Nonvalvular Atrial Fibrillation Diagnosis and Pharmacy Claims Indicating Lack of Anticoagulation: Managed Care Pharmacy Provider Fax Impact on Anticoagulation Initiation

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BACKGROUND

- The American Heart Association/American College of Cardiology/Heart Rhythm Society (AHA/ACC/HRS) 2019 guidelines recommend a CHA_2DS_2-VASc score be calculated for individuals with atrial fibrillation to determine their lifetime risk of stroke.[1]
- Anticoagulation among individuals with atrial fibrillation has been shown to decrease stroke risk.[1]
- The CHA_2DS_2-VASc score assigns one point for ages 65–74, female gender, congestive heart failure, hypertension, vascular disease and diabetes mellitus. Previous stroke/transient ischemic attack and ages 75 years and older are assigned two points each.
- AHA/ACC/HRS 2019 guidelines recommend the following for nonvalvular atrial fibrillation (NVAF):[1]
  - Individuals with a CHA_2DS_2-VASc score of less than two may be eligible for a novel oral anticoagulant (NOAC) based on the individual's clinical status and provider discretion. Options include Eliquis® (apixaban), Xarelto® (rivaroxaban), Savaysa® (edoxaban) or Pradaxa® (dabigatran).
  - Individuals with a CHA_2DS_2-VASc score of two or greater are recommended to start one of the following oral anticoagulants: warfarin, apixaban, rivaroxaban, edoxaban or dabigatran.
- Insurers and pharmacy benefit managers (PBMs) can use integrated medical and pharmacy administrative claims data to identify members with NVAF and high stroke risk who have no pharmacy claims for guideline recommended anticoagulation.
- Provider outreach in an institutional health care system did not result in an increased rate of atrial fibrillation anticoagulation initiation; however, little is known about the impact of PBM outreach to providers on NVAF anticoagulation initiation.[2–4]

OBJECTIVE

- To assess the incremental impact of a PBM provider outreach fax encouraging anticoagulation initiation among Medicare Advantage Prescription Drug (MAPD) plan members with NVAF compared to a concurrent group from health plans that did not implement the outreach program.

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METHODS

Part 1: MAPD Plan Anticoagulation Utilization Trend and Spend (Figure 1)

- Pharmacy claims data for MAPD members were queried from January 2019 through March 2021 (27 months) using Generic Product Identifier (GPI) codes to identify anticoagulation claims: apixaban, dabigatran, rivaroxaban and warfarin. Edoxaban was excluded because of low utilization and spend.
- Anticoagulation claims per 100,000 MAPD members was calculated and reported quarterly.
- Anticoagulation per member per month (PMPM) cost was defined as quarterly total paid (plan paid plus member paid), without adjustments for rebates, divided by average quarterly member months.

Part 2: Anticoagulation Initiation Following Provider Outreach (Figure 2)

- The study design was a retrospective comparison between an intervention group with a concurrent non-intervention group using integrated medical and pharmacy administrative claims data from 704,713 MAPD members.
- Members with one or more atrial fibrillation/flutter medical claim diagnosis codes between May 2019 and May 2021 were identified and verified to have active MAPD health insurance eligibility on May 1, 2021.
- Members were excluded if they had one or more medical claim diagnosis code(s) for valvular heart disease (e.g., mechanical heart valve, mitral valve disorders) between May 2019 and May 2021.
- Medical claims diagnosis codes and demographic data between May 2019 and May 2021 were used to calculate a CHA_2DS_2-VASc score for all MAPD members with atrial fibrillation diagnosis claims and no valvular heart disease claim(s) with eligibility on May 1, 2021.
- Pharmacy claims data were queried from January 2021 to May 2021 to identify members without a pharmacy claim indicating guideline recommended anticoagulation therapy and to find the most recent claim of a cardiovascular disease, antihypertensive, or hyperlipidemia medication. The most recent drug claim for a cardiovascular disease, antihypertensive, or hyperlipidemia medication was used to identify a member specific index provider.
- Members were divided into two groups based on their CHA_2DS_2-VASc score: a score of two or greater or a score of less than two.
- A concurrent non-intervention group from MAPD plans that did not implement the outreach program but met the same inclusion and exclusion criteria was identified using the same criteria above.

INTERVENTION

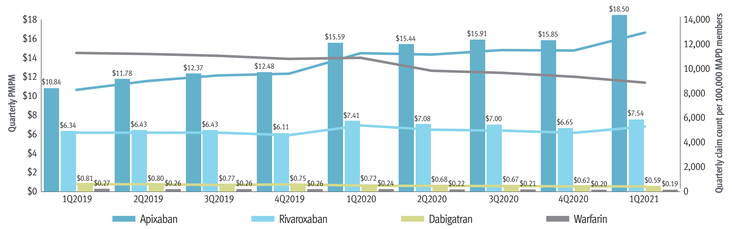
- Providers with valid fax numbers were faxed one of two communications on May 20, 2021, based on the member's CHA_2DS_2-VASc score:
  - CHA_2DS_2-VASc < 2: The provider was encouraged to consider a NOAC.
  - CHA_2DS_2-VASc ≥ 2: The provider was encouraged to consider a NOAC or warfarin.

