Solutions for Atrial Fibrillation Edvocacy (SAFE): Improving Awareness And Access To Afib Screening For Detection And Referral For Treatment

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Abstract

Background: *Atrial Fibrillation (Afib) can lead to stroke and heart failure, and early detection of Afib is an effective method of preventing these life-threatening conditions. An estimated 2.7 million Americans are living with Afib[1], a number that is expected to rise dramatically in the coming years.*

Methods: *The aim of this demonstration project was to create an additional access point in the community at local pharmacies for Afib screening, detection, and referral to physicians for follow-up and initiation of evidence-based therapy when appropriate. This prospective research study was conducted with 14 community pharmacies across the US, in which a total of 650 patients were screened for Afib. Pharmacists conducted SAFEty Risk Assessments that consisted of completion of a Stroke Risk Scorecard and EKG determination utilizing AliveCor's KardiaMobile® 6L device.*

Results: *In 552 (82.5%) of 669 total EKG readings, a "normal" rhythm was detected, and in 117 (17.5%) EKG readings an abnormal detection occurred. A total of 12 out of 650 patients (1.8%) received EKG readings of Afib, which is greater than double the expected prevalence of Afib in the US (0.81%), a statistically significant finding ($p < 0.0001$). Other notable findings included 42 (6.3%) EKG readings of Wide QRS, and 26 (3.9%) EKG readings of tachycardia. A total of 44 patients were referred to physicians for follow-up on their risk for Afib.*

Conclusions: *Community pharmacies offer a unique, valuable access point for patients to receive Afib screenings. Pharmacists are well positioned to make a significant contribution in the cardiovascular health of their patients and increase the value of team-based health care.*

Key words: pharmacists, Afib, atrial fibrillation, EKG, pharmacy, Kardiamobile

Introduction

It has been well established that Atrial Fibrillation (Afib) can lead to serious, sometimes fatal medical problems such as stroke and heart failure.[2] What is more difficult to establish, however, is an effective early detection method that connects patients with Afib to a healthcare provider before life-threatening events occur. According to the American Heart Association, there are at least 2.7 million Americans living with Afib,[1] which equates to 0.81% of the 333.3 million people in the US population.[3] The Centers for Disease Control and Prevention project this number to grow to 12.1 million Americans with Afib in 2030.[4] The World Health Organization lists stroke, a consequence of Afib, as the #2 leading cause of death globally.[5] In the United States in particular, Afib was mentioned on 183,321 death certificates in 2019 alone.[4]

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A recently published retrospective cohort analysis found that an estimated 13.1% of Afib cases in the United States were undiagnosed.[6] Many research studies support that the incidence of Afib increases with age.[7,8] Additionally, evidence suggests that certain ethnicities such as white men and white women are at a higher lifetime risk of Afib.[9] Gaps in detection of Afib pose a significant yet unsuspecting health risk for millions of Americans. The traditional manner used to detect Afib typically includes a physician's exam consisting of checking the pulse and blood pressure, an electrocardiogram (EKG or ECG) reading, stress testing, or a Holter monitor (or event monitor). However, due to the unpredictable nature of Afib, it can be difficult to detect at a single visit because the patient may not be in Afib at that moment in time.

Creating more accessible opportunities to screen for Afib may increase the chances of detecting it and preventing detrimental outcomes. Pharmacists in community pharmacies, as a result of their education and training, are well positioned to offer an additional access point for Afib screening, detection, and referral due to the frequency of patient interactions with people in this setting. By offering screenings, educating patients about the risk of Afib and stroke, and referring patients at risk for Afib to a physician for evaluation and follow-up, SAFE allowed pharmacists to bring the patients into a shared

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decision-making process that includes the patient's opinions and preferences to facilitate a team-based approach to care.

Pharmacists used a SAFEty Risk Assessment which included completing a Stroke Risk Scorecard developed by the National Stroke Association,[10] (Figure 1) as recommended by two cardiologist subject matter experts, plus a point-of-care EKG reading. The Stroke Risk Scorecard facilitates determination of risk categories (High Risk, Caution, Low Risk) based on blood pressure, atrial fibrillation, smoking, cholesterol, diabetes, physical activity, weight, and stroke in family. Point-of-care EKG readings were measured using AliveCor's KardiaMobile® 6L devices which are the only FDA-cleared 6-lead personal EKG device that requires no patches or patient preparation time.[11] The patient simply holds the device with his or her thumbs for 30-seconds and the device produces an EKG reading, which is viewable on the KardiaStation™ app synced to the device(s).[12] The EKG is then viewable for download on the KardiaPro® platform, AliveCor's web-based portal that presents medical-grade patient data.[13]

This research was conducted by the APhA Foundation, a national leader in pharmacy practice-based research and has a 25+ year history of producing innovative programs that improve the quality of patient health outcomes. Much of the APhA Foundation's research has been focused on chronic disease management that helps prevent serious complications, and the APhA Foundation has extensive experience designing and implementing innovative practice models through its research and demonstration projects.

The aim of this demonstration project was to create an additional access point in the community at local pharmacies for Afib screening, detection, and referral to physicians for follow-up and initiation of evidence-based therapy when appropriate.

Materials and Methods

Study Design

This prospective cohort study was approved by the WCG Institutional Review Board (IRB), protocol #20213688, Clinicaltrials.gov identifier NCT05067114.

