-risk scenarios*	Paroxysmal AF (PAF) AF that is intermittent and terminates within 7 days of onset Persistent AF (PerAF) AF that is continuous and sustained for ≥7 days and requires intervention Long-standing persistent AF (LSPAF) AF that is continuous for ≥12 months in duration Successful AF ablation (CA) after percutaneous or surgical intervention to ablate AF	No further attempts at rhythm control after discussion between patient and clinician
Test Modifiable Risk Factors			
Consider heightened vigilance			
Ongoing monitoring as clinically appropriate for AF burden			
Is AF associated with pathophysiological changes?			
Rhythm risk assessment and therapy if appropriate			
Test symptoms			

Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156, Fig. 5; <https://www.cdc.gov/heart-disease/about/atrial-fibrillation.html>

AFib Symptoms

- Irregular heartbeat
- Heart palpitations
- Lightheadedness
- Extreme fatigue
- Shortness of breath
- Chest pain



<https://www.cdc.gov/heart-disease/about/atrial-fibrillation.html>; Image from: <https://www.health.harvard.edu/heart-health/abnormal-heart-rhythms>

AFib Treatment



- Lifestyle and risk factor modification
- Anticoagulation
- Rate Control
- Rhythm Control



Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156; Image from: <https://fortune.com/well/2024/03/18/exercise-mimicking-pill/>

24

24

Anticoagulants

Reduce the risk of ischemic stroke

- **Warfarin**
 - First line for mechanical heart valves and moderate-to-severe mitral stenosis
 - INR target 2-3
- **DOACs**
 - First line for everyone else

3: Harm	B-R	4. In patients with AF who are candidates for anticoagulation and without an indication for antiplatelet therapy, aspirin either alone or in combination with clopidogrel as an alternative to anticoagulation is not recommended to reduce stroke risk. ^{8,9}
3: No Benefit	B-NR	5. In patients with AF without risk factors for stroke, aspirin monotherapy for prevention of thromboembolic events is of no benefit. ^{10,11}



Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156; DOAC: Direct oral anticoagulant

25

25

DOACs

DOAC Dosing Recommendations in AFib

	Apixaban	Dabigatran	Edoxaban	Rivaroxaban
Usual Dose	5mg BID	150mg BID	60mg daily (CI if CrCl $\geq$ 95 mL/min) ^a	20mg daily with food
Reduced Dose	2.5mg BID	75mg BID	30mg daily	15mg daily with food
Indications for Reduction	1. If 2 of 3 factors present: Age $\geq$ 80 years SCr $\geq$ 1.5 mg/dL Weight $\leq$ 60 kg 2. Co-administered with combined P-gp and strong CYP3A4 inhibitors (e.g., ketoconazole, itraconazole, ritonavir)	CrCl 15-30 mL/min OR, CrCl 30-50 mL/min with concomitant dronedarone or ketoconazole	CrCl 15-50 mL/min	CrCl $\leq$ 50 mL/min
Comments	Those with SCr $>$ 2.5 or CrCl $<$ 25 mL/min excluded from ARISTOTLE trial ^b	Those with CrCl $<$ 30 mL/min excluded from RE-LY trial ^b	Those with CrCl $<$ 30 mL/min excluded from ENGAGE AF-TIMI 48 trial ^b	Those with CrCl $<$ 30 mL/min excluded from ROCKET-AF trial ^b
Consult package inserts for specific use/dosing recommendations with concomitant CYP3A4 and/or P-gp inducers or inhibitors. There are additional drug interactions in which DOACs should be avoided.				



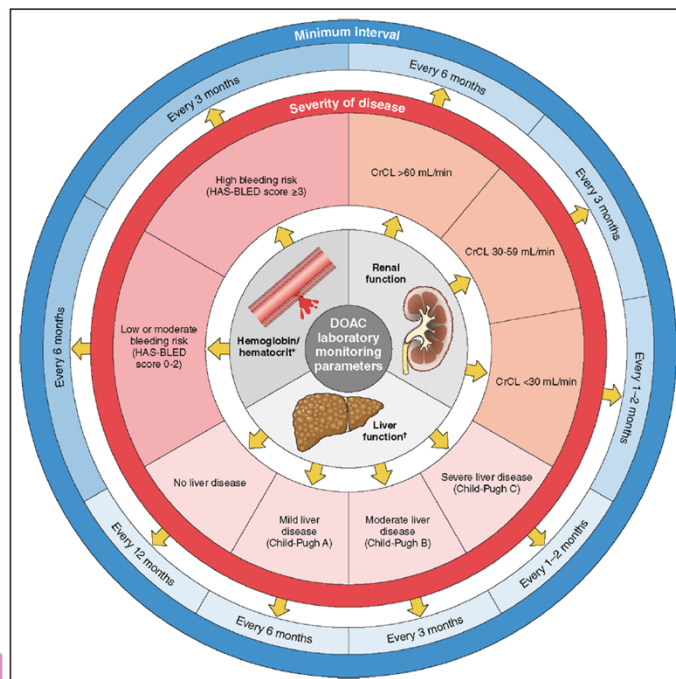
Image from: <https://www.acc.org/Membership/Sections-and-Councils/Electrophysiology-Section/Section-Updates/2018/10/12/12/42/DOAC-Dosing-For-AFib-Infographic-Now-Available>

26

26

DOAC Monitoring

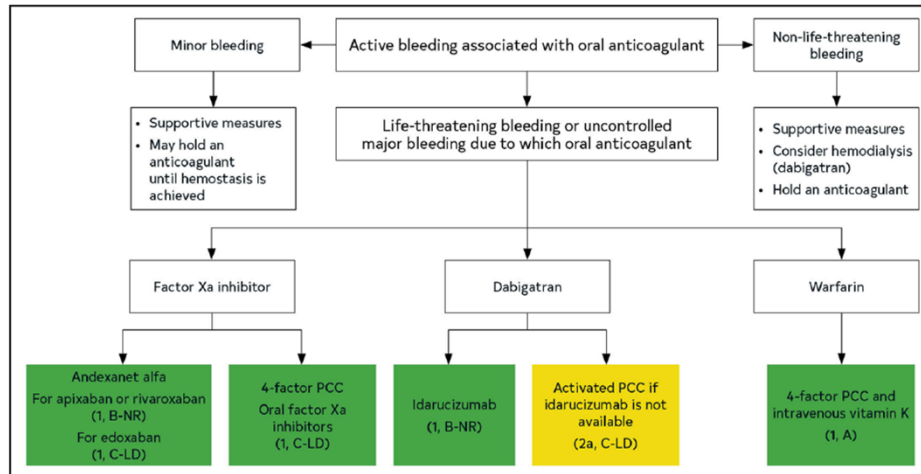
Joglar J, et al. 2023
ACC/AHA/ACCP/HRS
Guideline for the Diagnosis
and Management of AFib.
Circulation. 2024; 149:e1-e156,
Figure 11



27

27

Managing Active Bleeding



Joglar J, et al. 2023 ACC/AHA/ACCP/HR S Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156, Figure 13



28

28

Rate Control

Joglar J, et al. 2023 ACC/AHA/ACCP/HR S Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156;



29

29

Table 21. Pharmacological Agents for Rate Control in Patients With AF

	Intravenous Administration	Oral Maintenance Dose	Elimination Half-Life	Notes
Beta blockers				
Metoprolol tartrate	2.5-5 mg bolus over 2 min; up to 3 doses	25-200 mg, twice daily	3-4 h	
Metoprolol succinate	N/A	50-400 mg daily or twice daily in divided doses	3-7 h	
Atenolol	N/A	25-100 mg daily	6-7 h	Renally eliminated
Bisoprolol	N/A	2.5-10 mg daily	9-12 h	
Carvedilol	N/A	3.125-25 mg, twice daily	7-10 h	
Esmolol	500 µg/kg bolus over 1 min; then 50-300 µg/kg/min	N/A	9 min	
Nadolol	N/A	10-240 mg daily	20-24 h	
Propranolol	1 mg over 1 min; repeat as needed every 2 min; up to 3 doses	10-40 mg, 3-4 times daily	IV: 2-4 h Oral: 3-6 h ER: 8-20 h	
Non-dihydropyridine calcium channel blockers				
Diltiazem	0.25 mg/kg (actual body weight) IV over 2 min May repeat 0.35 mg/kg over 2 min; then 5-15 mg/h continuous infusion	120-360 mg daily (ER)	IV: 3-5 h Oral immediate release: 3-4.5 h ER: 4-9.5 h	Avoid in HF/EF
Verapamil	5-10 mg over ≥2 min (may repeat twice); then 5 mg/h continuous infusion (max 20 mg/h)	180-480 mg daily (ER)	IV: 6-8 h Oral: 2-7 h ER: 12-17 h	Avoid in HF/EF
Digitalis glycoside				
Digoxin	0.25-0.5 mg over several min; repeat doses of 0.25 mg every 6 h (maximum 1.5 mg/24 h)	0.0625-0.25 mg daily	1-2 d	Renally eliminated Increased mortality at plasma concentrations exceeding 1.2 ng/mL
Other				
Amiodarone	150-300 mg IV over 1 h, then 10-50 mg/h over 24 h	100-200 mg daily (generally IV form used for rate control)	IV: 9-36 d Oral: 28-107 d	Loading dose 6-10 g administered over 2-4 wk; can combine IV and oral dosing to complete

Therapy Guidance

Joglar J, et al. 2023
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for the Diagnosis and
Management of AFib. Circulation.
2024; 149:e1-e156



