The Impact of the Inflation Reduction Act Insulin Cost-Sharing Cap on Medication Adherence for Medicare Advantage Plan Enrollees Diagnosed with Type 2 Diabetes Mellitus

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Background

- Medication nonadherence places a significant burden on patient outcomes and the healthcare system.
- Insulin nonadherence in patients with diabetes is related to inadequate diabetes management as measured by glycemic control and the advancement of diabetes-related complications.[1]
- Existing literature supports the conclusion that higher insulin out of pocket (OOP) costs are associated with lower levels of medication adherence, patient satisfaction, and prescription affordability.[2-4]
- Passed in 2022, The Inflation Reduction Act (IRA) included legislation capping cost-sharing for insulin products covered under Medicare prescription drug plans to hopefully reduce OOP costs for members.[5]
- There is minimal published research that analyzes the impact of the IRA insulin cost-sharing cap on medication adherence.

Objectives

Primary Analysis:

- Determine the change in Medication Possession Ratio (MPR) for insulin users with Type 2 Diabetes Mellitus (T2DM), before and after the IRA insulin cost-sharing cap implementation.

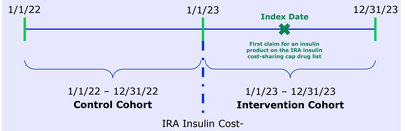
Secondary Analysis:

- Evaluate whether certain demographics or subgroups of Medicare Advantage Prescription Drug (MAPD) members benefited more from the IRA insulin cost-sharing cap.

Methods

- This was a retrospective cohort study that used medical and pharmacy claims from Cigna Healthcare's database. The study period was from January 2022 to December 2023. Medical claims were identified using International Classification of Diseases, 10th Revision (ICD-10) codes.
- Beneficiaries aged 18 years and older who were continuously enrolled in Cigna Healthcare's MAPD plans were included in the study if they had two or more paid pharmacy claims for an insulin product on the Cigna Custom IRA-Insulin Cap Drug List at least 28 days apart within the date ranges of both the control cohort (1/1/22 - 12/31/22) and the intervention cohort (1/1/23 - 12/31/23).
- Beneficiaries were excluded if they were Low Income Subsidy (LIS) partial subsidy; included in the Senior Savings Model; had a Type 1 Diabetes Mellitus (T1DM) diagnosis, gestational diabetes diagnosis, or pregnancy as identified by ICD-10 codes; or were enrolled in Employer Group Waiver Plans (EGWP), Part D Prescription Drug Plans (PDP), Medicare Advantage (MA)-only Plans, or Florida Dual Eligible Special Needs Plans (D-SNP).
- Nonadherence was defined as a MPR of < 80%.

Figure 1: Study Period Timeline



Statistical Analysis

- Baseline demographics were summarized descriptively.
- Paired t-tests were used to test for differences in average MPR between cohorts.
- Paired t-tests, chi-squared tests, linear regression tests, and logistic regression tests were used to examine factors associated with improvements in adherence resulting from IRA insulin cost-sharing cap implementation. P-values < 0.05 were considered significant. Statistical analyses were performed using SAS version 8.2 (SAS Institute, Cary, NC).

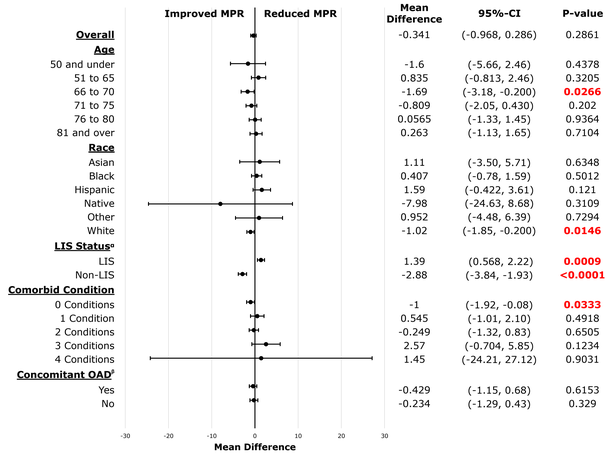
Results

Table 1: Baseline characteristics of members

Characteristic	N (%)
Overall	8238
Age	
50 and under	168 (2.04)
51 to 65	1324 (16.07)
66 to 70	1550 (18.82)
71 to 75	1903 (23.10)
76 to 80	1730 (21.00)
81 and over	1563 (18.97)
Race	
Asian	159 (1.93)
Black	2326 (28.24)
Hispanic	811 (9.84)
Native	11 (0.13)
Other	189 (2.29)
White	4742 (57.56)
LIS Status[a]	
LIS	4897 (59.44)
Non-LIS	3341 (40.56)
Comorbid Condition	
0 Conditions	3696 (44.87)
1 Condition	1380 (16.75)
2 Conditions	2829 (34.34)
3 Conditions	321 (3.90)
4 Conditions	12 (0.15)
Concomitant OAD[β]	
Yes	4528 (54.96)
No	3710 (45.04)

