



## ORAL ANTICOAGULANT (OAC) USE: RESOURCE UTILIZATION AND THE OCCURRENCE OF BLEEDING EVENTS

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### INTRODUCTION

Anticoagulant medications help prevent clots thereby reducing the chance of developing serious conditions such as stroke, myocardial infarction, deep vein thrombosis (DVT) and pulmonary embolism. Warfarin, a vitamin K antagonist (VKA) anticoagulant is the most commonly used oral anticoagulant (OAC). Newer non-vitamin K oral antagonists (NOACs) currently available in the market include apixaban, dabigatran and rivaroxaban.

Oral anticoagulants are associated with adverse events such as abnormal coagulation and bleeding. Patients treated with warfarin require close monitoring to avoid adverse events related to bleeding. NOACs are reported to have better safety and efficacy profiles which should translate to less monitoring and more convenience for patients and physicians. The lack of available antidotes for NOACs has hindered their adoption for use. Recently an antidote has been approved for reversing the effects of dabigatran and antidotes for other NOACs are in clinical development. Usage of NOACs is expected to increase substantially with the approval of these reversal agents/antidotes.

### OBJECTIVE

This study examined all-cause and bleeding-event related resource utilization (office visits, emergency department [ED] visits, hospital admissions) among patients on OAC therapy.

### METHODS

A retrospective analysis was conducted using Mississippi Medicaid pharmacy and medical claims data from January 2014 to November 2015. Claims for fee-for-service and encounter records for both managed care plans were included in the analyses. Beneficiaries who had at least one prescription for an OAC during the observation period were included in the study.

Resource utilization was classified as OAC-related if the medical claim included a diagnosis code for a bleeding event. Diagnosis codes for OAC related bleeding events were identified by ICD-9 and ICD-10 codes obtained by literature review. With the exception of warfarin, the analyses were performed for each drug strength, since specific strengths of the drugs are used for different indications.

### RESULTS

- A total of 3,551 patients were identified as prescribed OACs during the study period - 2,823 for warfarin, 567 for rivaroxaban, 107 for apixaban, and 54 for dabigatran.
- The percentages of patients with bleeding related ED visits were 13.3% for warfarin, 2.6% for rivaroxaban 10mg, 11.1% for rivaroxaban 15-20mg, 9.7% for apixaban 5mg, and 4.3% for dabigatran 150mg. Rates for bleeding related hospital admissions ranged from 3.4% for rivaroxaban 10mg to 7.5% for apixaban 5mg.

**Table 1. Overall resource use from January 2014 to November 2015  
By drug**

Brand Name	Total patients	Office Visits		ED Visits		Hospitalizations	
		Number of beneficiaries	%	Number of beneficiaries	%	Number of beneficiaries	%
Apixaban 2.5 MG	14	14	100.0%	9	64.3%	10	71.4%
Apixaban 5 MG	93	87	93.5%	59	63.4%	39	41.9%
Dabigatran 150 MG	46	40	87.0%	26	56.5%	15	32.6%
Dabigatran 75 MG	8	7	87.5%	5	62.5%	1	12.5%
Warfarin	2,823	2,452	86.9%	1,546	54.8%	1,004	35.6%
Rivaroxaban 10 MG	117	74	63.2%	44	37.6%	24	20.5%
Rivaroxaban 15-20	450	393	87.3%	271	60.2%	182	40.4%

**Table 2. OAC-related bleeding resource use from January 2014 to November 2015  
By drug**

Brand Name	Total patients	Office Visits		ED Visits		Hospitalizations	
		Number of beneficiaries	%	Number of beneficiaries	%	Number of beneficiaries	%
Apixaban 2.5 MG	14	-	0.0%	2	14.3%	1	7.1%
Apixaban 5 MG	93	12	12.9%	9	9.7%	7	7.5%
Dabigatran 150 MG	46	3	6.5%	2	4.3%	2	4.3%
Dabigatran 75 MG	8	-	0.0%	-	0.0%	-	0.0%
Warfarin	2,823	225	8.0%	376	13.3%	168	6.0%
Rivaroxaban 10 MG	117	10	8.5%	3	2.6%	4	3.4%
Rivaroxaban 15-20	450	48	10.7%	50	11.1%	35	7.8%

### CONCLUSION

Rates for bleeding related ED visits were lower for NOACs than for warfarin. Higher doses of rivaroxaban were related to increased risk of bleeding related ED visits, but other conclusive comparisons between NOACs could not be made due to the limited number of patients on most of the medications.

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