

# Taking the Pulse of Undiagnosed Atrial Fibrillation *Pharmacists as a Lynchpin of Detection and Team-Based Care*

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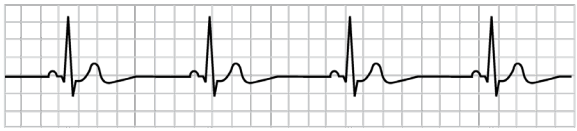
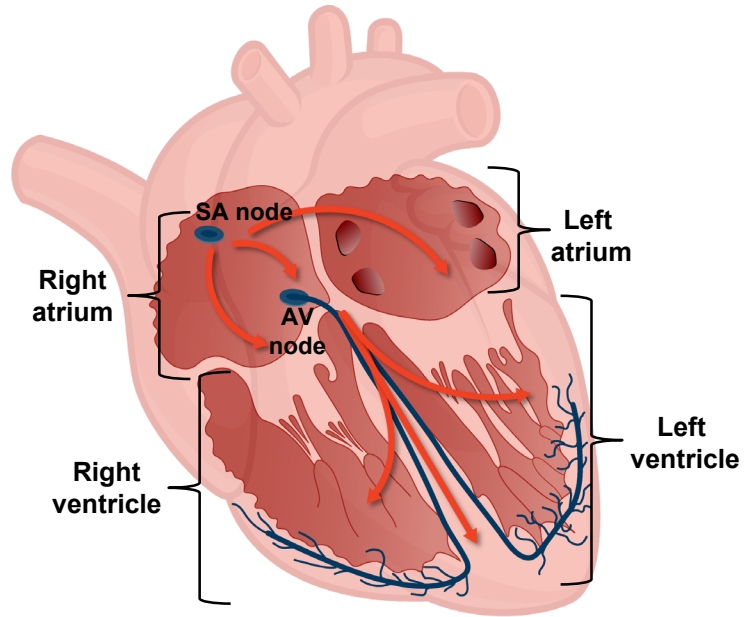


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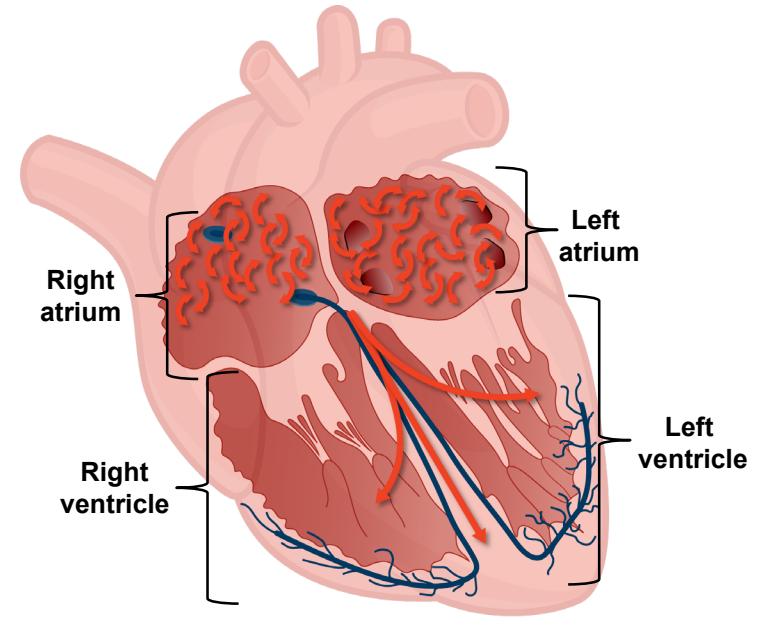
# What Is Atrial Fibrillation (AF)?

