MILLIMAN WHITE PAPER

Questions surrounding antidiabetic GLP-1s in Medicaid

A quantitative analysis across several managed care programs

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Continued increases in utilization of glucagon-like peptide 1 agonists (GLP-1s) are exerting pressure on healthcare cost trends and state Medicaid budgets, prompting a critical need for data-driven strategies to manage expenditures while ensuring appropriate access to these therapies. This white paper presents the results of a quantitative assessment of GLP-1 utilization and cost, with a particular emphasis on antidiabetic-indicated GLP-1s in Medicaid managed care (MMC). We present key insights using real-world Medicaid experience data aimed at aiding state agencies in optimizing their formulary management and cost containment strategies. This white paper addresses *three important questions* that have emerged in the wake of rapidly increasing GLP-1 utilization.

Type 2 diabetes mellitus (T2DM) poses a significant global health challenge, with a prevalence that is steadily rising, particularly among populations that are overweight or obese.[1] Effective treatment strategies aim not only to improve and control glycemic levels but also to address associated comorbidities, including obesity-related complications.[2] Among the pharmacological interventions for T2DM, metformin remains the preferred initial therapy due to its proven glycemic efficacy, minimal risk of hypoglycemia, and cost-effectiveness.[3,4] The American Association of Clinical Endocrinologists (AACE) recommends adding a GLP-1 agent to metformin for treatment of T2DM, and to consider a GLP-1 as first-line therapy in patients with T2DM who also have had or are at high risk for heart disease, a history of stroke, or chronic kidney disease.[5] Additionally, GLP-1s have attracted national attention for their ability to induce weight loss in addition to improving glycemic control and reducing cardiovascular risk.[6,7]

The weight-reducing effects of the two newest GLP-1s, semaglutide and tirzepatide, have been well-documented in clinical trials.[8,9] These two agents, marketed as Ozempic and Mounjaro for the treatment of T2DM, have been shown to have greater weight loss as compared to older GLP-1s.[10] In addition to contributing to weight loss results exceeding 15% after a year of use, semaglutide has also demonstrated efficacy in reducing risk of cardiovascular

1. Shaw, J.E. et al. (January 2010). Global Estimates of the Prevalence of Diabetes for 2010 and 2030. Diabetes Research and Clinical Practice. Retrieved October 22, 2024, from https://www.sciencedirect.com/science/article/abs/pii/S016882270900432X.
2. Yashi, K. & Daley, S.F. (June 19, 2023). Obesity and Type 2 Diabetes. StatPearls. Retrieved October 22, 2024, from https://www.ncbi.nlm.nih.gov/books/NBK592412/.
3. Ibid.
4. American Diabetes Association. Diabetes Care. Retrieved October 22, 2024, from https://diabetesjournals.org/care/issue/47/Supplement_1.
5. Ibid.
6. Bergmann, N.C. et al. (October 18, 2022). Semaglutide for the Treatment of Overweight and Obesity: A Review. Diabetes, Obesity, and Metabolism. Retrieved October 22, 2024, from https://dom-pubs.onlinelibrary.wiley.com/doi/full/10.1111/dom.14863.
7. Davies, M.J. et al. (August 18, 2015). Efficacy of Liraglutide for Weight Loss Among Patients With Type 2 Diabetes. JAMA. Retrieved October 22, 2024, from https://jamanetwork.com/journals/jama/fullarticle/2428956.
8. Bergmann, N.C. et al. (October 18, 2022). Semaglutide for the Treatment of Overweight and Obesity: A Review. Diabetes, Obesity, and Metabolism. Retrieved October 22, 2024, from https://dom-pubs.onlinelibrary.wiley.com/doi/full/10.1111/dom.14863.
9. Arrone, L.J. et al. (December 11, 2023). Continued Treatment With Tirzepatide for Maintenance of Weight Reduction in Adults With Obesity. JAMA. Retrieved October 22, 2024, from https://jamanetwork.com/journals/jama/fullarticle/2812936.
10. Ibid.

disease (CVD). This development suggests a potential role for GLP-1s in managing this disease in individuals with T2DM.[11] Although there has been a recent increase in media and public awareness, medications in this drug class have been around for nearly two decades, allowing for a good understanding of their place in therapy along with potential adverse events and long-term effects.[12] Other Milliman white papers have documented the historical development and milestones for this drug class.[13,14,15]

Despite the proven therapeutic benefits, GLP-1 adoption by payers has varied, particularly in publicly funded healthcare programs like Medicaid, making affordability and access difficult for some patients. As payers and pharmacy benefit managers (PBMs) navigate the ever-evolving landscape surrounding this drug class, many questions have been raised regarding the long-term financial sustainability of covering these medications. With monthly gross costs often exceeding $1,000, combined with the sudden surge in utilization, the current GLP-1 demand is reminiscent of hepatitis C drug experience about a decade ago.[16,17] GLP-1s are indicated to be used as maintenance therapy—meaning that patients are expected to indefinitely continue treatment for the management of their disease. Due to growing uncertainty over future adoption rates, state Medicaid agencies are paying close attention to emerging data assessing GLP-1 utilization, cost trend, and cost-effectiveness.

PDL landscape

In early 2022, a surge in utilization and demand for GLP-1 antidiabetic medications was observed across the U.S. healthcare system, and the consequent increases in pharmacy expenditures prompted concerns among many healthcare payers.[18,19,20] Within a sample of four Medicaid managed care (MMC) programs, spending associated with GLP-1s increased from approximately $4.50 per member per month (PMPM) costs in Q1 2022 to approximately $14.20 PMPM in Q1 2024 on a gross cost basis. This trend drove a variety of responses from states. In developing these responses, state Medicaid programs and the MMC plans considered:

- Preferred Drug List (PDL) strategy approaches that maximize federal and supplemental drug rebates
- Adjusting utilization management criteria that limit GLP-1s to indication(s) approved by the U.S. Food and Drug Administration (FDA) and reduce off-label use
- Patient adherence and persistence of GLP-1s
- Potential pharmacy and medical cost offsets achieved through treatment with GLP-1s

11. Myerson, M. (March 5, 2024). The New Weight Loss Drugs. Medical Economics. Retrieved October 22, 2024, from https://www.medicaleconomics.com/view/the-new-weight-loss-drugs.

12. Ibid.

13. Ally, A.J., Bell, D., Craff, M. et al. (August 2023). Payer Strategies for GLP-1 Medications for Weight Loss. Milliman White Paper. Retrieved October 22, 2024, from https://www.milliman.com/-/media/milliman/pdfs/2023-articles/8-28-23_glp-1s-for-weight-loss_20230824.ashx.

14. Niakan, K. & Schock, B. (January 2024). GLP-1 Agonists in Medicaid: Utilization, Growth, and Management. Milliman White Paper. Retrieved October 22, 2024, from https://www.milliman.com/-/media/milliman/pdfs/2024-articles/1-18-24_glp1-agonists-in-medicaid-utilization-growth-and-management.ashx.

15. Klaisner, J., Botros, B., LeRoy, R. et al. (June 11, 2024). Impact of Anti-Obesity Medication Coverage in the Medicaid and Commercial Markets. Milliman Report. Retrieved October 22, 2024, from https://www.milliman.com/-/media/milliman/pdfs/2024-articles/6-10-24-impact-of-anti-obesity-medications-coverage-in-commercial-and_medicaid.ashx.

