

The Role of Anticoagulation Clinics in Anticoagulant Therapy Initiation for Incident Atrial Fibrillation

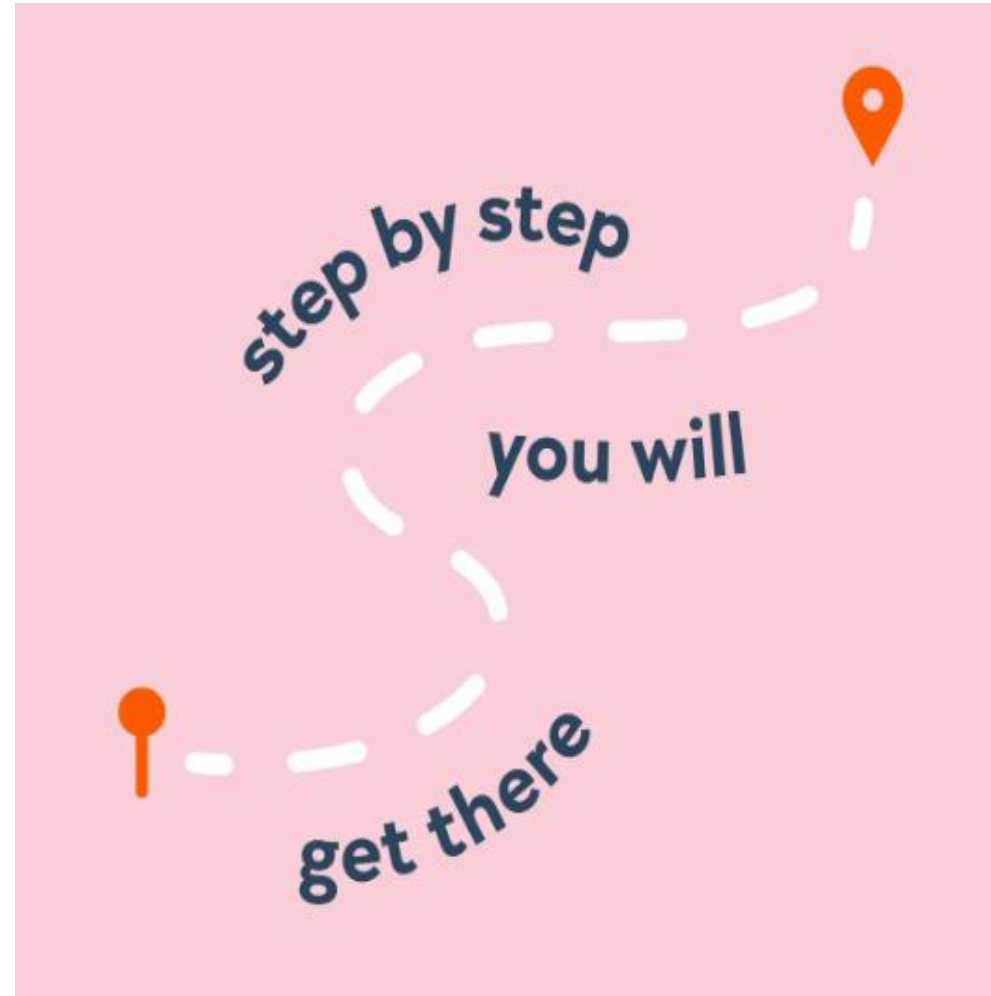
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ISPOR 2023

May 10, 2023 | Boston, MA, USA

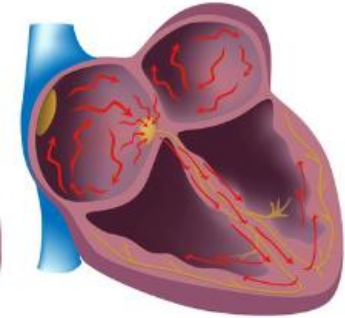
Outline

- Atrial Fibrillation (AF) & its Management
- Methods
- Results
- Key findings & Implications
- Acknowledgment