Practice Sites

This multi-site demonstration project occurred in 14 community pharmacies in 9 different states across the U.S. Each participating pharmacy site was provided with the SAFEty Risk Assessment screening materials, KardiaMobile® 6L devices, a validated blood pressure device, program support and coaching, and guidance regarding the referral process to physicians. There were no financial incentives for patients to participate in the project. The APhA Foundation provided community implementation support to each study site to cover costs associated with implementing the project. The breakdown of payment structure to each site was one payment of $1,000 at initiation of the project and payments of up to $3,000 based on per-patient documentation of a screening/assessment/follow-up.

The APhA Foundation prepared pharmacy teams to participate in the demonstration project by developing and conducting consistent training for all participating pharmacy practice sites. The training included information about Afib, the Stroke Risk Scorecard, materials for patient education to facilitate team-based care conversations, and guidance on the referral and follow-up process. Specific training was provided to pharmacy teams on the use of the AliveCor products, including the KardiaMobile® 6L EKG device, the KardiaStation™ and the KardiaPro®. This approach was intended to empower the pharmacies to create a sustainable, scalable practice model within the workflow of their pharmacy.

Process of Care (Figure 2)

Pharmacists identified patients potentially at-risk for Afib through routine patient encounters, proactive patient profile reviews, recruitment signs around the pharmacy, and subsequent discussions with the patient. Identified patients provided informed consent to join the research, and then completed the SAFEty Risk Assessment which included completing a Stroke Risk Scorecard plus a point-of-care EKG reading.

The Stroke Risk Scorecard (Figure 1) facilitates determination of risk categories (High Risk, Caution, Low Risk) based on several factors, and it also provides an opportunity for patient education on these factors. Pharmacists measured the patient's EKG utilizing AliveCor's KardiaMobile® 6L, a 6-lead EKG technology, to capture the EKG reading. Pharmacists, using their professional judgement, referred patients to physicians based on the Stroke Risk Scorecard, the EKG reading, and input from the patient. When the pharmacist deemed it necessary to refer a patient to a physician for further evaluation, they could do so verbally to the patient, provide a written referral to the patient, or could contact the physician to directly inform him or her of the patient's need to be seen.

The pharmacist utilized the results from the SAFEty Risk Assessment to educate the patient on risk factors for stroke and Afib and how the patient could work to reduce or improve upon certain modifiable risk factors. Following a referral, pharmacists were instructed to follow-up with patients at least once to ensure the transition of care. Pharmacists documented the care delivery, including the EKG reading and whether or not the patient was referred for further evaluation, within an electronic record. Because the tests in this study were screening tests and not diagnostic tests, medication recommendations for Afib treatment or stroke prophylaxis were not within the scope of the demonstration project.

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Participants

Individuals eligible to be enrolled in the study included any person at least 18 years of age presenting to a pharmacist for usual and customary care who did not have a pacemaker or implantable cardioverter defibrillator (ICD) or other implanted electronic devices, was not pregnant, and was not lacking cognitive or mental capacity to consent. All patients enrolled in the study reviewed and signed an electronic informed consent, as required by the IRB, and patients who did not consent were not enrolled in the study.

Between September 3, 2021, and May 31, 2022, patients were enrolled from 6 different states, by 9 of the 14 pharmacies involved in the research. Five pharmacies were unable to enroll patients in the study due to barriers described in the discussion section. A breakdown of patient demographics can be found in Table 1.

Data Collection

All data were handled in a manner compliant with the patient confidentiality provisions of the Health Insurance Portability and Accountability Act (HIPAA) to ensure protection of patient health information.

Patient demographics and process measures, as well as clinical and humanistic outcomes were collected for evaluation. In addition, pharmacists from the participating pharmacy sites were surveyed to provide feedback on the demonstration project to the researchers.

Statistical Analysis

Statistical analyses were performed using SAS software version 9.4. Mixed effects logistic regression analyses were used to establish associations between key patient characteristics, risk scores, and clinical outcomes while accounting for the clustering effect of patients with specific study sites/locations.

Results

Pharmacists conducted SAFEty Risk Assessments with a total of 650 enrolled patients, and results of the Stroke Risk Scorecard are found in Figure 3. As shown in Figure 3, 141 (21.7%) patients screened were found to be at high risk for stroke according to the pharmacists' assessment using the Stroke Risk Scorecard.

EKG Readings

A total of 669 EKG readings were performed on the 650 patients, of which 552 (82.5%) were normal (17 patients received 2 EKG readings, and 1 patient received 3 EKG readings). The remaining 117 EKG readings were considered abnormal, which means that the KardiaMobile® device gave a finding of: Afib in 12 (1.8%) cases, Bradycardia in 5 (0.7%) cases, Tachycardia in 26 (3.9%) cases, Premature Ventricular Contraction (PVC) in 12 (1.8%) cases, Supraventricular Ectopy (SVE) in 6 (0.9%) cases, Wide QRS in 42 (6.3%) cases, Unreadable in 7 (1.0%) cases, or Unclassified in 7 (1.0%) cases (which AliveCor defines as a rhythm caused by a non-Afib arrhythmia, unusually fast or slow heart rates, poor quality recording, or falling outside the boundaries of the algorithmic requirements to be called one of their other results). The Abnormal Heart Rhythms are broken down visually in Figure 4.

Of the 109 patients in this study that received an abnormal EKG reading, 78 (71.6%) were Caucasian. Furthermore, all 12 of these 109 patients (11.0%) that received an EKG reading of Afib were Caucasian ($p < 0.0001$). In addition, there is a clear and statistically significant correlation of increasing age and incidence of Afib readings ($p = 0.0420$), as shown in Table 2. The 12 patients in this study that received an Afib reading on the EKG is equivalent to 1.8% of the total participants (650). This number is greater than double the expected incidence of Afib in the US (0.81%), a statistically significant finding ($p < 0.0001$). Demographics and risk score categories of patients with any abnormal EKG readings, those with Afib EKG readings, and those referred for further evaluation are shown in Table 2.