16. Roebuck, M.C. & Liberman, J.N. (June 25, 2019). Assessing the Burden of Illness of Chronic Hepatitis C and Impact of Direct-Acting Antiviral Use on Healthcare Costs in Medicaid. Am J Manag Care. Retrieved October 22, 2024, from https://pubmed.ncbi.nlm.nih.gov/31211526/.

17. Walker, J. (April 8, 2015). Gilead's $1,000 Pill Is Hard for States to Swallow. Wall Street Journal. Retrieved October 22, 2024, from https://www.wsj.com/articles/gileads-1-000-hep-c-pill-is-hard-for-states-to-swallow-1428525426.

18. Ally, A.J., Bell, D., Craff, M. et al. (August 2023). Payer Strategies for GLP-1 Medications for Weight Loss. Milliman White Paper. Retrieved October 22, 2024, from https://www.milliman.com/-/media/milliman/pdfs/2023-articles/8-28-23_glp-1s-for-weight-loss_20230824.ashx.

19. Niakan, K. & Schock, B. (January 2024). GLP-1 Agonists in Medicaid: Utilization, Growth, and Management. Milliman White Paper. Retrieved October 22, 2024, from https://www.milliman.com/-/media/milliman/pdfs/2024-articles/1-18-24_glp1-agonists-in-medicaid-utilization-growth-and-management.ashx.

20. Klaisner, J., Botros, B., LeRoy, R. et al. (June 11, 2024). Impact of Anti-Obesity Medication Coverage in the Medicaid and Commercial Markets. Milliman Report. Retrieved October 22, 2024, from https://www.milliman.com/-/media/milliman/pdfs/2024-articles/6-10-24-impact-of-anti-obesity-medications-coverage-in-commercial-and_medicaid.ashx.

Beyond treating T2DM, a key implication of the rise in popularity of GLP-1s are the *nondiabetic* indications that this drug class is able to treat. Three of the GLP-1s currently on the market have a weight loss indication. Recently, Wegovy was approved to reduce the risk of major adverse cardiovascular events in adults with established cardiovascular disease.[21] The ongoing developments in this drug class's therapeutic effects and FDA approvals for additional indications require states to constantly review their PDL strategies. The table in Figure 1 summarizes the coverage landscape for GLP-1s across 10 MMC programs based on a review of publicly available information as of August 2024.

Figure 1 presents a nuanced picture of information gathered via a comprehensive study of coverage policies across a representative sample of MMC programs. Among the GLP-1s, Ozempic and Trulicity are listed as preferred drugs in a majority of the states included in this review. The study also showed that Ozempic was most commonly added between January 2022 and January 2023. However, the preference for Ozempic is often accompanied by stringent clinical authorization criteria, which reflects a desire to control the demand and curtail suspected off-label use. Mounjaro, the most recently approved GLP-1 for T2DM, is listed as a preferred drug less frequently than other GLP-1s (only one of the 10 states included in this review includes Mounjaro as a preferred medication).

Only a minority of states extend coverage of GLP-1 agents to include versions of these medications indicated for anti-obesity. Notably, Michigan, Pennsylvania, and one of the MMC plans in Rhode Island stand out for their inclusions of the recently approved Zepbound on their PDLs. Additionally, Michigan, Mississippi, and Pennsylvania all include Wegovy. These observations offer a glimpse into evolving coverage decisions tailored to address emerging therapeutic needs. This overview of the coverage landscape sets the stage for a deeper exploration into the quantitative aspects of coverage decisions, which are addressed in the context of the three business questions detailed in the following pages.

21. Arrone, L.J. et al. (December 11, 2023), op cit.

FIGURE 1: GLP-1 COVERAGE ACROSS 10 MEDICAID MANAGED CARE PROGRAMS

	Illinois[22]	Indiana[23]	Kentucky[24]	Louisiana[25]	Michigan[26]	Mississippi[27]	Ohio[28]	Pennsylvania[29]	Rhode Island[30]	South Carolina[31]
PBM and PDL Structure	Multiple PBM, Unified PDL	Multiple PBM, Unified PDL	Single PBM and Unified PDL	Single PBM and Unified PDL	Multiple PBM, Unified PDL	Single PBM and Unified PDL	Single PBM and Unified PDL	Single PBM and Unified PDL	Multiple PBM and Multiple PDL	Multiple PBM, Unified PDL
Antidiabetic GLP-1s Preferred	Trulicity, Victoza	**Ozempic**, Trulicity, Victoza, Byetta	**Ozempic**, Victoza, Byetta	**Ozempic**, **Rybelsus**, Trulicity, Victoza, Byetta	Trulicity, Victoza, Byetta	Trulicity, Victoza, Byetta	Trulicity, Victoza	**Ozempic**, Trulicity, Victoza	Varies by plan, all include **Mounjaro** and **Ozempic**	**Ozempic,** Trulicity, Victoza
Authorization Criteria		Diagnosis, Step Therapy	Diagnosis, Step Therapy	Diagnosis	Diagnosis			Diagnosis	Varies by plan, all include Step Therapy	Diagnosis, Step Therapy
Anti-Obesity GLP-1 Coverage	None	None	None	None	Yes	Yes	None	Yes	Yes, varies by plan	None
Anti-Obesity GLP-1s Preferred					**Wegovy**, **Zepbound**, Saxenda	**Wegovy**, Saxenda		**Wegovy**, **Zepbound**, Saxenda	Varies by plan	

Notes:

- *A Unified PDL* is a single list of preferred drugs and authorization criteria that is followed by all beneficiaries and plans in a state.
- *Diagnosis authorization criteria refers* to the PBM requiring a diagnosis of T2DM prior to the claim payment.
- For T2DM treatment, *Step Therapy* refers to the requirement that a potential user attempt therapy using another agent (usually metformin) prior to being prescribed a GLP-1.
- Highlighted are drugs with semaglutide (blue) and tirzepatide (green) as the active ingredient.

22. Illinois Medicaid PDL. See https://hfs.illinois.gov/content/dam/soi/en/web/hfs/sitecollectiondocuments/pdl01012024.pdf.
23. Indiana Medicaid PDL. See https://prdgov-rxadmin.optum.com/rxadmin/INM/20240801_INM_SUPDL_Final.pdf.
24. Kentucky Medicaid PDL. See https://www.chfs.ky.gov/agencies/dms/dpo/ppb/Documents/Kentucky%20Medicaid%20PDL%2001.01.2024_v2%20FINAL.pdf.
25. Louisiana Medicaid PDL. See https://ldh.la.gov/assets/HealthyLa/Pharmacy/PDL.pdf.
26. Michigan Medicaid PDL. See https://michigan.magellanrx.com/provider/external/medicaid/mi/doc/en-us/MIRx_PDL.pdf.
27. Mississippi PDL. See https://medicaid.ms.gov/preferred-drug-list/.
28. Ohio Medicaid PDL. See https://dam.assets.ohio.gov/image/upload/medicaid.ohio.gov/PHM/drug-coverage/20240701_UPDL_v2_Clean_APPROVED.pdf.
29. Pennsylvania PDL. See https://www.papdl.com/preferred-drug-list.html.
30. - Rhode Island Neighborhood Medicaid PDL. See https://www.caremark.com/portal/asset/NHPRI_Medicaid_List.pdf.
- Rhode Island Tufts PDL. See https://contenthub-aem.optumrx.com/content/dam/contenthub/rx-assets/en/documents/clients/tufts/ritogether/P32H_RI_Together_Comprehensive_English.pdf.
- Rhode Island UnitedHealthcare PDL. See https://www.uhc.com/communityplan/assets/plandocuments/findadrug/RI-PDL/RI-Children-SHCN-RIteCare-RhodyHealth-PDL.pdf.
31. South Carolina Medication PDL. See https://southcarolina.fhsc.com/Downloads/provider/SCpdl_listing_20240701.pdf.

