

**A Call to Action:
Addressing Health Equity
to Improve Atrial Fibrillation
Patient Experiences
and Outcomes**



StopAfib.org 



Overview

Atrial fibrillation (AF), the most common cardiac arrhythmia, is associated with significant morbidity and mortality. However, the impact of AF varies substantially based on race, ethnicity, sex, and social determinants of health such as income, education, and access to care. Symptom burden, quality of life, and clinical outcomes are documented to be worse in women and among Black and Hispanic patients, as well as other underrepresented racial and ethnic groups (UREGs).

Numerous studies have highlighted gaps in care that negatively impact women and individuals in UREGs. Patients in these groups are often not receiving standard-of-care treatments and guideline-recommended management proven to enhance both clinical outcomes and quality of life.

These findings indicate a critical need to address disparities (i.e., differences in health status between groups) and inequities (i.e., disparities that are related to social, economic, environmental, or healthcare access differences) in the care of patients with AF. Our task force has convened to identify priority areas for intervention, devise strategies to address disparities and inequities in AF care for affected populations, and drive change through action. By highlighting key issues and urgent needs, we are calling for specific actions to improve care for all patients, particularly those not receiving optimal care.

This report highlights critical divides in care and opportunities to improve health equity in AF management. Concerted efforts are needed to address inequities in managing AF, so all patients have the opportunity to receive optimal care regardless of sex, gender, race, and ethnicity.

We recommend a targeted, multifaceted strategy that addresses multiple levels of healthcare delivery, including the need to:

- Promote awareness and encourage adoption of new clinical practice guidelines to address health inequities and barriers to AF management
- Target healthcare providers through educational outreach to improve awareness and knowledge of AF care disparities and inequities
- Promote racial, ethnic, and gender diversity in the healthcare workforce
- Facilitate implementation of training on implicit bias and cultural competency
- Adopt advanced patient care strategies (e.g., AF centers of excellence) to support underserved communities
- Support ongoing efforts to ensure clinical trials include a broad and representative range of patients by race, ethnicity, and gender
- Support research on drivers and determinants that lead to disparities and inequities in AF management
- Enhance shared decision-making and patient engagement for patients with AF

Disease Impact and Outcomes

Approximately 7 million Americans are living with atrial fibrillation (AF).¹ These individuals are at a 5-fold increased risk for ischemic stroke and are also more susceptible to other morbid conditions, such as heart failure and dementia.² Each year in the United States, AF accounts for nearly 500,000 hospitalizations and is implicated in more than 150,000 deaths.^{3,4}

Although most common in men and individuals of White, European descent, AF is nevertheless the most prevalent sustained arrhythmia for both men and women in all racial and ethnic groups.^{5,6} The estimated lifetime risk of AF in White patients is 1 in 3; the lifetime risk in women is 1 in 4 and 1 in 5 for Black populations.^{2,7} Paradoxically, it has been reported that Black individuals have a lower rate of AF compared with White individuals despite a higher prevalence of cardiovascular risk factors.⁸

There is also increasing evidence that the impact of AF is more pronounced for female, Black, and Hispanic patients regarding adverse outcomes, including mortality.^{6,7,9-14}

Women and patients in racial and ethnic minoritized groups have longer-lasting and more frequent symptomatic episodes of AF, and worse quality of life.^{10,15}

Furthermore, patients in these groups may struggle with managing AF, especially when lacking social or community support.¹⁵⁻¹⁸

While Black and Hispanic individuals have a lower incidence of AF than White individuals, Black and Hispanic individuals with AF have a higher burden of comorbidities, including hypertension, cardiomyopathy, and diabetes, and a higher risk of adverse outcomes, such as stroke, heart failure, coronary heart disease (CHD), and death.^{12,13,19} Women have a higher risk for adverse outcomes associated with the disease,^{9,11} which includes a higher incidence of stroke (increased by a factor of 5.7, versus just 4.0 in men), heart failure (increased by a factor of 11.0, versus 3.0 in men), and death (increased by a factor of 3.5, versus 2.4 for men).⁶

Disparities and Inequities in AF Diagnosis and Care

Undiagnosed AF is a concern across all patient groups, given that the condition is frequently asymptomatic and thus may not be recognized until after the development of stroke or other complications.²⁰ However, it has been estimated that undiagnosed AF occurs with greater prevalence in women and Black or Hispanic individuals.²⁰⁻²² In a community-based cardiovascular disease study, AF detection by standard clinical methods was much lower in African American patients (6.6%) as compared with White patients (11.2%). Taken together, these findings suggest that clinical detection of AF varies by race and ethnicity and could precipitate underdiagnosis and potential undertreatment of specific patient groups.²¹

Delayed diagnosis of AF is one potential explanation for the aforementioned paradoxically low rate of AF reported in Black individuals and women. Factors that may contribute to delays in diagnosis include socioeconomic status, lack of insurance coverage, the location where medical care is received (e.g., a hospital, primary care practice, community health center, or other venue), and cultural factors that impact how the patient perceives illness and reports symptoms.²³

The experiences of AF patients vary by sex, race, and ethnicity. Black patients have indicated that AF was unpredictable and challenging to manage, particularly without essential social and community support.¹⁷ Patients may also experience different levels of treatment burden, defined as the demands on a patient's time and energy and its impact on patient function and well-being.²⁴ Women with AF are more likely to experience a high treatment burden, often fueled by frequent physician visits, health insurance, and other administrative aspects of care.²⁵ Approximately 2 in 5 females with AF rate their treatment burden as unacceptably high, compared with 1 in 5 males with AF.²⁶ High AF-related treatment burden may reduce quality of life and is linked to decreased mobility, increased discomfort, and higher anxiety/depression scores.²⁵

Treatment disparities are especially concerning given the disproportionate impact of adverse outcomes from AF on women and racial and ethnic minoritized populations. Today, management of risk factors, rate and rhythm control, and stroke reduction are all considered essential cornerstones of care for patients with AF.²⁷⁻²⁹

However, women and those in UREGs may not always receive the same high-quality, guideline-directed treatment as their White and male counterparts. Inequities have been documented in the use of essential treatments, including oral anticoagulation for stroke reduction, and rhythm control strategies that are increasingly important in AF care.^{18,30-32}