Atrial Fibrillation & its Management (Stroke Prevention)

Atrial Fibrillation



Management



Challenges with warfarin:

- Frequent blood monitoring
- Dosing adjustments
- Drug-food and drug-drug interactions
- Variability in patient response
- Increased risk of bleeding



- In the US, 3M to 6M people have AF
- Major risk factor for stroke
- Economic burden in the US estimated at \$28.4B



Benefits of DOAC:

- Superior clinical outcomes
- Predictable and consistent metabolism
- Limited drug-drug interactions
- Limited dietary restriction



Piccini JP et al. Circulation: Cardiovasc. Qual. Outcomes, 2012;5:85-93.
 Go AS et al. JAMA, 2001;285:2370-2375.
 Wolf PA et al. Stroke, 1991;22:983-988.
 Hylek EM et al. N Engl J Med, 2003;349:1019-1026.
 Lin H-J et al. Stroke, 1996;27:1760-1764

Atrial Fibrillation & its Management (Stroke Prevention)

- The 2019 AHA/ACC/HRS recommended DOACs as first-line in patients with AF
 - However, there are clinical scenarios where warfarin may be preferred, such as in patients with renal impairment and mechanical heart valves
- Several published articles have compared the cost-effectiveness of DOACs to warfarin in AF
- A recurring theme in these comparisons is that the benefits of DOACs, compared to warfarin, come at a substantially increased cost

Stevens SM et al. Chest. 2021;160:2247-2259.

Ortel TL et al. Blood advances. 2020;4:4693-4738.

Desai NR et al. Am J Med. 2014;127:1075-1082. e1071.

Parker K, Thachil J. Br J Haematol. 2018;183:170-184.

Ziakas PD et al. PLoS ONE. 2018;13(6):e0198674. <https://doi.org/10.1371/journal.pone.0198674>.

Atrial Fibrillation & its Management (Stroke Prevention)

- This cost difference can have significant implications for patients, healthcare providers, and the healthcare system
- We hypothesize that outpatient practices with specialized pharmacists in Anticoagulation Clinics (ACs) are more likely to initiate patients on warfarin compared to outpatient practices without such clinics
- Specialized pharmacists assist patients in:
 - Routine monitoring
 - Reviewing the out-of-pocket cost implications of various anticoagulants
 - Providing information and decision support service

Stevens SM et al. *Chest*. 2021;160:2247-2259.

Ortel TL et al. *Blood advances*. 2020;4:4693-4738.

Barnes et al. *Circulation. Cardiovascular quality and outcomes*. 2016;9(2):182.

Desai NR et al. *Am J Med*. 2014;127:1075-1082. e1071.

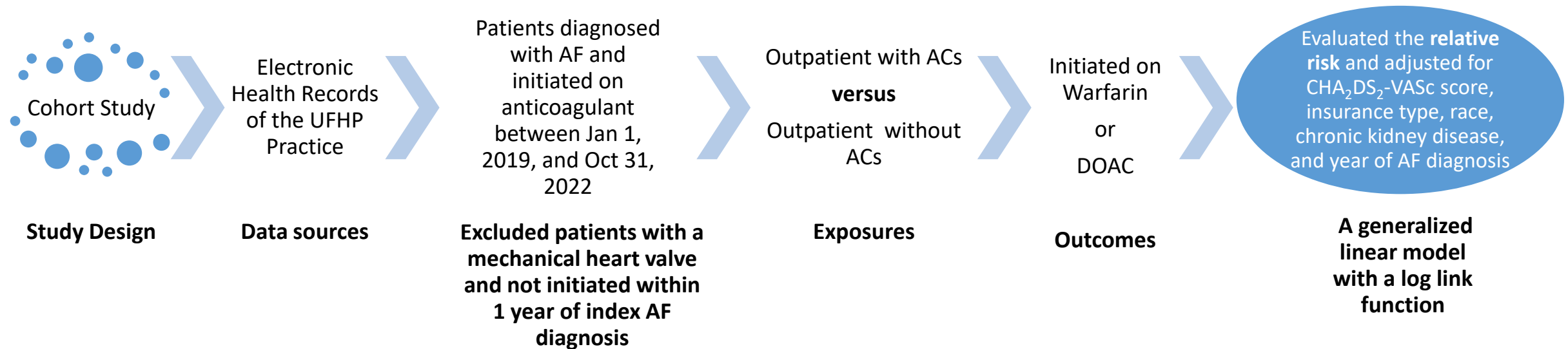
Parker K, Thachil J. *Br J Haematol*. 2018;183:170-184.