Referrals

In total, the pharmacies referred 44 patients to physicians for further evaluation. Figure 5 shows the breakdown of those referred for further evaluation by risk score and by EKG reading (please note that some of these patients received more than one EKG reading). Pharmacists were encouraged to follow-up at least once with patients that were referred to another provider for further evaluation. In total, 10 patients out of the 44 referred (22.3%) were documented as having received pharmacist follow-up after the initial referral.

Further analysis

In order to determine whether this study sample of patients had a higher prevalence of Afib compared to that of the general US population (2.7M out of 333M), a one-proportion z-test was used. This showed that the study sample did have a statistically significantly higher prevalence than the general population ($z = 64.61$, $p < 0.0001$).

Mixed effects logistic regression was used to identify independent predictors of whether a patient was referred to a physician by the pharmacist, as shown in Table 3. Age, gender, race, risk category, and whether they were identified as having Afib at the screening were included in the model as candidate predictors of whether a patient is referred to a physician. With this model, Afib detection was the only statistically significant predictor of whether a patient was referred to a physician ($p < 0.0001$), all other factors were not statistically significant predictors when Afib was included in the model. Thus, in order to get a better sense of whether or not any of the patient factors were statistically significant predictors of whether a patient was referred, a second model that excluded Afib from

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the list of candidate predictors was utilized. This model showed age as the only statistically significant factor (p = 0.0168) predicting whether a patient is referred to a physician, and each year of age increases the likelihood of a patient being referred to a physician.

A final mixed effects logistic regression model was used to determine whether any of the patient factors were significant predictors of Afib, as shown in Table 4. This model included all the same previous factors, but rather than predicting referral, it was designed to predict Afib. This model shows that age was a significant predictor of Afib (p = 0.0420), with increased age there is a greater chance of having Afib. Self-identifying as Caucasian was also a statistically significant predictor of Afib with Caucasian patients being more likely to be identified as having Afib when compared to non-Caucasians (p < 0.0001).

Pharmacy Survey (n = 9 pharmacies)
Pharmacists at each of the 9 participating pharmacies completed an online survey to provide feedback on the demonstration project. Notable findings are as follows: 89% of respondents indicated they agree with the statement "SAFE participants have found value in the Afib services provided"; 100% of respondents indicated they agree with the statement "Increased vaccination demand in my pharmacy has impacted my ability to participate in SAFE"; 78% of respondents indicated they agree with the statement "The $20 per patient screened is a sufficient incentive for me to participate in SAFE"; 56% of respondents indicated that the average time spent with patients on SAFE is between 11-15 minutes; 33% of respondents indicated that the average time spent with patients on SAFE is between 16-20 minutes; 89% of respondents indicated they were satisfied with participation in SAFE.

Discussion

Pharmacies involved in this research project demonstrated their ability to implement innovative Afib services that directly provide patients with access to a screening they may not otherwise have received if not for the community pharmacy. Results of this study are in alignment with the generally accepted understanding that incidence of Afib increases with age and occurs more frequently in Caucasians.[7,8,9] Additionally, this study's finding of greater than double the expected incidence of Afib in the US demonstrates and underscores the value of providing these services in a community pharmacy. The early detection of Afib offered through the increased access that pharmacists can provide is potentially life-saving for patients that previously had undetected Afib. Ninety percent of the US population lives within 5 miles of a pharmacy, making pharmacists highly accessible and potentially making patient access to Afib detection highly accessible.[14]

At the patient level, regression analyses showed that age was the predominant factor, from our set of observed patient factors, that determined whether patients were referred to a physician or not. Being older increased a patient's likelihood of being referred. Similarly, being Caucasian and Age were significant predictors of whether a patient was identified in this setting as having Afib. The older a patient was the greater the likelihood they are identified as having Afib.

Through this research, the 44 patients referred for further Afib evaluation may have avoided a devasting health outcome by seeking care they otherwise might not have received. Furthermore, the 12 patients that received an EKG determination of Afib are now aware of the possibility that they have Afib, have been introduced to a method to monitor Afib, and better understand the cardiovascular risks they face. Possible reasons that the patients in this study may have a higher risk for Afib compared to the general population could include that patients of a pharmacy may be predisposed to being in poorer health than the general population. For example, blood pressure medications are among the most highly prescribed medications in the US,[15] and given that high blood pressure is a risk factor for Afib, it follows that patients in the pharmacy to pick up blood pressure medications are predisposed to being at a higher risk for Afib because of their high blood pressure condition.

Pharmacists, patients, and other health team members worked collaboratively to create an individualized plan for the patient. The opinions of the patient were incorporated into the discussion of their cardiovascular health and the significance of their assessment results leading to a shared decision-making process about next steps. Pharmacists exemplified team-based care by then involving the patient's physician (or other healthcare team member) in discussion about the situation as needed. This research shows that coordination and communication among patients, pharmacists, and physicians is the foundation of this patient-centered team-based care approach.

This project demonstrates that pharmacists are able to conduct important health care services and help patients to utilize their pharmacist as an accessible, knowledgeable, and qualified health care provider. Pharmacies were compensated to provide these Afib services. Much is demanded of community pharmacists and there are frequently various workflow issues that compete for their time throughout the day, including vaccination, certification of prescriptions, counseling, and medication management. However, when compensated appropriately, pharmacies are able to devote the time required to perform direct patient care services that they are trained and equipped to provide. The impact that this research has upon pharmacy practice is significant because it demonstrates that pharmacists can provide much-needed care services to patients

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in an accessible format that can allow for early detection of serious health diseases. These results build on the mounting evidence that pharmacists are uniquely positioned to play a very valuable role in team-based care.[16, 17] This research should encourage pharmacists in the US to continue implementing innovative health care services in their practice.