## Normal Sinus Rhythm



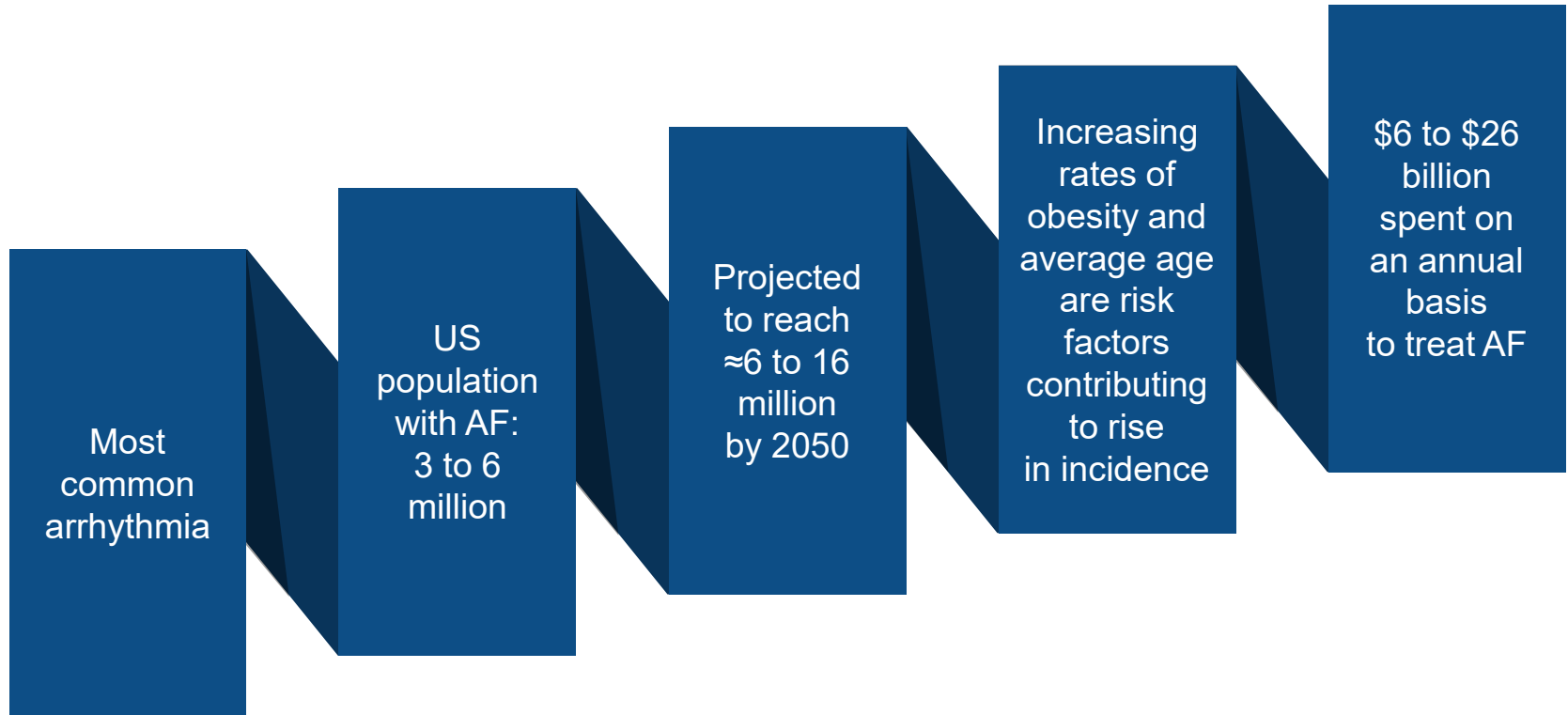
60-100 bpm

## Atrial Fibrillation



80-160 bpm

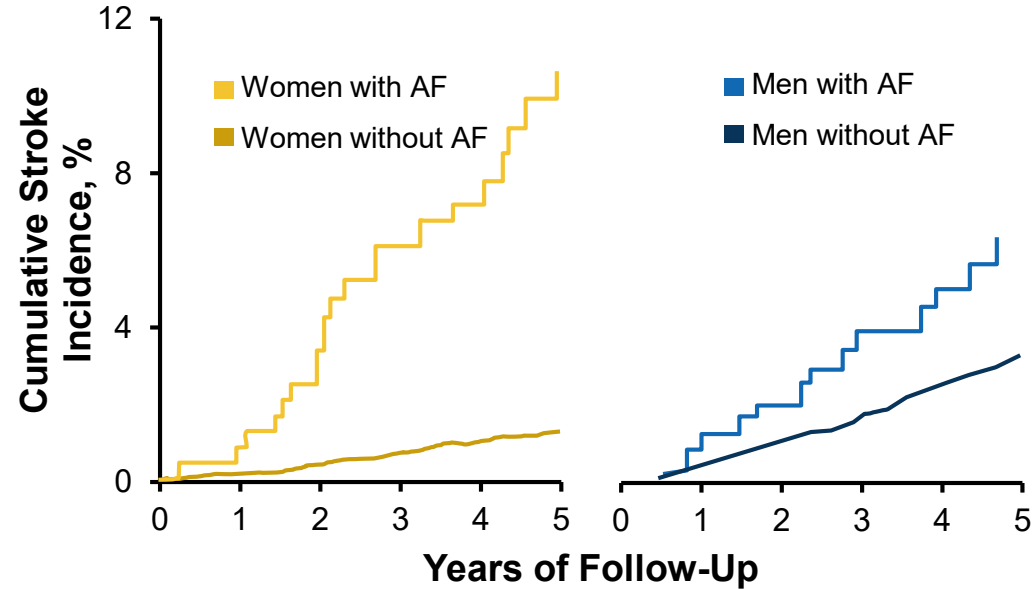
# How Common Is AF?<sup>1-2</sup>



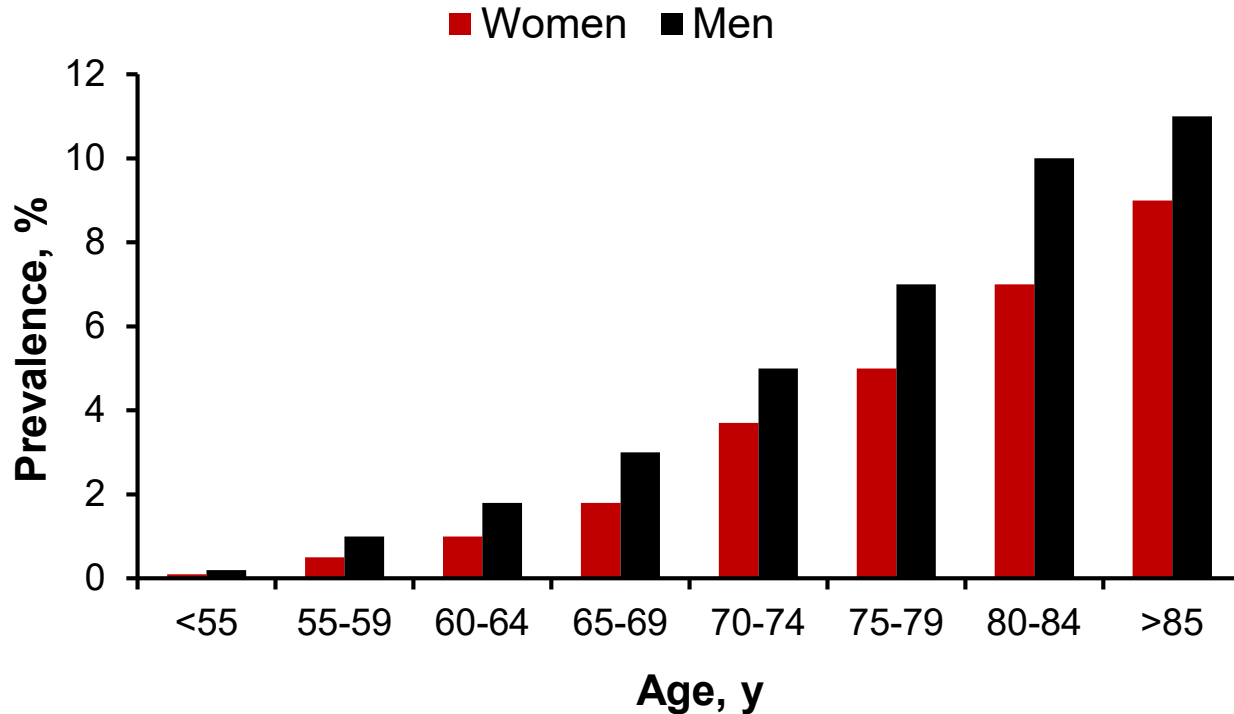
# AF/Flutter Is Associated With Increased Rates of Morbidity and Mortality<sup>1-5</sup>

- Tachycardia-induced worsening of associated myocardial ischemia or HF
- CV hospitalization: two- to three-fold increase in risk
- Thromboembolism/stroke: five-fold increase in risk
- Death: two-fold increase in risk

## Five-Fold Increase in the Risk of Strokes



# AF Prevalence Increases With Age and Differs by Sex<sup>1</sup>



More women than men experience AF, because the number of AF cases increases with age and women generally live longer than men

# Nonmodifiable and Modifiable Risk Factors<sup>1</sup>

- Nonmodifiable risk factor
  - Age
- Modifiable risk factors
  - Hypertension
  - Heart disease, especially HF
  - Hyperthyroidism
  - Excessive alcohol use
  - Obesity
  - Sleep apnea
  - Diabetes



# Symptoms of AF Are Mainly Associated With Reduced Cardiac Output<sup>1</sup>

## Palpitations

Sensations of an accelerated and irregular heartbeat

## Dyspnea

SOB during physical efforts

## Fatigue

Physical tiredness

## Dizziness

Lightheadedness

## Syncope

Fainting

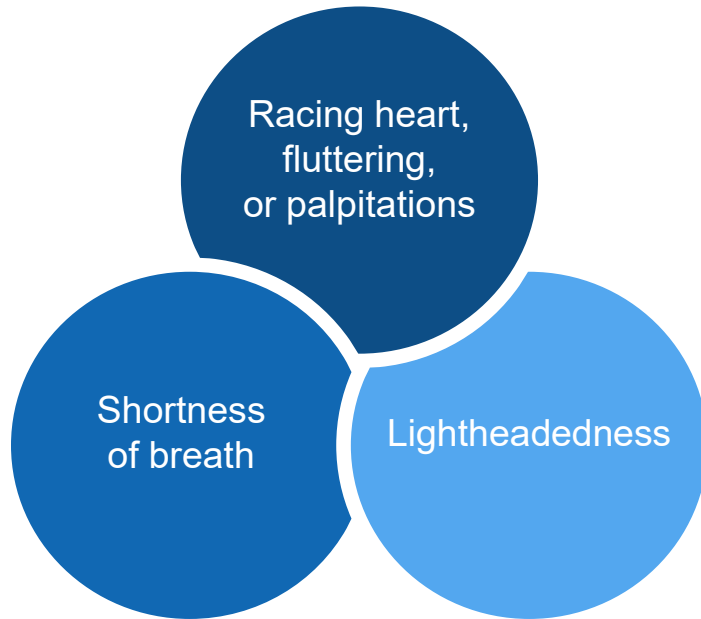
## Angina

Retrosternal chest pain and discomfort

1. <http://www.alfalliance.org/symptoms.htm>.

# But Many Patients Are Asymptomatic!<sup>1</sup>

AF can have a triad of symptoms or no noticeable symptoms at all

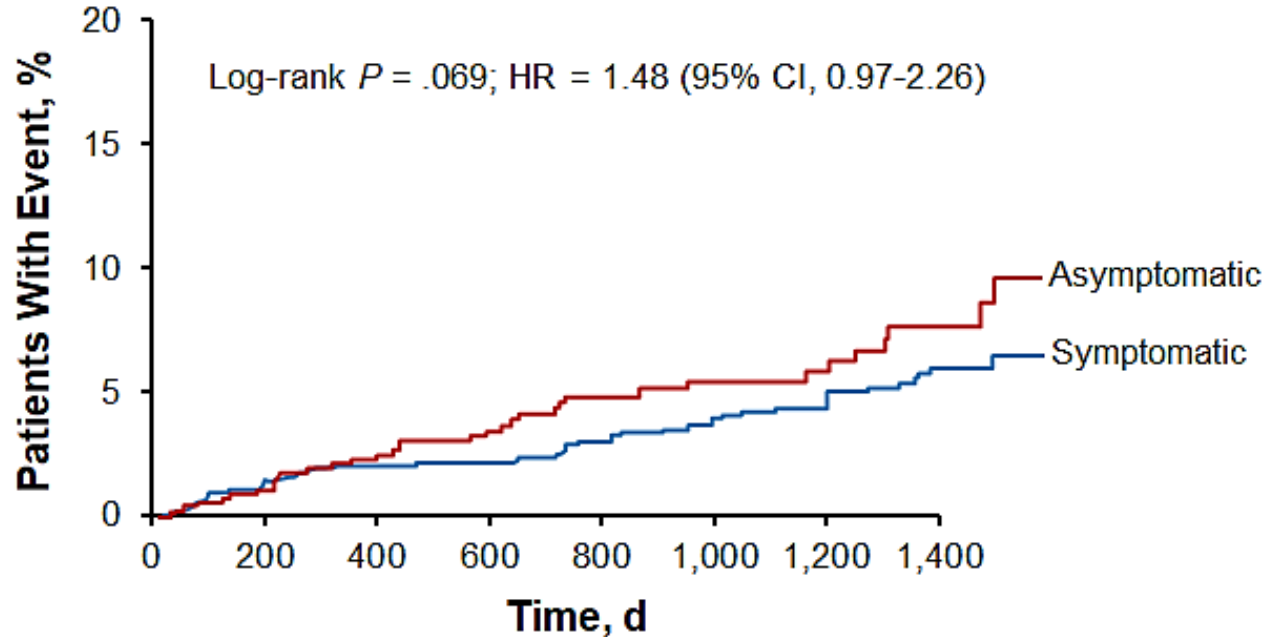


1. <https://www.heart.org/>.