7.2.2. Long-Term Rate Control

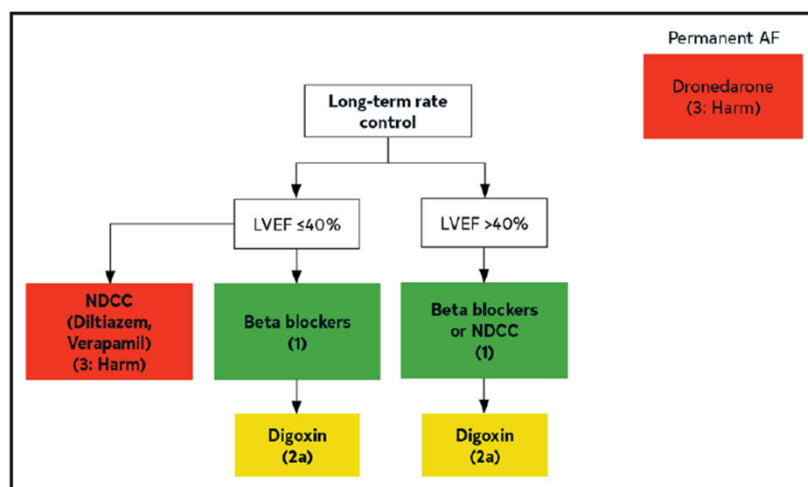
Recommendations for Long-Term Rate Control Referenced studies that support the recommendations are summarized in the Online Data Supplement .		
COR	LOE	Recommendations
1	B-NR	1. In patients with AF, beta blockers or nondihydropyridine calcium channel blockers (diltiazem, verapamil) are recommended for long-term rate control with the choice of agent according to underlying substrate and comorbid conditions. ^{1,2}
2a	B-NR	2. For patients with AF in whom measuring serum digoxin levels is indicated, it is reasonable to target levels <1.2 ng/mL. ³⁻⁶
2a	B-R	3. In patients with AF and HF symptoms, digoxin is reasonable for long-term rate control in combination with other rate-controlling agents, or as monotherapy if other agents are not preferred, not tolerated, or contraindicated. ⁷⁻⁹
3: Harm	C-LD	4. In patients with AF and LVEF <40%, nondihydropyridine calcium channel–blocking drugs should not be administered given their potential to exacerbate HF. ^{10,11}
3: Harm	B-R	5. In patients with permanent AF who have risk factors for cardiovascular events, dronedarone should not be used for long-term rate control. ¹²

30

30

Heart Failure Considerations

Joglar J, et al.
2023
ACC/AHA/ACCP/
HRS Guideline for
the Diagnosis and
Management of
AFib. Circulation.
2024; 149:e1-e156



31

31

Rhythm Control



Drug	Loading Dose	Maintenance Dose	Primary Route(s) of Elimination	Elimination Half-Life	Mechanism of Action	Major Adverse Effects	Important Pharmacokinetic Drug Interactions
Amlodipine	Total loading dose 8-16 g given 400-800 mg daily in 2-4 divided doses for 1-4 wk	200 mg once daily	Liver metabolism Biliary excretion	14-58 d	Inhibits I_{CaL} , I_{CaT} , I_{CaB} , I_{CaP} Noncompetitive beta blocker	AV block Bradycardia Coronary microcirculation Elevation in transaminases Hepatotoxicity Hypertension Hypothyroidism Nausea QT prolongation Peripheral neuropathy Photosensitivity Pulmonary fibrosis Skin pigmentation (blue-gray) TSP	Moderate* inhibitor of CYP2C8, weak inhibitor of CYP2D6 Some inhibition of CYP3A4 Increases plasma concentrations of warfarin, losartan, simvastatin, cyclosporine Inhibits p-gp Increases plasma concentrations of digoxin
Diltiazem	N/A	CCQ 240 mL/min: 500 µg twice daily CCQ 40-60 mL/min: 250 µg twice daily CCQ 20-40 mL/min: 125 µg twice daily CCQ C20 mL/min: Contraindicated	Kidney	10 h	Inhibits I_{CaL} and augments late I_{Ca}	QT prolongation TSP	Diltiazem is renally excreted via the renal calcium transport system. These drugs inhibit renal calcium transport, increase plasma diltiazem concentrations, and are contraindicated in patients taking diltiazem: Cimetidine, Digoxin, Fentanyl, Magnesium, Prochlorperazine, Tetracycline (alone or in combination with sulfamethoxazole), Verapamil In addition, hydrochlorothiazide (alone or in combination with furosemide) increases plasma diltiazem concentrations and should not be co-administered with diltiazem
Dronedronone	N/A	400 mg twice daily	Liver metabolism	13-19 h	Inhibits I_{CaL} , I_{CaT} , I_{CaB} , I_{CaP} Noncompetitive beta blocker	Abdominal pain Asthma Bradycardia Diarrhea Nausea and vomiting QT prolongation TSP	Dronedronone is a substrate for CYP3A4 and is a moderate inhibitor of CYP3A4 and CYP2D6 Dronedronone is also a substrate for, and inhibitor of, p-gp Dronedronone may increase plasma concentrations of: Digoxin, Simvastatin, Sildenafil, Tadalafil, Warfarin These drugs may increase plasma dronedronone concentrations: Grapefruit juice These drugs may decrease plasma dronedronone concentrations: CYP3A4 inducers including St. John's wort, rifampin, and phenytoin
Drug	Loading Dose	Maintenance Dose	Primary Route(s) of Elimination	Elimination Half-Life	Mechanism of Action	Major Adverse Effects	Important Pharmacokinetic Drug Interactions
Flecainide	N/A	50-300 mg PO divided q 8-12 h	Liver (70%) Kidney (30%)	12-27 h	Inhibits I_{Na}	Atrial flutter AV block Dizziness Dyspnea Exacerbation of HF/EF Headache Nausea QT prolongation VT Visual disturbances	Flecainide is a substrate for CYP2D6 These drugs may increase plasma flecainide concentrations: Amiodarone, Digoxin, Fluoxetine, Paroxetine
Propafenone	N/A	150-300 mg PO q 8 h, ER 225-425 PO q 12 h	Liver	9 h	Inhibits I_{Na}	Atrial flutter Bradycardia AV block Dizziness Dyspnea Exacerbation of HF/EF Nausea Taste disturbances VT Visual disturbances	Propafenone is a substrate for CYP2D6 These drugs may increase plasma propafenone concentrations: Fluoxetine, Paroxetine Propafenone may increase plasma digoxin concentrations Propafenone may increase plasma warfarin concentrations
Sotalol	CCQ >60 mL/min: 40-80 mg twice daily for 3 d CCQ 40-60 mL/min: 80-160 mg once daily for 3 d CCQ <40 mL/min: Contraindicated	CCQ >60 mL/min: 80-160 mg twice daily CCQ 40-60 mL/min: 80-160 mg once daily CCQ <40 mL/min: Contraindicated	Kidney	12 h	Inhibits I_{Ca} Beta blocker d-Sotalol augments late I_{Ca}	AV block Bradycardia Bronchospasm Diarrhea Exacerbation of HF/EF Fatigue Nausea and vomiting QT prolongation TSP	None

Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Afib. Circulation. 2024; 149:e1-e156, Table 23

32

32

Candidates for Rhythm Control Therapy



Factors Favoring Rhythm-Control Strategies	
Age <65 years	Pregnancy
Tachycardia-induced myopathy	No or minor structural heart disease
Disabling AF symptoms ^a	No/few comorbidities
Increased stroke risk	Normal or only moderately enlarged LA
AF recurring with transient events	Heart failure
Rate control difficult to achieve	Patient choice

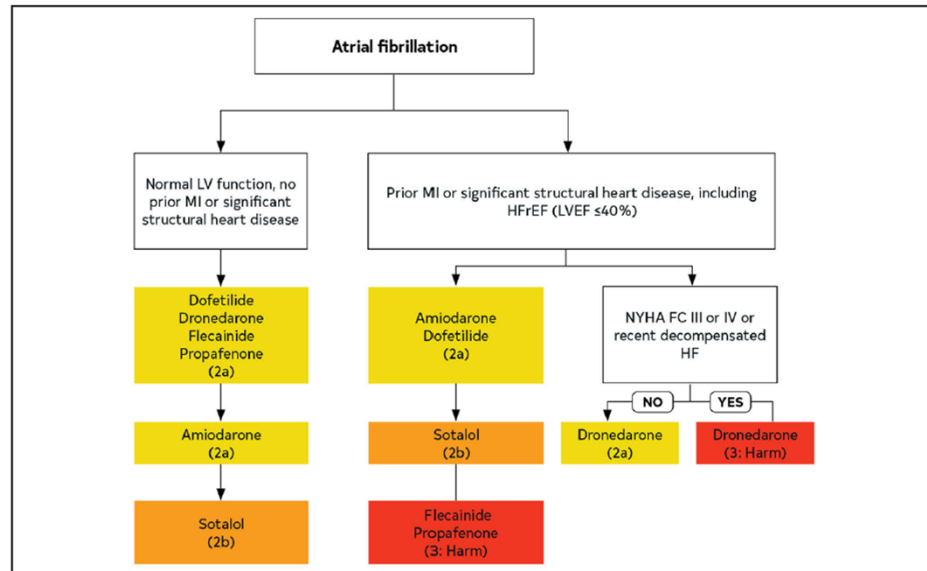
Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Afib. Circulation. 2024; 149:e1-e156, Fig. 2