STATISTICAL ANALYSIS

- The proportion of members in the provider fax intervention group who initiated anticoagulation within 60 days following the fax was compared to the proportion in the concurrent non-intervention group.
- Differences in anticoagulation initiation were compared with a chi-square test and statistical significance was set at $p < 0.05$.

FIGURE 1

Oral Anticoagulants Quarterly PMPM and Claims per 100,000 MAPD Plan Members[5]

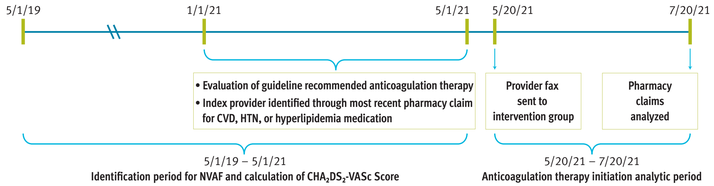


PMPM = per member per month; MAPD = Medicare Advantage Prescription Drug

Novel Oral Anticoagulant (NOAC) and warfarin utilization and spend for 666,032 Medicare Advantage Prescription Drug (MAPD) plan members in 1Q2019 growing to 771,385 members in 1Q2021. Oral anticoagulants included apixaban, rivaroxaban, dabigatran and warfarin. Edoxaban was excluded because of low utilization and spend. Pharmacy claims include all indications for oral anticoagulants. Vertical bars represent quarterly PMPM; horizontal lines represent quarterly claim count per 100,000 members. PMPM by quarter calculated as the sum of the total paid amount for oral anticoagulant pharmacy claims for the quarter divided by the sum of the average membership for each month of the quarter. Pharmacy claim count was adjusted for day supply (e.g., day supply of 30 days counts as one claim, day supply of 90 days counts as three claims). Pharmacy claim counts for the quarter were divided by the sum of the average membership for each month of the quarter and multiplied by 100,000 to determine the number of claims per 100,000 MAPD members. Total paid amount was defined as the sum of insurer allowed and member payments without adjustment for rebates or coupons.

FIGURE 2

Nonvalvular Atrial Fibrillation Identification Timeline and Anticoagulation Analytic Period

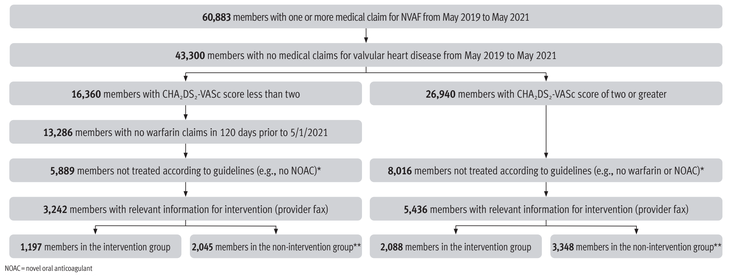


Intervention and non-intervention groups identified concurrently from 5/1/2019 to 5/1/2021

CVD = Cardiovascular Disease; HTN = Hypertension; NVAF = Nonvalvular Atrial Fibrillation

FIGURE 3

MAPD Plan Nonvalvular Atrial Fibrillation Analytic Population Identification



NOAC = novel oral anticoagulant

NVAF = nonvalvular atrial fibrillation

Medicare Advantage Prescription Drug (MAPD) plan had 704,713 members (280,593 intervention group members and 424,130 non-intervention group members) from which the analytic population was identified. Intervention group was defined by fax sent to provider encouraging oral anticoagulation. *Evaluation of guideline recommended anticoagulation therapy from 1/1/2021 to 5/1/2021. **Non-intervention group was identified by MAPD plans that did not implement the outreach program, see methods for details.

TABLE 1

MAPD Plan Members Proportion with Guideline Recommended Anticoagulation Therapy

	CHA_2DS_2-VASc Score < 2		CHA_2DS_2-VASc Score ≥ 2	
Outcome Non-Intervention N = 5,393 and Intervention N = 3,285	**Intervention (Provider Fax) N = 1,197**	**Non-Intervention N = 2,045**	**Intervention (Provider Fax) N = 2,088**	**Non-Intervention N = 3,348**
Initiation of guideline recommended anticoagulation therapy* % (n)	2.3% (28)	3.3% (68)	2.4% (51)	2.7% (92)
p-value**	**0.11**		**0.49**	

MAPD = Medicare Advantage Prescription Drug plan

See **Figure 3** for population identification and analytic attrition. Pharmacy claims were analyzed for all members 60 days after provider fax was sent in the intervention group. The non-intervention group was identified through MAPD plans that did not implement the outreach program but met the same inclusion and exclusion criteria. *Guideline recommended therapy: CHA_2DS_2-VASc Score a 2: warfarin or NOAC. CHA_2DS_2-VASc Score < 2: NOAC. **p-value statistical significance $p < 0.05$ between intervention and non-intervention group. Percentage calculated by number of members on guideline recommended therapy divided by member count (CHA_2DS_2-VASc score ≥ 2, score < 2).