In particular, recent studies have documented differences, based on sex, race, and ethnicity, in the use of oral anticoagulation to reduce the risk of stroke in conjunction with rhythm control. In an analysis including more than 500,000 Medicare beneficiaries with newly diagnosed AF, the use of catheter ablation was 30% less likely in Hispanic versus White patients and 35% less likely in women versus men. Oral anticoagulation was also significantly less likely to be used in Black and Hispanic patients versus White patients and in female versus male patients.³⁰ Further research found that Medicare beneficiaries who are newly diagnosed with AF are less likely to receive oral anticoagulants if they are Black or female. Among those who do receive oral anticoagulants, Black patients are less likely than White patients to initiate direct-acting oral anticoagulants (DOACs).³³ In one registry study, White patients more often were managed with rhythm control strategies, including antiarrhythmic drugs and catheter ablation, while Black and Hispanic patients were more often

managed with a rate control strategy, despite being more symptomatic overall than White patients.¹⁸

Disparities and inequities in the use of catheter ablation and antiarrhythmic drugs are particularly concerning due to the increasing emphasis on rhythm control in AF management. Atrial fibrillation best practices are evolving to favor the early use of rhythm control therapy rather than the symptom-driven use of rhythm control therapy.³¹ Patients managed with early rhythm control had a lower risk of adverse cardiovascular outcomes compared with standard rate control therapy in the randomized EAST-AFNET 4 clinical trial.³²

With the emergence of new and consistent evidence that early intervention with rhythm control may delay or prevent progression to persistent AF,³¹ an early rhythm control strategy is now highlighted in clinical practice guidelines. Recent AF management guidelines from the American College of Cardiology (ACC), American Heart Association (AHA), American College of Chest Physicians (ACCP), and Heart Rhythm Society (HRS) emphasize the importance of early management focused on maintaining sinus rhythm and minimizing AF burden.³⁴ This evolving paradigm shift in AF management emphasizes the need to address inequities in access to rhythm control strategies.³⁵ As stated in the latest clinical practice guidelines, the differences or delays in therapy shown to negatively impact women and individuals from UREGs may result in worse outcomes, given that early rhythm control improves outcomes.³⁴



Social Determinants of Health in AF

Social determinants of health are the factors that influence health outcomes, defined by the World Health Organization (WHO) as the conditions in which people are born, grow, work, live, and age.³⁶

Numerous social determinants (such as income, education, employment, food insecurity, and more) can negatively influence health equity in cardiovascular disease.³⁷

Social determinants may also play a specific role in AF-related inequities, such as the following:^{5,10,38-40}

- **Poor access to specialist physicians, screening, digital monitoring technology, and broadband internet access (referred to as the “digital divide”) may contribute to the underdiagnosis of AF and reduced treatment due to a lack of access to telemedicine and remote healthcare.**
- **Poverty and low socioeconomic status may limit access to costly therapies such as oral anticoagulation and specialized procedures such as ablation.**
- **Being uninsured, underinsured, and living in rural or urban areas with limited access to health care can also contribute to gaps in care.**
- **Language barriers and low literacy levels contribute to low health literacy and may complicate patient-provider communication and trust, limit the patient’s understanding of AF signs and symptoms and therapeutic choices, and confound referrals to specialists.**

Social determinants that increase AF risk can be clustered in susceptible individuals (e.g., Black race, female sex, and residing in a higher-poverty neighborhood) or certain geographic areas (e.g., rural environment with limited healthcare facilities). Throughout an individual’s lifetime, AF-related social determinants of health may “accumulate,” particularly among individuals who live in disadvantaged geographies.⁵ Furthermore, low household income and neighborhood poverty have been linked to significantly higher rates of AF and poor outcomes, suggesting a need to look beyond traditional risk factors such as smoking or obesity to ensure equitable care.^{7,41,42}

In addition, conscious or unconscious racial bias contributes to or causes health inequities.⁴³ Discriminatory housing practices (historically described as “redlining”) may make it difficult for individuals in UREGs to live in healthy neighborhoods, access high-quality education, or obtain the best healthcare; likewise, bias at the institutional or individual level may widen the gaps in care and exacerbate poor outcomes in patients with cardiovascular disease.⁴⁴ A clinician’s potential for bias, whether intentional or unintentional, likely contributes to race-related gaps in AF, although measuring the real-world impact of this bias remains challenging.³⁰

The AF-related impact of other specific social determinants, such as social support, geographic residence, and health literacy, is increasingly coming to light.⁴⁵ Collectively, research suggests the causes of inequities are complex and multifactorial.⁴³ More research is needed to confirm these findings and to investigate the impact of multiple, overlapping individual, societal, and institutional factors on AF detection and diagnosis, evaluation, management, and outcomes.⁴⁵

Strategies to Address Inequities in AF Patient Care

A multifaceted approach is needed to adequately address disparities and inequities in the management of AF and treatment outcomes. Our task force has identified opportunities to bridge these gaps. While not comprehensive, this list may serve as a framework for further discussions and developing actionable strategies to work toward health equity and high-quality medical care regardless of sex, race, ethnicity, and the social and environmental contexts in which patients with AF live and work.

Strategy	Problem	Solution
1. Encourage adoption of new AF guidelines	Efforts are needed to ensure that individuals experiencing health inequities are receiving appropriate guideline-directed medical treatments for AF	<ul style="list-style-type: none"> • Integrate updated AF guidelines into training and education programs for healthcare providers, especially for those who work in underserved communities • Collaborate with community organizations to help facilitate access to guideline-directed medical care • Enhance patient education with educational materials that highlight best practices from AF management guidelines • Support clinical practices and health systems in the selection of metrics to be tracked, implementation of reporting systems, and standardization of data collection
2. Educate HCPs on inequities in AF	Many HCPs lack awareness of disparities in AF that may compromise health outcomes among vulnerable individuals	<ul style="list-style-type: none"> • Provide educational outreach to HCPs through conferences, workshops, online learning platforms, and publications in professional journals • Prioritize education, outreach, and advocacy to address health equity and disparities in AF care at the leadership level of professional organizations and journals • Conduct mixed methods research to characterize HCP attitudes, behaviors, and understanding of AF-related disparities
3. Promote cardiology workforce diversity	Relatively few women and individuals from UREGs are in cardiology training programs, translating into a lack of diversity in the cardiology workforce	<ul style="list-style-type: none"> • Provide early financial and structural support, as well as mentoring, to high school and college students from UREGs to increase exposure to health careers • Adopt practices from well-designed programs (e.g., inclusive selection committees, holistic review for admissions and selection) • Implement diversity, equity, and inclusion programs and strategies consistently in HCP education • Consider alternate strategies for integrating these principles (in areas where there are barriers to implementation)
4. Facilitate implicit bias and cultural competency training	HCPs can hold implicit biases and possibly explicit attitudes or stereotypes that impact interactions with patients	<ul style="list-style-type: none"> • Implement ongoing training (i.e., not single-session training) to address implicit bias and promote cultural humility among a broad range of HCPs • Advocate for training implementation at the health system and policy level • Financially support the rollout of implicit bias training programs in resource-limited healthcare settings