# Asymptomatic vs Symptomatic AF: The Fushimi AF Registry<sup>1</sup>

## Stroke/SE



### No. at Risk

Symptomatic

1,148 1,108 942 879 683 662 474 452

Asymptomatic

689 641 503 446 321 296 215 205

# Identifying Patients With Undiagnosed AF<sup>1</sup>

- Estimates vary but, in general, for a single-timepoint screening in patients aged  $\geq 65$  years, detected undiagnosed AF is  $\sim 1.4\%$
- With more intense screening (2 weeks, 2x/day), the incidence of undetected AF was  $\sim 3.0\%$
- Recent experience with both opportunistic screenings at student-driven health fairs at the University of New Mexico and systematic screenings in community pharmacy settings was on the higher end, which may reflect the high-risk population seen in New Mexico

# Evidence on Identifying Patients With Undiagnosed AF<sup>1,2</sup>

## Screening studies suggest the prevalence of undiagnosed AF is ~1.5%

- Systematic review of 8 studies of 18,189 patients aged  $\geq 65$  years without prevalent AF, screened using ECG or pulse palpation
- 1.4% in primary care/outpatient clinics had AF
- 1.5% in community screening had AF

## Rates in VITAL-AF were similar and within a similar patient population

- 30,715 patients aged  $\geq 65$  years without prevalent AF who were seen in primary care clinics
- 1.72% in single-lead ECG screening group and 1.59% in the usual care group ( $P = \text{NS}$ ) were diagnosed with AF in 1 year

# Screening Strategies to Help Improve Detection of AF<sup>1</sup>

## Systematic Screening

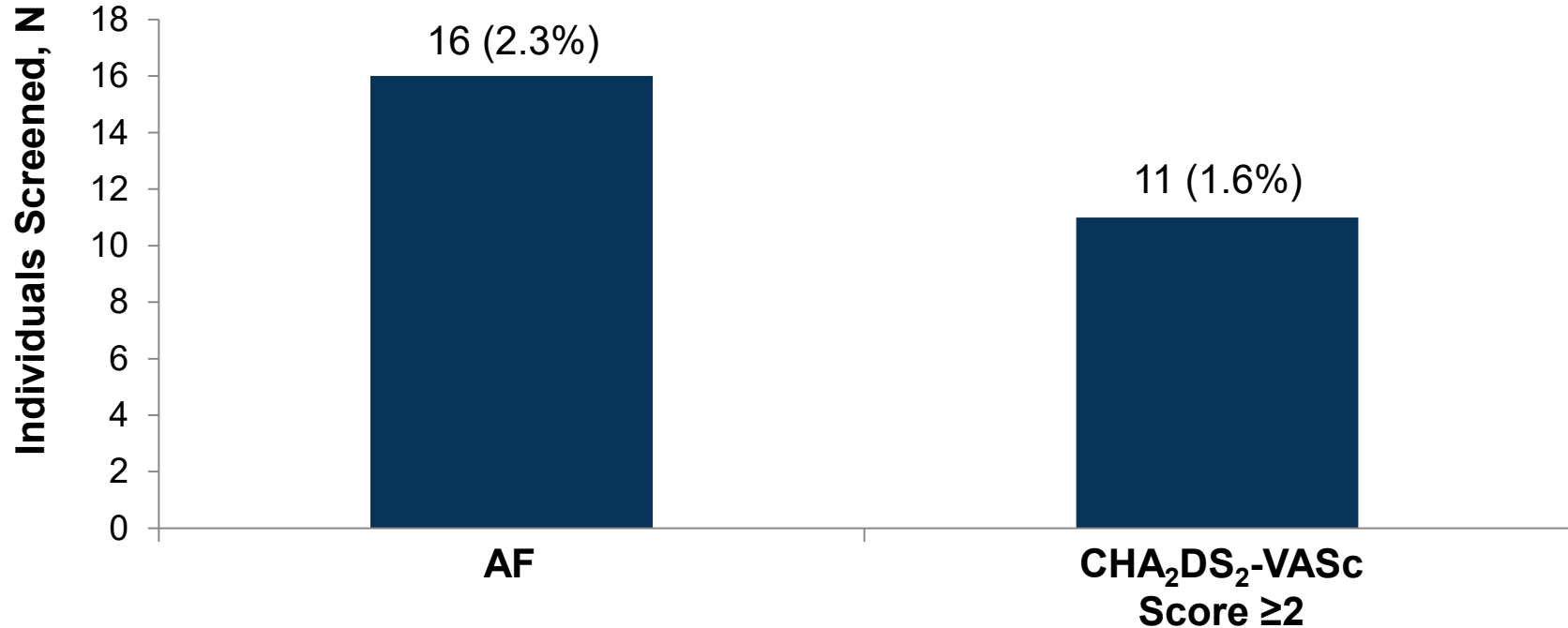
- Screening a predetermined target group
- High-risk individuals
  - Aged  $\geq 65$  years
  - CVD, such as hypertension, HF, etc.

## Opportunistic Screening

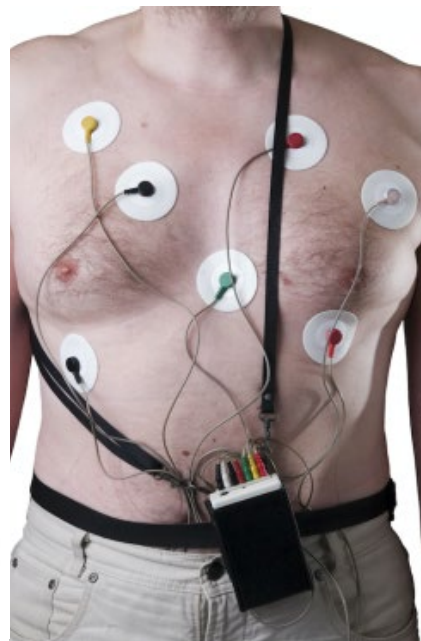
- Offering a test for an unsuspected disorder at the time the individual presents
- Health fairs
  - Anyone who shows up
  - Common screenings for hypertension, diabetes, hyperlipidemia, AF