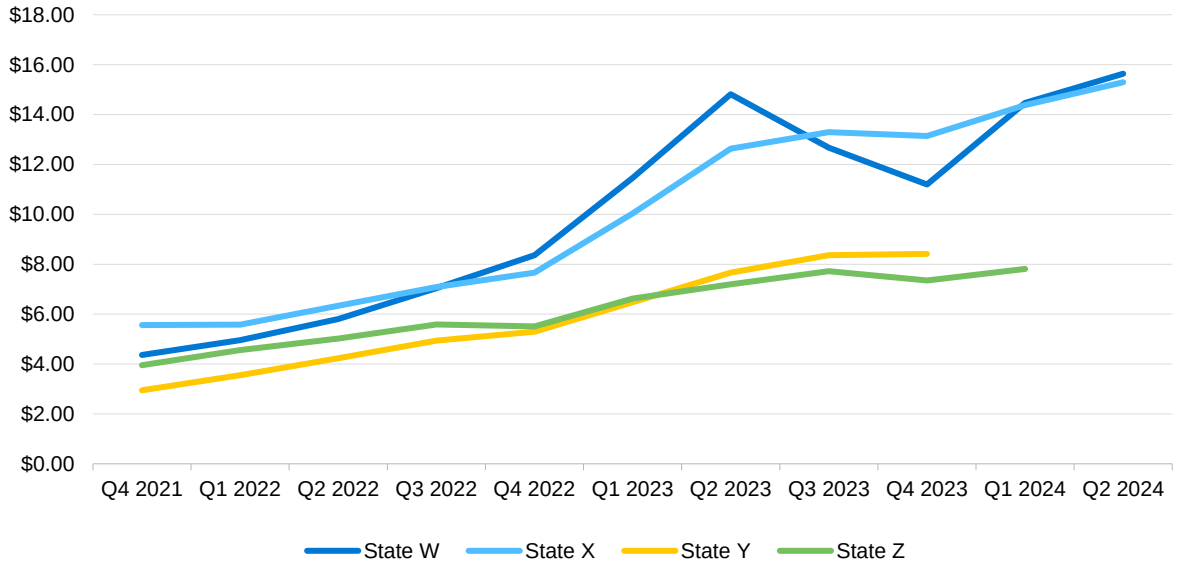
How does Medicaid preferred drug strategy impact GLP-1 utilization and spending on a gross and net cost basis?

Gross costs represent the amount paid by MMC plans for GLP-1 agents and the cost Medicaid programs fund in MMC capitation payments. Net cost is the cost of these medications to the state Medicaid program and represents the gross cost less Medicaid rebates that the state receives for drug utilization by drug manufacturers.

GROSS COSTS

Figure 2 illustrates the growth in GLP-1 expenditures for four MMC programs from Q4 2021 to Q2 2024, which was the most recent claims data available at the time of our analysis. We selected state programs where ample pharmacy claims data was available.

FIGURE 2: GLP-1 PMPM SPENDING ACROSS FOUR MMC PROGRAMS*



* Only programs for which data was sufficiently comprehensive, complete, and readily available were included. Due to data issues in a few state programs, more recent data was excluded. All four MMC programs are from Medicaid expansion states with managed care.

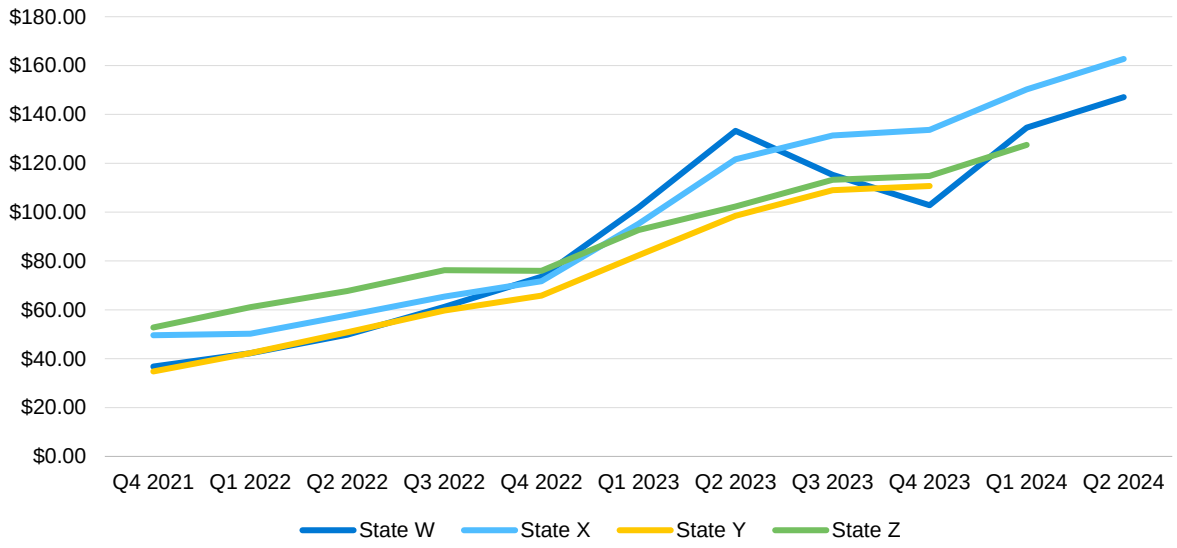
While spending associated with GLP-1s has increased significantly over the last two years in all four MMC programs shown in Figure 2, the rates of PMPM growth have varied. The variance of the rate of this increase in GLP-1 expenditures between MMC programs has depended on several factors, which include:

- The timing of adding certain GLP-1s to preferred status on the PDL, if ever
- The utilization management and clinical criteria put in place
- The size of the T2DM population within the Medicaid program

The elevation of recent GLP-1s to preferred status was likely influenced by both updated clinical guidelines that favored medications like semaglutide to treat T2DM,[32] clinical trial results showing significant weight loss among users,[33,34] and the potential supplemental rebates available from GLP-1 drug manufacturers, which we discuss in the Net Costs section below. These factors coincided with a growing patient demand driven in part by popular culture and social media.[35]

The third factor in the variance of the spending increase by the four MMC programs in Figure 2, the number of members diagnosed with T2DM, is one that states have little control over. The prevalence of T2DM in a state's Medicaid program is highly predictive of expenditures associated with antidiabetic medications such as GLP-1s. We isolated claims data to members with a T2DM diagnosis code in the claims data set in order to measure the impact of GLP-1 spending in this population, as shown in Figure 3.