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Methods

Settings: The study was conducted in 14 University of Florida Health Physicians (UFHP) practices

- ❑ 8 practice sites in Internal Medicine and Family Medicine departments having pharmacist-led anticoagulation clinics
- ❑ 6 practice sites in Cardiology and Family Medicine departments **do not** have pharmacist-led anticoagulation clinics

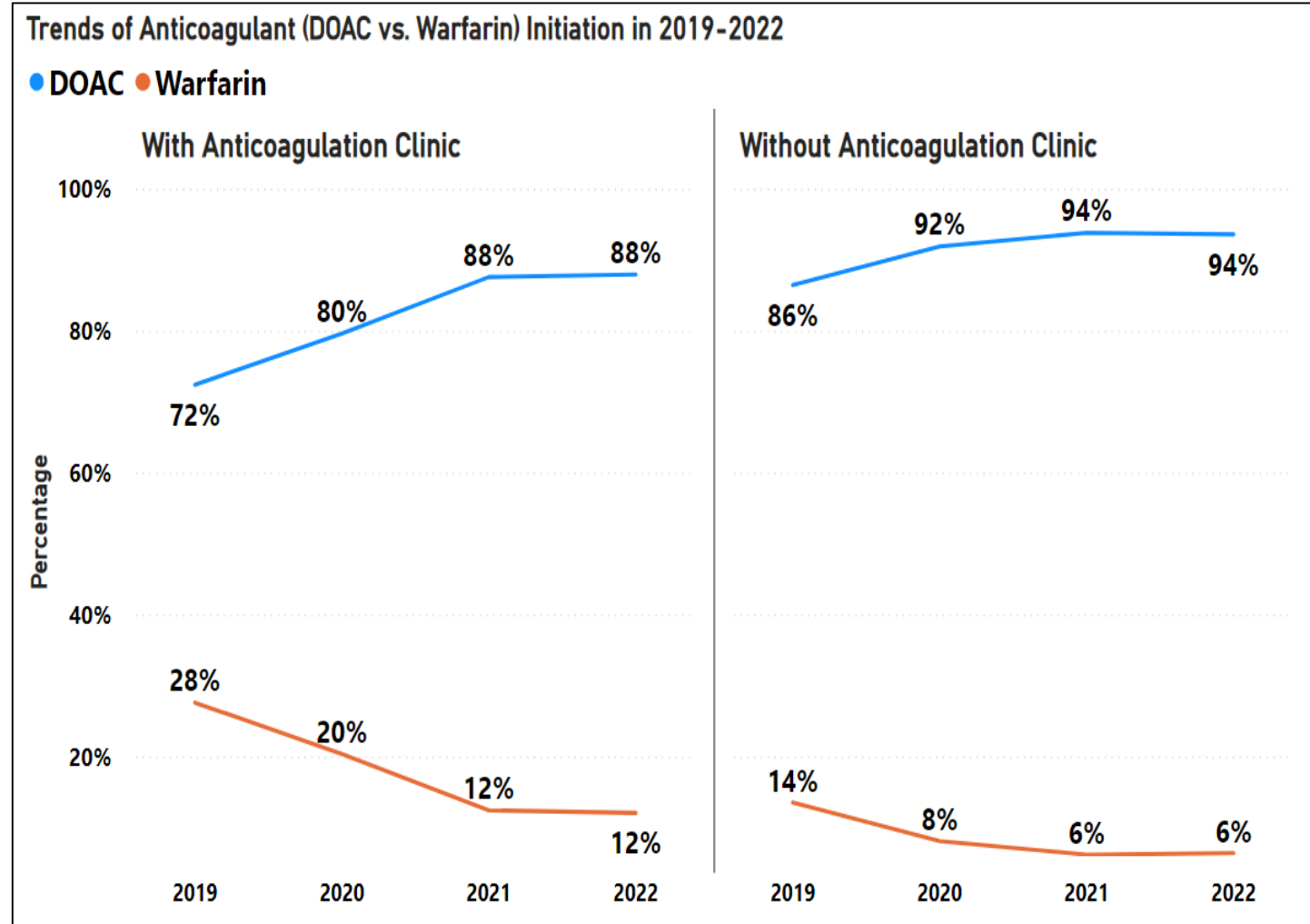


Results

Among 2087 newly diagnosed AF patients who started anticoagulant therapy:

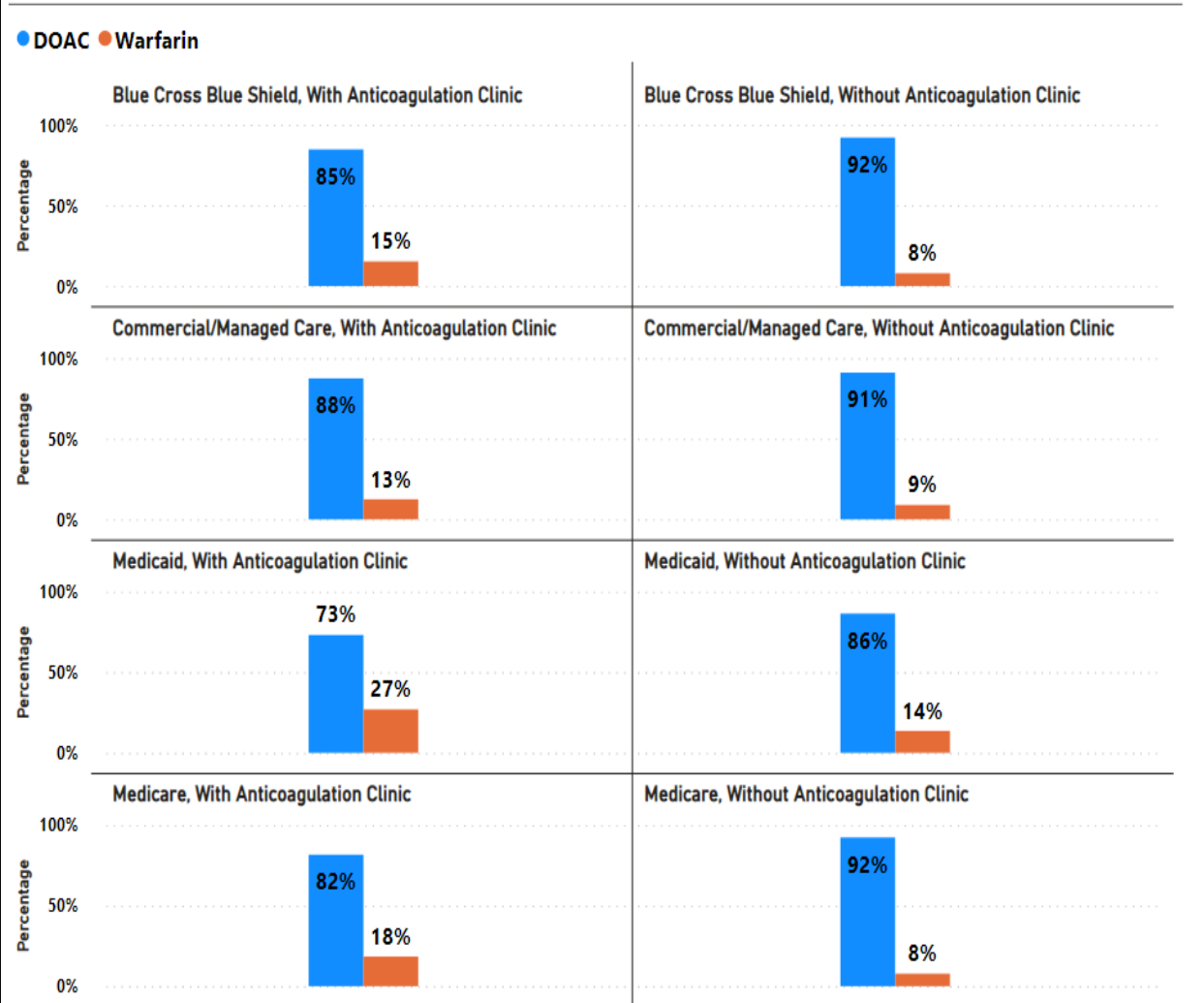
- 29.2% were in outpatient (OP) setting with AC
- 11.0% were initiated on warfarin and 89.0% were initiated on DOACs