# Opportunistic Screening: Health Fairs May Help to Identify Individuals With AF<sup>1</sup>

## Student-Driven Health Fair Screenings (N = 697)

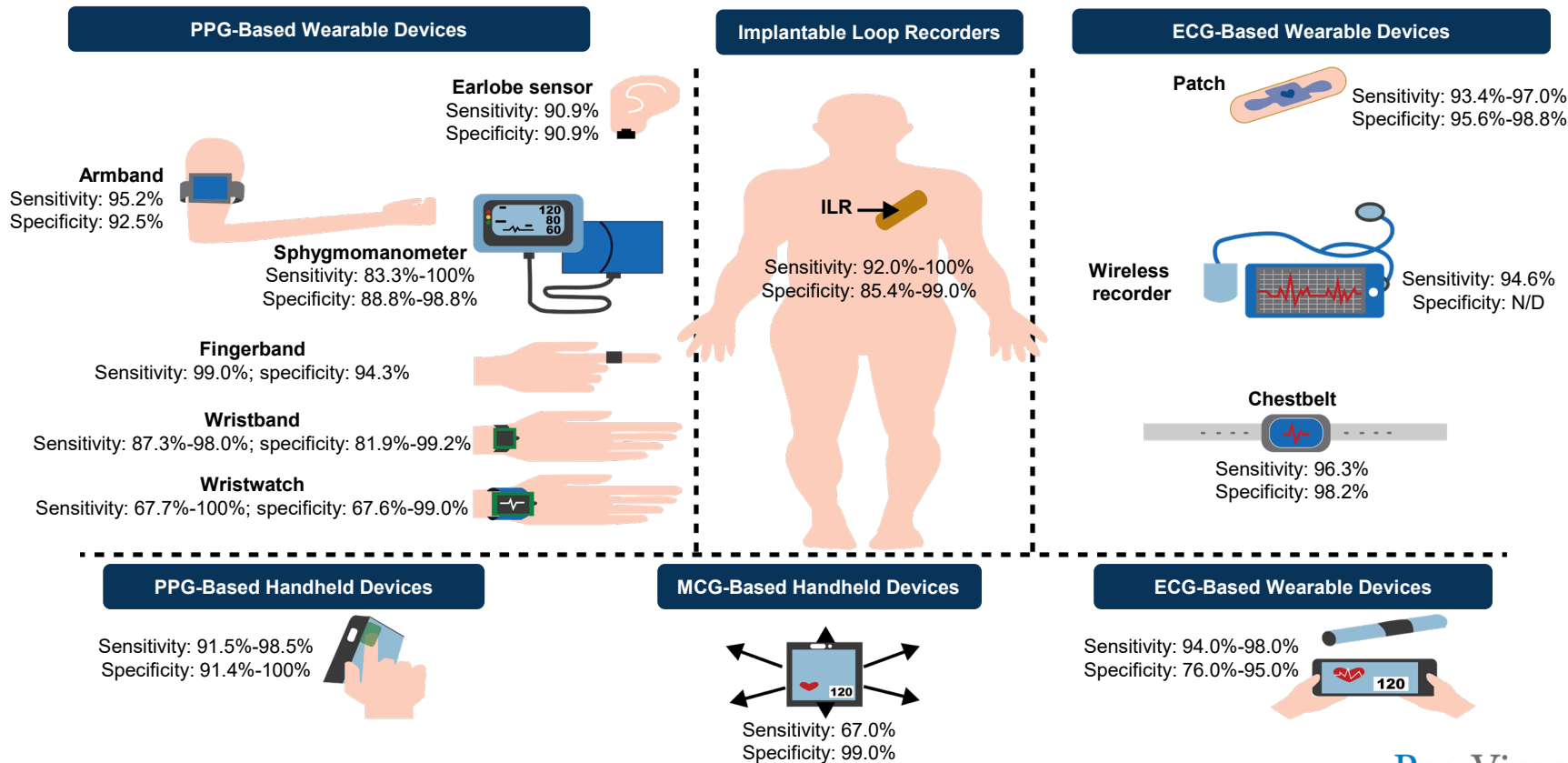


# AF Screening in the “Old Days”<sup>a</sup>



<sup>a</sup> Images courtesy of Drs. Joe R. Anderson and Barry E. Bleske.

# New Screening Options in the AF Toolbox Are Plentiful<sup>1</sup>



1. Hermans ANL et al. *Clin Res Cardiol.* 2021 Sep 21 [Epub ahead of print].

# Sensitivity and Specificity of Different AF Screening Methods<sup>1</sup>

Device	Method of Interpretation	Sensitivity, %	Specificity, %
<b>Pulse palpation</b>	–	94 (84-97)	72 (69-75)
<b>Handheld single-lead ECGs</b>			
AliveCor (Kardia) heart monitor	Algorithm only (based on presence of P wave and RR irregularity)	98 (89-100)	97 (93-99)
Merlin ECG event recorder	Cardiologist interpretation	93.9	90.1
Mydiagnostick	Algorithm only (based on RR irregularity)	94 (87-98)	93 (85-97)
Omron HCG-801	Algorithm only (based on RR irregularity)	98.7 (93.2-100)	76.2 (73.3-78.9)
Omron HCG-801	Cardiologist interpretation	94.4	94.6
Zenicor EKG	Cardiologist interpretation	96	92
<b>Modified BP monitors</b>			
Microlife BPA 200 plus	Algorithm only (based on pulse irregularity)	92	97
Microlife BPA 200	Algorithm only (based on pulse irregularity)	97 (81.4-100)	90 (83.8-94.2)
Omron M6	Algorithm only (based on pulse irregularity)	100	94
Omron M6 comfort	Algorithm only (based on pulse irregularity)	30 (15.4-49.1)	97 (92.5-99.2)
Microlife WatchBP	Algorithm only (based on pulse irregularity)	94.9 (87.5-98.6)	89.7 (87.5-91.6)
<b>Plethysmographs</b>			
Finger probe	Algorithm only (based on pulse irregularity)	100	91.9
iPhone photo-plethysmograph <sup>a</sup>	Algorithm only (based on pulse irregularity)	97.0	93.5

The comparator for all studies was a 12-lead ECG; RR irregularity indicates irregularity of intervals between successive R waves on the ECG.

<sup>a</sup> Three-lead telemetry used.

1. Freedman B et al. *Circulation*. 2017;135:1851-1867.



# Using Technology to Help Detect AF<sup>a</sup>



<sup>a</sup> Images courtesy of Drs. Joe R. Anderson and Barry E. Bleske.

# To Screen or Not to Screen<sup>1</sup>

- Screening needs to be inexpensive and easy to use with a high-positive predictive value
  - New technology meets these criteria (opportunistic or systematic screening)
- Positive outcomes?
  - Yes, with appropriate pharmacotherapy reduction in morbidity and mortality
- Negative outcomes?
  - Yes (but acceptable?); cost, patient stress, increased office visits, overdiagnosis, and the potential for unnecessary diagnostic testing and treatment
  - Yes, no data yet to show improved outcomes

# AF Screening Guidelines<sup>1-4</sup>

- The USPSTF states that “current evidence is insufficient to assess the balance of benefits and harms of screening” for AF but considers pulse palpation to be part of routine or usual care
  - Of note: In the review by USPSTF, no eligible studies were found that evaluated harm in screening patients for AF as compared with no screening; additionally, there is a current lack of outcomes studies (ie, clear benefit)
  - VITAL-AF RCT found similar detection rates with usual care, which included pulse measurement by automated devices, palpation, or auscultation, vs single-lead ECG
- The ESC recommends opportunistic AF screening by pulse assessment or ECG rhythm strip in patients aged 65 years or older; the guidelines also note that good settings for AF screening include pharmacies and community screening at special events
- Australian Heart Foundation recommends opportunistic point-of-care screening in the clinic or community should be conducted in people aged 65 years or older

1. USPSTF. *JAMA*. 2022;327:360-367. 2. Hindricks G et al. *Eur Heart J*. 2021;42:373-498.

3. NHFA CSANZ Atrial Fibrillation Guideline Working Group. *Heart Lung Circ*. 2018;27:1209-1266. 4. Lubitz SA et al. *Circulation*. 2022;145:946-954.

# AF Is Everywhere

## Pharmacists and pharmacy students are well positioned to intervene and can be excellent resources

- Pharmacy-driven opportunities and systematic screenings
- Clinical settings allow for direct patient care and often include prescription authority
  - Hypertension, lipids, HF, and diabetes clinics
  - Anticoagulant clinics
- Community pharmacy settings allow for direct patient care in rural, urban, and poverty-stricken urban communities and some include prescription authority
  - Screenings commonly performed for hypertension, diabetes, lipids
  - Pharmacy-run health fairs

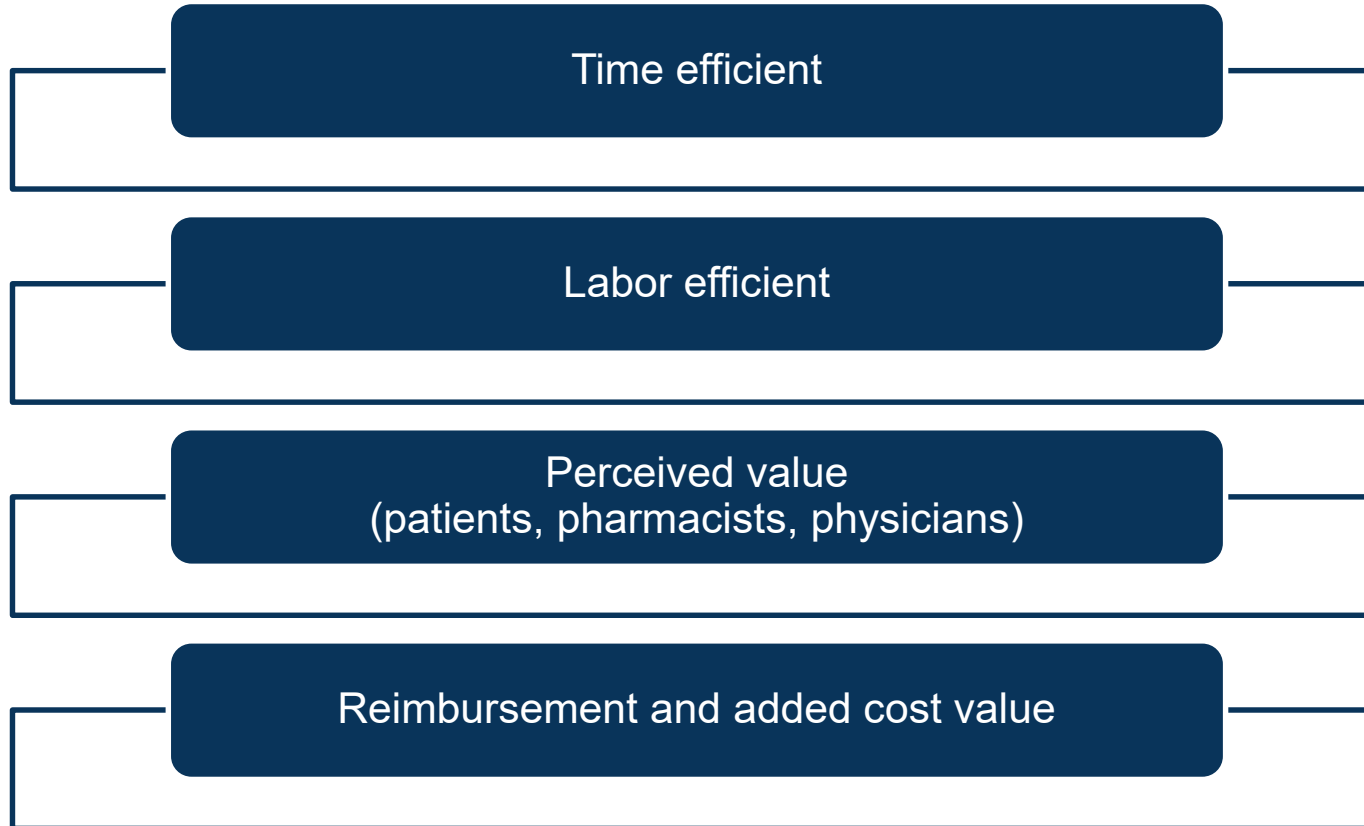
# Community Pharmacies Offer a Golden Opportunity for AF Screening and Intervention<sup>1-3</sup>