Abbreviations: AF = atrial fibrillation; HCP = healthcare provider; UREG = underrepresented racial or ethnic group.

Strategy	Problem	Solution
<p>5. Adopt advanced patient care strategies</p>	<p>There are significant disparities in the provision of evidence-based treatments for AF, resulting in suboptimal clinical outcomes for women and individuals in UREGs</p>	<ul style="list-style-type: none"> • Implement strategies to address unmet needs, such as establishing standardized protocols, order sets, and care pathways • Address barriers to treatment initiation such as a lack of patient education, inadequate disease/treatment documentation, and administrative or cost issues • Utilize registries to monitor quality of care and ensure AF treatment is equitable • Enact policy initiatives to ensure AF patients have access to essential medications • AF Centers of Excellence (CoEs) should be established in underserved communities, and existing CoEs should work toward demonstrating equitable care and eliminating disparities
<p>6. Support efforts to improve diversity in AF research</p>	<p>Historically, AF clinical trials have had limited generalizability due to inadequate enrollment of women/UREGs</p>	<ul style="list-style-type: none"> • Support continued efforts to improve the representation of women and UREGs in clinical trials and registries • Design clinical trials to ensure diverse patient enrollment by age, gender and sex, race and ethnicity, and geography • Consider simplified informed consent processes, financial incentives for patient participation, virtual follow-up options, and accessible clinical trial site locations (e.g., pharmacies or community centers) to bolster patient enrollment in studies • Perform community-based outreach to build partnerships, trust, and reciprocity • Train research teams to address implicit bias and promote cultural humility in the context of clinical research • Clinical trials should endeavor to include institutions that are recognized for serving minoritized populations, whether or not those institutions have a history of clinical research
<p>7. Support research in AF care disparities</p>	<p>There is a significant gap in understanding of the factors underlying AF treatment inequities among women and UREGs; and SDoH is under-researched in AF as compared with other CV diseases</p>	<ul style="list-style-type: none"> • Conduct qualitative and quantitative research studies of HCPs and AF patients to better understand the barriers and facilitators of equitable treatment • Increase research efforts to elucidate the associations between SDoH and AF
<p>8. Enhance SDM and patient engagement</p>	<p>Some patients are inadequately prepared for SDM and may not have input in treatment decisions</p>	<ul style="list-style-type: none"> • Emphasize the importance of SDM in cultural competence training and other educational outreach initiatives for HCPs • Implement strategies to improve the health literacy of patients with AF, such as providing access to accurate and accessible educational materials • Create and use apps, multimedia, and other digital tools to improve and optimize patient education on AF • Promote efforts to address the “digital divide” (i.e., poor access to technology among disadvantaged populations) and ensure that AF patients have equitable access to electronic health services and education

Abbreviations: AF = atrial fibrillation; CV = cardiovascular; CoEs = Centers of Excellence; HCP = healthcare provider; SDM = shared decision-making; SDoH = social determinants of health; UREG = underrepresented racial or ethnic group.

1. Promote Awareness and Encourage Adoption of New AF Clinical Practice Guidelines

Problem: Until recently, AF clinical practice guidelines were largely silent on health inequities in AF care. The latest AF management guideline directly addresses health inequities. Now, efforts are needed to ensure that the guidelines are implemented effectively to ensure that individuals experiencing health inequities are receiving appropriate guideline-directed medical treatments for AF.

Solution: The recently released 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Atrial Fibrillation³⁴ specifically focuses on addressing health inequities and barriers to AF management. The report states that all patients should be equitably offered guideline-directed therapy. This includes stroke risk reduction, rate and rhythm control, and lifestyle/risk factor modification regardless of sex and gender diversity, race and ethnicity, or adverse social determinants of health, such as lower income or education, inadequate or no insurance, or rural residence. To ensure awareness and adherence to the updated AF guidelines, targeted clinical training and education programs are needed, particularly for healthcare providers who work in underserved communities. In addition, collaborative community efforts may help facilitate access to guideline-directed medical care. Patient education can also be enhanced through the production of educational materials to improve understanding of AF management needs among individuals experiencing health inequities.

The guidelines state that clinical practices and health systems should be tracking the delivery of guideline-directed medical therapy and outcomes over time, and if this exercise identifies inequities, then barriers to optimal care should be identified and eliminated. While these goals are commendable, putting the recommendations into practice will be challenging. Efforts should be made to support clinical practices and health systems in the selection of metrics to be tracked, implementation of reporting systems, and standardization of data collection.

2. Target Healthcare Providers Through Educational Outreach

Problem: Many healthcare providers lack awareness of disparities and inequities in AF impact, diagnosis, and treatment that may compromise health outcomes among vulnerable individuals.

Solution: Educational outreach to healthcare providers through conferences, workshops, online learning platforms, and publications in professional journals will improve their awareness of health inequities, knowledge of the underlying evidence, and competence in addressing these issues

at the patient level. To accomplish this, the leadership of cardiology professional organizations and cardiovascular/electrophysiology journals must prioritize research, education, outreach, and advocacy to address health equity and disparities in AF care. To provide individualized care, healthcare providers should be aware of the differing symptom profiles of women and UREGs.¹⁸ Moreover, providers should consider the social contexts of individuals with AF to ensure tailored clinical strategies for self-management.¹⁷ Of note, implementing specific training programs to address implicit bias and promote cultural humility also creates the opportunity to raise awareness of AF care disparities and inequities. To facilitate educational outreach, mixed methods research should be conducted to better characterize healthcare providers' current understanding of AF-related disparities and inequities, knowledge gaps, and barriers to learning.

