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Real-World Analysis of Glucagon-Like Peptide-1 Agonist (GLP-1a) Obesity Treatment One Year Cost-Effectiveness and Therapy Adherence

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Introduction: Glucagon-like peptide-1 agonist (GLP-1a) products to treat type 2 diabetes mellitus (T2DM) have been on the market since 2005. In 2014, the FDA approved the first GLP-1a product, liraglutide injection (Saxenda), for weight loss, followed by semaglutide injection (Wegovy) in 2021.

In the fall of 2022, social media influencers expounded on the weight loss attributes associated with GLP-1a therapies. This resulted in some employers experiencing a substantial increase in GLP-1a utilization and costs during the first half of 2023.

At an annual wholesale acquisition price $11,500 to $14,000, the Institute for Clinical Economic Review (ICER) cost-effectiveness analysis identified that GLP-1a weight loss therapies are two-fold over-priced to their expected value in weight loss-associated reduction in cardiovascular events and diabetes development avoidance over a lifetime. The clinical trial data used by ICER to create their cost-effectiveness findings of GLP-1a drugs reported a medication adherence rate of 95%.

While these data are valuable for managed care decision-making, the ICER report reflects estimated costs over lifetime use and clinical trial data reflect use in an ideal setting. Little is known about the first year of GLP-1a obesity treatment as it relates to real-world cost-effectiveness and treatment adherence.

Objective: To describe changes in total cost of care (TCC) one year before and after initiation of GLP-1a treatment among GLP-1a-naïve, commercially insured members with obesity or prediabetes compared to a concurrent matched control group, and to assess GLP-1a adherence.

Methods: Prime Therapeutics and MagellanRx analyzed integrated pharmacy and medical claims data from 16 million commercially insured members. Study inclusion was limited to members with a GLP-1a claim (index date) between 1/1/2021 and 12/31/2021, with continuous

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enrollment 12-months before (pre-period) and after (post-period) the index date, and no GLP-1a drug claim before the pre-period.

Members were required to have at least one pre-period medical claim including a diagnosis code for obesity or prediabetes or Z code for body mass index (BMI) ≥ 30. Members were excluded if they had a medical claim with a DM diagnosis or a pharmacy DM drug therapy claim during the 12-month pre-index period. Additional medical claim diagnosis exclusions included: HIV/AIDS, hemophilia, sickle cell disease, malignant cancer, or end-stage renal disease.

Using the same inclusion and exclusion criteria and a two-step matching approach, a 3-to-1 matched control group was identified from a base 13.5 million members without a GLP-1a claim in 2021 and with a pharmacy claim for any drug. First, direct matching of GLP-1a obesity/prediabetes-treated members was performed using the following characteristics: gender, Blue plan, line of business (i.e., fully-insured, health insurance marketplace, self-insured), prediabetes diagnosis, obesity diagnosis, BMI group, and pregnancy.

After the direct match, GLP-1a utilizers were further matched using propensity scores on 5-year age bands, major chronic disease medical conditions, and pre-period drug utilization in the following classes: weight loss drug therapy (non-GLP-1a), statin, renin angiotensin system antagonist (RASA), and antidepressant.

Total cost of care was calculated by summing the 365-day period per member medical and pharmacy claim paid allowed amounts, including member share, after all network provider discounts were applied. Statistical analysis compared the pre- to post-average per member cost change between the groups using a difference-in-difference approach.

GLP-1a therapy persistency was assessed using pharmacy claims day supply to identify if a ≥ 60-day gap in GLP-1a supply occurred during the 365-day analysis period, and the last day of GLP-1a supply was defined as the member's discontinuation date. If there was no 60-day gap in therapy, the member was defined as GLP-1a therapy persistent for the year. Adherence was defined by the proportion of days covered (PDC) method, evaluating each day for a GLP-1a supply during the 365-day period and summing all days with supply divided by 365 days. Members with a PDC of ≥ 0.8, a customary threshold, were defined as adherent and those with PDC <0.8 were defined as nonadherent.

Results: A total of 4,255 commercially insured members newly initiating GLP-1a therapy and 484,111 control group members met all study criteria. After matching, the control sample was reduced to 12,379 unique control members. Of these, 386 (3%) matched to more than one GLP-1a utilizer.

The mean age of individuals included in the study was 47 years and 81% were women. An obesity diagnosis was present for 81% of members and 19% had a diagnosis of prediabetes. Pre-period annual total cost of care averaged $12,371 for the GLP-1a utilizers, and $11,590 among the control group. GLP-1a treated members' post-period annual total costs averaged $19,657 – a $7,286 (59%) increase – while the control group averaged $11,150 – a $440 (4%)

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decrease. The difference-in-difference statistical test found those taking GLP-1a drugs had significantly higher annual total cost of care at $7,727 per treated member (p<0.0001).

GLP-1a persistency and adherence to therapy was poor, with 32% of members remaining persistent at one year and 27% adherent to therapy during the post-year. Among the GLP-1a adherent sub-group, average per-member annual costs increased from $13,048 in the pre-period to $25,850 in the post-period – a 98% increase – compared to their matched control members of $11,955 pre-period to $11,539 post-period – a $416 (3%) decrease.

Conclusions: Among GLP-1a new initiators without DM and with obesity, prediabetes, and/or BMI ≥ 30, there was no health care cost reduction in the first year. Instead, costs went up $7,727 per GLP-1a treated member compared to the matched control group. GLP-1a treatment persistency was poor with only one-third on therapy at one year. Among GLP-1a adherent individuals, the increase in costs was even higher, double the prior year. These real-world findings are important to aid in the development of an evidence-based GLP-1a weight loss management program, pharmaceutical manufacturer value-based contracts, and health insurance benefit designs.

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