Barriers experienced in this research included the concurrent increased vaccination demand on the pharmacies, technology barriers with the devices, and patient-specific barriers such as time commitment.

Increased vaccination demand impacting their ability to participate in SAFE was a barrier expressed by all of the participating pharmacy sites. The time during which the SAFE project occurred was at the height of the COVID-19 booster vaccine demand across the US. This is the primary barrier expressed by the 5 sites that were unable to enroll patients in the research. The various COVID-19 vaccines, each with their own nuances in terms of dosing schedule, amount of volume, and age group considerations, require a lot of time, energy, and focus on behalf of the pharmacy. Offering of COVID-19 vaccines played a very significant role in the ability of the pharmacy staff to be able to make time for SAFE.

The time commitment to participate in SAFE was a barrier for patients according to over half of the participating pharmacy sites. Although the EKG reading itself is very quick, engaging the patient in conversation and education about their health and risk factors takes time. Other time-related factors mentioned by pharmacists were that many patients solely use the drive-thru, which is by nature a quick process that doesn't lend itself well to the time needed for SAFE. Another significant barrier indicated by the pharmacies was the informed consent process required by SAFE. Pharmacies indicated that patients are not accustomed to providing informed consent in a pharmacy, so that conversation alone was time consuming and presented a barrier. Some patients simply declined participation in SAFE immediately upon being asked to sign something, even after proper explanation from the pharmacist. Additionally, some pharmacists indicated their own discomfort with how to properly convey the informed consent requirement to patients, as this is not something that pharmacists typically do.

Limitations experienced in the research included sparse and inconsistent follow-up with patients referred for further evaluation by another health care provider, as well as issues with technology. The researchers encouraged, but did not require, pharmacists to document follow-up steps taken with those who were previously referred to another provider. Technology issues were expressed by many participating pharmacy sites. Oftentimes this was related to the login process itself, with multiple usernames and passwords for the various platforms (electronic informed consent, EKG determination, care delivery documentation). Keeping up with multiple passwords and having to continuously re-sign in every time was a burden for the pharmacy staff which is already very pressed for time. Additionally, not all staff members immediately knew the various passwords, so they had to look it up or ask colleagues how to login. The pharmacists also indicated that certain devices could do things, such as print, that other devices couldn't do, and thus having to manage multiple devices presented a barrier.

Conclusion

In conclusion, millions of Americans knowingly have Afib and millions more could unknowingly have Afib, placing this population at higher risk for stroke and heart failure. Patients have increased access to high-quality care through pharmacists who conduct Afib screening, detection, and referral services in the community pharmacy. These services are valuable for patients to achieve early detection and monitoring of Afib which could prevent incidence of stroke and other adverse cardiovascular outcomes. This demonstration project indicates that the process of care used in SAFE detected more than twice as many patients with Afib as compared to the expected prevalence of Afib in the US. This research provides a model that pharmacies may emulate and scale in order to identify more patients at risk for Afib, stroke, and other cardiovascular disease. When compensated and trained appropriately, pharmacists as part of the health care team are able to perform valuable patient care services in the community and provide unparalleled access to patients seeking care. Future studies are needed to explore scalability of the model and the pharmacists' role in monitoring patients with cardiovascular risk and disease. More studies are needed to address the study barriers and limitations, such as workflow issues and patient follow-up, as well as to evaluate the effectiveness of the SAFE intervention in confirming Afib diagnoses after the screening. To achieve these goals, changes in the current health care system are necessary to support delivery of accessible, high-quality patient care services.

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Author's confirmation/disclosure statement

Jonathan Little reports employment with The American Pharmacists Association Foundation and Hospital Discount Pharmacy. Aaron J. Bonham reports employment with the University of Michigan. Benjamin M. Bluml reports employment with The American Pharmacists Association Foundation.

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Disclaimer: The statements, opinions, and data contained in all publications are those of the author(s).

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Table 1. Demographic Characteristics for All Enrolled Patients (N = 650)

Age	Number (%)
18-24	29 (4.5%)
25-34	58 (8.9%)
35-44	62 (9.5%)
45-54	74 (11.4%)
55-64	130 (20.0%)
65-74	178 (27.4%)
75-84	96 (14.8%)
85 and above	23 (3.5%)
Sex	
Female	408 (62.8%)
Male	241 (37.1%)
Other	1 (0.2%)
Ethnicity	
African American	9 (1.4%)
Asian	139 (21.4%)
Caucasian	415 (63.8%)
Hispanic	5 (0.8%)
Native American	2 (0.3%)
Other / Not Specified	35 (5.4%)
Pacific Islander	45 (6.9%)
State	
Arkansas	48 (7.4%)
Hawaii	228 (35.1%)
Iowa	111 (17.1%)
Minnesota	41 (6.3%)
Ohio	194 (29.8%)
Oklahoma	28 (4.3%)

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Table 2. Results of selected groups of patients with abnormal EKG readings, those with Afib, and those who were referred.

