Classification of Ozempic® and Victoza® utilizers into on-label and off-label cohorts

PRIME THERAPEUTICS® | Magellan Rx MANAGEMENT℠

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BACKGROUND

- Obesity and type 2 diabetes are disease states that can diminish quality of life, increase healthcare costs, and may require lifelong management and treatment.[1]
- The prevalence of obesity will continue to increase nationwide. It is estimated by 2030, obesity and severe obesity in adults may increase to 50% and 25%, respectively.[2] Which means half of the US adult population will be obese in less than 10 years.
- Ozempic® (semaglutide) and Victoza® (liraglutide) are glucagon-like peptide 1 receptor agonists (GLP-1) that are indicated for adults with type 2 diabetes.
- Saxenda® (liraglutide) is an FDA approved GLP-1 for chronic weight management in adults. Wegovy® (semaglutide) recently received FDA label expansion for treatment of chronic weight management in adults and children ≥12 years.
- High demand, social media trends, and manufacturing issues have led to a Wegovy® shortage.[3]
- All doses of Ozempic® are on shortage due to potential misuse for off-label benefit, such as weight loss, impacting diabetic patients who may have to seek alternative therapies.[3]

OBJECTIVE

- To classify patients using Ozempic® or Victoza® for off-label use from administrative pharmacy claims

METHODS

- A retrospective study was conducted using paid medical and pharmacy claims to identify continuously enrolled commercially insured adults.
- Nationally representative commercial sample: 27 million lives
- Study Time Frame: January 1, 2018 to December 31, 2021

Inclusion Criteria:

- ≥2 pharmacy claims for Ozempic® or Victoza® on ≥2 different dates of service each year during the measurement period

Exclusion Criteria:

- ICD-10 code for diabetes other than type 2, pregnancy, pancreatitis, end-stage renal disease

- Members who met criteria were grouped into two cohorts based on medical claims diagnosis (E11.x ICD-10 codes) associated with type 2 diabetes. The on-label cohort had ≥1 type 2 diabetes diagnosis code each year, and the off-label cohort did not have a type 2 diabetes diagnosis code (see Figure 1).
- Baseline demographics characteristics were assessed for statistical differences (α=0.05). Odds ratio (OR) was used to compare cohorts and identify predictors of off-label use.

FIGURE 1. STUDY DESIGN

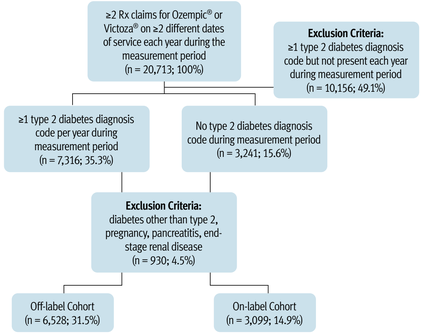


TABLE 1. BASELINE MEMBER DEMOGRAPHICS

	On-Label Count n=6,528	Off-Label Count n=3,099	Test Statistic	P-value
Female	3,246 (49.7%)	1,873 (60.4%)	96.889	<0.0001
Male	3,282 (50.3%)	1,226 (39.6%)		
Age				
18-20 Adolescence	3 (0.05%)	6 (0.2%)	88.89	<0.0001
21-30 Adulthood	16 (0.25%)	28 (0.9%)		
31-40 Adulthood	281 (4.3%)	225 (7.3%)		
41-50 Adulthood	1,465 (22.4%)	775 (25%)		
51-60 Adulthood	3,431 (52.6%)	1,547 (50%)		
61-64 Adulthood	979 (15%)	406 (13.1%)		
65+ Elderly	353 (5.4%)	110 (3.6%)		
Geographic Region				
New England	172 (2.5%)	28 (0.9%)	815.83	<0.0001
Middle Atlantic	905 (13.9%)	337 (10.9%)		
East North Central	1,349 (20.7%)	226 (7.3%)		
West North Central	703 (10.8%)	286 (9.2%)		
South Atlantic	1,893 (29.0%)	818 (26.4%)		
East South Central	197 (3.0%)	346 (11.2%)		
West South Central	827 (12.7%)	556 (18%)		
Mountain	179 (2.8%)	76 (2.5%)		
Pacific	291 (4.5%)	423 (13.7%)		
Metformin Usage				
Patients with ≥1 metformin fill	5,132 (78.6%)	2,201 (71.0%)	741.1	<0.0001
Patients with only 1 metformin fill	149 (2.5%)	90 (2.9%)	3.35	0.067

From pharmacy claims data alone, **payers can classify** commercially insured adult patients using **Ozempic® or Victoza® into on-label or off-label users.**

RESULTS

- This study identified 6,528 members in the on-label and 3,099 members in the off-label cohort.
- The off-label cohort was younger (mean age 52.9 vs 54.5) and more likely to be female (see Table 1).
- 28 outcomes were identified as being significant in favor of either on-label or off-label usage (see Table 2).
- The top 3 significant predictors in favor of off-label use were demographic regions: East South Central (OR=5.64), Pacific (OR=4.26), and West South Central (OR=1.78; see Table 2 and Figure 2).
- Patients who are female (OR=1.32) or had a pharmacy claim for mental/behavioral health (OR=1.14) were more likely to use GLP-1s off-label (see Table 2).
- The on-label cohort was more likely to have an Rx claim for anti-clotting (OR=2.24) or antiplatelet therapy (OR=1.9), which may relate to macrovascular complications associated with type 2 diabetes (see Table 2).
- The on-label cohort was more likely to have a pharmacy claim for metformin (OR=1.45) or dyslipidemia therapy (OR=1.63) which falls in guidance with appropriate prescribing for type 2 diabetes (see Table 2).