Out of the 229 patients who started warfarin, 48.9% were in OP with AC, and 51.9% were in OP without AC



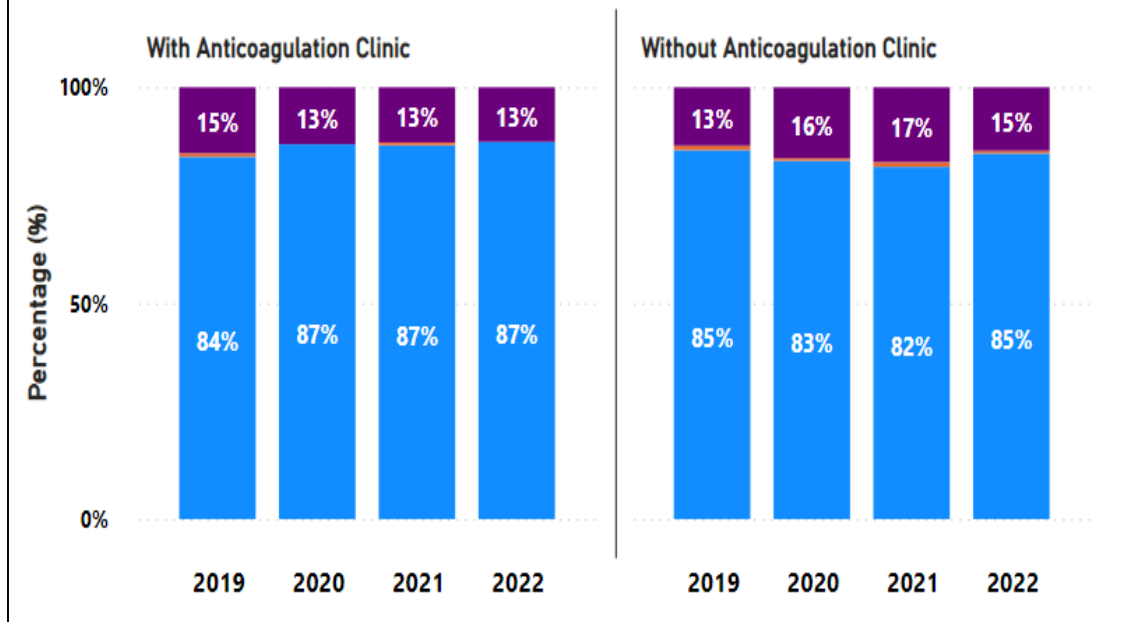
Results

Percentage of Patients with AF Initiated on Anticoagulant (DOAC vs. Warfarin) 2019-2022