Characteristics	Those with abnormal EKG reading (n=109) (Percentage)	Those with Afib EKG reading (n=12) (Percentage)	Those who were referred (n=44) (Percentage)
Sex			
Female	70 (64.2%)	9 (75%)	25 (56.8%)
Male	39 (35.8%)	3 (25%)	19 (43.2%)
Ethnicity			
African American	2 (1.8%)	-	1 (2.3%)
Asian	19 (17.4%)	-	8 (18.2%)
Caucasian	78 (71.6%)	12 (100%)	27 (61.4%)
Not Specified	4 (3.7%)	-	4 (9.1%)
Pacific Islander	6 (5.5%)	-	4 (9.1%)
Age			
18-24	5 (4.6%)	-	3 (6.8%)
25-34	8 (7.3%)	-	1 (2.3%)
35-44	10 (9.2%)	-	3 (6.8%)
45-54	6 (5.5%)	-	-
55-64	21 (19.3%)	1 (8.3%)	8 (18.2%)
65-74	25 (22.9%)	2 (16.7%)	8 (18.2%)
75-84	27 (24.8%)	4 (33.3%)	15 (34.1%)
85 and above	7 (6.4%)	5 (41.7%)	6 (13.6%)
State			
Arkansas	1 (1%)	1 (8.3%)	2 (4.5%)
Hawaii	29 (26.6%)	-	14 (31.8%)
Iowa	19 (17.4%)	1 (8.3%)	5 (11.4%)
Minnesota	10 (9.2%)	1 (8.3%)	8 (18.2%)
Ohio	45 (41.3%)	7 (58.3%)	11 (25%)
Oklahoma	5 (4.6%)	2 (16.7%)	4 (9.1%)
Risk Score			
High	36 (33%)	5 (41.6%)	13 (29.5%)
Caution	34 (31.2%)	3 (25%)	15 (34.1%)
Low	39 (35.8%)	4 (33.3%)	16 (36.4%)

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Table 3. Independent predictors of whether a patient was referred to a physician by the pharmacist.

	Model 1		Model 2	
	B	p-value	B	p-value
Low risk vs. Caution	0.0049	0.7877	0.0016	0.9373
Low vs. high risk	0.0029	0.9323	0.0143	0.7152
Age	0.0015	0.0607	0.0023	0.0168
A-fib	0.6697	<0.0001	--	--
Male Gender	0.0220	0.3909	0.0135	0.6275
Caucasian	0.0933	0.2077	0.0709	0.3135
AA/Black	0.0146	0.7075	-0.0028	0.9378
Other races	0.0657	0.4040	0.0553	0.4622
Intercept	0.0947	0.5349	0.0518	0.7352

Table 4. Determination of whether patient factors were significant predictors of Afib.

	B	p-value
Low risk vs. Caution	-0.0048	0.5354
Low vs. high risk	0.0172	0.1703
Age	0.0012	0.0420
Male Gender	0.0124	0.1615
Caucasian	-0.0185	<0.0001
Unspecified ethnicity	0.0164	0.1253
Intercept	-0.0739	0.0906

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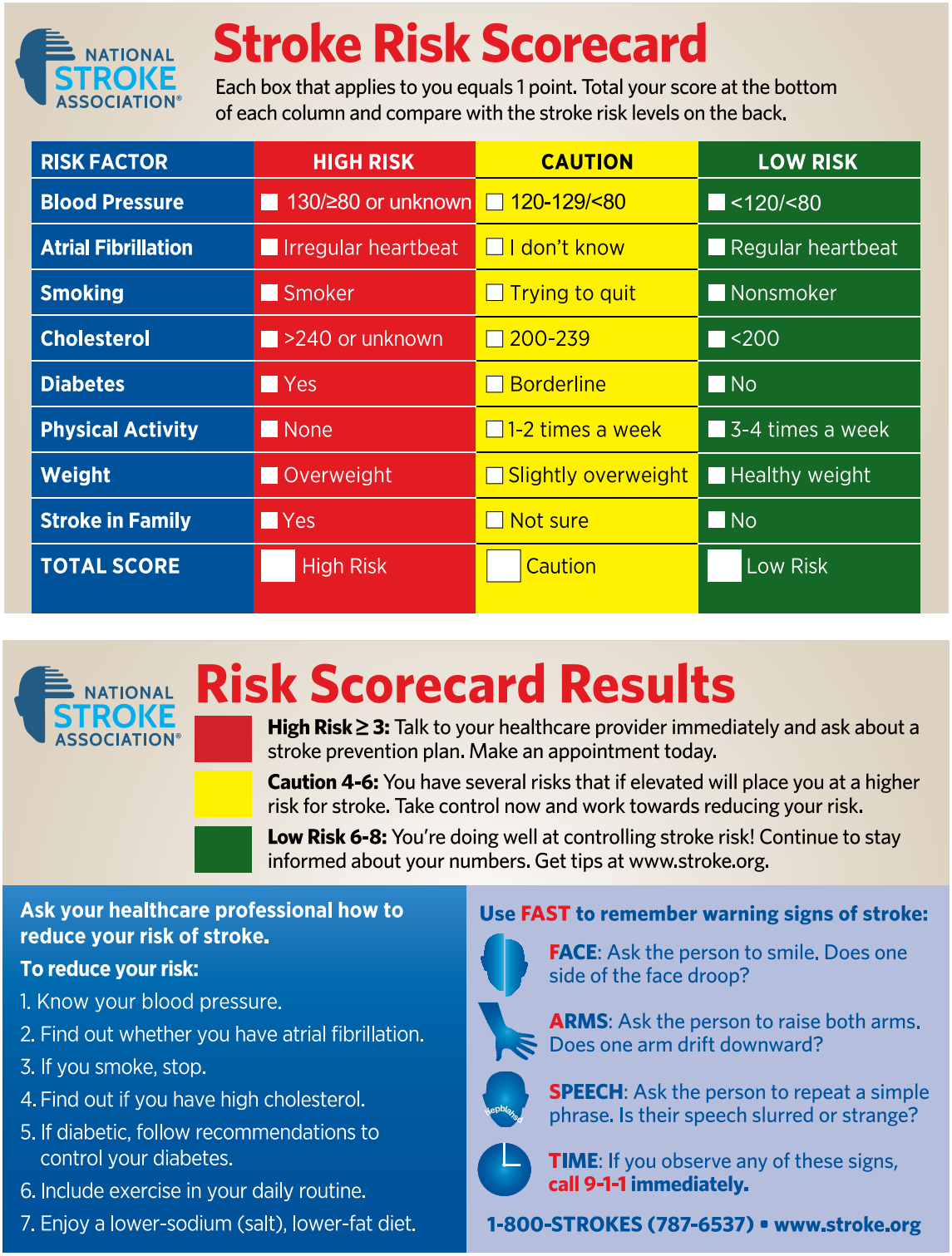