3. Promote Diversity in the Cardiology Workforce

Problem: There are relatively few women and individuals from UREGs in cardiology training programs, translating into a lack of diversity in the cardiology workforce.⁴⁶

Solution: Diversity, equity, and inclusion (DEI) programs and strategies must be implemented consistently and across the board at the level of healthcare provider education. In areas where there are significant challenges or barriers to adopting DEI efforts, alternative strategies may be needed to integrate the underlying principles and objectives of DEI into healthcare education. Additional diversity among healthcare providers could help reduce health disparities and inequities in AF by enhancing trust, improving quality of care, and fostering more research aimed at addressing health equity. With slow progress toward developing a diverse workforce, training programs must consider adopting best practices from well-designed programs (such as interviewer training in implicit bias, inclusive selection committees, and holistic review for admissions and selection) to improve DEI and ultimately improve healthcare outcomes.⁴¹

In addition to workplace initiatives, there is a need for action at earlier stages, i.e., in educational settings. Proactive measures could include mentoring, educational programs, and funding of scholarships to support high school and college students from UREGs. Such initiatives will help students grasp the importance and need to diversify the medical field and may encourage them to pursue higher levels of education, including college and professional healthcare training. Perhaps the most important effect of funding such endeavors would be to alleviate economic stressors that discourage students from disadvantaged backgrounds from pursuing the long and arduous road of medicine.



4. Facilitate Implementation of Training on Implicit Bias and Cultural Competency

Problem: Most healthcare providers report holding views consistent with racial, ethnic, and gender equality, and thus do not have explicit biases. However, healthcare providers can hold implicit biases and possibly explicit (i.e., attitudes or stereotypes) that are applied unconsciously and involuntarily impact interactions with patients.⁴⁷

Solution: Medical education needs to be enhanced so that training in concepts such as implicit bias and cultural humility reach all healthcare providers involved in managing patients with AF, including but not limited to physicians, advanced practice providers, nurses, physical and occupational therapists, social workers, and case managers. This training should not be limited to a single session, but rather, should be repeated over time to ensure that these important concepts are effectively integrated into day-to-day practice. To date, at least six states have mandated implicit bias training (California, Delaware, Maryland, Massachusetts, New Jersey, and Washington).⁴⁸ Furthermore, training in cultural humility can improve awareness of cultural nuances and differences to help counter stereotypes and implicit biases that may affect clinical decision-making and patient management.⁴³ Mandated training in implicit bias sends an important message about the need for health equity. Thus, health system leaders and policymakers should facilitate the implementation of implicit bias training for healthcare providers caring for patients with AF, support further research on the role of implicit bias in healthcare, and financially support the rollout of implicit bias training programs in resource-limited healthcare settings.⁴⁹

5. Adopt Advanced Patient Care Strategies

Problem: A pressing need exists to achieve equity in providing evidence-based treatments in the management of AF to improve clinical outcomes in women, the economically disadvantaged, and individuals from UREGs.⁵⁰ Regardless of their race, ethnicity, or sex, patients with AF must be promptly recognized, diagnosed, and provided with a consistent standard of care for control of AF through medical management or catheter ablation and oral anticoagulation for stroke reduction.³⁰

Solution: New care strategies should be adopted to ensure that women and individuals in UREGs are receiving optimal medical care and treatments that align with current clinical practice guidelines and expert recommendations.⁵¹ Due to the growing importance of early rhythm control strategies in AF, initiatives that address inequities in access to antiarrhythmic drugs and catheter ablation should be prioritized.³⁵ Overall, strategies should be established to reduce health inequities and improve outcomes. The AF Center of Excellence (CoE) model provides one such opportunity to enhance patient care by delivering high-quality, guideline-recommended treatment and management approaches. As such, AF CoEs are needed in underserved communities, and existing CoEs should work toward demonstrating that care is equitable, as eliminating disparities has been proposed as one of the core goals of this model.¹⁵ To aid in the implementation of AF CoEs, strategies must be developed to address unmet needs, such as establishing standardized protocols, order sets, and care pathways, addressing barriers to treatment initiation, enhancing patient education, improving documentation of AF and treatment status, and tackling administrative/cost barriers.⁵¹ In addition, registries are needed to track that the care provided to patients with AF is equitable. Similar to the American Heart Association's Get With The Guidelines® AFib program, these registries could be used to monitor and improve the quality of care.⁵² Finally, it is worth briefly noting that the affordability of drugs, including DOACs, is a widespread issue that goes beyond gender, racial, and ethnic boundaries. Efforts are needed at the policy level to ensure that all AF patients have access to essential medications.

6. Support Ongoing Efforts to Improve Diversity in Clinical Research

Problem: Historically, AF clinical trials have had limited enrollment of women and persons from diverse racial and ethnic backgrounds, limiting their applicability to broader, real-world patient populations.^{9,53} In several AF registry studies, Black individuals made up only 1% to 4% of the overall cohort.⁵⁴⁻⁵⁶ Of clinical trials cited in previous AF guidelines, only a third reported racial and ethnicity data; and in those that did report data, Black and Hispanic patients represented only 2% and 5.6% of total enrollment, respectively.⁵⁷

Solution: Continued efforts should be made to improve the representation of women and UREGs in clinical trials and registries. Redoubled efforts are needed in this area. The FDA Revitalization Act of 1993 has had an important impact over the past several decades on the recruitment of women and racial and ethnic minoritized populations to National Institutes of Health (NIH)-funded trials; however, significant progress still needs to be made, particularly as only 6% of clinical trials are NIH funded, and due in part to cycles of distrust and bias, many clinical trials continue to overrepresent patients who are White and male.⁵⁸ It is paramount that industry partners developing new AF treatment approaches think purposefully about how clinical trials can be better diversified. As they face a competitive landscape, industry partners may seek patient enrollment in centers and areas that historically have recruited well, but may not have ideal representation in terms of age, gender and sex, race and ethnicity, or geographic region.