33

33

Therapy Guidance

Joglar J, et al. 2023
ACC/AHA/ACCP/HRS
Guideline for the
Diagnosis and
Management of AFib.
Circulation. 2024;
149:e1-e156, Fig. 23



Hypertrophic Cardiomyopathy (HCM)



2024



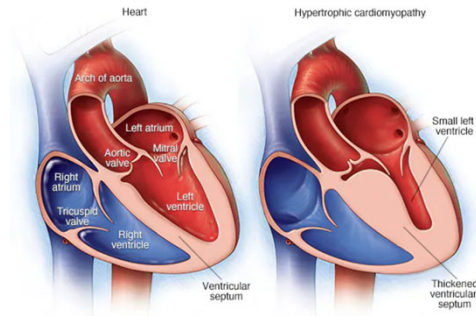
2024 AHA/ACC/AMSSM/HRS/PACES/SCMR Guideline for the Management of Hypertrophic Cardiomyopathy

A Report of the American Heart Association/American College of Cardiology
Joint Committee on Clinical Practice Guidelines

Asif I, et al. AHA/ACC/AMSSM/HRS/PACES Guideline for the management of hypertrophic cardiomyopathy. 2024.
J Am Coll Cardiol

HCM Symptoms

- Chest pain
- Fainting
- Palpitations
- Shortness of breath



Asif I, et al. AHA/ACC/AMSSM/HRS/PACES Guideline for the management of hypertrophic cardiomyopathy. 2024. J Am Coll Cardiol; <https://www.mayoclinic.org/diseases-conditions/hypertrophic-cardiomyopathy/symptoms-causes/syc-20350198>

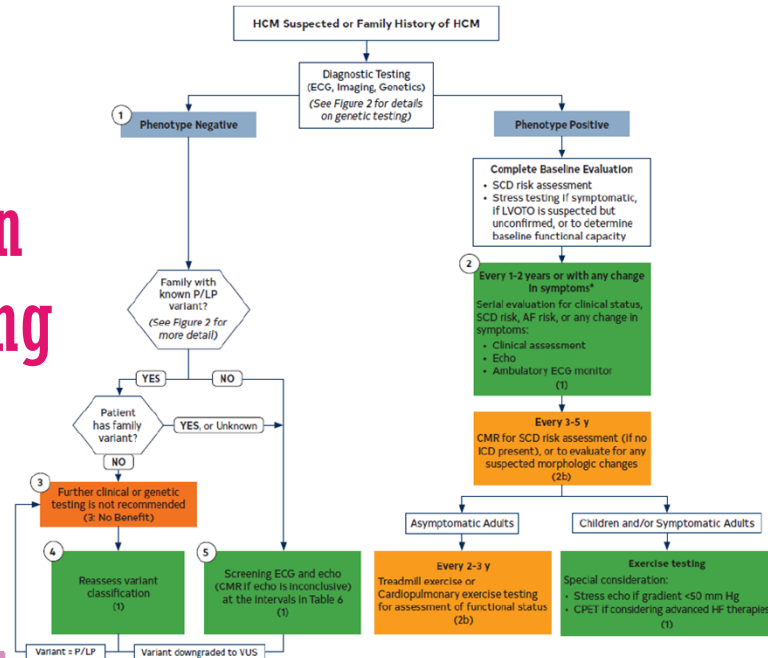


36

36

Evaluation and Testing

Asif I, et al. AHA/ACC/AMSSM/HRS/PACES Guideline for the management of hypertrophic cardiomyopathy. 2024. J Am Coll Cardiol



37

37

Heart Rhythm Assessment

COR	RECOMMENDATIONS
1	 24- to 48-hour ambulatory ECG monitoring is recommended in the initial evaluation and as part of periodic follow up (every 1-2 years) to identify patients at risk for SCD and guide management of arrhythmias (Class 1)
1	 In patients with HCM who develop palpitations or lightheadedness, extended (>24h) ECG monitoring or event recording is recommended (Class 1)
1	 In patients with HCM who are deemed high risk for AF based on risk factors or risk score, and who are eligible for anticoagulation, extended ambulatory monitoring is recommended to screen for AF as part of initial evaluation and annual follow-up. (Class 1)
2b	 In adult patients with HCM without risk factors for AF and who are eligible for anticoagulation, extended ambulatory monitoring may be considered to assess for asymptomatic paroxysmal AF as part of initial evaluation and periodic follow-up (every 1-2 years) (Class 2b)

Asif I, et al. AHA/ACC/AMSSM/HRS/PACES Guideline for the management of hypertrophic cardiomyopathy. 2024. J Am Coll Cardiol



38

38

Therapy Guidance

COR	RECOMMENDATIONS
1	In patients with clinical AF or subclinical AF (≥ 24 hours), anticoagulation with direct-acting oral anticoagulants (DOACs) is <u>first line</u>
1	Anticoagulation with Vitamin K Antagonists is <u>second line</u>
1	β-Blocker, Verapamil, or Diltiazem is recommended if pursuing rate control strategy
2a	In patients with subclinical AF, lasting > 5 minutes but < 24 hours for a given episode, anticoagulation with DOAC as <u>first line</u> , and vitamin K Antagonist as <u>second line</u> can be beneficial
2a	Patients with poorly tolerated AF, a rhythm control strategy with cardioversion or anti-arrhythmic drugs can be beneficial
2a	AF catheter ablation can be effective when drug therapy is 1) ineffective, 2) contraindicated or 3) not patient's preference
2a	In patients with AF undergoing myectomy, concomitant surgical AF ablation can be beneficial

Asif I, et al. AHA/ACC/AMSSM/HRS/PACES Guideline for the management of hypertrophic cardiomyopathy. 2024. J Am Coll Cardiol



39

39

Rhythm Control

Antiarrhythmic Drug	Efficacy for AF	Adverse Effects	Toxicities	Use in HCM
Disopyramide	Modest	Anticholinergic HF	Prolonged QTc TdP	Particularly with early onset AF Generally used in conjunction with atrioventricular nodal blocking agents
Flecainide and propafenone	...	Prolonged QRS	Proarrhythmia Typical atrial flutter	Not generally recommended in the absence of an ICD
Sotalol	Modest	Fatigue Bradycardia	Prolonged QTc TdP	Reasonable
Dofetilide	Modest	Headache	Prolonged QTc TdP	Reasonable
Dronedaron	Low	HF	Prolonged QTc	...
Amiodarone	Modest-high	Bradycardia	Liver, lung, thyroid, skin, neurologic Prolonged QTc	Reasonable

AF indicates atrial fibrillation; HCM, hypertrophic cardiomyopathy; HF, heart failure; ICD, implantable cardioverter-defibrillator; and TdP, torsades de pointes.

Asif I, et al. AHA/ACC/AMSSM/HRS/PACES Guideline for the management of hypertrophic cardiomyopathy. 2024. J Am Coll Cardiol



40

40

Stroke

AHA/ASA GUIDELINE

Stroke

2024 Guideline for the Primary Prevention of Stroke: A Guideline From the American Heart Association/American Stroke Association

Endorsed by the Preventive Cardiovascular Nurses Association and the Society for Vascular Surgery

The American College of Obstetricians and Gynecologists supports the value of this clinical document as an educational tool

The American Academy of Neurology affirms the value of this statement as an educational tool for neurologists

GUIDELINE WRITING GROUP

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Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024.



41

41

Patient Assessment

Recommendations for Patient Assessment		
COR	LOE	Recommendations
1	B-NR	1. In individuals 40–79 years of age, estimation of risk for atherosclerotic CVD (ie, nonfatal MI, nonfatal stroke, and fatal CVD) every 1 to 5 years is beneficial to guide decisions on treatments and lifestyle recommendations that may reduce risk for stroke. ⁵⁸
1	B-NR	2. In individuals with AF, calculation of the CHA ₂ DS ₂ -VASc score is recommended to guide decisions on prescription of oral anticoagulation to reduce risk for stroke. ⁵⁹
1	C-EO	3. In individuals ≥18 years of age, periodic screening for modifiable behaviors and medical conditions that increase stroke risk is recommended to reduce risk for stroke. ^{60,61}
1	C-EO	4. In individuals ≥18 years of age, periodic screening for SDOH (eg, food insecurity, lack of transportation) is beneficial to identify additional factors that contribute to stroke risk. ^{35,62–65}

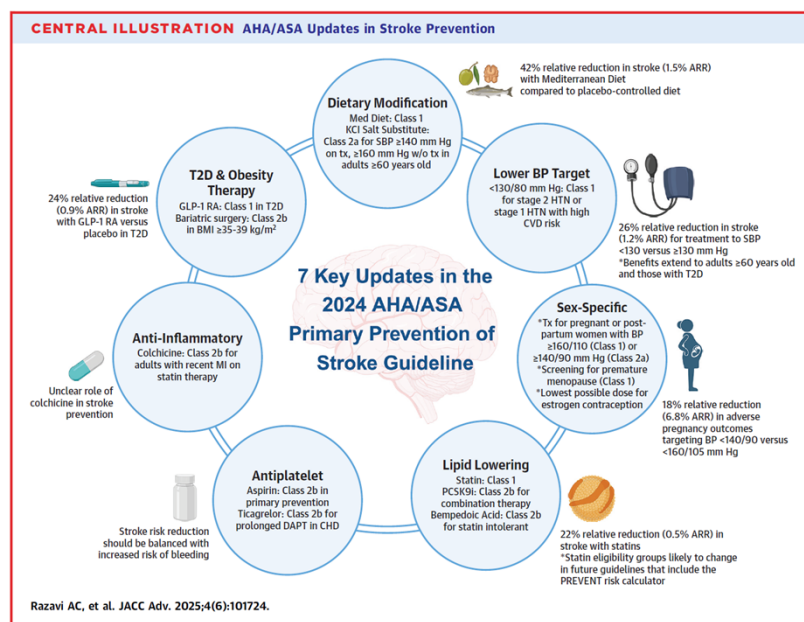


Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024.

