

Relationship Between Chronic Conditions and Continuous Enrollment Among 16 Million Commercially Insured Members

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BACKGROUND

- The commercial health insurance market has a high enrollee turnover, with nearly 1 in 5 members disenrolling from a commercial health insurer each year.¹
- High enrollee turnover disrupts the continuity of care for members and creates challenges for insurers in managing the health of their enrollee populations.¹
- Previous research using enrollment data from 2006 to 2015 found that commercially insured members with chronic disease were 30% to 40% less likely to disenroll in a health plan at any given point in time and stayed enrolled for almost a year longer than matched controls.²
- A more recent comparison of commercially insured enrollee disenrollment by chronic disease to individuals without the chronic disease, regardless of time since diagnosis, is needed to understand disenrollment patterns among a fixed cohort of members.

METHODS

Data Sources and Study Population

- Data was obtained from medical claims for a sample of 16 million commercially insured members receiving pharmacy benefits from Prime Therapeutics from 2018 to 2022.
- Included members were 18 to 60 years of age on January 1, 2018.
- The following chronic conditions were evaluated: asthma, atrial fibrillation (AFib), depression, diabetes mellitus (DM), hyperlipidemia (HLP), hypertension (HTN), multiple sclerosis (MS), osteoporosis, and rheumatoid arthritis (RA).
- Clinical Classifications Software Refined (CCSR) using ICD-10 code medical claims was used to identify the chronic conditions present for each member in 2018.³
 - Members were identified as having a chronic condition if they had at least one inpatient ICD-10 claim or two outpatient ICD-10 claims at least one day apart, with the chronic condition diagnosis as defined by CCSR methods.³
 - Atrial fibrillation was defined as a subset of ICD-10 codes from the CCSR category "Cardiac Dysrhythmias".³

Study Design

- Enrollment outcome was assessed annually:
 - Members were considered enrolled in a given year if they had at least one day of enrollment during that year.

- Members were considered disenrolled if they had no days of enrollment in a given year.
- All remaining members enrolled in 2022 were considered censored.
- Matching approach
 - Members with the condition of interest were matched to members without the condition on the following criteria:
 - Age in five categories: 18 to 26, 27 to 34, 35 to 44, 45 to 54, 55 to 60 years
 - Gender
 - Blue Plan state enrolled
 - Charlson Comorbidity Index (CCI),⁴ a proxy for the individual's severity of illness, ranged from a minimum of 0 to a maximum of 24 in five categories: 0, 1, 2, 3 to 6, 7+

Statistical Analysis

- A 20% random sample of individuals from each of the nine chronic conditions and the respective matched cohort without the condition was used to conduct statistical significance comparison testing as follows:
 - Time to disenrollment among those who disenrolled was calculated using Poisson regression.
 - Difference in the proportion of the sample remaining enrolled in 2022 was calculated using Chi-square analysis.
 - Difference in time to disenrollment curves was calculated using the Kaplan-Meier estimator.

TABLE

Member Characteristics, Enrollment for Five Years, Mean Time to Disenrollment and Statistical Comparisons to Non-Chronic Disease Members by Nine Chronic Conditions

	Asthma	Atrial Fibrillation	Diabetes Mellitus	Depression	Hyperlipidemia	Hypertension	Multiple Sclerosis	Osteoporosis	Rheumatoid Arthritis	
Total members with condition	115,678	27,647	432,599	301,284	488,485	752,242	16,477	18,893	43,796	
Random sample	23,135	5,529	86,501	60,253	97,684	150,426	3,296	3,779	8,759	
Characteristics										
Age categories in years	18-26	17.5%	1.6%	3.8%	23.4%	2.5%	2.0%	5.3%	1.0%	3.7%
	27-34	16.2%	4.2%	6.2%	19.8%	6.2%	6.3%	14.7%	1.3%	8.7%
	35-44	23.3%	12.5%	18.2%	23.5%	19.1%	19.9%	31.4%	4.7%	20.6%
	45-54	27.9%	38.1%	41.7%	22.8%	41.7%	42.1%	33.7%	31.3%	39.6%
	55-60	15.2%	43.6%	30.0%	10.6%	30.5%	29.6%	14.9%	61.7%	27.4%
Gender	Female	64.5%	28.7%	44.6%	67.9%	45.3%	45.6%	76.5%	93.3%	78.8%
	0	0%	46.5%	0%	74.2%	66.6%	61.4%	73.6%	63.0%	0%
CCI Score category*	1	78.1%	25.9%	56.7%	14.7%	20.7%	23.3%	12.7%	17.9%	67.9%
	2	10.6%	12.8%	25.5%	3.6%	6.0%	7.4%	6.0%	9.4%	17.5%
	3-6	4.7%	10.5%	12.6%	5.3%	4.9%	5.7%	4.8%	6.2%	8.3%
	7+	6.6%	4.3%	5.2%	2.2%	1.7%	2.2%	2.9%	3.6%	6.3%
Enrollment / Disenrollment comparison between those with disease to those without disease¹										
Mean time to disenrollment among those who disenrolled, Poisson regression statistical comparison	with Disease	2.24 yrs	2.24 yrs	2.21 yrs	2.17 yrs	2.25 yrs	2.24 yrs	2.20 yrs	2.25 yrs	2.28 yrs
	without Disease	2.18 yrs	2.12 yrs	2.18 yrs	2.06 yrs	2.07 yrs	2.10 yrs	2.06 yrs	2.09 yrs	2.18 yrs
p-value	with Disease	0.0007	0.0004	0.2213	0.0521	<.0001	<.0001	0.0006	<.0001	<.0001
	without Disease	44.2%	46.5%	47.7%	39.6%	45.5%	46.3%	43.6%	48.4%	46.2%
Percent of members enrolled in 2022, 5 yrs follow-up	with Disease, Percentage More Likely to Be Enrolled for 5 yrs	4%	7%	1%	no difference	19%	11%	10%	20%	10%
	without Disease									