- ~90% of the general population visits a pharmacy at least once a year
- Patients with chronic diseases (eg, hypertension or diabetes) visit a community pharmacist five times more often than their physician or another HCP
- Community pharmacists:
  - Are highly accessible and often the first point-of-entry into the healthcare system for many patients
  - Can help bridge the gap between patients and clinicians
  - Trained to provide patient-level education
  - Have a proven record for chronic disease management
  - Work in rural settings and may be the only healthcare contact in those settings

1. Bleske BE et al. *J Am Pharm Assoc* (2003). 2022;62:541-545. 2. Sandhu RK et al. *Open Heart*. 2016;3:e000515.

3. Anderson JR et al. *J Am Pharm Assoc* (2003). 2020;60:e52-e57.

# Overcoming Common Barriers in Pharmacy/Primary Care Settings: Tactics for a Successful, Sustainable Model<sup>1</sup>



# Developing a Plan for AF Screening in the Community Pharmacy Setting

- Conduct training
  - Partnerships with schools of pharmacy, nursing, and medicine or other organizations
  - Online training and competency
  - Online forms and educational resources
  - Self-guided learning, including resources from the internet and professional associations
- Build an efficient workflow pattern
  - Optimize time for the pharmacist and physician
  - Screening takes <1 minute
  - Pharmacy staff or pharmacy students can provide the initial screenings; APPE students are a captivated and motivated work force, as well as interns
  - Pharmacists are engaged with possible detection of AF
  - Patient education is provided by trained pharmacy staff or students, if AF is not detected
  - Designate an AF champion

# A Proposed Screening Model for the Community Pharmacy Setting<sup>1</sup>

- Patient recruitment
  - Utilize signage and community flyers
  - Take a systematic approach to identify and recruit high-risk patients—this is the most efficient approach with a higher yield
    - Aged >65 years
    - Patient on medication(s) for CVD or diabetes
    - AF or health assessment event
- Local GP partnership
  - Establish a model for patient referral and follow-up
  - Identify patients for medication adherence follow-up to new anticoagulation therapy



# A Proposed Screening Model for the Community Pharmacy Setting<sup>1</sup> (Cont'd)

- Cost effectiveness for pharmacies
  - Value-added service
  - Regularly scheduled AF or health assessment events may increase patient traffic in the pharmacy and increase profits
  - Targeted medication adherence calls for patients on anticoagulation therapy (comprehensive AF service?)
  - Device <\$200

# University of New Mexico College of Pharmacy Model for the Community Pharmacy Setting: Systematic Approach<sup>1,2</sup>

- APPE students/pharmacists/pharmacy techs
  - Identify high-risk patients who are recruited based on age and medication profile review (eg, CVD or diabetes medications)
- APPE students perform the assessment (next step is pharmacy technicians)
  - If no AF is reported, participants are counseled by the student on the results
  - If AF is reported, participants are counseled by the pharmacist and student
    - Ask permission to call their PCP to discuss results—set up an appointment
    - Give the participant a “Dear Doctor card” that explains results
    - Counsel the patient with handout (eg, AHA flyer)

All participants are counseled on AF/stroke and given education materials

# University of New Mexico College of Pharmacy Model<sup>1,2</sup>

- Education and training for students, pharmacists, and pharmacy technicians
  - Online modules and training videos
  - Competency exam
  - Hands-on training
  - Free CE provided to pharmacists and pharmacy technicians
    - URL: <https://hscmoodle.health.unm.edu/>
    - Create Moodle account
    - Search for “atrial fibrillation”
    - Type in the case-sensitive student enrollment key: afib2021
- APPE students
  - Required to perform at least four screenings/rotations and report back to the faculty champion and experiential office
- Equipment, screening forms, signage, other documents provided by the college of pharmacy

# Detecting AF<sup>a</sup>



<sup>a</sup> Image courtesy of Drs. Joe R. Anderson and Barry E. Bleske.

# Data Collection Form for AF Screening and Quality Improvement<sup>1,a</sup>

Patient Data Collection Form

Pharmacy: \_\_\_\_\_ Patient# \_\_\_\_\_

Patient is ≥ 50 years old AND/OR on one of the following:

Medication Profile (Check all that apply)

<input type="checkbox"/> ACE-Inhibitor or ARB	<input type="checkbox"/> Anticoagulant
<input type="checkbox"/> Beta-Adrenergic Blocker	<input type="checkbox"/> Antiplatelet
<input type="checkbox"/> Calcium Channel Blocker	<input type="checkbox"/> Anti-diabetic agents
<input type="checkbox"/> Diuretic	<input type="checkbox"/> Vasodilators (e.g. nitrates, hydralazine)
<input type="checkbox"/> Hypercholesterolemia Agents (e.g. Statins)	

Male or Female \_\_\_\_\_ Age: \_\_\_\_\_

Patient did not agree to Afib assessment AND AHA educational flyer was given to the patient.

Patient agreed to Afib assessment AND:

Atrial Fibrillation Assessment

Results: Possible AFib (Checked Twice)    Normal    Unclassified (Checked Twice)    Unreadable

If Possible Atrial Fibrillation was detected please check or circle box #1 or #2:

#1.  The pharmacy contacted the patient's provider while the patient was in the pharmacy.  
Describe the outcome (use back of sheet if necessary)?

#2.  The patient indicate that they would follow-up with their provider on their own.

Patient Result Card For Possible Atrial Fibrillation

Patient Result Card given to patient.

Education and Post Card:

AHA Flyer was presented to the patient     AHA Flyer was discussed with the patient

Postcard given to Patient

Time

The time frame for this patient encounter for Afib assessment and education (circle one):

<10 minutes	10-20 minutes	> 20 minutes
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<sup>a</sup> Image courtesy of Drs. Joe R. Anderson and Barry E. Bleske.  
1. <https://hscmoodle.health.unm.edu/course/view.php?id=564>.

# Communicating AF Screening Results: Sample Postcard<sup>1</sup>

Dear Doctor,

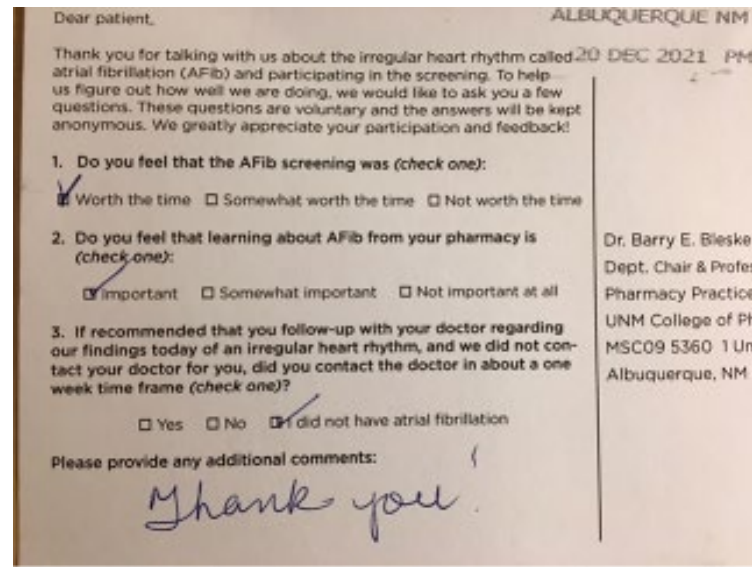
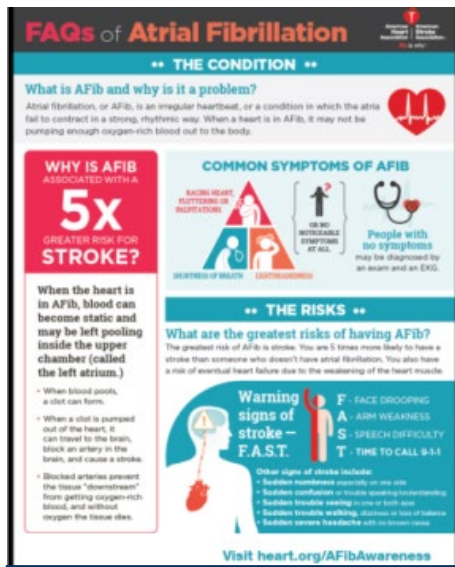
Your patient recently participated underwent screening for atrial fibrillation at your patient's community pharmacy provided by the University of New Mexico College of Pharmacy students and faculty on \_\_\_\_\_. We screened for atrial fibrillation using Alivecor's KardiaMobile EKG monitor which uses a FDA-approved algorithm to detect atrial fibrillation. During the screening the KardiaMobile detected possible atrial fibrillation in your patient. We discussed the results with your patient and recommended that they schedule a visit with you as soon as possible. If you have any questions, please feel free to contact Dr. Barry Bleske at 505-272-1525 (bbleske@salud.unm.edu) or Dr. Joe Anderson at 505-272-3664 (janderson@salud.unm.edu). Thank you.