Direct-acting Oral Anticoagulant (DOAC) Initiation in 2019-2022

Type of DOAC ● Apixaban ● Edoxaban ● Dabigatran ● Rivaroxaban



Results

	Unadjusted Relative Risk		Adjusted Relative Risk	
	RR (95% CI)	P value	RR (95% CI)	P value
Initiation on Warfarin (vs. DOAC) in outpatient practice with AC	2.32 (1.69-3.19)	<0.0001	2.14 (1.56 – 2.95)	<0.0001

Adjusted for CHA₂DS₂-VASc score, insurance type, chronic kidney disease, race, and year of AF diagnosis

Key findings

- These findings suggest that the services provided by specialized pharmacists in anticoagulation clinics, such as routine patient management and reviewing prescription coverage, may have an impact on the choice of anticoagulant therapy for patients newly diagnosed with AF
- The higher likelihood of initiating patients on warfarin in outpatient practices with anticoagulation clinics could be due to factors such as patient preference influenced by cost differences between DOACs and warfarin and the availability of cheaper alternatives

Implication of the findings

- Anticoagulation clinics could potentially address both adoptions of evidence-based guidelines and patient-centered care, particularly for patients who may face financial constraints or lack adequate insurance coverage
- Although DOACs are cost-effective, they may harm equity in terms of affordability. One approach to addressing this limitation is to make cheaper alternatives available by investing in delivery infrastructure such as anticoagulation clinics.
- Cost-effectiveness studies should take into account affordability and patient preference to ensure that the results are comprehensive and reflect real-world clinical practice.

Limitations

- **Generalizability:** The study was conducted at a single center which may limit the generalizability of the findings to other settings or populations with different characteristics
- **Potential confounding:** There may be other unmeasured confounding variables that could influence the results. For example, socioeconomic status, education level, provider preference, and concurrent medications may also impact the choice of anticoagulant therapy

Acknowledgements

- Atrial Fibrillation CORE Team
- Dr. Rachel Reise
- Dr. Steven Smith
- Dr. Scott Vouri
- Dr. Marvin Dewar
- Dr. Mikael Svensson
- Dr. Kelly Ma
- Dr. Eric Dietrich



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Thank you
Questions?