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Stroke Risk Scorecard

Each box that applies to you equals 1 point. Total your score at the bottom of each column and compare with the stroke risk levels on the back.

RISK FACTOR	HIGH RISK	CAUTION	LOW RISK
Blood Pressure	☐ 130/≥80 or unknown	☐ 120-129/<80	☐ <120/<80
Atrial Fibrillation	☐ Irregular heartbeat	☐ I don't know	☐ Regular heartbeat
Smoking	☐ Smoker	☐ Trying to quit	☐ Nonsmoker
Cholesterol	☐ >240 or unknown	☐ 200-239	☐ <200
Diabetes	☐ Yes	☐ Borderline	☐ No
Physical Activity	☐ None	☐ 1-2 times a week	☐ 3-4 times a week
Weight	☐ Overweight	☐ Slightly overweight	☐ Healthy weight
Stroke in Family	☐ Yes	☐ Not sure	☐ No
TOTAL SCORE	☐ High Risk	☐ Caution	☐ Low Risk

NATIONAL STROKE ASSOCIATION®

Risk Scorecard Results

High Risk ≥ 3: Talk to your healthcare provider immediately and ask about a stroke prevention plan. Make an appointment today.

Caution 4-6: You have several risks that if elevated will place you at a higher risk for stroke. Take control now and work towards reducing your risk.

Low Risk 6-8: You're doing well at controlling stroke risk! Continue to stay informed about your numbers. Get tips at www.stroke.org.

Ask your healthcare professional how to reduce your risk of stroke.

To reduce your risk:

1. Know your blood pressure.
2. Find out whether you have atrial fibrillation.
3. If you smoke, stop.
4. Find out if you have high cholesterol.
5. If diabetic, follow recommendations to control your diabetes.
6. Include exercise in your daily routine.
7. Enjoy a lower-sodium (salt), lower-fat diet.

Use FAST to remember warning signs of stroke:

FACE: Ask the person to smile. Does one side of the face droop?

ARMS: Ask the person to raise both arms. Does one arm drift downward?

SPEECH: Ask the person to repeat a simple phrase. Is their speech slurred or strange?

TIME: If you observe any of these signs, **call 9-1-1 immediately.**

1-800-STROKES (787-6537) ▪ www.stroke.org

Figure 1. Stroke Risk Scorecard.

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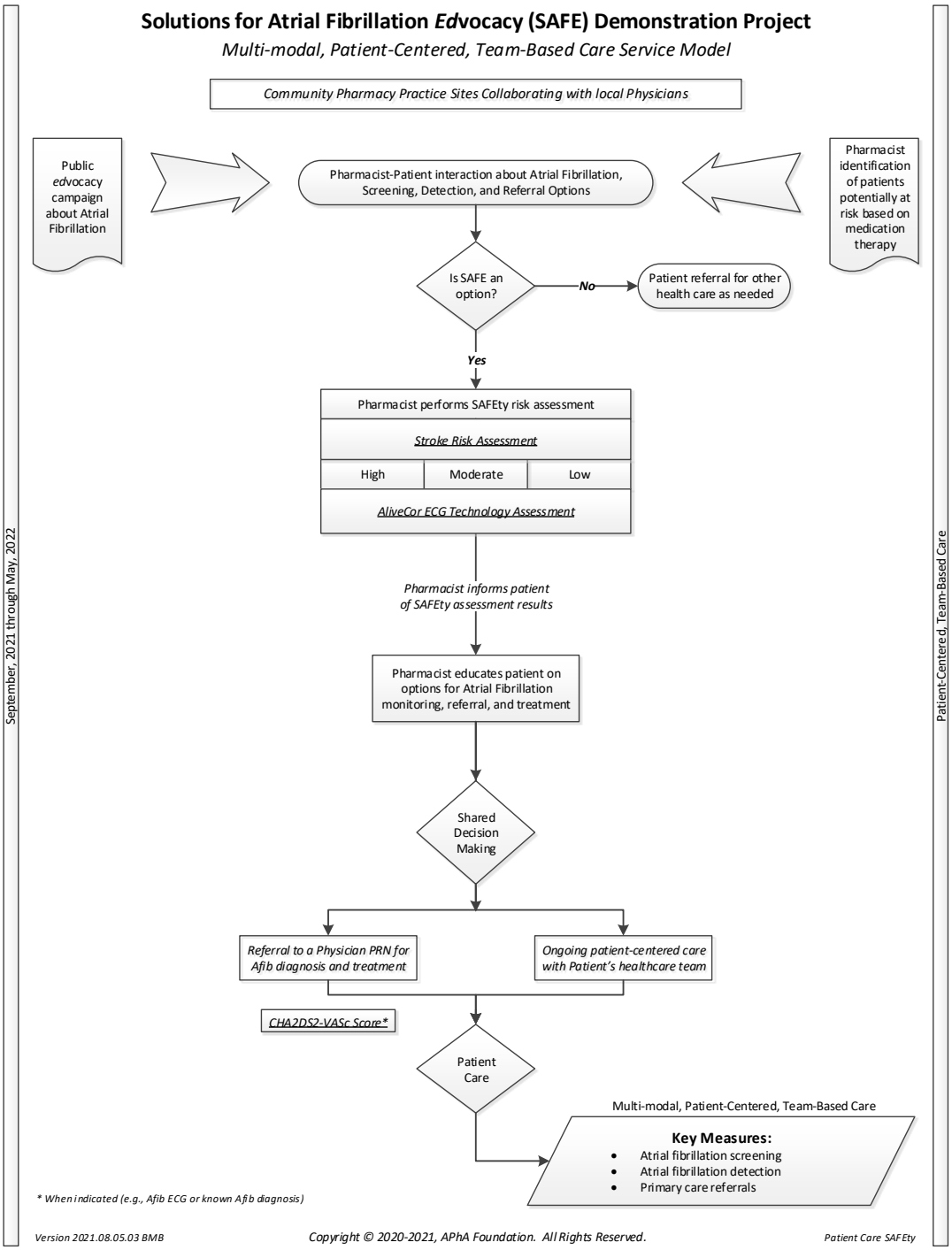