Dear Patient,

As we talked about, we possibly detected an irregular heart rhythm known as atrial fibrillation. Atrial fibrillation is a very serious health condition that can lead to stroke if not treated. Treatment often consists of using a blood thinner to decrease the risk of stroke. We strongly recommend that you see your doctor **AS SOON AS POSSIBLE** to further evaluate your heart rhythm. Please present this card to your doctor which explains our findings from today on the other side. Thank you.

1. <https://hscmoodle.health.unm.edu/>.

# University of New Mexico College of Pharmacy Model: Creating Awareness to Increase AF Screening and Detection<sup>a</sup>



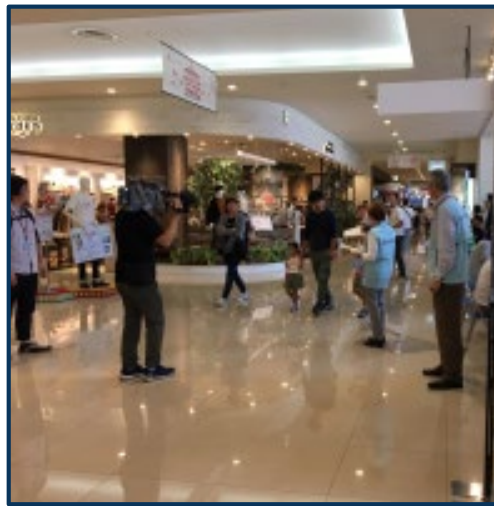
Educating patients on AF and screening methods through handouts, signage, and follow-up questionnaires can be done easily in the community setting

<sup>a</sup> Images courtesy of Drs. Joe R. Anderson and Barry E. Bleske.

# Health Fairs: Planning and Consideration<sup>1</sup>

- Population (systematic or opportunistic), advertising plan, and sites
  - Community events, senior centers, consulates, student unions, festivals, sporting events, and workplaces, including community pharmacies (screening day!)
- Designate leaders and get volunteers
  - Students are great to work with and lead
- Create a training plan
  - Equipment and education—we want to educate as much as we want to do screenings
- Logistics
  - Stay organized and make a list
  - Supplies and equipment (consent forms, data collection forms, educational forms and materials, hand sanitizer, clipboards, alcohol swabs, pens, screening equipment, etc.)
  - Signage





Images courtesy of Drs. Joe R. Anderson and Barry E. Bleske.

# Pillars for Success: Patient and Pharmacist Perceived Value<sup>1-3</sup>

- Patient value
  - Two studies in community pharmacies and one screening study from a health fair demonstrated that nearly 100% of patients were very satisfied or somewhat satisfied and thought that the screening was worth their time and important
- Pharmacist value (community)
  - Professional value (9.7 ± 0.6, on a scale from 1-10 with 10 being most value)
  - Value to pharmacy (8.8 ± 0.8, on a scale from 1-10 with 10 being most value)
  - “Increases connection to customers”
  - “Another way to help patients”
  - “Serves the community”

1. Bleske BE et al. *J Am Pharm Assoc* (2003). 2022;62:541-545. 2. Sandhu RK et al. *Open Heart*. 2016;3:e000515.

3. Anderson JR et al. *J Am Pharm Assoc* (2003). 2020;60:e52-e57.

# Healthcare Setting: Clinics (Protocol Driven)

- 12-lead ECGs are not often done during routine clinic visits—reimbursement challenges
  - New onset or asymptomatic AF may be missed, but this could be circumvented if screened in waiting room with mobile device
- Establish a workflow pattern for every patient
  - Technology: A medical assistant, nursing student, or pharmacy student conducts a point-of-care assessment for each patient or the patient self-screens (self service!)
  - Pulse palpation, instead of or in addition to the point-of-care assessment
- If possible AF detected
  - Perform a 12-lead ECG and appropriate tests and labs, including thyroid testing as needed
- If AF is confirmed (pharmacy)
  - Consider anticoagulation therapy in appropriate patients (CHA<sub>2</sub>DS<sub>2</sub>-VASc and HAS-BLED scores)
  - Referral to an anticoagulation clinic

# Patient Self-Screening for AF<sup>a</sup>

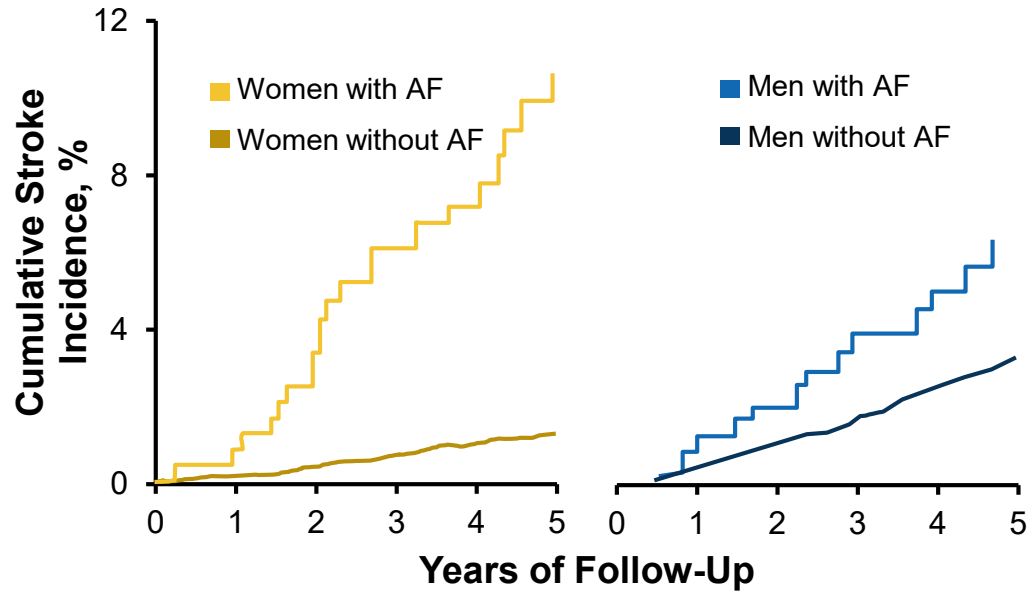


- Self-pulse check
- BP machines
- Smartwatches (Apple, Fitbit)
- ECG devices
- Follow-up!!!
  - Document
  - Educate patients
    - Contact HCP
    - On what the signs and symptoms of stroke and stroke risk are, even if the patient is asymptomatic and the rhythm is paroxysmal

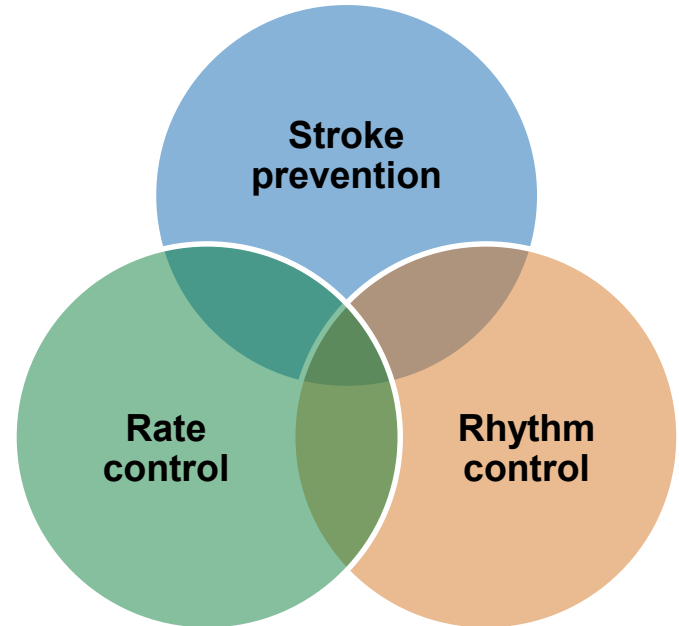
<sup>a</sup> Image courtesy of Drs. Joe R. Anderson and Barry E. Bleske.