42

42

Stroke Prevention



Razavi AC, et al. Future of stroke prevention. JACC Adv. 2025;4(6)



43

43

Published Evidence



44

JAMA
Network | **Open.**

RCT: Stroke Risk Reduction in Atrial Fibrillation Through Pharmacist Prescribing

POPULATION

35 Men, 45 Women



Adults aged ≥ 65 y with known, undertreated, or previously unrecognized atrial fibrillation (AF)
Mean age, 79.7 y

SETTINGS / LOCATIONS



**27 Pharmacies
in Canada**

INTERVENTION

**80 Patients randomized
80 Patients analyzed**



39 Early pharmacist intervention
AF education, blood pressure assessment, and oral anticoagulation (OAC) prescription



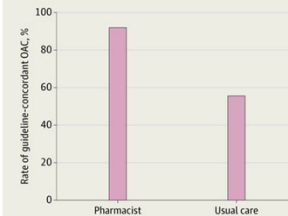
41 Usual care
AF education, encouragement to book primary care physician (PCP) visit, and fax sent to PCP

PRIMARY OUTCOME

The difference in the rate of guideline-concordant OAC use at 3 mo ascertained by a research pharmacist blinded to treatment group allocation

FINDINGS

There was a significant increase in appropriate stroke risk reduction therapy with pharmacist prescription compared with usual care



Rate of guideline-concordant OAC:

Early intervention group: 92% (36/39)

Usual care group: 56% (23/41)

Between-group difference: 34%; $P < .001$

Sandhu RK, Fradette M, Lin M, et al. Stroke risk reduction in atrial fibrillation through pharmacist prescribing: a randomized clinical trial. *JAMA Netw Open.* 2024;7(7):e2421993. doi:10.1001/jamanetworkopen.2024.21993

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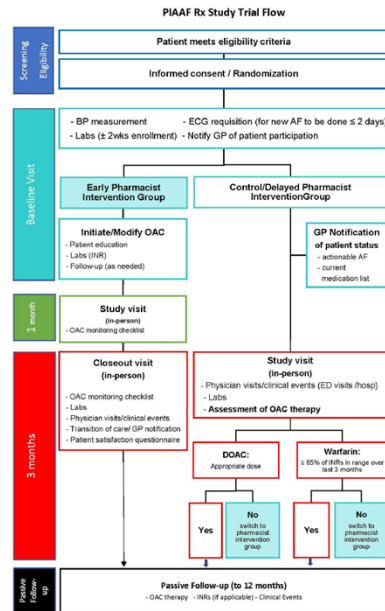
Roopinder K, et al. Stroke risk reduction in afib through pharmacist prescribing. *JAMA Network Open.* 2024;7(7)

45

45

Workflow and Satisfaction Survey

Roopinder K, et al. Stroke risk reduction in afib through pharmacist prescribing. JAMA Network Open. 2024;7(7), Supp 1



eTable 2. Patient Satisfaction With Pharmacists Services Survey

Question

1. Pharmacist fully addressed the main health reason/concerns/issues during my visit
2. The pharmacist was professional in all our interactions
3. The pharmacist explained information to me in a manner that I could understand
4. The pharmacist checked to see if I understood all the information
5. My physician and pharmacist worked together as a team to manage my health
6. The pharmacist spent as much time necessary to help me with my questions and concerns
7. The pharmacist made sure I understood how important it is to follow the drug regimen
8. The pharmacist provided useful recommendations on how to take my medications
9. The pharmacist provided useful recommendations about managing my overall health
10. The pharmacist worked with me to manage my medication related issues
11. The pharmacist followed up on my progress in a timely manner
12. The pharmacist was caring and kind in dealing with my health issues
13. The pharmacist encouraged me to achieve my treatment goals
14. I felt comfortable in my interactions with the pharmacist
15. The pharmacist was respectful to me during our interactions
16. The pharmacist was committed to improving my health
17. I could trust the information that the pharmacist provided
18. I was satisfied with the overall care provided by my pharmacist
19. There are some things about my visit with the pharmacist that can be improved
20. I would recommend my pharmacist to people I know

46

46

AFib Monitoring in Older People

- ✓ Quarterly AFib check-ups that also assessed co-morbid conditions
- ✓ Monitoring of anticoagulation therapy
- ✓ Easy-access availability from cardiologists and anticoagulation clinics

**45%
reduction
in all-
cause
mortality**



Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024; Piccini JP, et al. Clinical course of Afib in older adults. Eur Heart J. 2014;35:250

47

47

Community Pharmacy & HTN Services

Interventions	Screening of BP Medication Reviews / Education Lifestyle Education
Outcomes	Improvement in adherence Identification of drug related problems Impact on CV risk factors (smoking, alcohol, weight, cholesterol, and A1c)
Results	17 randomized controlled trials Systolic BP reduction -6.1 (p<0.00001) Diastolic BP reduction -2.5 (p<0.00001)
Conclusion	Community pharmacists can significantly reduce BP



Cheema E, et al. The impact of interventions by pharmacists in community pharmacies on control of hypertension. Br J Clin Pharmacol. 2014;78:6

48

48

Community Pharmacy & Diabetes Services

Interventions	Community-based pharmacist coaching Diabetes care Education Self-management strategies
Outcomes	A1c Cholesterol Blood pressure Vaccination rates Eye exam rates Foot exam rates
Results	A1c decreased from 7.5% to 7.1% (p=0.002) LDL decreased from 98 to 94 mg/dL (p<0.001) Systolic blood pressure decreased from 133 to 133 mm/Hg (p<0.001) Vaccination rates increased from 32% to 75%, eyes 57% to 81%, and foot exams 34% to 74%
Conclusion	Community pharmacists can impact diabetes control



Fera, et al. Diabetes ten city challenge. J Am Pharm Assoc. 2009; 49(3):383

49

49

Community Pharmacy & Biometric Screening

Interventions	15-minute biometric screening (BP, lipid, BMI, tobacco use) Counseling
Outcomes	ASCVD risk
Conclusion	Community pharmacists can have a significant impact on ASCVD risk with improvements in BP, BMI, and cholesterol



Table 2. Change in ASCVD lifetime risk.*

	Baseline	Last Screening	Change	p Value
ASCVD Risk, median (IQR) N=10,001	1.5% (0.7% - 3.5%)	1.8% (0.8% - 4.2%)	0.3%	< 0.001

Table 3. Patients eligible for clinical intervention by community-based pharmacist.

	At Last Screening
ASCVD Risk $\geq 7.5\%$, n	1,187
Receiving Statin Therapy, n (%)	162 (13.6)
Not Receiving Statin Therapy, n (%)	1,025 (86.4)
Current Tobacco Users, n (%)*	1,573 (15.7)

*out of 10,001 patients

Newell BJ, et al. Identifying opportunities for impact of community-based pharmacist-led biometric health screenings on ASCVD risk. Kans J Med. 2023;16:88-93

50

50

Community Pharmacy & Biometric Screening

Table 4. Mean differences in health screening parameters among patients with elevated ASCVD risk ($\geq 7.5\%$).

	Baseline Minus Intermediary Screening (N=1,187)	p Value	Intermediary Minus Last Screening (N=1,187)	p Value	Baseline Minus Last Screening (N=1,187)	p Value
ASCVD Risk	0.7%	< 0.001	-0.3%	0.076	0.4%	0.027
Systolic Blood Pressure	4.7 mmHg	< 0.001	1.8 mmHg	0.006	6.4 mmHg	< 0.001
Diastolic Blood Pressure	2.1 mmHg	< 0.001	0.9 mmHg	0.015	3.1 mmHg	< 0.001
Body Mass Index	0.797	0.01	0.073	0.24	0.870	0.02
Total Cholesterol	8.5 mg/dL	< 0.001	0.297 mg/dL	0.83	8.8 mg/dL	< 0.001
Triglycerides	13.8 mg/dL	< 0.001	-0.25 mg/dL	0.94	13.6 mg/dL	0.001
HDL	-4.8 mg/dL	< 0.001	-1.6 mg/dL	0.012	-6.3 mg/dL	< 0.001
LDL	9.7 mg/dL	< 0.001	2.0 mg/dL	0.1	11.7 mg/dL	< 0.001

Newell BJ, et al. Identifying opportunities for impact of community-based pharmacist-led biometric health screenings on ASCVD risk. Kans J Med. 2023;16:88-93



51

51

Strategies for Patient Care



52

Multifaceted Approach - PACT

Probe

- Adverse SDOH relate directly to primary stroke prevention

Assess

- AHA and USPSTF support risk assessment tools

Counsel

- Life's Essential 8 include the most treatable behaviors that reduce stroke risk

Therapy

- Guideline directed medical therapy



Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024; Image from: <https://aahd.us/2022/05/all-about-the-social-determinants-of-health/> ; AHA: American Heart Association; USPSTF: US Preventive Services Task Force

53

53

AFib/Stroke Risk Assessments

Table 1: Stroke and bleeding risk stratification with the CHA₂DS₂-VASc and HAS-BLED schemas