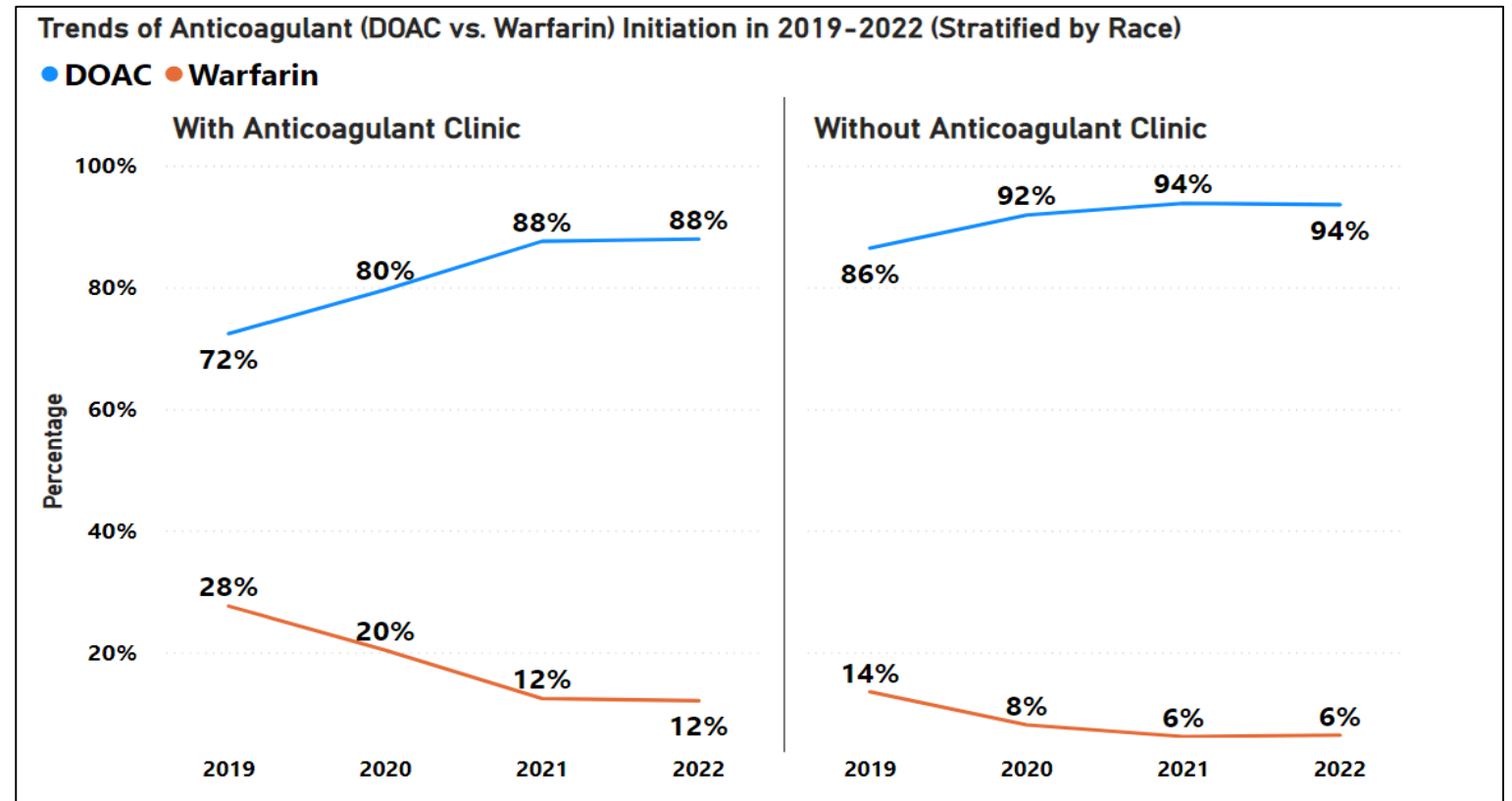
Results

	With Anticoagulant Clinic	Without Anticoagulant Clinic
Overall (%)	609 (29.2%)	1478 (70.8%)
Type of Anticoagulant (%)		
DOAC	497 (81.6%)	1361 (92.1%)
Warfarin	112 (18.4%)	117 (7.9%)
Sex (%)		
Male	313 (51.4%)	843 (57.0%)
Female	269 (48.6%)	635 (43.0%)
Age (SD)	70.0 (±12)	69.4 (±12)
Race (%)		
Black or African American	93 (15.3%)	130 (8.8%)
White	478 (78.5%)	1276 (86.3%)
Others	38 (6.2%)	72 (4.9%)
Comorbidities (%)		
Hypertension	539 (88.5%)	1205 (81.5%)
Congestive Heart Failure	248 (40.7%)	662 (44.8%)
Stroke	121 (19.9%)	217 (14.7%)
CKD	191 (31.4%)	313 (21.2%)
Diabetes	221 (36.3%)	428 (29.0%)
Vascular Disease	145 (23.8%)	336 (22.7%)
Health Insurance		
Blue Cross Blue Shield	59 (9.7%)	176 (11.9%)
Commercial/Managed Care	24 (3.9%)	67 (4.5%)
Medicaid	26 (4.3%)	66 (4.5%)
Medicare	477 (78.3%)	1108 (75.0%)
Other	4 (0.7%)	20 (1.3%)
Self-Pay	19 (3.1%)	41 (2.8%)
Year		
2019	163 (26.8%)	319 (21.6%)
2020	162 (26.6%)	367 (24.8%)
2021	169 (27.8%)	466 (31.5%)
2022	115 (18.9%)	328 (22.1%)

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Results

Trends of Anticoagulant (DOAC vs. Warfarin) Initiation in 2019-2022 (Stratified by Race)

● DOAC ● Warfarin