# AF Treatment

## Five-Fold Increase in the Risk of Strokes<sup>1-3</sup>



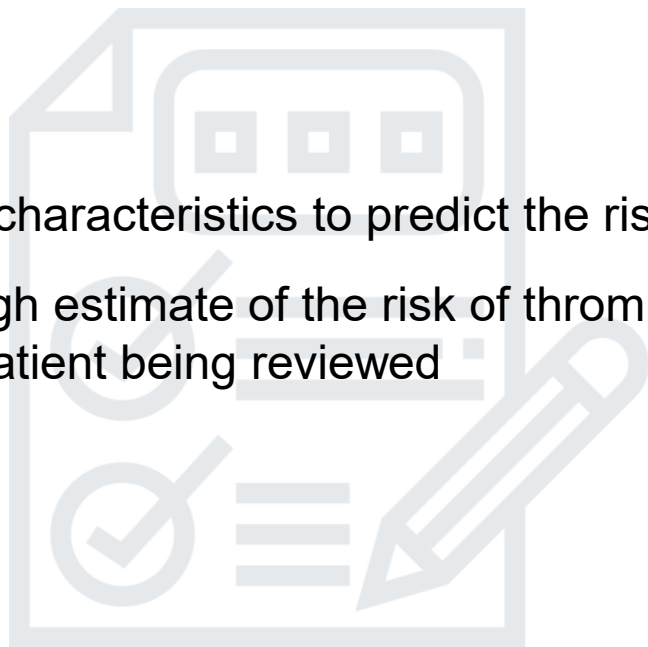
## All Patients With AF Must Be Assessed for Each of the Three Areas<sup>4</sup>



1. Go ES et al. *JAMA*. 2001;285:2370-2375. 2. Wolf PA et al. *Stroke*. 1991;22:983-938. 3. Friberg J et al. *Am J Cardiol*. 2004;94:889-894.  
4. January CT et al. *Circulation*. 2014;130:e199-e267.

# Scoring Systems for Stroke Risk<sup>1</sup>

- A variety of systems have been published
  - CHADS<sub>2</sub>
  - CHA<sub>2</sub>DS<sub>2</sub>-VASc
- All use selected clinical characteristics to predict the risk of stroke
- All scores provide a rough estimate of the risk of thrombosis in a population at a similar risk as the patient being reviewed



# CHA<sub>2</sub>DS<sub>2</sub>-VASc<sup>1</sup>

## 2009 Birmingham Schema Expressed as a Point-Based Scoring System

Risk Factor	Score
CHF/LV dysfunction	1
Hypertension	1
Aged ≥75 years	2
Diabetes	1
Stroke/TIA/TE	2
Vascular disease (prior MI, PAD, or aortic plaque)	1
Aged 65-74 years	1
Sex category (ie, female gender)	1

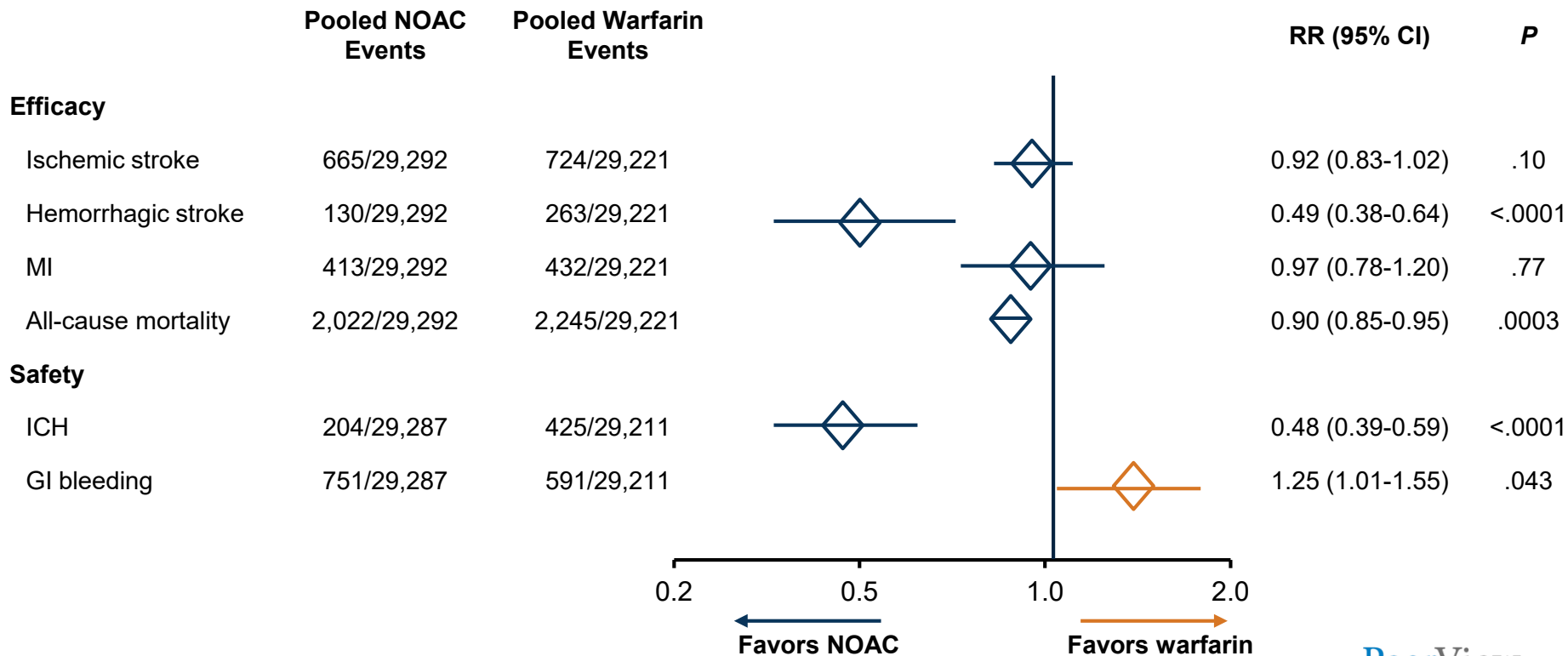
# 2019 AHA/ACC/HRS Focused Update of the 2014 Guideline for Managing AF<sup>1</sup>

COR	LOE	Recommendations
I	A B B B	For patients with AF and elevated CHA <sub>2</sub> DS <sub>2</sub> -VASc score $\geq 2$ in men or $\geq 3$ in women, oral anticoagulants are recommended; options include: warfarin (LOE: A); dabigatran (LOE: B); rivaroxaban (LOE: B); apixaban (LOE: B); edoxaban (LOE: B-R)



# Meta-Analysis of RCTs: Comparison of the Efficacy and Safety of NOACs With Warfarin in Patients With AF<sup>1</sup>

## Secondary Efficacy and Safety Outcomes



1. Ruff CT et al. *Lancet*. 2014;383:955-962.

# 2019 AHA/ACC/HRS Focused Update of the 2014 Guideline for Managing AF<sup>1</sup>

COR	LOE	Recommendation
I	A	<p>NOACs (dabigatran, rivaroxaban, apixaban, and edoxaban) are recommended over warfarin in NOAC-eligible patients with AF (except with moderate to severe mitral stenosis or a mechanical heart valve)</p> <p><i>NEW: Exclusion criteria are now defined as moderate to severe mitral stenosis or a mechanical heart valve; when the NOAC 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 SE and were associated with lower risks of serious bleeding</i></p>

COR	LOE	Recommendation
I	B	<p>For patients with AF who have mechanical heart valves, warfarin is recommended</p> <p><i>MODIFIED: New information is included in the supportive text</i></p>