FIGURE 3: GLP-1 PMPM SPENDING ACROSS FOUR MMC PROGRAMS, PER DIABETIC MEMBER*



* The numerator and denominator for the PMPM values in this chart only includes T2DM-diagnosed members.

While it is not surprising that the relative size of this cohort is highly predictive of overall GLP-1 expenditures in each state, it is notable how similarly the PMPM values have trended among the four states included in the study when limiting the data to only T2DM-diagnosed individuals. While there is some evidence that State X has a higher adoption rate among diabetics (as demonstrated by higher relative spending in recent quarters), the gap in gross GLP-1 expenditures on a PMPM basis among the four states is much smaller than in Figure 2. The size of the T2DM population appears to explain some of the discrepancies we see in Figure 2. However, some variability remains in spending by different MMC programs that is likely driven by other factors, such as the severity of the disease, the prevalence of comorbid obesity, the potential off-label use of GLP-1 agents, and the quality of the patient care management in each state. While these factors may be more difficult to control for, investigating them further may provide insights into the core drivers of varying experience among states.

32. American Diabetes Association. Diabetes Care. Retrieved October 22, 2024, from https://diabetesjournals.org/care/issue/47/Supplement_1.

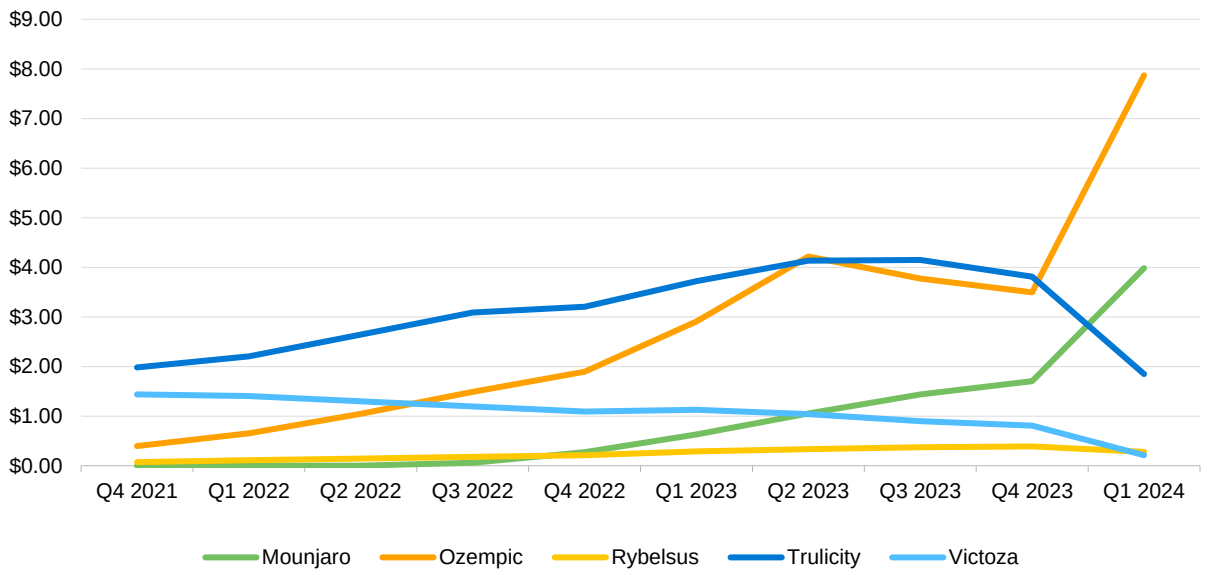
33. Bergmann, N.C. et al. (October 18, 2022). Semaglutide for the Treatment of Overweight and Obesity: A Review. Diabetes, Obesity, and Metabolism. Retrieved October 22, 2024, from https://dom-pubs.onlinelibrary.wiley.com/doi/full/10.1111/dom.14863.

34. Davies, M.J. et al. (August 18, 2015). Efficacy of Liraglutide for Weight Loss Among Patients With Type 2 Diabetes. JAMA. Retrieved October 22, 2024, from https://jamanetwork.com/journals/jama/fullarticle/2428956.

35. Han, S.H. et al. (July 4, 2023). Public Interest in the Off-Label Use of Glucagon-like Peptide 1 Agonists (Ozempic) for Cosmetic Weight Loss: A Google Trends Analysis. Aesthetic Surgery Journal. Retrieved October 22, 2024, from https://academic.oup.com/asj/article/44/1/60/7218900.

Figure 4 summarizes spending by GLP-1 agent across four MMC programs. While the recent surge in demand has contributed to an increase in utilization among almost all GLP-1s in this class, the two that have seen the most significant utilization increases have been Ozempic and Mounjaro. Trulicity, the GLP-1 with the most utilization in our data prior to 2022, remains heavily utilized by Medicaid beneficiaries especially in MMC programs where neither Ozempic nor Mounjaro are preferred drugs on the PDL. Ozempic and Mounjaro, which combined for approximately $0.50 PMPM in early 2022, now contribute an estimated $6.00 PMPM, which is more than double the PMPM for Trulicity ($2.50).

FIGURE 4: GLP-1 PMPM SPENDING BY PRODUCT ACROSS FOUR MMC PROGRAMS



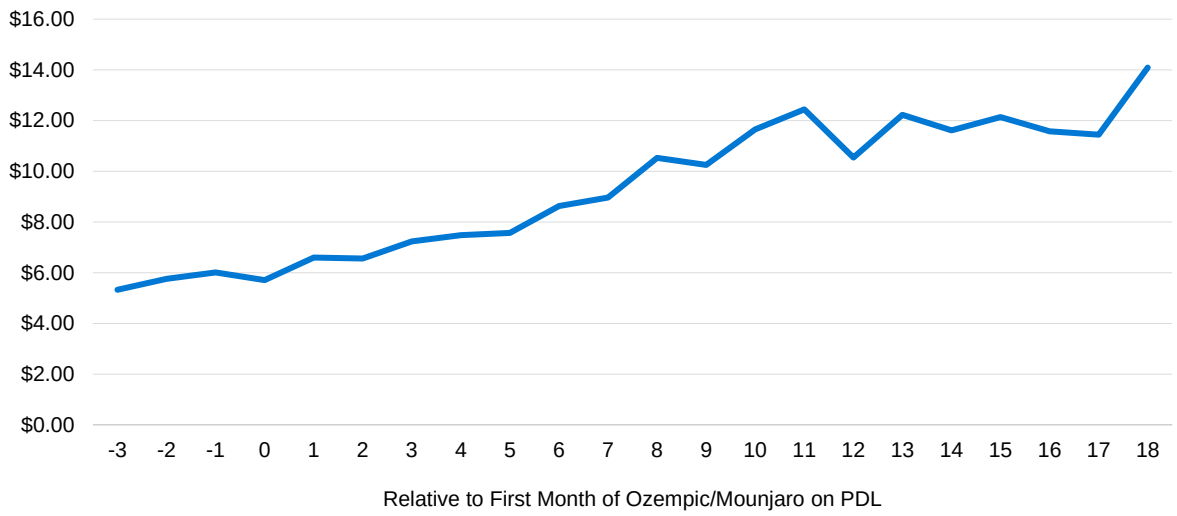
Note: This chart does not control for changes or differences in PDLs among the states or the size of the T2DM population.