CHA ₂ DS ₂ -VASc	Score	HAS-BLED	Score
Congestive heart failure/LV dysfunction	1	Hypertension i.e. uncontrolled BP	1
Hypertension	1	Abnormal renal/liver function	1 or 2
Aged ≥75 years	2	Stroke	1
Diabetes mellitus	1	Bleeding tendency or predisposition	1
Stroke/TIA/TE	2	Labile INR	1
Vascular disease [prior MI, PAD, or aortic plaque]	1	Age (e.g. >65)	1
Aged 65-74 years	1	Drugs (e.g. concomitant aspirin or NSAIDs) or alcohol	1
Sex category [i.e. female gender]	1		
Maximum score	9		9

Treat men ≥2 score and women ≥3 score with anticoagulant

Reasonable for treatment men ≥1 score and women ≥2 score

Table 10. Risk Factor Definitions for CHA₂DS₂-VASc Score as in the Original Article^a

C	Heart Failure	The presence of signs and symptoms of either right (elevated central venous pressure, hepatomegaly, dependent edema) or left ventricular failure (exertional dyspnea, cough, fatigue, orthopnea, paroxysmal nocturnal dyspnea, cardiac enlargement, rales, gallop rhythm, pulmonary venous congestion) or both, confirmed by noninvasive or invasive measurements demonstrating objective evidence of cardiac dysfunction
H	Hypertension	A resting blood pressure >140 mm Hg systolic and/or >90 mm Hg diastolic on at least 2 occasions or current antihypertensive pharmacological treatment
A ₂	Age, additional risk/point	Age ≥75 y
D	Diabetes	Fasting plasma glucose level ≥7.0 mmol/L (126 mg/dL) or treatment with hypoglycemic agent and/or insulin
S ₂	Thromboembolism	Either an ischemic stroke, transient ischemic attack, peripheral embolism, or pulmonary embolism
V	Vascular Disease	Coronary artery disease (prior myocardial infarction, angina pectoris, percutaneous coronary intervention, or coronary artery bypass surgery) or peripheral vascular disease (the presence of any of the following: intermittent claudication, previous surgery or percutaneous intervention on the abdominal aorta or the lower extremity vessels, abdominal or thoracic vascular surgery, arterial and venous thrombosis)
A	Age standard risk/weight	Age 65–74 y
Sc	Sex Category	Female sex

C₂HES₂

Acronym	Risk Factor	Points
C ₂	CAD/COPD	1-2
H	Hypertension	1
E	Elderly (age ≥75 y)	2
S	Systolic heart failure	2
T	Thyroid disease (hyperthyroidism)	1

Other Risk assessment tools:
ATRIA, GARFIELD-AF,
HEMORR₂HAGES

Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024, Table 7; Image from: <https://www.acc.org/latest-in-cardiology/articles/2014/07/18/15/13/has-bled-tool-what-is-the-real-risk-of-bleeding-in-anticoagulation>

SDOH

- **Screening:** Use direct interview or questionnaire to assess employment status, household income, education, food insecurity, health care access, housing, access to transportation, neighborhood and built environment, and internet access
- **Recommendation:** Use existing screening questionnaires (CDC, CMS, AAFP)
- **Pharmacy:** Use CHW to help patients address challenges and find resources

These next questions are about you.

51. What is your living situation today?
(Check ONE answer)
☐ I have a steady place to live
☐ I have a place to live today, but I am worried about being able to stay there
☐ I do not have a steady place to live (I am temporarily staying with others, in a hotel, in a shelter, living outside on the street, on a train station, or in a park)

52. During the last 12 months, was there a time when you were not able to pay your mortgage, rent, or utility bills?
☐ No
☐ Yes

53. During the last 12 months, how often did the food that you bought not last, and you didn't have money to get more? (See that.)
☐ Always
☐ Usually
☐ Sometimes
☐ Rarely
☐ Never

54. During the last 12 months, how often were you unable to afford to eat balanced meals? A balanced meal includes all the types of food that you think should be in a healthy meal. For example, a starch like potatoes or rice, vegetables or fruit, and some protein like meat, fish, chicken, or eggs.
☐ Always
☐ Usually
☐ Sometimes
☐ Rarely
☐ Never

55. During the last 12 months, has lack of reliable transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living?
☐ No
☐ Yes

56. During the last 12 months, how often did your doctor, nurse, or other health providers explain things about your health in a way that was easy to understand?
☐ Always
☐ Usually
☐ Sometimes
☐ Rarely
☐ Never

57. Since your new baby was born, have you felt that you have needed mental health services such as counseling, medication, or support groups to help with feelings of anxiety, depression, grief, or other issues?
☐ No
☐ Yes

58. Were you able to get the mental health services that you needed?
☐ No
☐ Yes

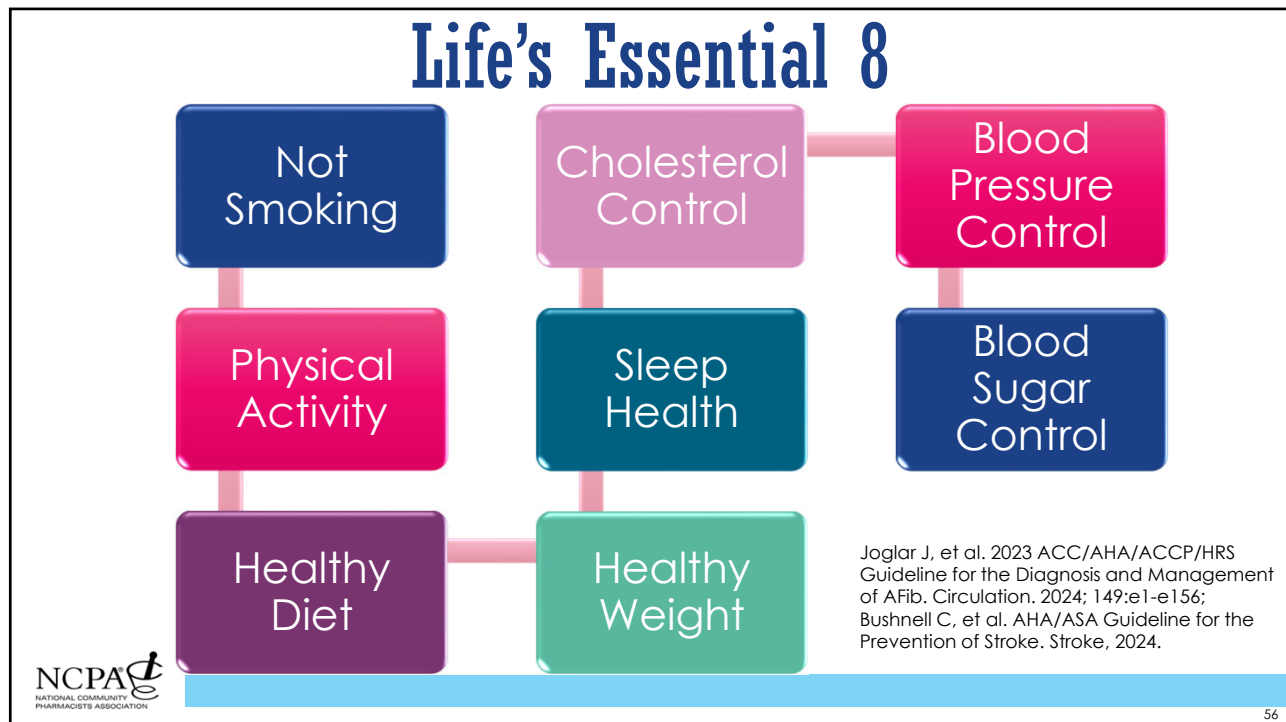
59. Which of these statements explains why you did not get the mental health services you needed? (Check ALL that apply)
☐ I couldn't afford the cost
☐ My health insurance does not cover any type of mental health treatment or counseling
☐ My health insurance does not pay enough for mental health treatment or counseling
☐ I did not know where to go to get services
☐ I was concerned that the information I gave the counselor might not be kept confidential
☐ I didn't want others to find out that I needed treatment
☐ I was concerned that I might have to take medication
☐ I had no transportation; treatment was too far away, or the hours were not convenient
☐ I didn't have time because of job, childcare, or other commitments
☐ Some other reason ————— Please tell us: _____

60. During your life, how often have you felt that you were treated badly or unfairly because of your race or ethnicity?
☐ Always
☐ Usually
☐ Sometimes
☐ Rarely
☐ Never

61. During the last 12 months, how often would you say you get the social and emotional support you need?
☐ Always
☐ Usually
☐ Sometimes
☐ Rarely
☐ Never

Please turn the page and answer the question on the other side.

Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024; Image from: <https://www.cdc.gov/prams/pdf/questionnaire>



56

Life's Essential 8

Not Smoking

- **Screening:** Screen with a direct question
- **Recommendation:** Advise to quit smoking (less likely to develop stroke)
- **Pharmacy:** Screen, recommend appropriate therapy, call quitline

FREE Quit Help

Call to Talk to a Quit Smoking Coach Today!
 1-800-QUIT-NOW
 (1-800-784-8669)

In Spanish:
 1-855-DÉJALO-YA
 (1-855-335-3569)

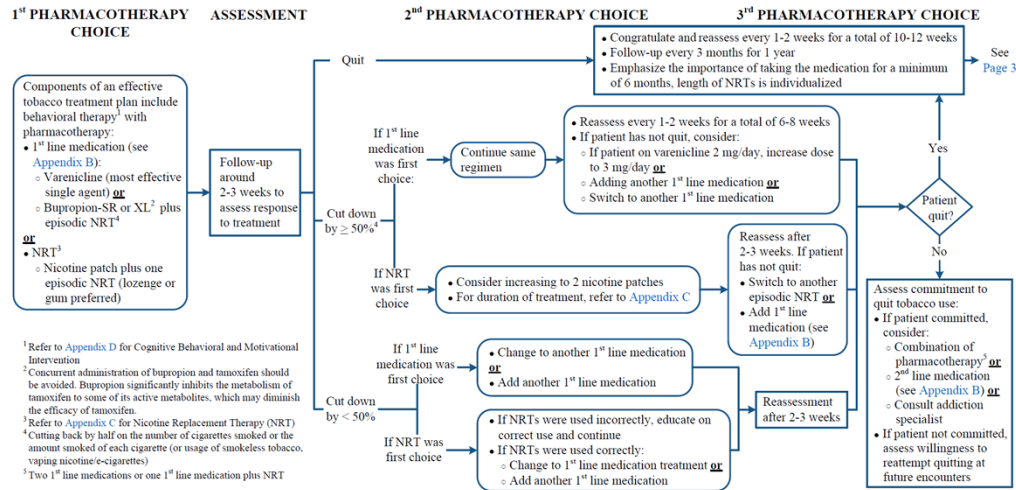
In Asian languages:
 Mandarin and Cantonese:
 1-800-838-8917
 Korean:
 1-800-556-5564
 Vietnamese:
 1-800-778-8440

Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156; Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024; <https://www.cdc.gov/tobacco/campaign/tips/quit-smoking/quitline/index.html>

57

57

Treatment Guidance



¹Refer to Appendix D for Cognitive Behavioral and Motivational Intervention

²Concurrent administration of bupropion and tamoxifen should be avoided. Bupropion significantly inhibits the metabolism of tamoxifen to some of its active metabolites, which may diminish the efficacy of tamoxifen.

³Refer to Appendix C for Nicotine Replacement Therapy (NRT)

⁴Cutting back by half on the number of cigarettes smoked or the amount smoked of each cigarette (or usage of smokeless tobacco, vaping nicotine/e-cigarettes)

⁵Two 1st line medications or one 1st line medication plus NRT



The University of Texas MD Cancer Center Making Cancer History Tobacco Cessation Treatment-Adult, 2025

58

58

Treatment Options

- **How much do you smoke per day?**
If > 20 cigarettes, see footnote¹
- **How soon do you smoke after you wake up in the morning?**
If within 30 minutes, see footnote¹
- **Do you use any other type(s) of tobacco/nicotine products and if so, how much?** (e.g., pipes, cigars, snuff, and/or e-cigarettes)
- **Do you use tobacco everyday or some days?**
If daily, see footnote¹
- **Fagerstrom Test of Cigarette Dependence (FTCD)** (optional):
A score of 3 or higher indicates dependence on nicotine

Document history of quit attempts in patient health record:

- What is the longest period you have gone without smoking?
- When was your last quit attempt?
- Did you use anything to help you quit in the past? If so, what?
 - Unaided
 - Medications
 - Support group
 - Behavior therapy
 - Quitlines, websites, smart phone applications, or other media
 - E-cigarettes
 - Other
- **Why were previous quit attempts unsuccessful?**
(e.g., side effects, cost, continued cravings, did not work)
- **Engage patients in a motivational dialog about smoking cessation:**
 - Review risks of smoking and benefits of quitting
 - Provide patient education resources

Recommend nicotine patch plus one episodic NRT:

Nicotine patch:

- If ≥ 5 cigarettes per day or smokes within 30 minutes of waking:
 - 21 mg daily for 6 weeks or more, then consider decrease to
 - 14 mg daily for 2 weeks or more, then consider decrease to
 - 7 mg daily for 2 weeks or more
 - If patient quits, either stop NRT after 4 weeks of total abstinence **or** taper to next lower level
 - Continuous use of NRT: There is no standard timeframe beyond 12 weeks; it is based on individual preference. May continue up to 24 weeks if needed for continued nicotine cravings.
- If < 5 cigarettes per day or smokes after at least 30 minutes of awaking:
 - 14 mg daily for 6 weeks or more, then consider decrease to
 - 7 mg daily for 2 weeks or more
 - If patient quits, either stop NRT after 4 weeks of total abstinence **or** taper to 7 mg
 - Continuous use of NRT: There is no standard timeframe beyond 12 weeks; it is based on individual preference. May continue up to 24 weeks if needed for continued nicotine cravings.

Episodic NRT: (Dosing minimum of 8 doses/day; maximum 20 doses/day. One dose every 1-2 hour(s) on a schedule for 12 weeks or more.)

- Gum or lozenges¹: 2 mg or 4 mg/piece (4 mg lozenge is preferred due to favorable cost, effectiveness and ease of use)
- Nasal spray²: 2 sprays, one in each nostril (1 mg) equals 1 dose (not preferred due to higher cost and difficulty of use)

First Line Medications:

- Varenicline (Chantix[®]) for 12 weeks; if patient quits, then continue same dose for another 12 weeks:
 - 0.5 mg daily for 3 days, then consider increase to
 - 0.5 mg twice a day for 4 days, then consider increase to
 - 1 mg twice a day
 - If patient has reduced usage of tobacco but not quit after 6 weeks, may increase to 3 mg per day if not experiencing any adverse events
- Bupropion-SR[®] (Zyban[®]) for 12 weeks; if patient quits, then continue same dose for another 12 weeks:
 - 150 mg daily for 3-7 days, then consider increase to
 - 150 mg twice a day **or**
- Bupropion-XL[®] for 12 weeks; if patient quits, then continue same dose for another 12 weeks:
 - 150 mg every morning for 3-7 days, then consider increase to
 - 300 mg every morning

Second Line Medications:

- Nortriptyline:
 - 25 mg daily at bedtime for 7 days, then consider increase to
 - 50 mg daily at bedtime for 7 days, then consider increase to
 - 75 mg daily at bedtime
- Clobidine:
 - 0.1 mg twice daily for 7 days, then consider increase to
 - 0.1 mg three times a day



The University of Texas MD Cancer Center Making Cancer History Tobacco Cessation Treatment-Adult, 2025

59

59

Physical Activity

Life's Essential 8

- **Screening:** Direct questioning is preferred approach to learn about patient's level of physical activity; Questionnaires are not accurate; Verbally ask:
 1. On average, how many days do you engage in moderate to strenuous exercise like a brisk walk
 2. On average, how many minutes do you engage in exercise at this level
- **Recommendation:** Moderate exercise of 150 minutes/week and vigorous exercise 75 minutes/week to reduce symptoms, burden, maintenance of sinus rhythm, increase functional capacity, and improve quality of life
- **Pharmacy:** Classify activity levels and counsel patients to help them reach targets, list of community resources



Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024; Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156

60

60

Life's Essential 8

Healthy Diet

- **Screening:** Direct questioning, tools include Mediterranean Diet Adherence Screener and Mediterranean Eating Pattern for Americans
- **Recommendation:** Mediterranean diet, ≥60yoa and HTN use salt substitutes
- **Pharmacy:** Provide dietary counseling, example menus

Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156; Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024; Image from: <https://www.hamiltonhealthsciences.ca/wp-content/uploads/2022/04/Cardiac-Health-Mediterranean-Diet-Adherence-Screener.pdf>

Mediterranean Diet Adherence Screener (MEDAS)

Adapted from: www.heart.org, 10/15/2018; 2012 Apr; 42(2):377-385; 19th, 2013 Jul; 14(2):1340-1345; 2015

	ANSWER	POINTS
1. Do you use olive oil as the main source of fat for cooking?	Yes No	
2. How many tablespoons of olive oil do you use each day? <i>Include olive oil used in salads, meat eaten away from home, frying etc</i>	# tablespoons per day	
3. How many servings of vegetables do you eat per day? <i>One serving is ½ cup raw or cooked vegetables or 1 cup of raw salad greens</i>	# servings per day	
4. How many servings of whole fruit do you eat per day? <i>One serving is ½ cup or a medium sized piece of whole fruit</i>	# servings per day	
5. How many servings of red meat, hamburger or sausages do you eat per week? <i>One serving is 3 oz. (85 grams) (200-300 grams)</i>	# servings per week	
6. How many servings of butter, margarine or cream do you consume per day? <i>One serving is 1 Tablespoon. This does not include soft non-hydrogenated margarines</i>	# servings per day	
7. How many sugar sweetened beverages do you drink per week? <i>One serving is 12oz or one can of pop or 12 ounces. This includes any drinks with added sugars such as regular pop, fruit drinks, sports drinks, energy drinks, and tea.</i>	# servings per week	
8. Do you drink wine? How much do you drink per week? <i>1 glass = 5oz (150 ml) or 6 oz. If you do not drink wine or alcohol, do not start</i>	# glasses per week	
9. How many servings of legumes like kidney beans, chick peas, lentils, black beans, split peas do you eat per week? <i>One serving is ½ cup or 100 grams or 1½ - 2½ cup</i>	# servings per week	
10. How many servings of fish or seafood do you eat per week? <i>One serving of fish is 3 oz. (85 grams) or 100-150 grams. One serving of seafood is 4-5 pieces or 7 ounces or 200 grams</i>	# servings per week	
11. How many times do you eat baked goods such as pies, cookies, cake or doughnuts per week?	# times per week	
12. How many times do you eat nuts per week? <i>2 serving is 30 grams or 2 ounce</i>	# times per week	
13. Do you eat chicken or turkey more often than beef, pork, hamburger or sausage?	Yes No	
14. How many times per week do you eat dishes with a source of tomato, garlic, onion/leeks sautéed in olive oil?	# times per week	
TOTAL Points		



61

61

Cholesterol Control

Life's Essential 8

- **Screening:** Blood test
- **Recommendation:** See Table
- **Pharmacy:** Point-of-care cholesterol tests, ASCVD calculation, appropriate statin therapy

Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156; Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke. 2024.

