

Antiemetic Utilization Following Initiation of Glucagon-Like Peptide-1 Receptor Agonists to Treat Obesity Among Commercially Insured Members Without Diabetes: A 3-Year Real-World Assessment



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Background

- Studies have demonstrated the real-world effectiveness of glucagon-like peptide-1 receptor agonists (GLP-1s) for weight loss among patients with obesity and without diabetes.¹
- Nausea and vomiting are among the most common side effects of GLP-1s,² and use of antiemetic drugs early in GLP-1 treatment has been recommended.³
- Real-world, long-term use of antiemetics for management of nausea and vomiting with GLP-1s is poorly understood.

Objective

Our objective was to assess antiemetic utilization in the year before and 3 years after GLP-1 obesity treatment initiation among commercially insured members without diabetes compared with matched controls.

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Methods

- This retrospective, observational cohort study analyzed Prime Therapeutics' integrated pharmacy and medical claims data from 16 million commercially insured members from all regions of the United States between January 1, 2020, and March 31, 2025.
- Study inclusion was limited to members newly initiating a GLP-1, as defined as no GLP-1 use in the prior year, between January 1, 2021, and March 31, 2022.
- Inclusion criteria were continuous enrollment in the 12 months prior to index for a new GLP-1 therapy start date (pre-period) and 12 months after index (post-period), an obesity diagnosis on 1 or more medical claims during the pre-period, 19 years of age or older at index, and no GLP-1 use or evidence of diabetes mellitus (DM) during the pre-period.
- Members were excluded if they had a DM diagnosis medical claim, a pharmacy DM drug therapy claim, or a medical claim diagnosis for HIV/AIDS, hemophilia, sickle cell disease, malignant cancer, or end-stage renal disease during the pre-period.
- Using the same inclusion and exclusion criteria, a control group was identified from a potential pool of 10 million members with at least 1 new pharmacy claim for a maintenance medication between January 1, 2021, and March 31, 2022. Each distinct fill date for a new prescription of a chronic medication was considered a potential index date.
- A 2-step matching approach was used to identify the control group, matching each treatment member to up to 3 control members.
 - Step 1: A direct match was made on gender, 10-year age bands, region, line of business (i.e., fully insured, health insurance marketplace, self-insured), Charlson Comorbidity Index score band,⁴ pre-period pharmacy claim fill rates, pregnancy, and year of index date, hospitalization in the 91-day period before index, prediabetes, severe obesity, sleep apnea, and any weight loss medication use.
 - Step 2: After the direct match, GLP-1 utilizers were matched using propensity scores on age, month of index study date, body mass index (BMI) grouping, Charlson Comorbidity Index score and conditions,⁴ pre-period pharmacy claim fill rates, pregnancy, and pre-period utilization of non-GLP-1 weight loss drug therapy by class (e.g., phentermine, topiramate, naltrexone), statins, renin-angiotensin system antagonists (RASAs), and/or antidepressants.

- Balance across cohorts was evaluated using standardized mean differences (SMDs), with differences less than 0.1 considered balanced.
- Antiemetic medications in this analysis included ondansetron, meclizine, scopolamine, aprepitant, fosaprepitant, granisetron, and a small number of other products falling under the antiemetic class, as defined by Medi-Span.
- Annual percentage changes between groups and across periods (pre-period vs. year 1, year 2, and year 3 post-period) were statistically analyzed using difference-in-difference (DID) regression.
 - Quarterly trends were assessed graphically.
- An additional subanalysis of antiemetic use requiring GLP-1 treatment adherence (proportion of days covered ≥80%) was also conducted.

Table 1 Select Demographic and Clinical Characteristics After Matching				
Demographic or Clinical Characteristic	After Matching*			
	Treatment (N=7,922)	Control (N=22,998)	SMD†	P Value‡
Age in years, mean (SD)	45.9 (10.1)	45.8 (10.3)	0.006	0.63
Gender—female, N (%)	6,365 (80.3%)	18,504 (80.5%)	0.003	0.84
Charlson Comorbidity Index, mean (SD)	0.26 (0.54)	0.25 (0.52)	0.025	0.06
Severe obesity**, N (%)	3,247 (41.0%)	9,328 (40.6%)	0.009	0.51
BMI Z-code category, N (%)				
30–34.9	1,469 (18.5%)	4,180 (18.2%)	0.042	0.03
35–39.9	1,316 (16.6%)	3,573 (15.5%)		
40–44.9	1,107 (14.0%)	3,400 (14.8%)		
45+	1,054 (13.3%)	2,948 (12.8%)		
No obesity BMI Z-code	2,976 (37.6%)	8,897 (38.7%)		
Index quarter and year, N (%)				
Q1 2021	837 (10.6%)	2,428 (10.6%)	0.003	1.00
Q2 2021	1,271 (16.0%)	3,671 (16.0%)		
Q3 2021	1,542 (19.5%)	4,464 (19.4%)		
Q4 2021	1,814 (22.9%)	5,284 (23.0%)		
Q1 2022	2,458 (31.0%)	7,151 (31.1%)		

standardized mean difference (SMD); standard deviation (SD); body mass index (BMI)

*Eligible control group members were matched to glucagon-like peptide-1 receptor agonist (GLP-1) treatment members on characteristics and conditions using a combined exact and propensity score matching approach, as described in Methods.

