

Analysis of Pre-Exposure Prophylaxis Utilization in a Medicaid Population

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INTRODUCTION

- Approximately two million new cases of human immunodeficiency virus (HIV) infection occur annually worldwide.^{1,2}
- Behavioral and pharmacological prevention strategies are standard practices to reduce the spread of HIV. For certain patient populations at risk of infection, pre-exposure prophylaxis (PrEP) therapy is recommended.^{1,3}
- Patients who are adherent to PrEP may reduce the risk of HIV transmission by roughly 90%; however, adherence varies greatly among patients (22 to 90%).^{1,4}
- Diagnoses of HIV infection are approximately two times higher in metropolitan areas than in smaller metropolitan areas, and three times higher than in nonmetropolitan areas.⁵
- There are currently two Food and Drug Administration-approved agents for PrEP: emtricitabine/tenofovir disoproxil fumarate (Truvada®), which was approved on July 3, 2012, and emtricitabine/tenofovir alafenamide (Descovy®), which was approved on October 3, 2019. Massachusetts Medicaid (MassHealth) has no formulary restrictions on either agent.^{6,7}
- Data on geographic differences in utilization of PrEP in a Medicaid population is limited.⁸

OBJECTIVE

To evaluate geographic differences in the utilization of two PrEP therapies, emtricitabine/tenofovir disoproxil fumarate (Truvada®) and emtricitabine/tenofovir alafenamide (Descovy®), among MassHealth plans.



METHODS

- This retrospective analysis included pharmacy and medical claims analyzed by county from January 1, 2018 to June 30, 2020 for members covered by MassHealth Primary Care Clinician/Fee-For-Service (PCC/FFS) and Managed Care Organization (MCO) plans at any point during the study period.
- Member and prescriber geographic location were evaluated based on zip codes from pharmacy claims data and grouped according to county.
- Inclusion Criteria:**
 - Members ≥18 years of age enrolled in MassHealth with ≥1 pharmacy claim for either emtricitabine/tenofovir disoproxil fumarate (Truvada®) or emtricitabine/tenofovir alafenamide (Descovy®) between January 1, 2019 to June 30, 2020
- Exclusion Criteria:**
 - Members with third-party liability coverage between January 1, 2019 and June 30, 2020
 - Members with ≥1 pharmacy claim for an antiretroviral medication other than emtricitabine/tenofovir disoproxil fumarate (Truvada®) or emtricitabine/tenofovir alafenamide (Descovy®) between January 1, 2019 to June 30, 2020
 - Members with a medical diagnosis indicative of HIV infection during the calendar year prior to pharmacy claim(s) for emtricitabine/tenofovir disoproxil fumarate (Truvada®) or emtricitabine/tenofovir alafenamide (Descovy®)
- Primary Outcomes:**
 - Differences in utilization of PrEP therapy by geographic location over the time period of January 1, 2019 to June 30, 2020
 - Claims for PrEP therapy analyzed by quarter

RESULTS

TABLE 1.
Demographics of Members on PrEP

Characteristics	PCC/FFS (N=1,434)	MCO (N=1,038)
Gender		
Female	237	203
Male	1,197	835
Age		
18-29	485	344
30-39	447	341
40-49	234	193
50-59	191	119
60-79	77	41
Drug		
Emtricitabine/tenofovir alafenamide (Descovy®)	63	38
Emtricitabine/tenofovir disoproxil fumarate (Truvada®)	1,293	971
Both*	78	29

*Overlapping claims may be indicative of transitioning therapies.