The sharp increase in the utilization of Ozempic and Mounjaro are both notable, though they likely stem from two different phenomena. Ozempic had experienced a significant utilization increase in early 2022 for the state programs included in our study, prior to it moving to a preferred status. Utilization of non-preferred GLP-1s is likely driven by a highly motivated user base in addition to physician and member preference. This increase in utilization and the product's growing demand likely enhanced pressure on many Medicaid agencies to consider adding Ozempic to their PDLs. While this change in status certainly led to easier access to the product for Medicaid beneficiaries, the subsequent utilization comes at a materially reduced net cost per script for each state if they were able to negotiate supplemental rebates as a condition to moving Ozempic to a preferred product on the PDL.

Mounjaro, on the other hand, was approved and brought to market in the midst of the surge in GLP-1 utilization. Mounjaro, which was still largely non-preferred on many PDLs as of late 2023, has showed a significant increase in its utilization growth. Mounjaro's utilization, even as a non-preferred drug, has achieved a rate that is higher than Ozempic's 2022 peak. As with Ozempic, the rapid increase in utilization may contribute to pressure on state Medicaid agencies to consider adding including Mounjaro as a preferred drug on their PDLs.

Figure 5 tracks spending for all GLP-1s in states where either Ozempic or Mounjaro has become preferred. In three of the four states studied, where either Ozempic or Mounjaro is preferred, the PMPM associated with *all* GLP-1 spending doubled within about a year of the drugs reaching preferred status. The movement to preferred drug status makes the GLP-1s with the most beneficial weight loss profile more accessible to the Medicaid members diagnosed with T2DM.

FIGURE 5: ALL GLP-1 PMPM SPENDING ACROSS THREE MMC PROGRAMS WHERE OZEMPIC OR MOUNJARO IS PREFERRED



NET COSTS

Medicaid programs benefit from federally required manufacturer drug rebates. Manufacturers are required to provide a statutorily defined drug rebate in order to participate in the Medicaid program. State Medicaid programs also benefit from supplemental rebates that they may be able to negotiate with PBMs or manufacturers in addition to the required Medicaid drug rebate. This supplemental rebate negotiation may be contingent on whether the Medicaid program or MMC plan adds the drug as a preferred drug on their PDL or what type of utilization management criteria they elect to use. In situations where there are multiple brand products in the same drug category, like GLP-1s, the broader the utilization management criteria (i.e., easier access to the drug), the higher the supplemental rebate tends to be.

The table in Figure 6 illustrates the estimated PMPM spending for Ozempic and Mounjaro across three MMC programs on a gross and net cost basis. Due to the confidential nature of supplementary rebates negotiated between drug manufacturers and MMC programs, the estimates underlying the results in Figure 6 are likely to vary among states and will be contingent on which drugs are already listed on PDLs. However, we estimate that the net cost for a non-preferred agent that is eligible for the mandatory federal Medicaid drug rebates would likely be in the range of 50% to 70% of the gross cost. Preferred drugs would also likely benefit from state supplemental rebates further reducing the net cost to the range of 20% to 40% of the gross cost.[36,37]

36. Clemans-Cope, L. et al. (January 6, 2023). Estimates of Medicaid and Non-Medicaid Net Prices of Top-Selling Brand-Name Drugs Incorporating Best Price Rebates, 2015 to 2019. JAMA Health Forum. Retrieved October 22, 2024, from https://pubmed.ncbi.nlm.nih.gov/36637815/.

37. Rome, B.N. et al. (June 2023). Inflationary Rebates for Generic Drugs Sold Through Medicaid Saved Billions During 2017–20. Health Affairs. Retrieved October 22, 2024, from https://www.healthaffairs.org/doi/abs/10.1377/hlthaff.2022.01029.

FIGURE 6: NET COST PMPM ESTIMATES FOR OZEMPIC AND MOUNJARO, ACROSS THREE MMC PROGRAMS

	Ozempic (preferred)	Mounjaro (non-preferred)
Gross Monthly Cost per 28-day Script, WAC	$936	$1,023
Estimated Net Cost per 28-day Script (range)	$187-374	$511-716
Q4 2023 Scripts per 1,000 members	19.1	9.0
Gross Cost to MMC Programs PMPM	$5.96	$3.07
Estimated Net Cost to MMC Programs PMPM	$1.19-2.38	$1.54-2.15

Notes:

- Wholesale acquisition cost (WAC) from Medi-Span with effective date in Q4 2023.
- Estimated net cost assumes that the net cost as a percentage of the gross cost is 20% to 40% for preferred agents and 50% to 70% for non-preferred agents.
- Estimated net cost to MMC program calculated by taking total net cost divided by the number of member months for each state Medicaid program.

In states where Ozempic was added as a preferred drug on the PDL, the drug's share of the GLP-1 market—in each respective state—reached levels of around 20% in the months prior to it becoming preferred. Currently, Mounjaro is seeing an increased utilization trend primarily in states where Ozempic is already preferred and Mounjaro is not. This shows that, despite not being on the PDL, Mounjaro is able to gain market share. Figure 6 shows both the gross costs associated with the two drugs as well as estimates of the net costs after accounting for estimated federal and supplementary rebates. While Mounjaro's market share in these states remains relatively low, the absence of supplemental rebates means that it is likely costing states a disproportional PMPM amount, relative to the much more utilized Ozempic. These trends in changing market shares should be reviewed within the context of developing supply shortage issues that are being addressed along varying timelines.[38]

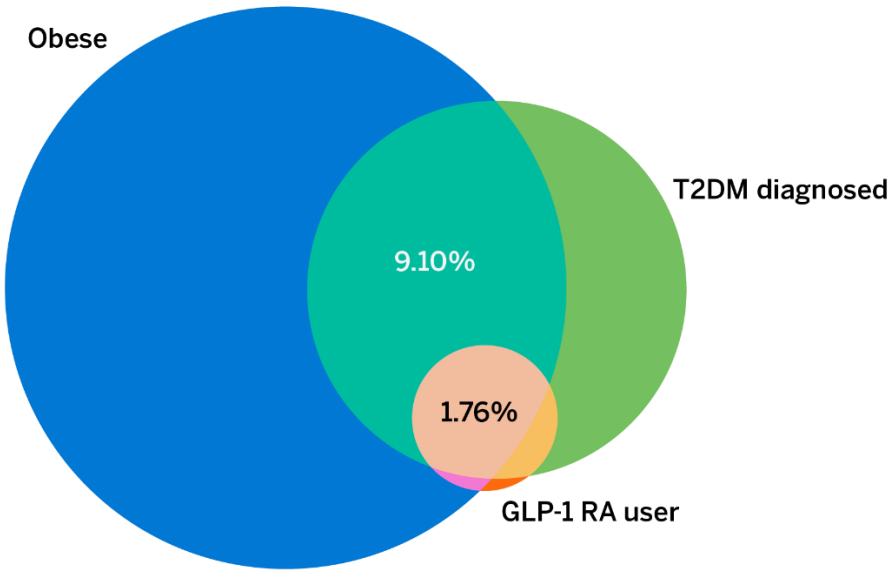
State programs are likely considering their strategy options with the growing utilization of Mounjaro where it continues to be a non-preferred drug. Two potential paths that states are likely to consider include strengthening utilization management of non-preferred GLP-1s and evaluating their current PDLs and rebate strategies for highly utilized non-preferred drugs. These measures should be weighed against the impact on existing negotiated supplemental rebates as they would be sensitive to any changes in a state's PDL regarding this drug class.