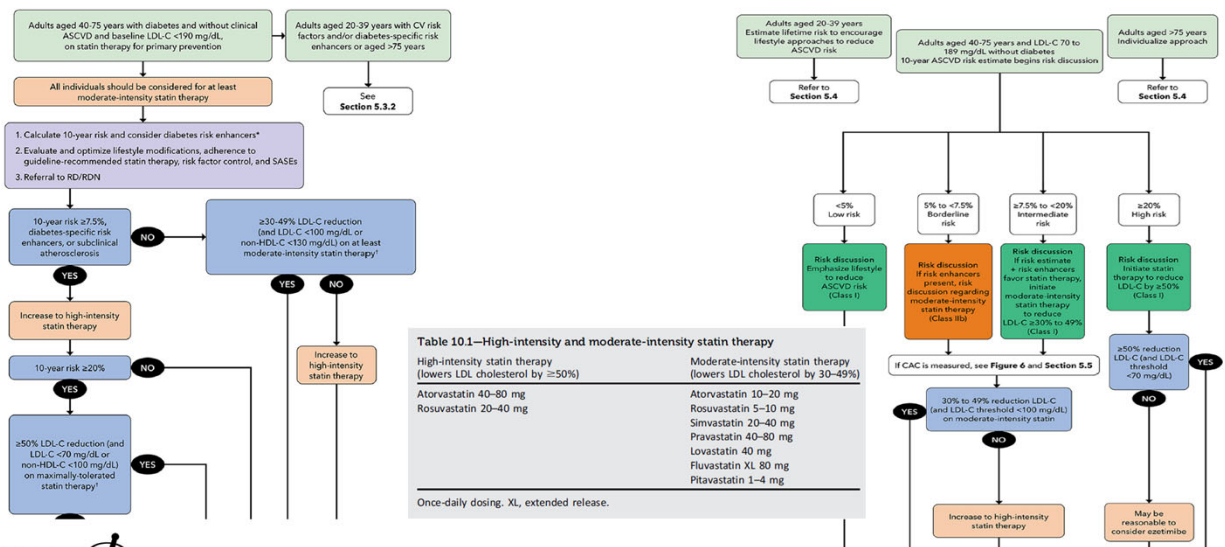
Recommendations for Lipids		
COR	LOE	Recommendations
1	A	1. In adults who qualify for treatment with lipid-lowering therapy according to the 2019 ACC/AHA guideline on the primary prevention of CVD (eg, 20–75 years of age with LDL cholesterol [LDL-C] level >190 mg/dL [>4.9 mmol/L], 10-year ASCVD risk $\geq 20\%$, or 10-year ASCVD risk $\geq 7.5\%$ – $<20\%$ plus ≥ 1 risk enhancers), treatment with a statin is recommended to reduce the risk of a first stroke. ^{243,244}
2b	A	2. In adults without CVD who qualify for treatment with lipid-lowering therapy, according to the 2019 ACC/AHA guideline on the primary prevention of CVD (eg, 20–75 years of age with LDL-C level >190 mg/dL [>4.9 mmol/L], 10-year ASCVD risk $\geq 20\%$, or 10-year ASCVD risk $\geq 7.5\%$ – $<20\%$ plus ≥ 1 risk enhancers), who cannot reach goals or cannot tolerate other therapies such as statins, the benefit of treatment with alirocumab or evolocumab compared with other active lipid-lowering therapy for the reduction of the risk of a first stroke is uncertain. ²⁴⁵



62

62

Treatment Guidance



AHA/ACC/AACVPR/ AAPA/ ABC/ACPM/ADA/AGS/APHA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018; 2022 ACC Expert Consensus Decision Pathway. J Am Coll Cardiol. 2022; 80(14).

63

63

Life's Essential 8

Sleep Health

- **Screening:** Questionnaires such as Epworth Sleepiness Index, Berlin Questionnaire, and Pittsburgh Sleep Quality Index; Screen of obstructive sleep apnea
- **Recommendation:** 7-9 hours sleep daily
- **Pharmacy:** Perform sleep questionnaires, counsel on sleep hygiene

Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156; Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024.



64

64

Healthy Weight

Life's Essential 8

- **Screening:** Measure BMI
- **Recommendation:** BMI >27 kg/m₂ weight loss is recommended; Target 10% weight loss to reduce symptoms, recurrence, and burden
- **Pharmacy:** Provide weight loss counseling, measure weight, waist circumference, body fat analysis

Obesity measure	Measurement technique	Obesity criteria and classification	Stroke risk
BMI	Weight (kg)/height (m) ²	Class I: 30–34.9 kg/m ² Class II: 35–39.9 kg/m ² Class III: ≥40 kg/m ²	Each 5-unit increase in BMI=10% increased stroke risk. ¹⁰³
WC*	Measured at midpoint between lower margin of the least palpable rib and top of the iliac crest	Women >80 cm: increased cardiometabolic risk >88 cm: substantially increased cardiometabolic risk Men >94 cm: increased cardiometabolic risk >102 cm: substantially increased cardiometabolic risk ¹⁰²	For each 10-cm higher WC, RR is higher by 10% on average. ¹⁴¹
WHR*	WC (cm)/hip circumference (cm) measured around the widest portion of the buttocks	Women >0.85 cm: substantially increased cardiometabolic risk Men >0.90 cm: substantially increased cardiometabolic risk ¹⁰²	0.1-unit increase in WHR=16% RR of stroke ¹⁴¹
WHR*	Waist circumference (cm)/height (m)	No available data	0.05-unit increase in WHR=13% RR of stroke ¹⁴¹
WWI*	Waist circumference (cm)/weight (kg)	No available data	Stroke OR, 1.62 (95% CI, 1.06–2.48) in highest versus lowest WWI quartile ¹⁷¹
VAI*	Calculated from WC, BMI, triglycerides, and HDL-C	No available data	Stroke HR, 1.45 (95% CI, 1.15–1.75) in highest versus lowest VAI quartile ¹⁷²

BMI indicates body mass index; HDL-C, high-density lipoprotein cholesterol; HR, hazard ratio; OR, odds ratio; RR, relative risk; VAI, visceral adiposity index; WC, waist circumference; WHR, waist-to-hip ratio; WHR, waist-to-height ratio; and WWI, weight-adjusted waist index.

*Measures specific to abdominal obesity.

[†]South Asian/Chinese/Japanese cutoff for men: >90 cm.

Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024; Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156; Image from: <https://scitechdaily.com/your-bmi-might-be-lying-to-you-as-you-get-older/>



65

65

Life's Essential 8

Blood Pressure Control

- **Screening:** Measure BP
- **Recommendation:** Target BP <130/80; Treatment with ACEi, ARBs and MRA associated with lower AFib incidence and reduce AFib burden
- **Pharmacy:** Manually take BP, recommend appropriate treatment and lab monitoring, Counsel on lifestyle changes

BP Category	Systolic		Diastolic
Normal	<120 mmHg	And	<80 mmHg
Elevated	120-129 mmHg	And	<80 mmHg
Hypertension			
Stage 1	130-139 mmHg	Or	80-89 mmHg
Stage 2	≥140 mmHg	Or	≥90 mmHg

Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. Circulation. 2024; 149:e1-e156; Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024.



66

66

Intervention	Recommendation	Impact on SBP with hypertension	...SBP with normotension
Weight loss	1 kg reduction in body weight	-5 mmHg	-2/3 mmHg
DASH diet	Fruits, vegetables, whole grains, and low-fat dairy	-11 mmHg	-3 mmHg
Dietary sodium	<1500 mg/day	-5/6 mmHg	-2/3 mmHg
Dietary potassium	3500-5000 mg/day	-4/5 mmHg	-2 mmHg
Aerobic physical activity	90-150 min/week, 65-75% heart rate reserve	-5/8 mmHg	-2/4 mmHg
Dynamic resistance physical activity	90-150 min/week, 50-80% 1 rep maximum, 6 exercises, 3 sets/exercise, 10 repetitions/set	-4 mmHg	-2 mmHg
Isometric resistance physical activity	4 x 2 min (hand grip), 30-40% max voluntary contraction, 3 sessions/week	-5 mmHg	-4 mmHg
Moderate alcohol consumption	Men: ≤2 drinks/day	-4 mmHg	-3 mmHg

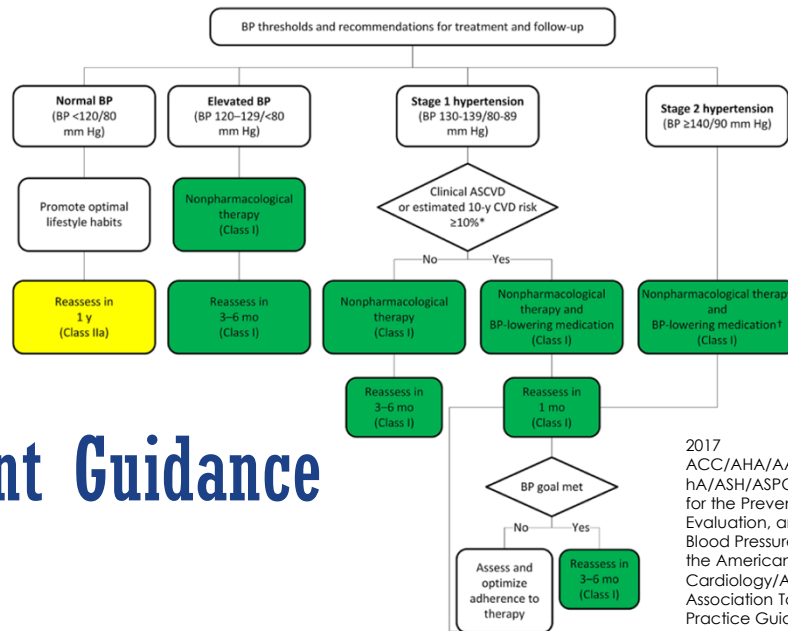


2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018; 71:e127-e248

67

67

Treatment Guidance



68

68

Blood Sugar Control

Life's Essential 8



Are you at risk for type 2 diabetes?