FIGURE 1.
Percentage of Unique Members Per Total Plan Populations by Quarter

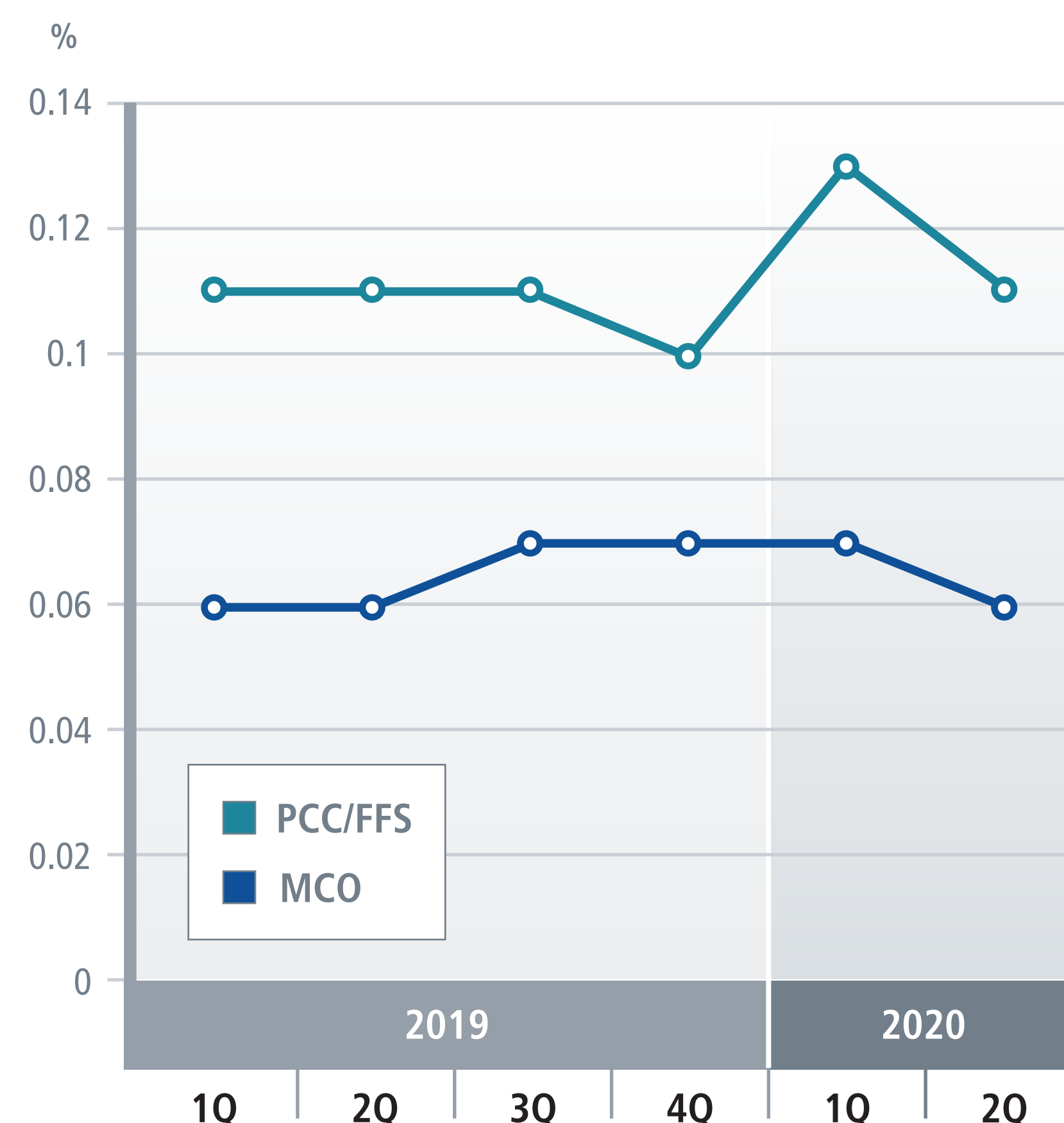


TABLE 2.
Claim Count for Unique Members by Quarter

Quarter		PCC/FFS			PCC/FFS		
		Total Claims (N)	Unique Members	Claims/Member	Total Claims (N)	Unique Members	Claims/Member
2019	1Q	1,172	596	1.96	764	386	1.98
	2Q	1,179	597	1.97	797	391	2.04
	3Q	1,219	603	2.02	852	422	2.02
	4Q	1,150	551	2.09	810	402	2.01
2020	1Q	1,395	682	2.05	872	414	2.11
	2Q	1,129	596	1.89	746	376	1.98

FIGURE 2.
Unique Member Distribution by Geographic Location for PCC/FFS and MCO Populations