Investigators should continue to advocate for the deliberate inclusion of women and individuals from racial and ethnic minoritized groups in AF studies through community-based outreach. To bolster study recruitment, investigators should consider simplified informed consent processes, financial incentives for patient participation, and virtual follow-up options (or at least flexibility in follow-up schedules) for individuals who cannot consistently attend in-person follow-up appointments. Selecting clinical trial sites with inclusivity in mind (e.g., situating them in pharmacies, community centers, or other easily accessible locations) could help to ensure more diversity in clinical trial participation. Community-based outreach can be initiated to form partnerships, build trust, and ensure reciprocity (i.e., mutually beneficial for the research efforts and the community).

Finally, it would be beneficial for research teams to receive training on implicit bias, including how it may impact patient engagement in clinical research and may serve as a barrier to achieving diversity in enrollment.⁴³ Those funding the clinical trials should endeavor to include institutions that are recognized for serving minoritized populations, whether or not those institutions have a history of clinical research. Such centers have already established trust with communities of color and may be more successful in the recruitment of minoritized groups in clinical studies. These centers should also be given the support needed to ensure success, such as resources for patient education, transport, and staff training in clinical research.

7. Support Research to Address Knowledge Gaps in AF Care Disparities and Inequities

Problem: More studies are needed to understand the complex and interrelated factors underlying inequities in the treatment of AF in women and UREGs. Furthermore, the role of social determinants of health has been increasingly well documented for several cardiovascular diseases, while by comparison, AF has received only limited consideration to date in these research efforts.⁵

Solution: Studies incorporating methods that are both qualitative (e.g., interviews and focus groups) and quantitative (e.g., survey data) are needed to better understand the barriers and facilitators of equitable treatment in AF. This research should be conducted not only in cohorts of clinicians who treat AF, but also among patients with AF. This research would be complementary to other research needs (e.g., studies designed to better understand the association between social determinants of health and AF). Thus, efforts also should be taken to increase research inquiry on the association between social determinants of health and AF.

Recently, an expert panel convened by the National Heart, Lung, and Blood Institute called for transformative integration of social determinants of health into AF research, highlighting multiple knowledge gaps and opportunities to accelerate research into socioeconomic status and access to care, health literacy, race and ethnicity and racism, sex and gender, shared decision-making, and the areas where people live.⁵ These priorities provided a roadmap that could be utilized by researchers, policymakers, and other stakeholders to close knowledge gaps and address inequities in the care of patients with AF.

8. Enhance Shared Decision-Making and Patient Engagement

Problem: Shared decision-making is widely recommended to ensure that patients with AF actively decide upon treatment that aligns with their values, preferences, and goals. Unfortunately, not all patients with AF are adequately prepared for shared decision-making due to challenges such as lack of health literacy, cultural/language barriers, and lack of relevant and accessible patient educational materials. Patients may not be fully engaged in shared decision-making with their healthcare providers, and in some cases, may have no input in treatment decisions.⁵⁹ Moreover, there are inequities in the provision of patient education related to certain social determinants of health, including limited literacy, cultural norms, and language barriers.⁶⁰

Solution: The importance of shared decision-making needs to be emphasized and modeled in cultural competence training and other educational outreach initiatives for healthcare providers. Efforts are needed to ensure that healthcare providers understand the meaning and value of shared decision-making in AF, and how to implement shared decision-making in busy clinic workflows using decision aids designed to operationalize this patient-centric approach. Importantly, these efforts should consider social determinants of health such as economic stability, education, and access to healthcare, which can serve as barriers to effective shared decision-making in patients with cardiovascular conditions.⁶¹ Shared decision-making should recognize and respect differences in culture, values, preferences, and language needs of diverse patient populations. All patients, including women and UREGs with AF, should be empowered to understand their condition better and make informed decisions regarding treatment and ongoing management in line with their preferences and values.

Strategies are needed to improve the health literacy of patients with AF, such as providing access to accurate and accessible educational materials that can be read or viewed before the appointment. To ensure relevancy, patients should be actively involved in the creation of these educational materials (e.g., by providing their perspectives on the disease and the challenges they face). Healthcare providers should play an important role in promoting health literacy by contributing to the creation, development, and dissemination of these educational materials, encouraging patient engagement, and leveraging available technology to provide interactive learning experiences and potentially broaden the base of patients who are reached. Altogether, appropriate and accessible patient education is critical to supporting shared decision-making in the management of AF (see accompanying Resource listings for further information).⁶²

Using apps and multimedia represents an opportunity to improve and optimize patient education on AF while overcoming these barriers.⁶² Digital tools (such as monitoring devices) when used collaboratively by patients and their healthcare providers may help give patients a feeling of more control over their condition, potentially resulting in greater patient empowerment and more equitable care.⁶³ However, at a broader level, there is a persistent “digital divide” in the U.S., where disadvantaged populations have less access to broadband and mobile technology that can facilitate advanced online health initiatives.^{45,64} Accordingly, there is a need to ensure that all AF patients have equitable access to technologies with the potential to overcome access-to-care barriers.⁵ One resource that may help in that regard is the Stanford Guide to AFib Stroke Prevention (afibguide.com and afibguide.com/clinician), a novel shared decision-making toolkit with a patient and provider component. This brief educational intervention is enhanced by a low-literacy approach (e.g., sparse text and effective visuals) and, importantly, was shown to be similarly effective across racial, ethnic, and educational subgroups.⁶⁵

Conclusion

Urgent action is needed to address disparities and inequities in AF, ensuring that all patients, regardless of background or circumstances, are offered high-quality, guideline-concordant care. Action is needed to promote workforce diversity, improve healthcare provider awareness of health inequities and implicit bias, adopt new models of care, implement revised clinical practice guidelines, support ongoing efforts

to improve clinical trial diversity and health equity research, and enhance shared decision-making and patient engagement. We offer this white paper as a starting point for considering multifaceted initiatives to optimize AF care, improve access to care regardless of factors such as socioeconomic status, and enhance clinical outcomes for patients with this common, burdensome, and potentially lethal arrhythmia.