# HAS-BLED Score<sup>1</sup>

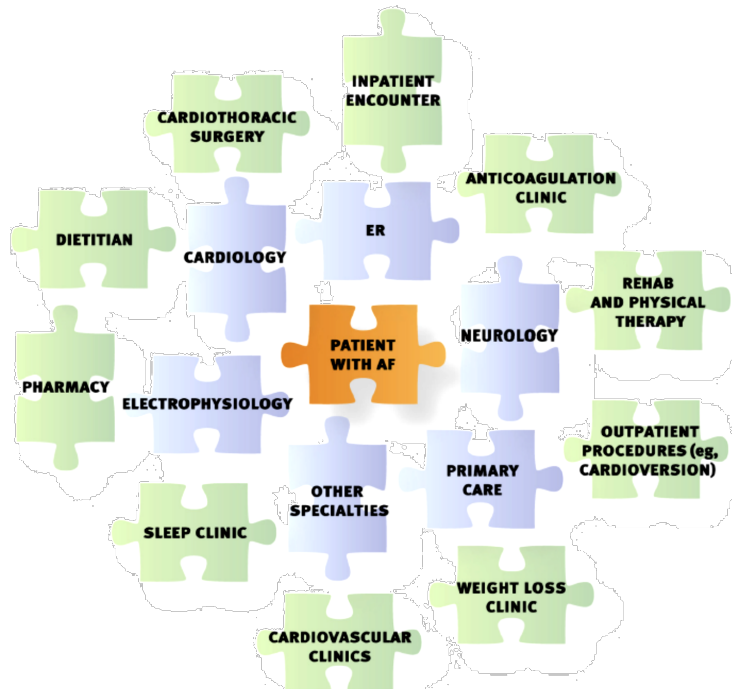
Risk Factor	Score
Hypertension <sup>a</sup>	1
Abnormal renal/liver function <sup>b</sup>	1 or 2
Stroke	1
Bleeding tendency	1
Labile INR	1
Age (eg, >65 years)	1
Drugs (eg, concomitant aspirin, NSAIDs, etc.) or alcohol <sup>b</sup>	1 or 2
<b>Maximum score</b>	<b>9</b>

A score of 0 to 2 indicates a low risk of bleeding;  
a score of  $\geq 3$  indicates a high risk of bleeding

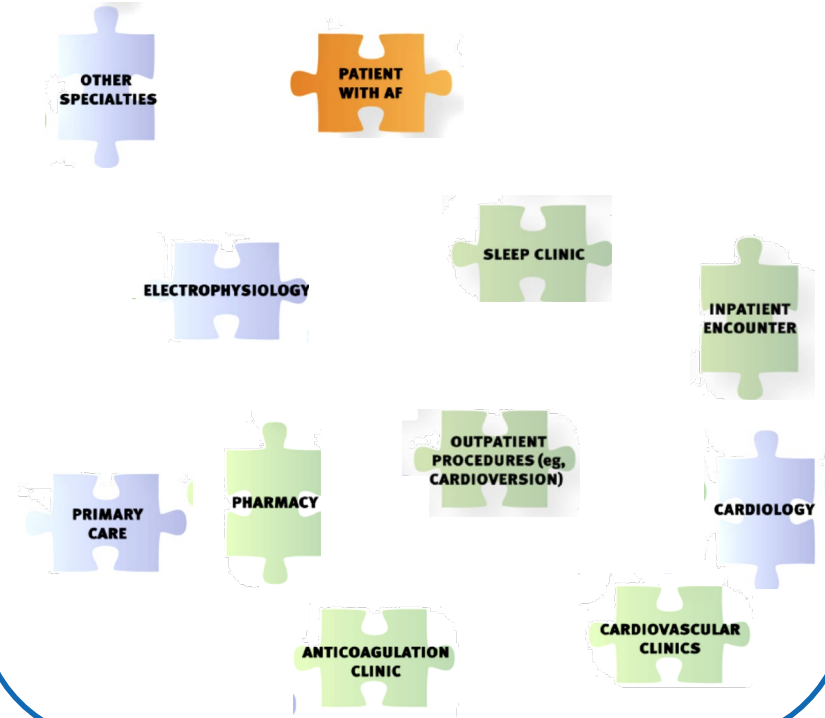
<sup>a</sup> Hypertension is defined as a systolic BP >160 mmHg. <sup>b</sup> One point is awarded for each abnormal renal or liver function, and drug or alcohol use.  
1. Ahmad Y, Lip GYH. *Clin Med Insights Cardiol.* 2012;6:65-78.

# Multidisciplinary Collaboration<sup>1,2</sup>

## How We Are Supposed to Work



## How We Actually Work



# A Team Is Essential to Successfully Manage AF<sup>1,a</sup>

## Integrated AF Management

Patient Involvement	Multidisciplinary Teams	Technology Tools	Access to All AF Treatment Options
<ul style="list-style-type: none"><li>• Central role in care process</li><li>• Patient education</li><li>• Encouragement and empowerment for self-management</li><li>• Advice and education on lifestyle</li><li>• Shared decision-making</li><li>• <b>Informed, involved, empowered patient</b></li></ul>	<ul style="list-style-type: none"><li>• Physicians (GPs, cardiology and stroke AF specialists, surgeons) and allied health professionals work in a collaborative practice model</li><li>• Efficient mix of communication skills, education, and experience</li><li>• <b>Working together in a multidisciplinary chronic AF care team</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Informed on AF</b></li><li>• Clinical decision support</li><li>• Checklist and communication tools</li><li>• Used by HCPs and patients</li><li>• <b>Monitoring of therapy adherence and effectiveness</b></li><li>• <b>Navigating system to support decision-making in treatment team</b></li></ul>	<ul style="list-style-type: none"><li>• Structured support for lifestyle changes</li><li>• <b>Anticoagulation</b></li><li>• Rate control</li><li>• Antiarrhythmic drugs</li><li>• Catheter and surgical interventions (ablation, LAA occluder, AF surgery, etc)</li><li>• <b>Complex management decisions underpinned by an AF heart team</b></li></ul>

<sup>a</sup> The content outlined in red highlights where the pharmacist has a role.  
1. Hendricks JMI, Heidbüchel H. *Eur J Cardiovasc Nurs.* 2019;18:88-95.

# Anticoagulant Medication Nonadherence in AF<sup>1-3</sup>

- VA healthcare system (retrospective review; 2,882 patients)
  - >25% nonadherent
  - Increase stroke and mortality
- Meta-analysis (~500,000 patients)
  - ~30% nonadherent
  - Increased stroke, death, and medical costs
- New diagnosis of AF (12 months adherence)
  - Medicare claims data (16,969 patients)
  - 40% of those who initiated warfarin and 47% of those who initiated NOACs did not continuously adhere to therapy in the first year after AF diagnosis

# Medication Nonadherence: Some Potential Factors<sup>1</sup>

## Social and Economic

- Health literacy
- Insurance status
- Transportation issues

## Healthcare System

- Provider-patient relationship
- Provider communication skills
- Formulary restrictions

## Condition-Related

- Competing health priorities
- Depression
- Lack of symptoms

## Therapy-Related

- Regimen complexity
- Actual/perceived AEs
- Treatment interferes with lifestyle

## Physical

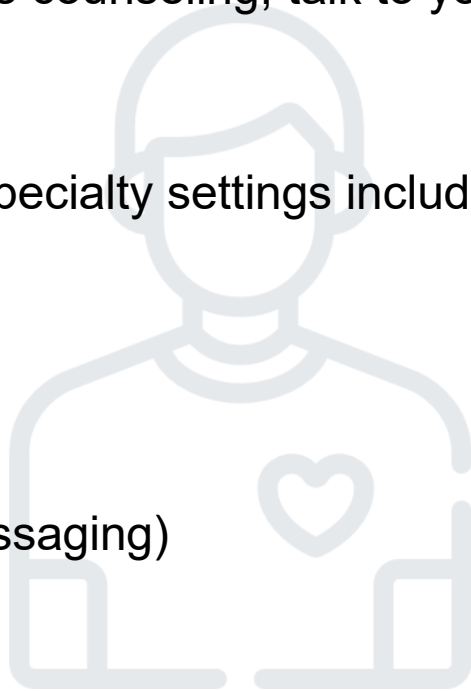
- Vision impairment
- Impaired dexterity
- Swallowing difficulties

## Psychological/Behavioral

- Perceived risk of disease
- Perceived risk of treatment
- Stress, anxiety, anger

# Patient-Centered Approaches to Encourage Medication Adherence

- Direct methods: face-to-face counseling; talk to your patients
  - Pharmacies
  - Discharge
  - Transitional, GP, and specialty settings including anticoagulant clinics
  - Phone calls
- Motivational interviewing
- Patient education
- Indirect methods
  - Electronic (eg, text messaging)
  - Mail
  - Fax





# Discuss Available Tools to Improve Adherence With Patients

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**Pill boxes**

**Pill cards  
(diaries)**

**Blister packs**

**Digital dispensers**

**Timer**

**Mobile apps**

**Smartwatches  
(reminders)**

**Automated  
phone calls**

# Additional Approaches to Improve Adherence

- Medication reconciliation
- Simplify medication regimens
- 90-day supplies
- Automatic refills
- Adherence packaging
- Reduce cost
- Ask about AEs!
- Cultural and socioeconomic considerations
- Transportation (pharmacy deserts)
- Online resources (eg, Million Hearts campaign)



# Conclusions

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Work collaboratively with our clinical colleagues to bridge the gap between patients and all members of the healthcare team to improve AF screening, diagnosis, and treatment

Improving and maintaining medication adherence is ongoing and needs to be addressed as often as possible