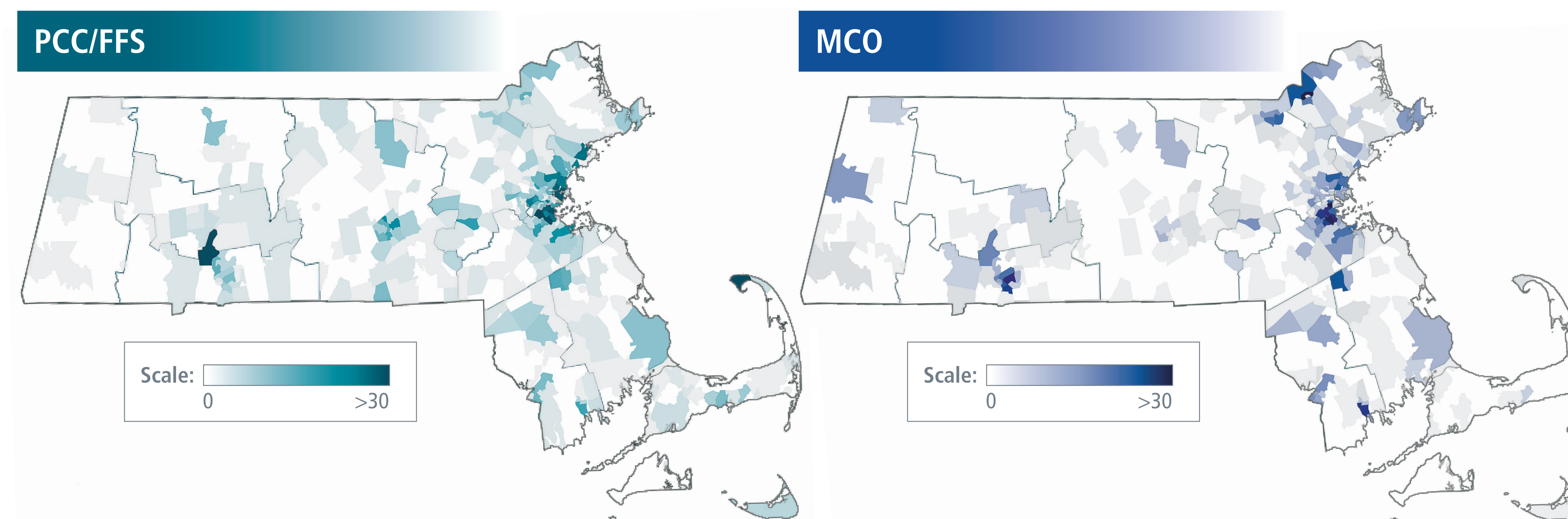


TABLE 3.
Member Distribution by County for PCC/FFS and MCO Populations⁹

County	County Population	PCC/FFS			MCO		
		Members (N)	% of Total Members	Prevalence of County Population (per 1,000 lives)	Members (N)	% of Total Members	Prevalence of County Population (per 1,000 lives)
Barnstable/Dukes/Nantucket*	241,976	115	8.0	0.48	14	1.3	0.06
Berkshire/Franklin*	197,002	23	1.6	0.12	17	1.6	0.09
Bristol	561,037	71	5.0	0.13	78	7.5	0.14
Essex	783,676	141	9.8	0.18	128	12.3	0.16
Hampden	467,871	100	7.0	0.21	119	11.5	0.25
Hampshire	161,032	23	1.6	0.14	11	1.1	0.07
Middlesex	1,600,842	204	14.2	0.13	168	16.2	0.10
Norfolk	700,437	85	5.9	0.12	72	6.9	0.10
Plymouth	515,303	55	3.8	0.11	38	3.7	0.07
Suffolk	796,605	444	31.0	0.56	320	30.8	0.40
Worcester	824,772	144	10.0	0.17	55	5.3	0.07
Out of State	N/A	29	2.0	N/A	18	1.7	N/A
Total	6,850,553	1,434	100		1,038	100	

N/A=not applicable *County totals combined for reporting purposes and to protect confidentiality. Cell sizes <11 were not reportable for individual counties.