Figure 2. Solutions for Atrial Fibrillation Edvocacy (SAFE) Care Service Model.

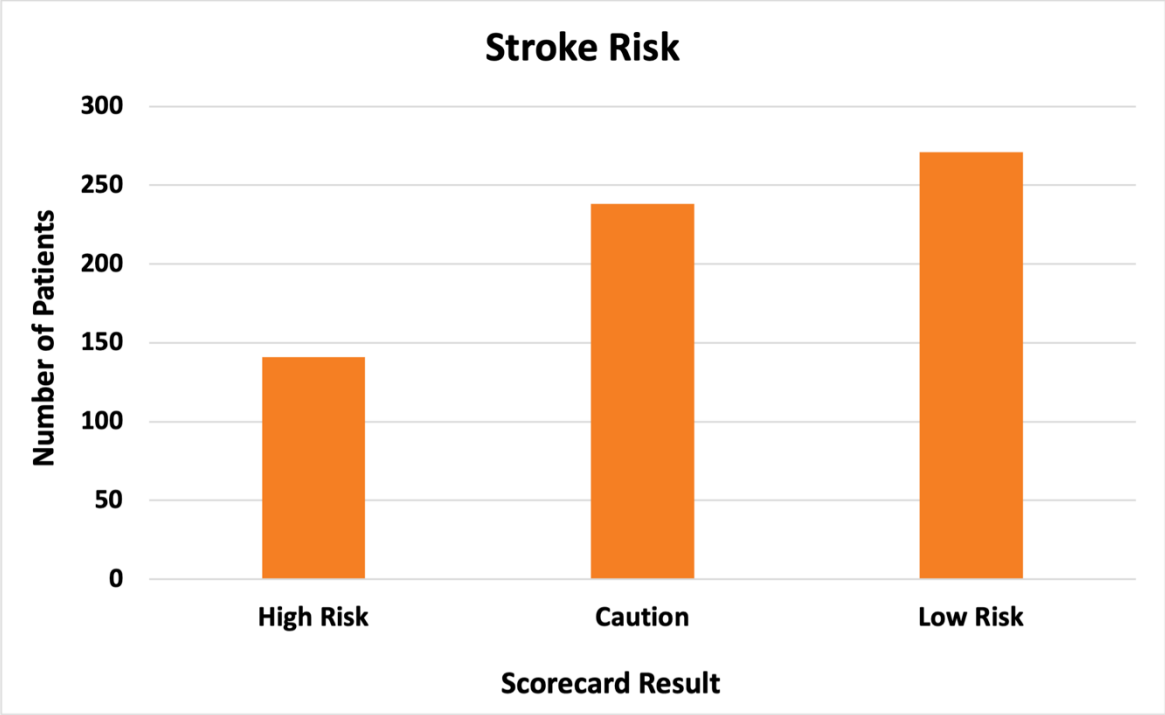

Figure 3: Stroke Risk According to Scorecard Result.