Diabetes Risk Test

- How old are you?
Less than 40 years (0 points)
40-49 years (1 point)
50-59 years (2 points)
60 years or older (3 points)
- Are you a man or a woman?
Man (1 point) Woman (0 points)
- If you are a woman, have you ever been diagnosed with gestational diabetes?
Yes (1 point) No (0 points)
- Do you have a mother, father, sister or brother with diabetes?
Yes (1 point) No (0 points)
- Have you ever been diagnosed with high blood pressure?
Yes (1 point) No (0 points)
- Are you physically active?
Yes (0 points) No (1 point)
- What is your weight category?
See chart at right.

WRITE YOUR SCORE IN THE BOX.

Height	Weight (lb.)	Weight (kg.)
4' 10"	110-142	163-206
4' 11"	124-147	180-207
5' 0"	128-152	193-209
5' 1"	132-157	199-210
5' 2"	136-163	204-217
5' 3"	141-168	209-224
5' 4"	145-173	214-231
5' 5"	150-179	220-239
5' 6"	155-185	226-248
5' 7"	159-190	231-254
5' 8"	164-196	237-261
5' 9"	169-202	243-269
5' 10"	174-208	250-277
5' 11"	179-214	257-285
6' 0"	184-220	263-293
6' 1"	189-226	270-301
6' 2"	194-232	277-310
6' 3"	200-239	284-318
6' 4"	205-245	291-327

1 point 2 points 3 points

If you weigh less than the amount in the left column, 0 points

If you scored 5 or higher:

You are at increased risk for having type 2 diabetes. However, only your doctor can tell for sure if you do have type 2 diabetes or prediabetes, a condition in which blood glucose levels are higher than normal but not yet high enough to be diagnosed as diabetes. Talk to your doctor to see if additional testing is needed.

Type 2 diabetes is more common in African Americans, Hispanic/Latino individuals, Native Americans, Asian Americans, and Native Hawaiians and Pacific Islanders.

Higher body weight increases diabetes risk for everyone. Asian Americans are at increased diabetes risk at lower body weight than the rest of the general public (about 15 pounds lower).

Lower your risk:

The good news is you can manage your risk for type 2 diabetes. Small steps make a big difference in helping you live a longer, healthier life.

If you are at high risk, your first step is to ask your doctor to see if additional testing is needed.

Visit diabetes.org or call 1-800-2DIABETES (800-542-2383) for information, tips on getting started, and ideas for success. Small steps you can take to help lower your risk.

Result	Hemoglobin A1c level, %	Fasting plasma glucose level, mg/dL	2-h Plasma glucose from oral glucose tolerance test, mg/dL
Normal	<5.7	<100	<140
Prediabetes	5.7-6.4	100-125	140-199
Diabetes	≥6.5	≥126	≥200

- Pharmacy:** Questionnaire or point of care testing



Joglar J, et al. 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of AFib. *Circulation.* 2024; 149:e1-e156; Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. *Stroke.* 2024; 2025 ADA Standards of Care, January 2025.

69

69

2025 ADA Standards of Care. Diabetes 2025



70

Arrive at Pharmacy (use database, prescriptions)

Medication Reconciliation

Screening Assessments

Point of Care Testing

Patient Education and Coordination with Healthcare Team

Manning D, Kristeller J. Pharmacy transitions of care and culture. *Hosp Pharm*. 2017;52(8):520; Melody K, et al. Optimizing care transitions: the role of the community pharmacist. *Integr Pharm Res Pract*. 2016;5:43



71

Putting it to Practice!



72

The Patient

- **Patient**: TJ is a 69yo black male that comes to your pharmacy to pick up routine prescriptions
- **Insurance**: Medicare Part D
- **Social history**: Retired bus driver, widower, lives alone in a government subsidized senior housing complex, uses public transportation
- **Medications**: HCTZ 25mg daily for HTN, Metformin 1000mg BID for diabetes, Atorvastatin 40mg nightly for cholesterol, albuterol PRN for COPD, and has refused warfarin in the past (documented in pharmacy profile)



Case adopted from chatgpt.com; Image from: <https://stock.adobe.com/search?k=elderly+african+american+man>

73

73

Pharmacy Interaction

- **Pharmacy Tech:** Hi TJ! Are you here for your refills of your medicationas? How are you doing and feeling?
- **TJ:** I am! I just need my albuterol filled. I've been okay. Been feeling tired, out of breath easier which is why I am needing my albuterol, and a little lightheaded sometimes. My heart kind of racing now and then, especially when I climb stairs. But I figure it's just age catching up. I live on the third floor with no elevator – good exercise, I guess!

Check In

What can the pharmacy tech do at this point of the interaction?

Risk Assessments and Plan

CHA₂DS₂-VASc Score

- ☐ Congestive Heart Failure
- ☐ Hypertension
- ☐ Age ≥75
- ☐ Diabetes
- ☐ Stroke/TIA/Thromboembolism
- ☐ Vascular disease
- ☐ Age 65-74
- ☐ Sex category (female)



77

Risk Assessments

✓ Clinical Risk Factors (CHA₂DS₂-VASc Score)

Risk Factor	Present?	Points
Congestive heart failure	✗	0
Hypertension	✓	1
Age ≥ 75	✗ (69)	0
Diabetes mellitus	✓	1
Stroke/TIA/Thromboembolism	✗	0
Vascular disease	Possibly (check med hx)	1*
Age 65-74	✓	1
Sex category (female)	✗	0

- **Symptoms of AFib:** palpitations, heart fluttering, lightheadedness, fatigue, exertional symptoms
- **SDOH Concerns:** lives alone, low-income housing, financial barriers, limited access to healthcare, no elevator in building, limited transportation, refused warfarin therapy in the past (cost? Fear? Understanding?)
- **Medication Refills**
- **Blood pressure**
- **Blood glucose**

78

Check In

How can the pharmacist help the TJ using principles of the Life's Essential 8?



78

79

Key Takeaways



Many opportunities for pharmacies to help patients – Remember the PACT!



Integrate the entire pharmacy team (including learners) to increase success



Call to action!!! Take a PACT to help!



81

Resources

Agency	Website	Focus Area
American College of Cardiology Colorado Program for Patient Centered Decisions	https://patientdecisionaid.org/icd/atrial-fibrillation/	Stroke risk reduction therapies
Anticoagulation Choice Decision Aid	https://anticoagulationdecisionaid.mayoclinic.org/	Stroke risk reduction therapies
Ottawa Hospital Research Institute Developer Healthwise	https://decisionaid.ohri.ca/AZlist.html	AF ablation Stroke risk reduction
Stanford	https://afibguide.com/	Stroke risk reduction therapies

Calculators:

<https://www.mdcalc.com>

<https://af.garfieldregistry.org/Garfield-af-risk-calculator>

<https://professional.heart.org/en/guidelines-and-statements/hcm-af-risk-calculator>

Bushnell C, et al. AHA/ASA Guideline for the Prevention of Stroke. Stroke, 2024, Table 5; CHARGE-AF: Cohorts for heart and aging research in genomic epidemiology model for afib

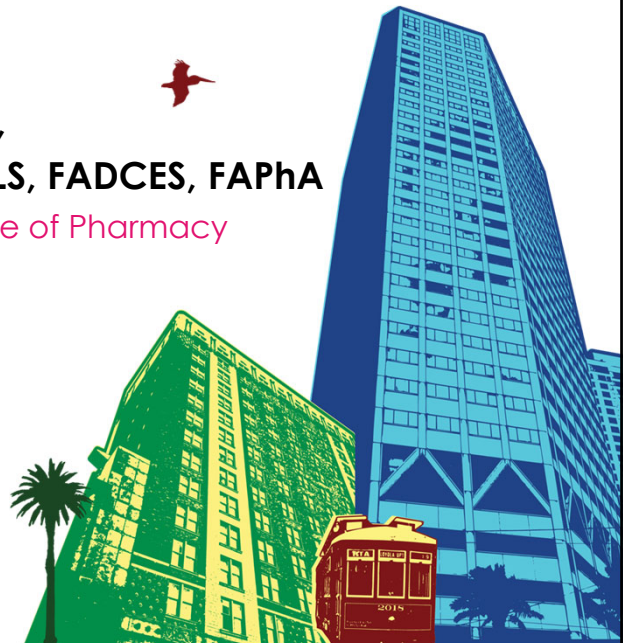


80

82

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84