**Severe obesity is defined as BMI ≥40 using ICD-10-CM codes of E66.01 or Z68.4. The number of members with severe obesity exceeds the number of members categorized with BMI ≥40 due to coding of E66.01 and under-coding of Z-codes for BMI, which are not billable ICD-10-CM codes.

†SMD assesses the balance in demographics and characteristics between groups, with excellent balance defined as a value <0.1.

‡Statistical comparisons between the treatment and control groups used t-tests for continuous outcomes and chi-square tests for categorical outcomes.

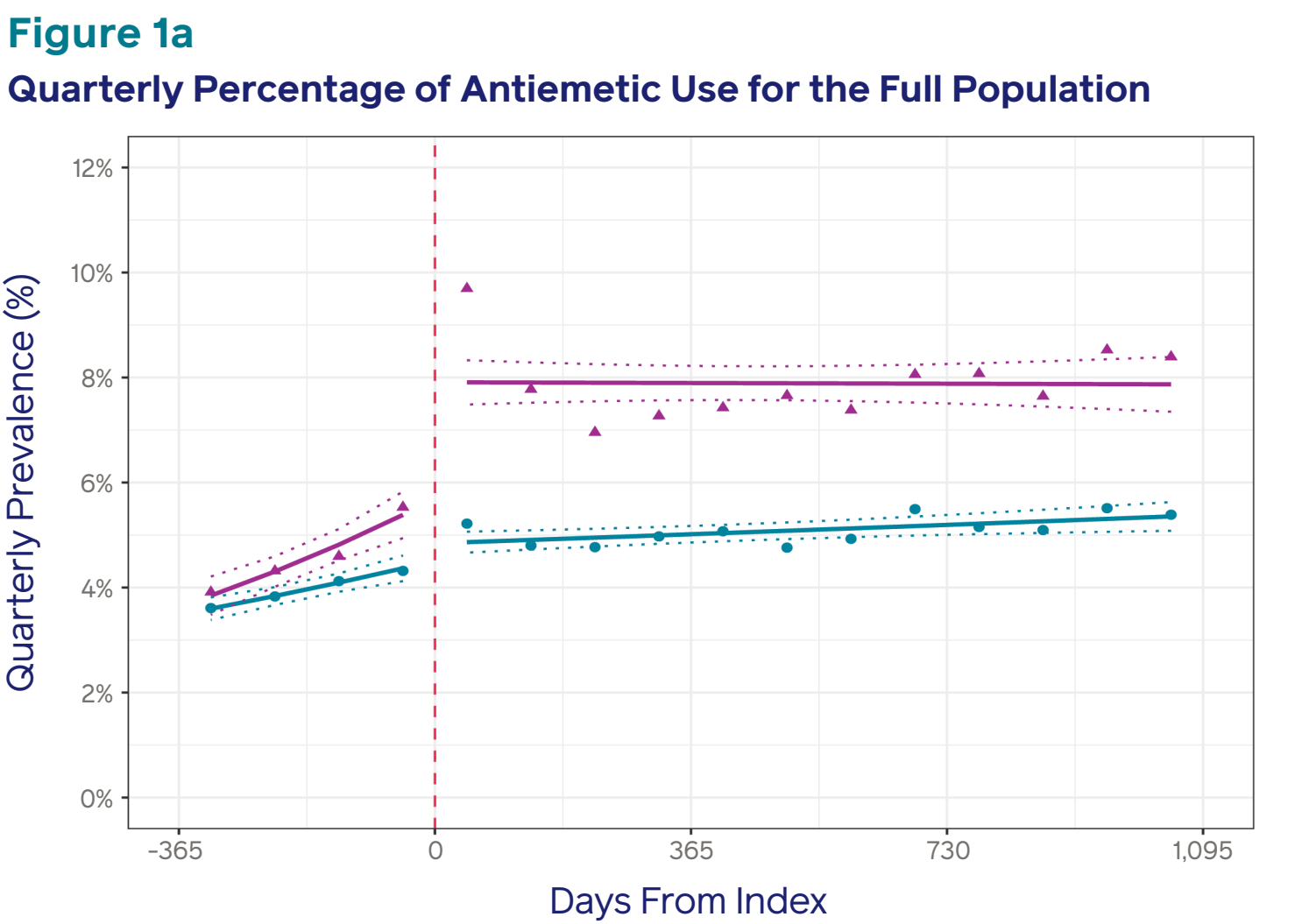
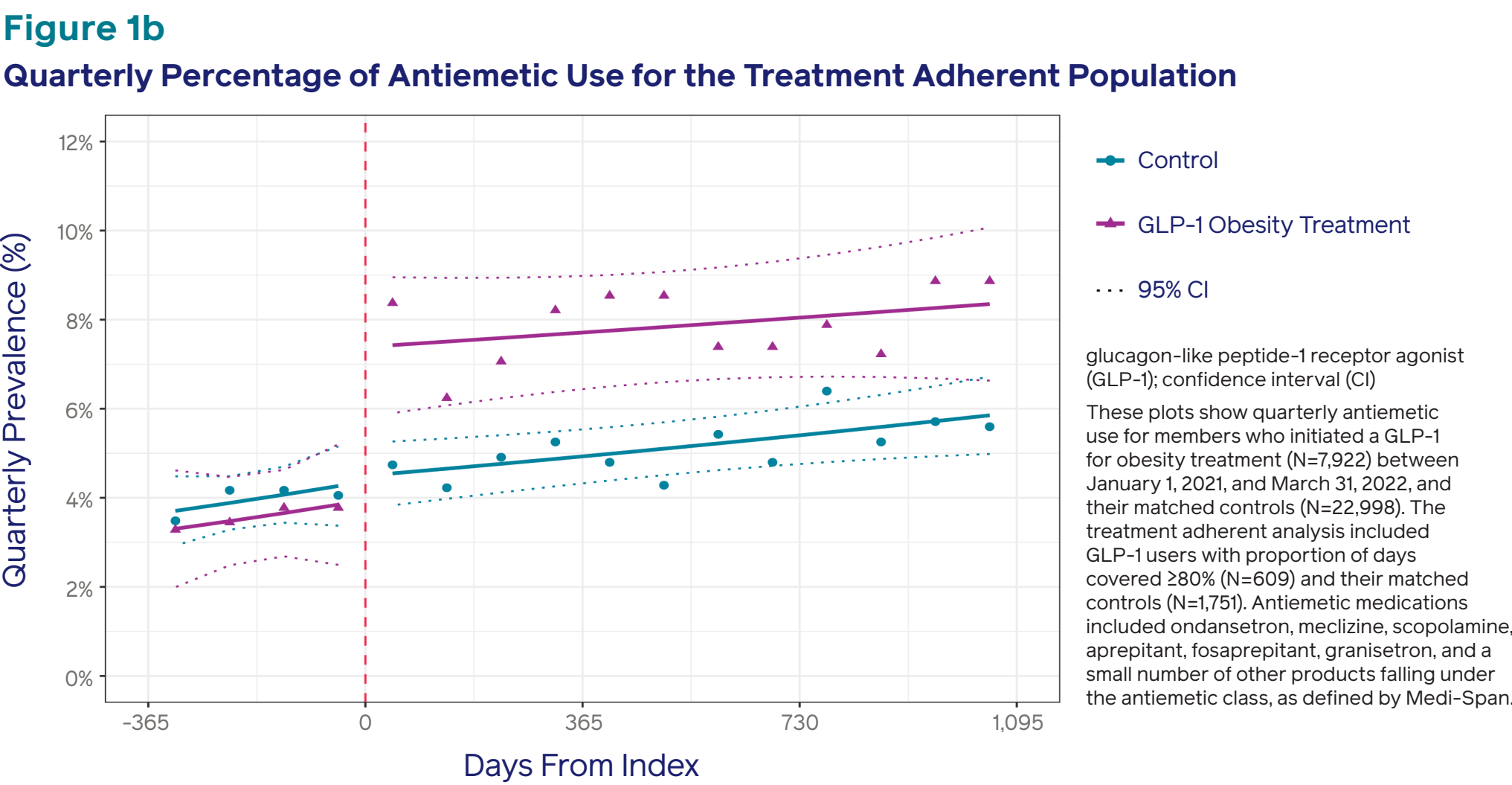


Table 2 Change in Antiemetic Use in Pre-Period vs. Post-Period						
Full Population						
	GLP-1 Obesity Treatment		Matched Controls*		Annual DID vs. Pre-Period** (95% CI)	P Value
	Prevalence (per 1,000 PY)	Difference vs. Pre-Period (% change)	Prevalence (per 1,000 PY)	Difference vs. Pre-Period (% change)		
Pre-period	144.4	—	121.0	—	—	—
Post-period year 1	222.2	77.8 (53.8%)	147.3	26.3 (21.7%)	51.5 (39.6–63.4)	<0.001
Post-period year 2	213.8	69.4 (48.1%)	148.0	27 (22.3%)	42.4 (29.2–55.7)	<0.001
Post-period year 3	218.7	74.3 (51.4%)	152.2	31.1 (25.7%)	43.1 (28.6–57.6)	<0.001
Adherent Only						
Pre-period	111.7	—	123.4	—	—	—
Post-period year 1	205.3	93.6 (83.8%)	136.8	13.4 (10.9%)	80.2 (38.6–121.7)	<0.001
Post-period year 2	197.0	85.4 (76.5%)	139.6	16.1 (13.1%)	69.2 (27.9–110.6)	0.001
Post-period year 3	208.5	96.9 (86.8%)	158.2	34.8 (28.2%)	62.1 (19.8–104.5)	0.004