RESULTS

Part 1: MAPD Plan Anticoagulation Utilization Trend and Spend (Figure 1)

- There was a 9.9% increase in oral anticoagulant utilization over 2.25 years, from 23,748 claims per 100,000 members in 1Q2019 to 26,095 claims per 100,000 members in 1Q2021 among approximately 770,000 MAPD members.
- During the same period, the combined oral anticoagulation PMPM cost increased 46.9%, from $18.25 to $26.82.
- Apixaban PMPM increased 70.7%, from $10.84 to $18.50. Utilization increased 55.6%, from 7,872 claims to 12,251 claims per 100,000 MAPD members.
- Rivaroxaban PMPM increased 18.9%, from $6.34 to $7.54. Utilization increased 10.8%, from 4,547 claims to 5,037 claims per 100,000 MAPD members.
- Dabigatran PMPM decreased 27.5%, from $0.81 to $0.59. Utilization decreased 32.1%, from 592 claims to 402 claims per 100,000 MAPD members.
- Warfarin PMPM decreased 27.6%, from $0.27 to $0.19. Utilization decreased 21.7%, from 10,732 claims to 8,398 claims per 100,000 MAPD members.

Part 2: Anticoagulation Initiation Following Provider Outreach

MAPD Plan Nonvalvular Atrial Fibrillation Analytic Population Identification (Figure 3)

- 3,285 (1.2%) of 280,583 MAPD lives met intervention and analytic criteria and had a provider outreach fax encouraging anticoagulation initiation (Intervention Group)
  - CHA_2DS_2-VASc < 2: 1,197 members
  - CHA_2DS_2-VASc ≥ 2: 2,088 members
- 5,393 (1.3%) of 424,130 MAPD lives met intervention and analytic criteria of the MAPD plans that did not implement the outreach program (Non-intervention Group)
  - CHA_2DS_2-VASc < 2: 2,045 members
  - CHA_2DS_2-VASc ≥ 2: 3,348 members

MAPD Plan Members Proportion with Guideline Recommended Anticoagulation Therapy (Table 1)

- CHA_2DS_2-VASc < 2: 28 members (2.3%) in the intervention group started guideline recommended therapy compared to 68 members (3.3%) in the non-intervention group ($p = 0.11$).
- CHA_2DS_2-VASc ≥ 2: 51 members (2.4%) in the intervention group started guideline recommended therapy compared to 92 members (2.7%) in the non-intervention group ($p = 0.49$).

LIMITATIONS

- There was no confirmation the fax arrived at the provider's office or that the provider read the message. 38% of opportunities identified did not include a claim with a valid provider fax number, limiting the number of potential prescribers contacted.
- We did not attempt to determine why anticoagulation was not initiated. Reasons not to initiate may include, but are not limited to, history of intracranial hemorrhage, pregnancy, and previous cardioversion with now normal sinus rhythm.
- This study had stricter limitations for NOAC qualification eligibility than stated in the AHA/ACC/HRS guidelines by excluding all members with valvular heart disease.[1]
- Members could have been misclassified as not starting anticoagulation for several reasons, including medications filled outside of the specified date range, medications with OTC status (e.g., aspirin), the member paying out of pocket, and patient assistance programs.
- Administrative pharmacy and medical claims have the potential to be miscoded and include assumptions of actual drug use and diagnoses.
- These findings are limited to MAPD members currently enrolled as of May 1, 2021 with a medical claim diagnosis of NVAF and may not be representative of the general population using oral anticoagulants or with a NVAF diagnosis.

CONCLUSIONS

- The 49% increase in oral anticoagulation pharmacy spend and 9.9% increase in claims from 1Q2019 to 1Q2021 among MAPD members was largely driven by an increase in apixaban utilization. Warfarin and dabigatran utilization decreased during the same period. Rivaroxaban accounted for 28% of the total oral anticoagulation PMPM in 1Q2021, second to apixaban at 69%.
- The provider fax encouraging anticoagulation initiation among NVAF diagnosed MAPD members with no recent anticoagulation claim(s) was not associated with increased anticoagulation claim initiation compared to a concurrent non-intervention group, regardless of CHA_2DS_2-VASc score category.
- NVAF anticoagulation initiation opportunities identified using pharmacy claims alone do not capture decisions by the provider and member to pursue other treatment or no treatment. While this does not explain the similar results between intervention and non-intervention groups, it may explain the low rate of less than 1 in 30 members who initiated anticoagulation therapy.
- These results are consistent with other atrial fibrillation anticoagulation provider outreach programs, highlighting the need for continued research into optimal member identification and provider communication to encourage guideline recommended anticoagulation therapy in appropriate individuals.[2–4]

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