*Charlson Comorbidity Index (CCI), a proxy for the individual's severity of illness ranges from 0 minimum to 24 maximum was broken into 5 categories. 1Yrs years. 2Members with condition were identified from 16 million commercially insured individuals using medical claims diagnosis CCSR method in 2018 and followed for annual enrollment assessment for 5 years, until 2022. Matched comparison was identified without condition matching on age category, gender, CCI category, and Blue Plan insurer state enrolled.

LIMITATIONS

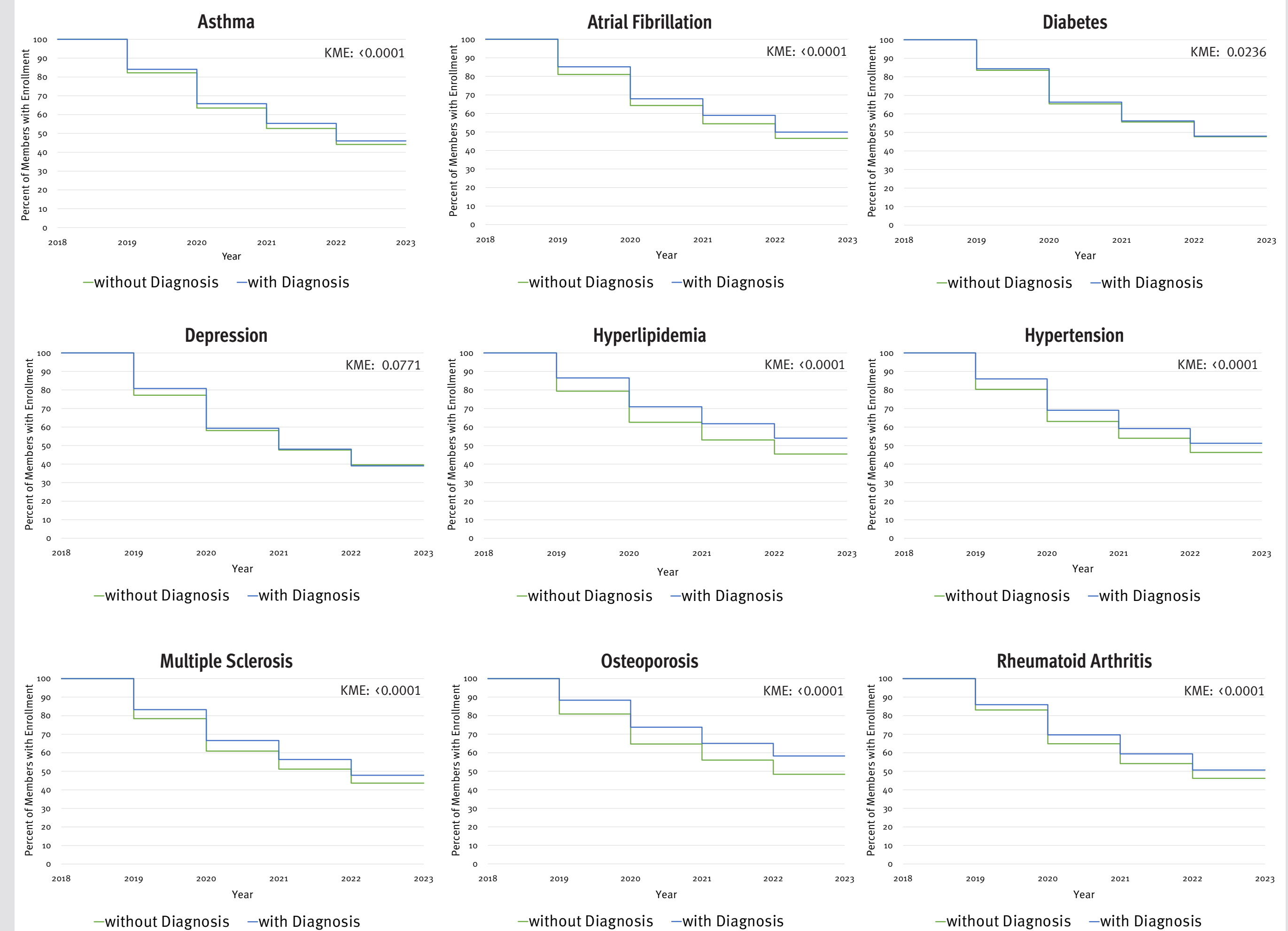
- This analysis was limited to commercially insured members between the ages of 18 and 60 years old at the time of identification and cannot be extrapolated to Medicaid or Medicare.
- Chronic conditions were independently assessed and severity was not considered, which ignores confounding among individuals who have multiple chronic conditions and conditions vary by severity. Future analyses should consider assessing enrollment by chronic condition constellations.
- This analysis did not assess mortality or employer insurer change as reasonings for disenrollment, which may have had different incidences between the comparison groups.