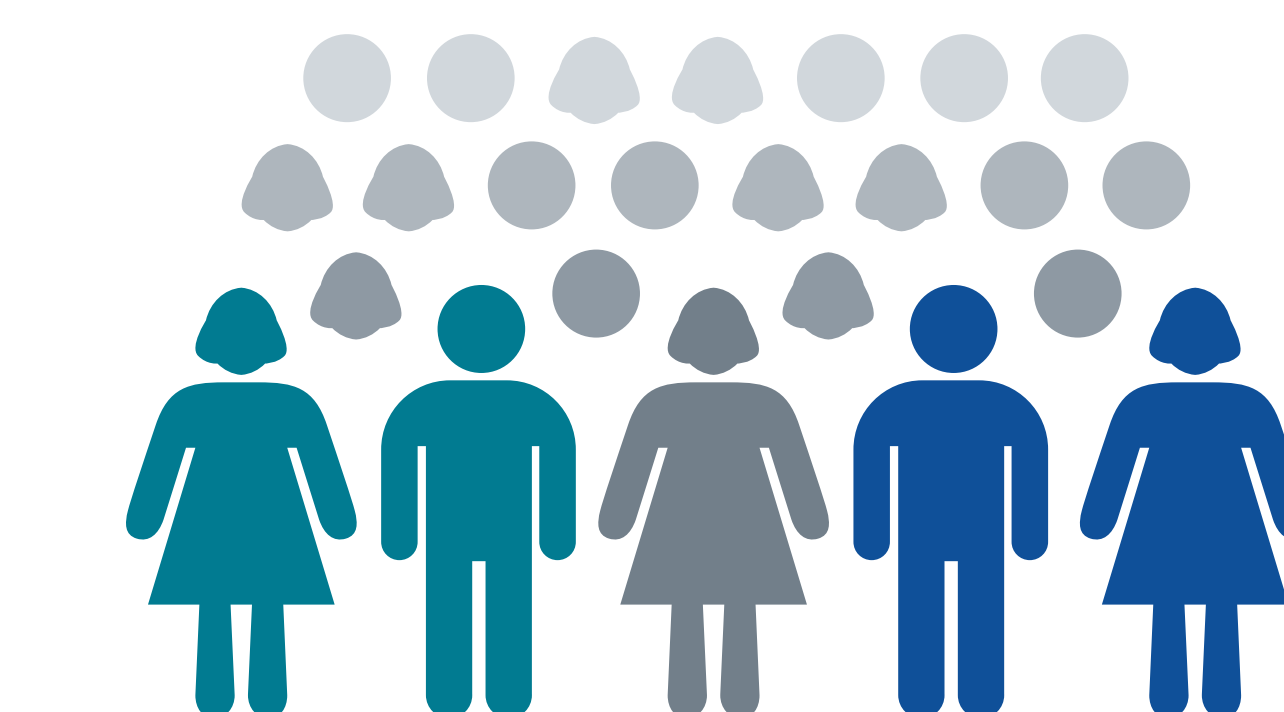


TABLE 4.
Prescriber Distribution by County for PCC/FFS and MCO Claims

County	PCC/FFS		MCO	
	Prescribers (N)	% of Total Prescribers	Prescribers (N)	% of Total Prescribers
Barnstable/Dukes/Nantucket*	30	3.5	<11	0.8
Berkshire/Franklin*	22	2.6	14	1.8
Bristol	45	5.3	37	4.8
Essex	76	8.9	82	10.7
Hampden	59	6.9	58	7.6
Hampshire*	23	2.7	<11	0.8
Middlesex	86	10.1	136	17.8
Norfolk	32	3.8	42	5.5
Plymouth	26	3.0	18	2.4
Suffolk	327	38.3	281	36.7
Worcester	103	12.1	46	6.0
Total	853	100	765	100

*County totals combined for reporting purposes and to protect confidentiality. Cell sizes <11 were not reportable for individual counties.

DISCUSSION

- The majority of members in both the PCC/FFS and MCO populations were prescribed emtricitabine/tenofovir disoproxil fumarate (Truvada®) (Table 1).
- The average claim count per member was highest for the PCC/FFS population in the fourth quarter of 2019 (2.09, range 1.89 to 2.09) and was highest for the MCO population in the first quarter of 2020 (2.11, range 1.98 to 2.11) (Table 2).
- Despite fluctuations during the 18-month period, the rate of unique members per enrolled populations in the PCC/FFS and MCO plans was the same when comparing the first quarter 2019 to the second quarter of 2020 (1.1% and 0.6%, respectively) (Figure 1).
- Suffolk County had the highest percentage of unique members utilizing PrEP therapy in both the PCC/FFS and MCO populations, despite being the third most populous county. Conversely, Middlesex County had the second highest percentage of unique members utilizing PrEP therapy in both the PCC/FFS and MCO populations, despite being the most populous county (Figure 2 and Table 3).
- Prescribers were largely located in Suffolk County, which includes Boston and has a large concentration of academic hospitals and health centers (Table 4).

LIMITATIONS

- Retrospective-claims analyses inherently have limitations and carry the risk of inaccurate or incomplete data and/or billing inaccuracies.
- The analysis included members with ≥1 pharmacy claim for PrEP therapy which does not account for variations in the duration of use for PrEP therapy.
- Emtricitabine/tenofovir alafenamide (Descovy®) was not approved for PrEP over the entire period, which may have impacted shifts in utilization from emtricitabine/tenofovir disoproxil fumarate (Truvada®) after October 2019.
- Prescribers could have practice sites in more than one county, potentially causing them to be duplicated in the total number of unique prescribers.

CONCLUSIONS

- This analysis exhibits that there were similar geographic differences among PCC/FFS and MCO populations over the study time period. The results suggest the highest number of PrEP claims were focused within the same counties (Suffolk, Middlesex, Essex, and Hampden) for both PCC/FFS and MCO populations.
- Educational materials to expand member awareness of PrEP therapy and target Massachusetts providers to enhance appropriate prescribing may be of benefit to optimize PrEP utilization among MassHealth members.
- Ongoing county analyses of PrEP utilization are necessary to address any potential need for targeted educational materials and prescriber outreach to optimize PrEP utilization within this Medicaid population.

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