TABLE 2. PREDICTORS OF ON-LABEL AND OFF-LABEL GLP-1 USE

On-Label Outcomes	
Outcome	**Odds Ratio**
East North Central Region	2.41
Anti-Clotting Indicator	2.24
Platelet Aggregator Indicator	1.90
Pain - Opioid Indicator	1.64
Dyslipidemia Indicator	1.63
Cardiovascular Indicator	1.59
Diabetes Medical Devices and Supplies Indicator	1.54
Heart Failure Indicator	1.46
≥1 Metformin Fill	1.45
Nausea/Vomiting Indicator	1.31
Hypertension Indicator	1.28
Benign Prostatic Hyperplasia Indicator	1.25
Vaccine Indicator	1.20
Musculoskeletal Indicator	1.19
Ulcer/GERD Indicator	1.16
Urinary Tract Infection Indicator	1.16
Chronic Disease Score Indicator	1.06

Off-Label Outcomes	
Outcome	**Odds Ratio**
East South Central Region	5.64
Pacific Region	4.26
West South Central Region	1.78
Family Planning Indicator	1.68
Female Sex	1.32
Insomnia Indicator	1.31
Throat/Oral Care Indicator	1.27
South Atlantic Region	1.21
Hormone Therapy Indicator	1.21
Thyroid Therapy Indicator	1.20
Behavioral Health Indicator	1.14

FIGURE 2. MAGNITUDE OF GEOGRAPHICAL REGIONS FAVORING OFF-LABEL AND ON-LABEL USAGE

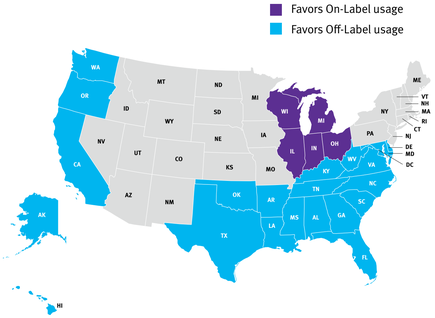
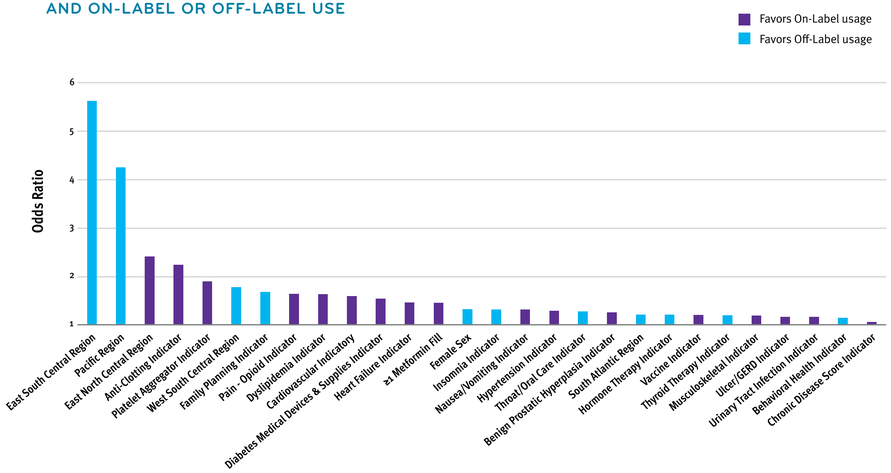


FIGURE 3. MAGNITUDE OF ASSOCIATION BETWEEN PREDICTORS AND ON-LABEL OR OFF-LABEL USE



DISCUSSION

- Mounjaro™ (tirzepatide), a dual GIP/GLP-1 recently approved for type 2 diabetes in May 2022, is also in short supply due to high demand, and clinical trials found an increase in weight loss benefit compared to semaglutide.[3]
- Additionally, the higher strengths of Trulicity® (dulaglutide), a GLP-1 indicated for type 2 diabetes, are reporting to have "intermittent periods of backorder" due to recent high demand per the FDA.[4]
- Semaglutide and liraglutide are currently the only active ingredients FDA approved and indicated for type 2 diabetes and obesity. Due to clinical data of weight loss benefit in other GLP-1s and Mounjaro™, providers and patients may be switching and utilizing these medications due to shortages and restricted access of semaglutide.
- Off-label usage resulting in shortages continues to impact diabetic patients that may have to seek alternative therapies.
- Recognizing the absence or presence of indicators may allow payers, with only pharmacy claims data, to identify patients into on-label and off-label cohorts.
- Payers could ensure cost savings and appropriate GLP-1 access to prevent future shortages and issues for diabetic patients.

LIMITATIONS

- This study is based on claims data. All pharmacy and medical claims may not be fully captured in the data.
- Analysis is limited to commercial insured patients; therefore, results may not generalize to other lines of business.

CONCLUSIONS

- This study demonstrates patients using Ozempic® or Victoza® can be classified into on-label or off-label users, based on additional information derived from claims data.
- Future research should evaluate the cost impact of off-label GLP1 usage.

REFERENCES

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