38. Walker, J. (April 8, 2015). Gilead's $1,000 Pill Is Hard for States to Swallow. Wall Street Journal. Retrieved October 22, 2024, from https://www.wsj.com/articles/gileads-1-000-hep-c-pill-is-hard-for-states-to-swallow-1428525426.

What does emerging experience tell us about future utilization?

The Venn diagram in Figure 7 illustrates the portions of the adult MMC beneficiary population deemed obese, diagnosed with T2DM, and who have a pharmacy claim indicating they have used a GLP-1 (across three states). Only states where either Ozempic or Mounjaro is a preferred drug are included in this diagram.

FIGURE 7: VENN DIAGRAM OF THREE POPULATION COHORTS ACROSS THREE MMC PROGRAMS



Notes:

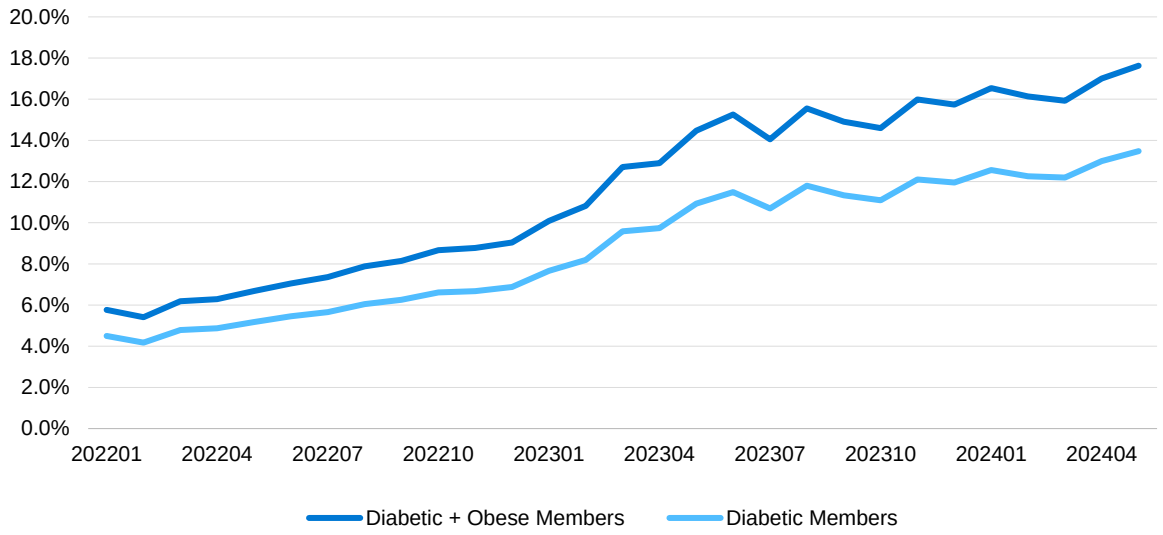
- The populations of three MMC programs where either Ozempic or Mounjaro is preferred are included in this diagram.
- A snapshot date in Q1 2024 was used.
- An "Obese" member is defined as one who has an ICD-10 diagnosis code inferring a body mass index (BMI) of 30+. We do not make an adjustment for the potential undercounting of obesity that comes with relying on diagnosis codes.

Of the adult populations in the three MMC programs included in Figure 7, approximately 36% are estimated to be obese and 16% are estimated to be diagnosed with T2DM. The portion of the adult populations that is both obese and has a T2DM diagnosis is *approximately 9.1%* based on Q1 2024 data. This represents a cohort that is both clinically eligible to take the GLP-1s and may be particularly motivated to take advantage of GLP-1s' weight loss features. This cohort remains quite large relative to the portion of members in this cohort who have also used a GLP-1, which is **approximately 1.8%**.

Further, the adoption rate of this drug class—which is primarily driven by Ozempic and Mounjaro—has not shown signs of slowing down in the most recent claims data (see Figure 8). It is unclear how much of this treatment gap, between the 9.1% of comorbid T2DM and obese patients and the 1.8% who have been treated, will likely seek treatment in the near future. Beyond this comorbid cohort, there are also numerous members who have a T2DM diagnosis (green portion of Figure 7) but have yet to receive a script for a GLP-1. This indicates that, despite the rapid growth in the adoption of GLP-1s to date, there is still potential for continued growth.

Figure 8 tracks the take-up rate of GLP-1s among two population cohorts for three MMC programs combined. The comorbid—diabetic and obese—cohort is expected to be more motivated to start and stay on these drugs. Therefore, it is reasonable that their take-up rate is materially higher than the T2DM-diagnosed population that is not also obese.

FIGURE 8: THE TAKE-UP*/ADOPTION RATE OF GLP-1S ACROSS THREE MMC PROGRAMS



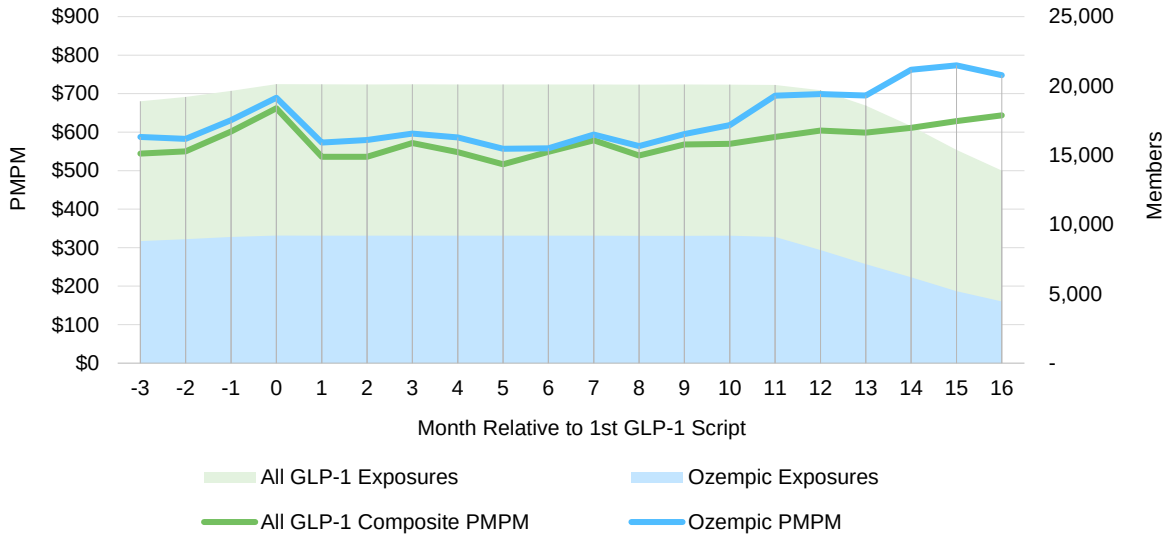
* The take-up rate is defined as the percentage of members in a given cohort that have ever used a GLP-1.

Does emerging experience show medical or pharmacy cost offsets for GLP-1 users?