CONCLUSIONS

- This large commercially insured real-world study followed members for five years and found significantly higher enrollment among 7 of 9 chronic diseases assessed compared to matched members without a chronic disease, although differences were smaller than what had been previously reported in the literature.²
- Conditions with age skewing lower, asthma and depression, had a smaller five-year enrollment difference compared to those without the chronic condition.
- Further investigation into enrollment differences found between individuals with DM and those without the chronic condition should contain sub-category analyses including those with DM complications, those utilizing medications to treat DM, and those utilizing insulin, as well as, Type 1 and Type 2.
- Managed care pharmacy programs frequently target chronic conditions and understanding commercially insured members' real-world enrollment persistency is an important program value consideration. General population level disenrollment should not be used. These findings further support managed care pharmacy programs to optimize drug therapy and improve medication adherence resulting in future medical event avoidance seen by the insurer.
- From a drug cost perspective, the 10% high relative enrollment for individuals with RA and MS for five years should provide further incentive for managed care pharmacy programs to ensure constant drug therapy surveillance to optimize cost-effectiveness.

FIGURE

Differences in Disenrollment by Chronic Disease Diagnoses, Calendar Years 2018-2022



KME = Kaplan-Meier Estimator p-value statistical comparison between with and without Disease group. Members with condition were identified from 16 million commercially insured individuals using medical claims diagnosis CCSR method in 2018 and followed for annual enrollment assessment for 5 years, until 2022. Matched comparison was identified without condition matching on age category, gender, Charlson Comorbidity Index category, and Blue Plan insurer state enrolled.

OBJECTIVES

- To explore the extent to which time to disenrollment differs by chronic condition for a cohort of members enrolled in 2018 and followed through August 2022.

RESULTS (Table and Figure)

- Among 16 million commercially insured members with enrollment during 2018, the number of members with a chronic condition ranged from 16,477 individuals with MS to 752,242 individuals with HTN.
- The majority of individuals with asthma and depression were less than 45 years old, while in the other seven chronic conditions the majority of individuals were 45 years or older.
- Gender mix varied across chronic conditions, with females comprising 28.7% of individuals with AFib to 93.3% of individuals with osteoporosis.
- Charlson Comorbidity Index score, the severity of illness proxy, was 2 or more from a range of 11.1% for individuals with a depression diagnosis to 43.3% for those with a DM diagnosis.
- Mean time to disenrollment was statistically longer for seven of the nine chronic conditions and not different for depression and DM. The average member disenrolled in the third year for both those with and without a chronic condition.
- Enrollment for five years among those with each of the nine chronic conditions compared to individuals without the chronic condition:
 - Ranged from an absolute 9.8 percentage points higher among those with an osteoporosis diagnosis to no difference among those with a depression or DM diagnosis.
 - Was a significant relative 10% to 20% higher for individuals with HLP, HTN, MS, osteoporosis, or RA and 4% to 7% higher for individuals with a chronic condition of asthma or AFib, respectively.