[a]LIS: Lower income subsidy; [β]OAD: Oral antidiabetic drug

Figure 2: Mean difference (control – intervention) in average MPR



	Mean Difference	95%-CI	P-value
Overall	-0.341	(-0.968, 0.286)	0.2861
Age			
50 and under	-1.6	(-5.66, 2.46)	0.4378
51 to 65	0.835	(-0.813, 2.46)	0.3205
66 to 70	-1.69	(-3.18, -0.200)	**0.0266**
71 to 75	-0.809	(-2.05, 0.430)	0.202
76 to 80	0.0565	(-1.33, 1.45)	0.9364
81 and over	0.263	(-1.13, 1.65)	0.7104
Race			
Asian	1.11	(-3.50, 5.71)	0.6348
Black	0.407	(-0.78, 1.59)	0.5012
Hispanic	1.59	(-0.422, 3.61)	0.121
Native	-7.98	(-24.63, 8.68)	0.3109
Other	0.952	(-4.48, 6.39)	0.7294
White	-1.02	(-1.85, -0.200)	**0.0146**
LIS Status[a]			
LIS	1.39	(0.568, 2.22)	**0.0009**
Non-LIS	-2.88	(-3.84, -1.93)	**<0.0001**
Comorbid Condition			
0 Conditions	-1	(-1.92, -0.08)	**0.0333**
1 Condition	0.545	(-1.01, 2.10)	0.4918
2 Conditions	-0.249	(-1.32, 0.83)	0.6505
3 Conditions	2.57	(-0.704, 5.85)	0.1234
4 Conditions	1.45	(-24.21, 27.12)	0.9031
Concomitant OAD[β]			
Yes	-0.429	(-1.15, 0.68)	0.6153
No	-0.234	(-1.29, 0.43)	0.329

[a]LIS: Lower income subsidy; [β]OAD: Oral antidiabetic drug

Figure 3: Nonadherent to Adherent Conversion by LIS Status

Percentage of Members Switching from Nonadherent to Adherent

Figure 4: Nonadherent to Adherent Conversion by Age

Percentage of Members Switching from Nonadherent to Adherent

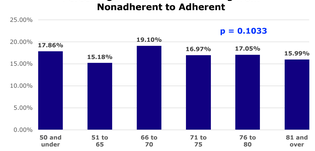


Figure 5: Nonadherent to Adherent Conversion by Comorbidities

Percentage of Members Switching from Nonadherent to Adherent

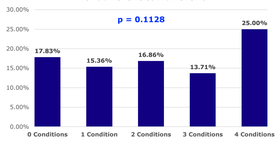


Figure 6: Nonadherent to Adherent Conversion by Race

Percentage of Members Switching from Nonadherent to Adherent

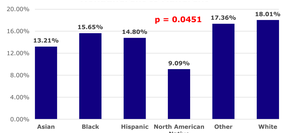


Figure 7: Nonadherent to Adherent Conversion by OAD Utilization

Percentage of Members Switching from Nonadherent to Adherent

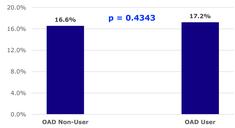


Table 2: Results of Logistic & Linear Regression Testing

Select Variables	Logistic Regression (Adherent vs Nonadherent)			Linear Regression by MPR	
	Comparison	OR (95%CI)	P-value	β estimate (SE)	P-value
LIS Status	Non-LIS vs LIS	1.134 (1.009, 1.275)	**0.0355**	-4.465 (0.67)	**<0.0001**
OAD	OAD Non-Users vs OAD Users	0.953 (0.846, 1.073	0.3064	0.48 (0.64)	0.4577
Race	Asian vs White	0.722 (0.452, 1.153)	0.0959	N/A	N/A
Age	51 to 65 vs 50 and under	0.834 (0.54, 1.29)	0.1532	-0.08 (0.04)	**0.025**
Comorbid Conditions	1 Condition vs 0 Conditions	0.845 (0.711, 1.006)	0.1439	-0.71 (0.33)	**0.031**

Conclusions and Implications

- A nonsignificant improvement in the mean difference in average MPR between cohorts was found following the IRA insulin cost-sharing cap implementation.
- The calculated MPR demonstrated significant improvement in adherence for patients in the following subgroups: 66-70 years old, White race, zero comorbid conditions, and non-LIS status.
- Non-LIS patients had greater odds of going from nonadherent in the control cohort to becoming adherent in the intervention cohort compared to LIS patients.
- Increasing age, increasing comorbid conditions, and LIS status were associated with decreases in MPR.
- LIS status was consistently a significant subgroup in our paired t-test, logistic regression, and linear regression analyses, but not our chi-squared test analysis.

Limitations

- While our study showed improvements in our defined adherence measure, the amount of uncontrolled confounders and limitations with the study design may not be able to definitively prove causation between the IRA insulin cap implementation and adherence improvement.
- As this study relies on administrative claims data, there is a risk of inaccuracy given claims are dependent on correct coding and given the potential for misclassification when a patients fills a prescription without insurance.
- There may be inaccuracy with measuring adherence as we are not able to determine if patients took their medications by solely looking at claims data.
- This study is specifically looking at a Medicare population enrolled in the same health plan and may not be generalizable to other patient populations.
- Calculating adherence for insulin regimens may not be standardizable due to variability in insulin dosing, titration, and processing at point of sale.
- Cohorts were followed across separate time periods which may influence results due to extraneous variables such as insulin shortages or new insulin products released on the market only occurring in one of the cohort time periods.

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Poster PDF

Additional Acknowledgements

- Art Garcia, Cigna Medicare Pharmacy Informatics
- Shantonu Mazumdar, Cigna Medicare Health Services Admin
- Christopher Powers, PharmD, Cigna Health Services Analytics
- Thank you to Pfizer Inc. for funding the AMCP Foundation Managed Care Summer Internship Program.
- Poster presented at AMCP Nexus 2024, October 14-17, Las Vegas, NV