MEDICAL EXPENDITURES

The increasing utilization of GLP-1s, given their demonstrated efficacy in managing T2DM and promoting weight loss, has prompted a closer examination of the overall budgetary impact. Due to the relatively high gross cost of these medications, payers are keen to understand whether the long-term health benefits they are associated with can translate into material medical cost offsets. While establishing causation of any healthcare cost offsets with the use of GLP-1s is difficult, it is crucial to quantify these indirect downstream effects in order to understand the cost-effectiveness of this drug class. The following chart (Figure 9) offers insights into the overall health status for a cohort of GLP-1 users, shedding light on potential impacts stemming from the sustained use of these agents.

FIGURE 9: MEDICAL PMPM EXPENDITURES FOR GLP-1 USERS ACROSS FOUR MMC PROGRAMS



Notes:

- This chart only includes users that have adhered to a GLP-1 for 12 months, as highlighted by the flat member count bars from time 0 to time 11.
- Mounjaro users are not included as the vast majority of them do not meet the 12-month adherence threshold.
- The spike in PMPM expenditures at time 0 is likely driven by a provider visit where the patient received the prescription, and presumably other treatment was received.
- This analysis does not control for fee schedule changes or secular medical cost trends. The data is adjusted for estimated claims incurred but not reported (IBNR).

Figure 9 illustrates the medical expenditure PMPM rate for GLP-1 users adherent to the medication for at least 12 months. The x-axis represents the number of months relative to the initiation of GLP-1 therapy (time 0), ranging from -3 (three months prior to the first prescription) to 16 months post-initiation. While the period studied is relatively short, the data supports the hypothesis that medical cost offsets are not likely to be observed in the first year since the onset of GLP-1 usage. Given that the weight loss effects of these drugs are not immediate but rather occur over time, it is not likely that any consequent improvements in the health state would materialize before a few years after the adoption and adherent use of GLP-1s. However, we recommend that stakeholders, including state Medicaid programs, continue to leverage real-world data—as we've done in this analysis—to gain a comprehensive understanding of the total cost of care for members using GLP-1 medications. Further, an analysis leveraging a control group of similar patients without GLP-1 utilization would be needed to truly measure the cost-effectiveness of these treatments. This will allow them to ensure that the PDL and utilization strategy align with the overall lower cost of care.

Some studies have developed estimates of long-run net savings from the continued use of GLP-1s within other contexts.[39,40] One of these studies, which was conducted by Milliman colleagues and published in June, estimates the net impact of adding anti-obesity medication (AOM) coverage to Medicaid programs. The authors estimate a five-year incremental impact of this coverage to be savings, net of the drug costs, which range from $0.14 to $0.34 PMPM for Medicaid programs (inclusive of both state and federal costs) under the currently approved indications of the AOMs. The other analysis, conducted by the University of Southern California's Schaeffer Center, studied the potential medical savings to the Medicare program from extending coverage to these drugs and using them to treat obesity. The authors report estimated medical offsets of $176 billion dollars over a 10-year period.

39. Klaisner, J., Botros, B., LeRoy, R. et al. (June 11, 2024). Impact of Anti-Obesity Medication Coverage in the Medicaid and Commercial Markets. Milliman Report. Retrieved October 22, 2024, from https://www.milliman.com/-/media/milliman/pdfs/2024-articles/6-10-24-impact-of-anti-obesity-medications-coverage-in-commercial-and_medicaid.ashx.

40. Ward, A.S. et al. (April 18, 2023). Benefits of Medicare Coverage for Weight Loss Drugs. USC Schaeffer. Retrieved October 22, 2024, from http://freelist.mcol.com/t/23187834/401269302/1205832/502/.

While the association of GLP-1s with weight loss and improvements in cardiovascular risk factors is established by other research,[41] the long-term impacts on overall healthcare costs have not been as well studied using *real-world data* due to the relative recency of this phenomenon.[42] Another factor complicating the ability to establish any causation in this area is the potential for side effects, including adverse gastrointestinal events, increased risks of biliary disease, pancreatitis, and other diseases putting upward pressure on overall healthcare costs.[43]

Overall, the financial uncertainty for such a substantial component of healthcare expenditures underscores the need for further research to better understand the long-term economic and clinical impacts of GLP-1 therapy. A comprehensive longer-term longitudinal analysis incorporating factors such as side effects, adherence rates, medical cost trends, and the broader healthcare utilization patterns is essential to accurately assess the value proposition of GLP-1s as a part of the antidiabetic treatment algorithm.

We also explored other versions of this analysis, and all resulted in similarly inconclusive trends on the potential cost savings of GLP-1 therapy. These versions include the following:

- An alternate version of Figure 9 that required adherent use of GLP-1s for 18 months, as opposed to 12 months
- An isolated study of inpatient hospital admissions for members using GLP-1 agents
- An isolated study of emergency department utilization for members using GLP-1 agents

ANTIDIABETIC PHARMACEUTICAL UTILIZATION

Another area of medical cost offset that is likely of interest to Medicaid state agencies is how the rise in GLP-1 utilization is affecting the utilization of other antidiabetic medications. First-line therapy for T2DM generally includes metformin in combination with another medication such as a GLP-1 or a sodium glucose co-transporter-2 inhibitor (SGLT-2). Based on glycemic needs, the addition of insulin can be considered for patients not achieving their T2DM goals.[44,45] Therefore, as GLP-1 utilization increases in the T2DM population, we would expect to see corresponding utilization decreases on other T2DM-indicated medications. Figure 10 shows the number of antidiabetic scripts per GLP-1 user, relative to the number of months for which a drug in this class has been used. The solid lines represent all antidiabetic medications, excluding GLP-1s and insulins. The dashed lines are limited to insulins. The GLP-1 utilizers are split into three cohorts based on adoption date, as we identified significantly different baselines of antidiabetic medication utilization based on the duration of use.

41. Nauck, M.A. & Quast, D.R. (March 28, 2021). Cardiovascular Safety and Benefits of Semaglutide in Patients With Type 2 Diabetes: Findings From SUSTAIN 6 and PIONEER 6. Front. Endocrinol. Retrieved October 22, 2024, from https://www.frontiersin.org/journals/endocrinology/articles/10.3389/fendo.2021.645566/full.