DOI: https://doi.org/10.24926/iip.v14i2.5477

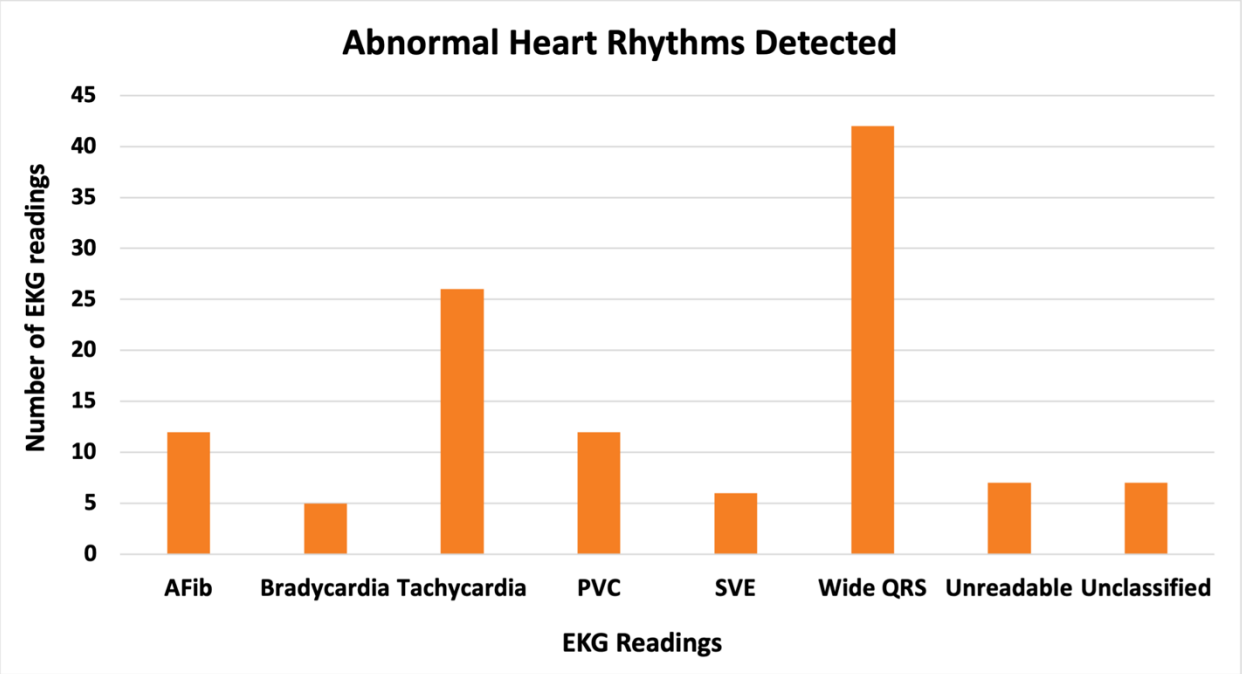

Figure 4: Abnormal Heart Rhythms Detected. AFib, atrial fibrillation; PVC, Premature Ventricular Contraction; SVE, Supraventricular Ectopy; QRS, term given to denote a specific section seen on an EKG.

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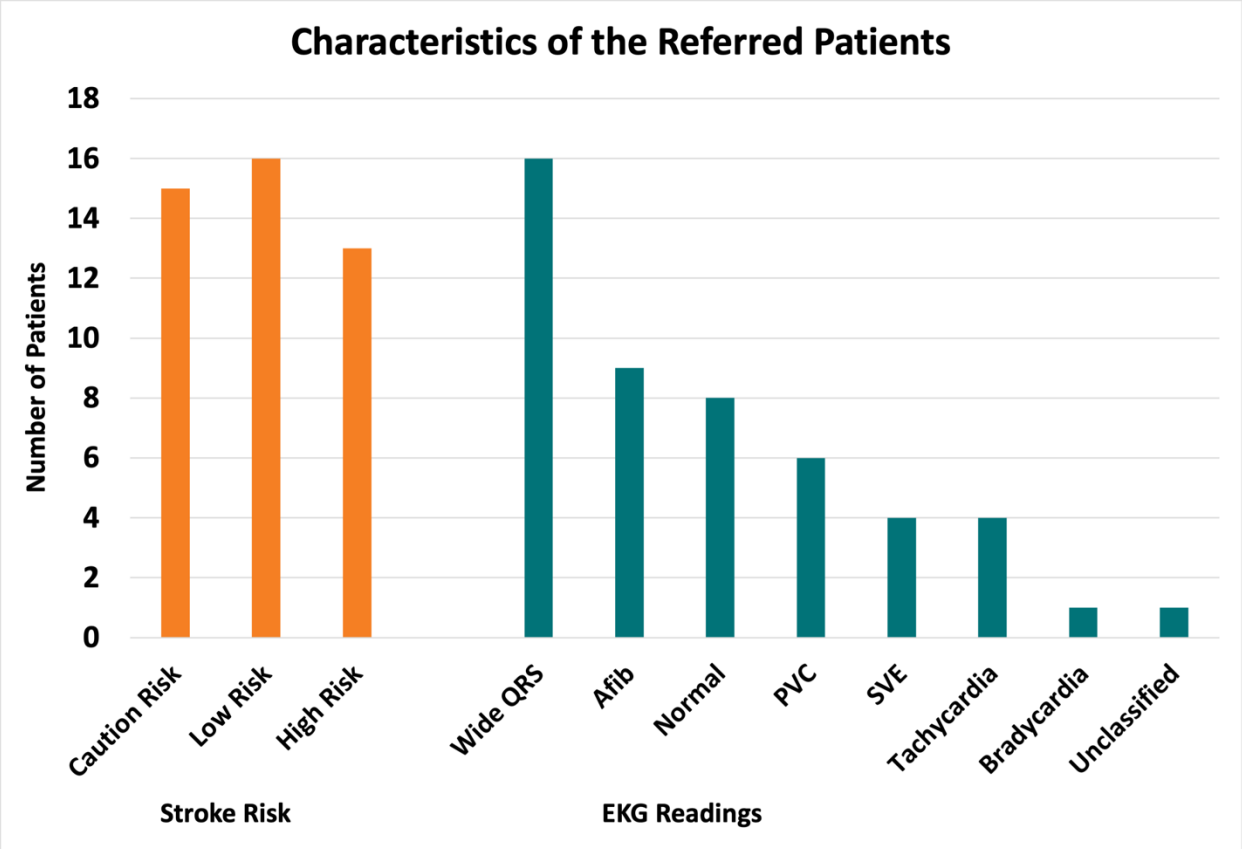

Figure 5: Characteristics of the Referred Patients. AFib, atrial fibrillation; PVC, Premature Ventricular Contraction; SVE, Supraventricular Ectopy; QRS, term given to denote a specific section seen on an EKG.

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