Resources for Patients

StopAfib.org:

A comprehensive resource to provide patients and caregivers with the information needed to take control of their AF, including:

- Get Started Learning About Afib Guide <https://www.stopafib.org/learn-about-afib/get-started-learning-about-afib/>
- Sign up (<https://www.stopafib.org/afib-resources/videos/>) to access the What Patients Need to Know video course (<https://stopafib.knowledgelink.tv/course/atrial-fibrillation-what-patients-need-to-know>), recordings from the annual Get in Rhythm. Stay in Rhythm.® Atrial Fibrillation Patient Conference (<https://stopafib.knowledgelink.tv/course/atrial-fibrillation-patient-conference-replays>), the Afib Master Class (<https://stopafib.knowledgelink.tv/course/dr-prystowsky-masterclass>), and the Get Back to Care Webinar series (<https://stopafib.knowledgelink.tv/course/stopafiborg-webinars-2>).
- Discussion Forum to provide peer support <https://forum.stopafib.org/>

American College of Cardiology:

Cardiosmart.org

American Heart Association:

MyAfibExperience.org Forum
(a collaboration with StopAfib.org)

Association of Black Cardiologists:

Patient Assistance Center
<https://abcardio.org/patient-assistance-info/>

Heart Rhythm Society: Upbeat.org

Stanford Guide to AFib Stroke Prevention:

www.afibguide.com

A novel shared decision-making tool with a healthcare provider companion site (see **Resources for Clinicians**).

Resources for Clinicians

2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Atrial Fibrillation:

www.ahajournals.org/doi/full/10.1161/CIR.0000000000001193

American Association for Thoracic Surgery: Diversity, Inclusion, and Equity Statement:

<https://www.aats.org/about-the-aats/governance/diversity-inclusion-and-equity-statement>

American College of Cardiology Diversity and Inclusion Initiative:

<https://www.acc.org/-/media/Non-Clinical/Files-PDFs-Excel-MS-Word-etc/About-ACC/Diversity/2018/03/Diversity-Inclusion-Strategy-Summary.pdf>

American College of Cardiology Health Equity Resource Center:

<https://www.acc.org/healthequity>

Shared Decision-Making and Cardiovascular Health: A Scientific Statement From the American Heart Association:

www.ahajournals.org/doi/10.1161/CIR.0000000000001162

Association of Black Cardiologists Roundtable: Improving Health Care Access for Minority and High-Risk Populations Summary Recommendations:

https://abcardio.org/wp-content/uploads/2017/03/Summary_of_Recommendations.pdf

Heart Rhythm Society: Statement of Diversity, Equity, and Inclusion [Video]:

<https://www.hrsonline.org/about-us/dei>

Heart Rhythm Society CARDIQ: Quality Demystified:

www.cardiq.org

Stanford Guide to AFib Stroke Prevention:

www.afibguide.com/clinician

A novel shared decision-making toolkit that has proven to achieve significantly lower decisional conflict compared with usual care in patients with AF.

Contributors to the Report Include

Ralph J. Damiano, Jr., MD

American Association for Thoracic Surgery

Ijeoma Ekeruo, MD, FACC

American College of Cardiology

Jose Joglar, MD

American Heart Association

Camille Frazier-Mills, MD, MHS, FACC, FAHA

Association of Black Cardiologists

Heart Rhythm Society (Member, DEI Council)

Larry R. Jackson II, MD, MHSc

Association of Black Cardiologists

Andrea M. Russo, MD, FACC, FHRS, FAHA

Heart Rhythm Society

Eric N. Prystowsky, MD, FACC, FHRS, FAHA

Heart Rhythm Society

StopAfib.org Board of Directors

Mellanie True Hills, CSP

StopAfib.org

Andrew D. Bowser

Medical and Science Writer

Funding for this activity was provided by Sanofi. StopAfib.org policies restrict funders from controlling program content.