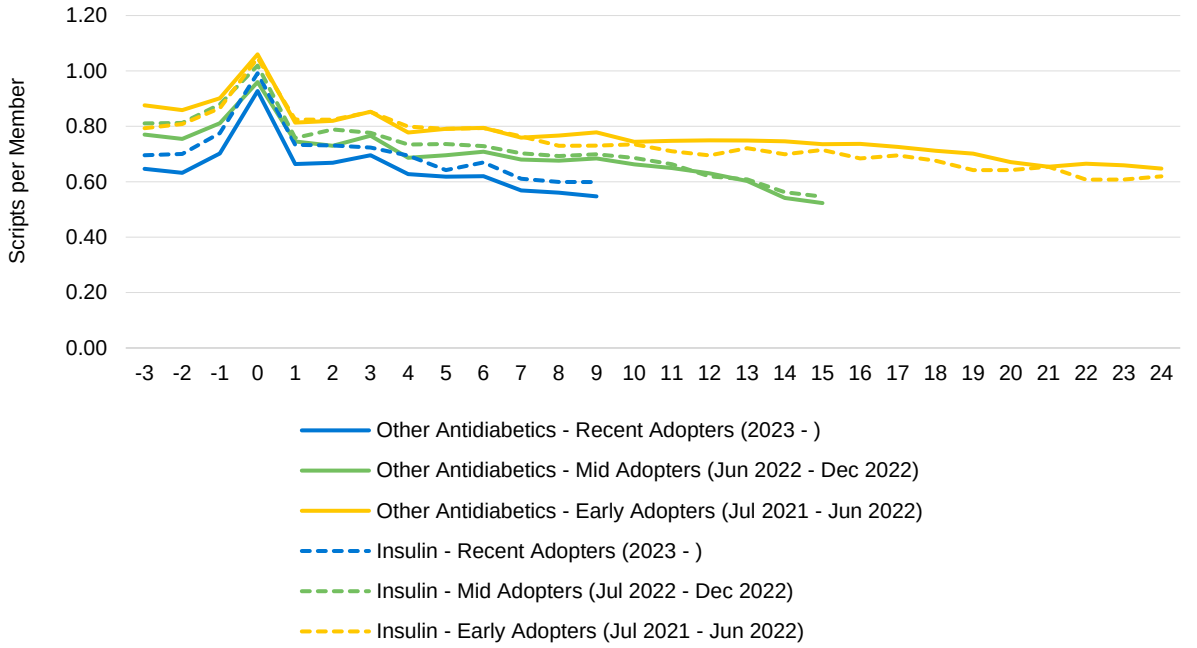
42. Ward, A.S. et al. (April 18, 2023). Benefits of Medicare Coverage for Weight Loss Drugs. USC Schaeffer. Retrieved October 22, 2024, from http://freelist.mcol.com/t/23187834/401269302/1205832/502/.

43. Mahase, E. (October 9, 2023). GLP-1 Agonists Linked to Adverse Gastrointestinal Events in Weight Loss Patients. BMJ. Retrieved October 22, 2024, from https://www.bmj.com/content/bmj/383/bmj.p2330.full.pdf.

44. Yashi, K. & Daley, S.F. (June 19, 2023). Obesity and Type 2 Diabetes. StatPearls. Retrieved October 22, 2024, from https://www.ncbi.nlm.nih.gov/books/NBK592412/.

45. American Diabetes Association. Diabetes Care. Retrieved October 22, 2024, from https://diabetesjournals.org/care/issue/47/Supplement_1.

FIGURE 10: NON-GLP-1 ANTIDIABETIC SCRIPTS FILLED, PER 1,000 GLP-1 USERS, RELATIVE TO GLP-1 ADOPTION



Notes:

- The three cohorts had significantly different utilization levels prior to taking up a GLP-1. The theory is that earlier adopters have, on average, more severe forms of T2DM while the more recent adopters may be primarily taking up GLP-1s for the weight loss properties.
- The uptick at time 0 (month of first GLP-1 script) is likely due to additional scripts obtained during the physician visit when the member was prescribed a GLP-1.

With the cohort split, Figure 10 more clearly shows that the "Mid" and "Recent" adopters have noticeably reduced their utilization of other antidiabetic medications in favor of GLP-1s. The "Early" adopters, on the other hand, appear to have similar utilization levels as they did before receiving their first GLP-1 script. This indicates that patients diagnosed with T2DM who utilize a GLP-1 with more recent adoption tend to have a more significant reduction in their other diabetic medications, or perhaps it indicates that the early adopters of GLP-1s have added back other antidiabetic medications.

The reduction in insulin utilization among GLP-1 users is more pronounced than for other antidiabetic medications. This is likely correlated with the AACE treatment guidelines, which recommend insulin only for T2DM members who are unable to meet their treatment goals. These guidelines also state that, with continued use of a GLP-1, members who are achieving their treatment goals may be able to stop insulin therapy.[46]

46. Ibid., page 13.

Looking forward

State Medicaid and MMC programs may continue to closely monitor utilization metrics for the GLP-1 class, with a focus on utilization for non-preferred drugs. Our analysis reveals a clear correlation between the adoption of a preferred medication strategy and the growth of overall utilization in the class. We do note that there has been substantial utilization growth for non-preferred drugs in this class, which should be evaluated against the current PDL strategy employed. This can be viewed as an area of potential inefficiency in pharmacy benefit management and PDL development. As these agents continue to gain market share without the benefit of supplementary rebates, they account for a significant financial burden for state Medicaid budgets. Medicaid agencies may weigh the costs associated with these non-preferred drugs against the potential benefits of negotiating their inclusion as preferred agents, where rebate agreements could mitigate some of the financial impact.

Further, the ongoing study and development of GLP-1s for additional indications will likely grow the pool of members who meet the criteria to use a medication in this class. This will continue to put pressure on state Medicaid programs to work to establish the lowest net cost through effective PDL management.

Near-term medical cost offsets for members receiving GLP-1s have not been evident in a claims data review. However, many of the potential clinical outcomes that are expected to result in long-term improved health and medical cost offsets may only be observed over a longer-term horizon. Short-term medical cost offsets may be seen through the reduced need for insulin or other oral antidiabetic medications. However, this may not completely offset the cost of the GLP-1 medications. Medical cost offsets will likely be seen longer-term as members continue to use GLP-1 medications to meet their diabetic treatment goals, reduce weight, and reduce risk of cardiovascular events.

To navigate these complexities, Medicaid programs should invest in ongoing monitoring and the development of comprehensive reporting tools—such as dashboards—to track utilization trends, expenditure patterns, and clinical outcomes associated with GLP-1s. By being proactive in this area, state programs can better anticipate and manage the financial pressures that accompany the growing adoption of this drug class, ensuring both fiscal responsibility and optimal patient outcome.

Caveats and Limitations

The authors acknowledge that PDLs are dynamic and subject to modification over time. Consequently, the findings and conclusions presented in this analysis are reflective of the information available at the time of writing. Additionally, several limitations inherent to the medical expenditure analysis are worthy of note. A key constraint is the inability to fully control for confounding factors, such as drug-related side effects and overarching medical cost trends, which could significantly influence outcomes. Addressing these variables would enable a more precise and accurate analysis. Further, restricting the analysis to individuals who have maintained medication adherence over a specific duration may introduce selection bias, as less adherent patients are excluded from the cohort after a certain point. Finally, it is important to recognize that discussions regarding net costs and rebates rely on broad estimations of federal and supplementary rebates. These estimates are drawn from a limited number of studies and should therefore be interpreted with caution when considering their application to broader contexts.

The material in this paper represents the opinion of the authors and is not representative of the view of Milliman. As such, Milliman is not advocating for, or endorsing, any specific views contained in this paper related to GLP-1 medications.

The information in this paper is designed to provide insights into emerging antidiabetic GLP-1 coverage and experience within Medicaid. It relies on data from several Medicaid managed care programs and is intended for that audience. The findings herein may not be generalizable to other health insurance programs or their populations. This information may not be appropriate, and should not be used, for other purposes. We do not intend this information to benefit any third party that receives this work product. Any third-party recipient of this paper that desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its specific needs.

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. Amine Elmeghni is a member of the American Academy of Actuaries and meets the qualification standards for performing the analyses in this report.

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