glucagon-like peptide-1 receptor agonist (GLP-1); person-years (PY); difference-in-difference (DID); confidence interval (CI)

*Eligible control group members matched to GLP-1 treatment members on characteristics and conditions using a combined exact and propensity score matching approach; see Methods

**Difference between the pre-to-post-period change in prevalence among the GLP-1 cohort and the pre-to-post-period change in prevalence among matched controls



Results

- Out of the 3,027,817 control member-index date combinations and 8,614 GLP-1 treatment members who met inclusion and exclusion criteria, 22,998 controls were matched to 7,922 treatment members.
 - The treatment-adherent analysis consisted of 609 treatment members and 1,751 matched controls.
- The treatment and control cohorts were well balanced after matching (SMD <0.1; [Table 1](#)).
- Among the control cohort, annual prevalence of antiemetic use ranged from 12.1% (121 per 1,000 person-years [PY]) in the pre-period to 15.2% (152 per 1,000 PY) in year 3, but antiemetic use nearly doubled from 14.4% to 22.2% (144 to 222 per 1,000 PY) in the treatment cohort ([Table 2](#)). The annual DID statistical estimate for year 1 vs. pre-period was 5.2% (95% CI: 4.0%–6.3%; $P<0.01$).
- [Figure 1a](#) shows an immediate increase in antiemetic drug use early in GLP-1 treatment, that persists throughout the post-period for treatment, compared with controls.
- Similar trends were observed for the treatment-adherent analysis ([Figure 1b](#)).

Limitations

- Data were sourced from administrative healthcare claims; therefore, misclassification bias may have occurred due to the use of medical and pharmacy claims to exclude individuals without diabetes and identify those with obesity. Similarly, claims-based identification of GLP-1 utilization may have failed to appropriately classify utilizers of compounded GLP-1 products, individuals procuring GLP-1 through direct-to-consumer programs, or other individuals with nonadjudicated GLP-1 utilization.
- Our study examined a commercially insured membership and, therefore, is not generalizable to Medicare or Medicaid populations.
- The impacts of an individual's cost sharing, other diagnoses, social determinants of health, or other member characteristics are outside the scope of this analysis and are worthy of future consideration.

Conclusion

- Antiemetic use increased significantly immediately following initiation of GLP-1 treatment for obesity and remained elevated throughout the 3-year follow-up period among all treatment members and in the treatment-adherent subanalysis.
- Among GLP-1 users, more than 1 in 5 members had an antiemetic claim annually, suggesting continued use of antiemetics to manage adverse effects through 3 years of GLP-1 therapy.
- The 5.2% higher antiemetic use among GLP-1-treated individuals indicates an additional 1 in 20 GLP-1-treated individuals had an antiemetic drug claim during year 1 compared with individuals in the control group.
- These findings highlight the role of cardiometabolic case management in supporting ongoing side effect management for members using GLP-1 products.

References

- Thomsen RW, Mailhac A, Løhde JB, Pottegård A. Real-world evidence on the utilization, clinical and comparative effectiveness, and adverse effects of newer GLP-1 RA-based weight-loss therapies. *Diabetes Obes Metab*. 2025;27(suppl 2):66–88. doi:10.1111/dom.16364
- Ismail A, Scarlata GGM, Boitos I, et al. Gastrointestinal adverse events associated with GLP-1 RA in non-diabetic patients with overweight or obesity: A systematic review and network meta-analysis. *Int J Obes (Lond)*. 2025;49(10):1946–1957. doi:10.1038/s41366-025-01859-6
- Gorgojo-Martínez JJ, Mezquita-Raya P, Carretero-Gómez J, et al. Clinical recommendations to manage gastrointestinal adverse events in patients treated with GLP-1 receptor agonists: A multidisciplinary expert consensus. *J Clin Med*. 2023;12(1):145. doi:10.3390/jcm12010145
- Glasheen WP, Cordier T, Gumpina R, Haugh G, Davis J, Renda A. Charlson comorbidity index: ICD-9 update and ICD-10 translation. *Am Health Drug Benefits*. 2019;12(4):188–197. Accessed August 28, 2026. https://pmc.ncbi.nlm.nih.gov/articles/PMC6684052/pdf/ahdb-12-188.pdf