References

1. Colilla S, Crow A, Petkun W, Singer DE, Simon T, Liu X. Estimates of Current and Future Incidence and Prevalence of Atrial Fibrillation in the U.S. Adult Population. *Am J Cardiol.* 2013;112(8):1142-1147.
2. Tsao CW, Aday AW, Almarazooq ZI, et al. Heart Disease and Stroke Statistics—2023 Update: A Report From the American Heart Association. *Circulation.* 2023;147(8):e93-e621.
3. Centers for Disease Control and Prevention. Atrial Fibrillation. Last reviewed October 14, 2022. https://www.cdc.gov/heartdisease/atrial_fibrillation.htm.
4. Centers for Disease Control and Prevention. CDC Wonder: Multiple Cause of Death, 1999-2020 Results. Query executed on September 1, 2023. <http://wonder.cdc.gov/mcd-icd10.html>.
5. Benjamin EJ, Thomas KL, Go AS, et al. Transforming Atrial Fibrillation Research to Integrate Social Determinants of Health: A National Heart, Lung, and Blood Institute Workshop Report. *JAMA Cardiology.* 2023;8(2):182-191.
6. Michaud GF, Stevenson WG. Atrial Fibrillation. *New England Journal of Medicine.* 2021;384(4):353-361.
7. Mou L, Norby FL, Chen LY, et al. Lifetime Risk of Atrial Fibrillation by Race and Socioeconomic Status: ARIC Study (Atherosclerosis Risk in Communities). *Circ Arrhythm Electrophysiol.* 2018;11(7):e006350.
8. Mendys P, Jackson LR, 2nd, Solimon EZ, Howard G, Ferdinand K. The atrial fibrillation paradox -connecting hypertension to atrial disease and stroke. *Am J Prev Cardiol.* 2021;8:100284.
9. Linde C, Bongiorno MG, Birgersdotter-Green U, et al. Sex differences in cardiac arrhythmia: a consensus document of the European Heart Rhythm Association, endorsed by the Heart Rhythm Society and Asia Pacific Heart Rhythm Society. *EP Europace.* 2018;20(10):1565-1565ao.
10. Ugowe FE, Jackson LR, 2nd, Thomas KL. Racial and ethnic differences in the prevalence, management, and outcomes in patients with atrial fibrillation: A systematic review. *Heart Rhythm.* 2018;15(9):1337-1345.
11. Kavousi M. Differences in Epidemiology and Risk Factors for Atrial Fibrillation Between Women and Men. *Front Cardiovasc Med.* 2020;7:3.
12. Bush D, Martin LW, Leman R, Chandler M, Haywood LJ. Atrial fibrillation among African Americans, Hispanics and Caucasians: clinical features and outcomes from the AFFIRM trial. *J Natl Med Assoc.* 2006;98(3):330-339.
13. Rodriguez CJ, Soliman EZ, Alonso A, et al. Atrial fibrillation incidence and risk factors: the Multi-Ethnic Study of Atherosclerosis. *Ann Epidemiol.* 2015;25(2):71-76. e71.
14. Moussata D, Allez M, Cazals-Hatem D, et al. Are random biopsies still useful for the detection of neoplasia in patients with IBD undergoing surveillance colonoscopy with chromoendoscopy? *Gut.* 2018;67(4):616-624.
15. Piccini JP, Sr., Allred J, Bunch TJ, et al. Rationale, considerations, and goals for atrial fibrillation centers of excellence: A Heart Rhythm Society perspective. *Heart Rhythm.* 2020;17(10):1804-1832.
16. Blum S, Muff C, Aeschbacher S, et al. Prospective Assessment of Sex-Related Differences in Symptom Status and Health Perception Among Patients With Atrial Fibrillation. *Journal of the American Heart Association.* 2017;6(7):e005401.
17. Mann H, Johnson AE, Ferry D, et al. A qualitative crossroads of rhythm and race: Black patients' experiences living with atrial fibrillation. *American Heart Journal Plus: Cardiology Research and Practice.* 2023;28:100293.
18. Golwala H, Jackson LR, Simon DN, et al. Racial/ethnic differences in atrial fibrillation symptoms, treatment patterns, and outcomes: Insights from Outcomes Registry for Better Informed Treatment for Atrial Fibrillation Registry. *Am Heart J.* 2016;174:29-36.
19. Dewland TA, Olgin JE, Vittinghoff E, Marcus GM. Incident Atrial Fibrillation Among Asians, Hispanics, Blacks, and Whites. *Circulation.* 2013;128(23):2470-2477.
20. Turakhia MP, Shafrin J, Bogner K, et al. Estimated prevalence of undiagnosed atrial fibrillation in the United States. *PLoS One.* 2018;13(4):e0195088.
21. Heckbert SR, Austin TR, Jensen PN, et al. Differences by Race/Ethnicity in the Prevalence of Clinically Detected and Monitor-Detected Atrial Fibrillation. *Circulation: Arrhythmia and Electrophysiology.* 2020;13(1):e007698.
22. Turakhia MP, Guo JD, Keshishian A, et al. Contemporary prevalence estimates of undiagnosed and diagnosed atrial fibrillation in the United States. *Clin Cardiol.* 2023;46(5):484-493.
23. Tamirisa KP, Calvert P, Dye C, et al. Sex Differences in Atrial Fibrillation. *Curr Cardiol Rep.* 2023;25(9):1075-1082.
24. Eton DT, Ramalho de Oliveira D, Egginton JS, et al. Building a measurement framework of burden of treatment in complex patients with chronic conditions: a qualitative study. *Patient Relat Outcome Meas.* 2012;3:39-49.
25. Potpara TS, Mihajlovic M, Zec N, et al. Self-reported treatment burden in patients with atrial fibrillation: quantification, major determinants, and implications for integrated holistic management of the arrhythmia. *EP Europace.* 2020;22(12):1788-1797.
26. Mihajlovic M, Simic J, Marinkovic M, et al. Sex-related differences in self-reported treatment burden in patients with atrial fibrillation. *Front Cardiovasc Med.* 2022;9:1029730.
27. January CT, Wann LS, Alpert JS, et al. 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: executive summary: a report of the American College of Cardiology/American Heart Association Task Force on practice guidelines and the Heart Rhythm Society. *Circulation.* 2014;130(23):2071-2104.
28. January CT, Wann LS, Calkins H, et al. 2019 AHA/ACC/HRS Focused Update of the 2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. *J Am Coll Cardiol.* 2019;74(1):104-132.
29. Hindricks G, Potpara T, Dagres N, et al. 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS): The Task Force for the diagnosis and management of atrial fibrillation of the European Society of Cardiology (ESC) Developed with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC. *Eur Heart J.* 2021;42(5):373-498.



30. Bhavé PD, Lu X, Girotra S, Kamel H, Vaughan Sarrazin MS. Race- and sex-related differences in care for patients newly diagnosed with atrial fibrillation. *Heart Rhythm*. 2015;12(7):1406-1412.
31. Camm AJ, Naccarelli GV, Mittal S, et al. The Increasing Role of Rhythm Control in Patients With Atrial Fibrillation. *J Am Coll Cardiol*. 2022;79(19):1932-1948.
32. Kirchhof P, Camm AJ, Goette A, et al. Early Rhythm-Control Therapy in Patients with Atrial Fibrillation. *New England Journal of Medicine*. 2020;383(14):1305-1316.
33. Essien UR, Magnani JW, Chen N, Gellad WF, Fine MJ, Hernandez I. Race/Ethnicity and Sex-Related Differences in Direct Oral Anticoagulant Initiation in Newly Diagnosed Atrial Fibrillation: A Retrospective Study of Medicare Data. *J Natl Med Assoc*. 2020;112(1):103-108.
34. Joglar JA, Chung MK, Armbruster AL, et al. 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. *Circulation*. 2024;149(1):e1-e156.
35. Eberly LA, Garg L, Yang L, et al. Racial/Ethnic and Socioeconomic Disparities in Management of Incident Paroxysmal Atrial Fibrillation. *JAMA Network Open*. 2021;4(2):e210247-e210247.
36. World Health Organization. Social determinants of health. <https://www.who.int/health-topics/social-determinants-of-health>.
37. Powell-Wiley TM, Baumer Y, Baah FO, et al. Social Determinants of Cardiovascular Disease. *Circ Res*. 2022;130(5):782-799.
38. Arber S, McKinlay J, Adams A, Marceau L, Link C, O'Donnell A. Influence of patient characteristics on doctors' questioning and lifestyle advice for coronary heart disease: a UK/US video experiment. *Br J Gen Pract*. 2004;54(506):673-678.
39. Wang E, Al-Rousan T, Mansour W, et al. Language Barriers in Patients With Cardiovascular Disease. *JACC: Advances*. 2022;1(4):100077.
40. Meschia JF, Merrill P, Soliman EZ, et al. Racial Disparities in Awareness and Treatment of Atrial Fibrillation. *Stroke*. 2010;41(4):581-587.
41. Tertulien T, Chen Y, Althouse AD, Essien UR, Johnson A, Magnani JW. Association of income and educational attainment in hospitalization events in atrial fibrillation. *Am J Prev Cardiol*. 2021;7:100201.
42. Essien UR, McCabe ME, Kershaw KN, et al. Association Between Neighborhood-Level Poverty and Incident Atrial Fibrillation: a Retrospective Cohort Study. *J Gen Intern Med*. 2022;37(6):1436-1443.
43. Thomas KL, Garg J, Velagapudi P, et al. Racial and ethnic disparities in arrhythmia care: A call for action. *Heart Rhythm*. 2022;19(9):1577-1593.
44. Banerjee S, Aaysha Cader F, Gulati M, Capers Qt. Racism and Cardiology: A Global Call to Action. *CJC Open*. 2021;3(12 Suppl):S165-s173.
45. Essien UR, Kornej J, Johnson AE, Schulson LB, Benjamin EJ, Magnani JW. Social determinants of atrial fibrillation. *Nat Rev Cardiol*. 2021;18(11):763-773.
46. Balinda IG, Reza N. Diversity, Equity, Inclusion, and Belonging in Cardiovascular Disease Fellowship Training. *Methodist Debakey Cardiovasc J*. 2022;18(3):67-77.
47. The Joint Commission. Quick Safety 23: Implicit bias in health care. <https://www.jointcommission.org/resources/news-and-multimedia/newsletters/newsletters/quick-safety/quick-safety-issue-23-implicit-bias-in-health-care/implicit-bias-in-health-care/>.
48. Montague A, Hooper S. Introduced Implicit Bias Training Bills in the United States, 2019-2022. https://pretermbirthca.ucsf.edu/sites/g/files/tkssra2851/f/Introduced%20IBT%20Bills%20Chart_v03.1.pdf.
49. Cooper LA, Saha S, van Ryn M. Mandated Implicit Bias Training for Health Professionals—A Step Toward Equity in Health Care. *JAMA Health Forum*. 2022;3(8):e223250-e223250.
50. Essien UR, Chiswell K, Kaltenbach LA, et al. Association of Race and Ethnicity With Oral Anticoagulation and Associated Outcomes in Patients With Atrial Fibrillation: Findings From the Get With The Guidelines-Atrial Fibrillation Registry. *JAMA Cardiol*. 2022;7(12):1207-1217.
51. Sandhu RK, Seiler A, Johnson CJ, et al. Heart Rhythm Society Atrial Fibrillation Centers of Excellence Study: A survey analysis of stakeholder practices, needs, and barriers. *Heart Rhythm*. 2022;19(6):1039-1048.
52. Lewis WR, Piccini JP, Turakhia MP, et al. Get With The Guidelines AFIB: novel quality improvement registry for hospitalized patients with atrial fibrillation. *Circ Cardiovasc Qual Outcomes*. 2014;7(5):770-777.
53. Gomez SE, Fazal M, Nunes JC, et al. Racial, ethnic, and sex disparities in atrial fibrillation management: rate and rhythm control. *J Interv Card Electrophysiol*. 2023;66(5):1279-1290.
54. Reiffel JA, Kowey PR, Myerburg R, et al. Practice patterns among United States cardiologists for managing adults with atrial fibrillation (from the AFFECTS Registry). *Am J Cardiol*. 2010;105(8):1122-1129.
55. Le Heuzey JY, Breithardt G, Camm J, et al. The RecordAF study: design, baseline data, and profile of patients according to chosen treatment strategy for atrial fibrillation. *Am J Cardiol*. 2010;105(5):687-693.
56. Magnani JW, Norby FL, Agarwal SK, et al. Racial Differences in Atrial Fibrillation-Related Cardiovascular Disease and Mortality: The Atherosclerosis Risk in Communities (ARIC) Study. *JAMA Cardiology*. 2016;1(4):433-441.
57. Sarraju A, Maron DJ, Rodriguez F. Under-Reporting and Under-Representation of Racial/Ethnic Minorities in Major Atrial Fibrillation Clinical Trials. *JACC Clin Electrophysiol*. 2020;6(6):739-741.
58. Epker E. June 10, 1993: 10 Facts About The NIH Revitalization Act As It Turns 30. June 6, 2023. <https://www.forbes.com/sites/evaepker/2023/06/06/june-10-1993-10-facts-about-the-nih-revitalization-act-as-it-turns-30/?sh=154d92e8841c>.
59. Ali-Ahmed F, Pieper K, North R, et al. Shared decision-making in atrial fibrillation: patient-reported involvement in treatment decisions. *Eur Heart J Qual Care Clin Outcomes*. 2020;6(4):263-272.
60. Beagley L. Educating Patients: Understanding Barriers, Learning Styles, and Teaching Techniques. *J Perianesth Nurs*. 2011;26(5):331-337.
61. Enard KR, Hauptman PJ. Heart Failure, Shared Decision-making, and Social Determinants of Health: An Upstream Perspective. *JAMA Cardiology*. 2019;4(7):609-610.
62. Ferguson C, Hickman LD, Lombardo L, et al. Educational Needs of People Living with Atrial Fibrillation: A Qualitative Study. *Journal of the American Heart Association*. 2022;11(15):e025293.
63. Hills MT. Patient Perspective: Digital tools give afib patients more control. *Cardiovascular Digital Health Journal*. 2021;2(3):192-194.
64. Smith B, Magnani JW. New technologies, new disparities: The intersection of electronic health and digital health literacy. *Int J Cardiol*. 2019;292:280-282.
65. Wang PJ, Lu Y, Mahaffey KW, et al. Randomized Clinical Trial to Evaluate an Atrial Fibrillation Stroke Prevention Shared Decision-Making Pathway. *Journal of the American Heart Association*. 2023;12(3):e028562.