

DVHA Review of Obesity and Implications for Covering Obesity Medications

Contents

Figures:	3
Tables	3
Executive Summary	4
1. Introduction	7
2. Project Goals	9
3. Scopes, Objectives, Assumptions, and Limitations	10
4. Understanding Obesity in the United States	11
5. Obesity Among Children in the US	22
6. The Vermont Perspective	25
7. Obesity, Mortality, and Weight Loss Strategies	28
8. The Economic Burden of Obesity on Vermont Medicaid	29
8.1. Direct Costs	30
8.2. Indirect Costs	30
9. DVHA review of Obesity and Implications for covering Obesity Medication	32
9.1. Drug Information Chats: Anorectic	35
9.2. Drug Information Chats: GLP-1 receptor agonists	36
9.3. Drug Information Chats: combined GLP-1 receptor agonists and glucose-dependent insulinotropic polypeptide (GIP) receptor agonists	38
9.4. Drug Information Charts: opioid antagonists combined with bupropion (a type of antidepressant)	39
9.5. Drug Information Charts: Reversible gastrointestinal (GI) lipase inhibitors	40
10. Evaluating the Cost-Effectiveness of Obesity Medications	41
10.1. Cost of Medication vs. Improved Health Outcomes	41
10.2. Cost Benefit Analysis for Vermont Medicaid	43
10.3. Key Factors Affecting Cost-Benefit of GLP-1 drugs	48
11. Summary of Concerns & Long-Term Implications	51
12. Future Directions in Obesity Treatment	53
13. Final Considerations	55
14. Concluding Comments	56
Glossary of Acronyms and Terms: Definitions and Descriptions	58
Appendices	61
Appendix 1: DVHA Weight Loss Drug Coverage Fiscal Analysis Draft	61

[Appendix 2: RetroDUR Results: GLP-1 Receptor Agonist Adherence](#)65

[Appendix 3: Medicaid’s Bariatric Surgery Experience from 2021 to 2023](#)68

[Appendix 4: DVHA Cost-Benefit Analysis Details](#).....69



Figures:

Figure 1: Measured overweight (including obesity) rates among adults, by sex, 2019 (or nearest year) Source: OECD Health Statistics 2021.	9
Figure 2: Adult Obesity Prevalence Map	13
Figure 3: Prevalence of obesity among adults, BMI greater or equal to 30 (age-standardized estimate) (%)	14
Figure 4: TFAH Analysis of BRFSS Data for 2017 – 2020	15
Figure 5: Obesity-Related Diseases	16
Figure 6: Trends in age-adjusted obesity and severe obesity prevalence among adults aged 20 and over: United States, 1999–2000 through 2017–2018	17
Figure 7: Estimated BMI-related medical expenditures, children, and adults	19
Figure 8: Total and excess annual medical expenditures by BMI category (\$US 2019)	20
Figure 9: Obesity Prevalence among children by Insurance Coverage	24
Figure 10: Vermont Adults with Obesity, 2022	25
Figure 11: Obesity trends Vermont and the US	26
Figure 12: Data derived from Arterburn D. Paradigm shifts and price wars: The bright and bumpy future of obesity treatment. Presented at: Obesity Medicine 2024. April 24-28, 2024; Denver.	29
Figure 13: Medicare total spending hit \$5.7 billion in 2022 for GLP-1s, up from \$57 million in 2018.	33

Tables

Table 1: Medical cost comparison, per treated individual over approximately 20 years of pharmacological interventions and lifestyle modifications.	45
Table 2: Medical cost comparison of pharmacological interventions utilized over a two-year duration compared to lifestyle modifications or no treatment at approximately 30 years.	46



Executive Summary

Obesity is a major public health problem afflicting Vermonters. The Department of Vermont Health Access (DVHA) has undertaken a review of the problem of obesity and the intricate challenge of managing obesity in Vermont, with a focus on Vermont Medicaid beneficiaries. This review attempts to put the problem of obesity into context and specifically looks at the complex implications of Vermont Medicaid providing coverage for the new weight loss medications to treat obesity.

Obesity is at a critical point in the U.S., with a prevalence rate of 41.9%, according to the Centers for Disease Control and Prevention (CDC)¹. Obesity is a contributing factor to many of the major chronic illnesses afflicting Americans today, which has a staggering effect on the economy. Utilizing U.S. national data and published reports from professional organizations, this report illustrates the direct and indirect costs of obesity to the State of Vermont.

The Vermont Department of Health (VDH) reports the current prevalence of obesity in Vermont at 27%. National data reveals that obesity prevalence rates are notably higher within the Medicaid population. Specifically, individuals covered by Medicare or Medicaid were 26% and 27% more likely to have obesity compared to those with commercial insurance². This report provides a breakdown of obesity prevalence based on factors such as age, education, income, race, ethnicity, disability, and more, offering a comprehensive understanding of the impact of obesity on our population's health landscape.

The document, titled "DVHA Review of Obesity and Implications for Covering Obesity Medications," is the first of two sections of DVHA's review. The first section will delve into medications, while the second section will explore non-medication and lifestyle approaches in more detail. The review aims to elucidate the potential health benefits associated with treating obesity using both lifestyle interventions and medications. Additionally, the first section will

¹ *Adult obesity Facts*. (2024b, May 14). *Obesity*. <https://www.cdc.gov/obesity/php/data-research/adult-obesity-facts.html>

² Mylona, E. K., Benitez, G., Shehadeh, F., Fleury, E., Mylonakis, S. C., Kalligeros, M., & Mylonakis, E. (2020). The association of obesity with health insurance coverage and demographic characteristics: a statewide cross-sectional study. *Medicine*, 99(27), e21016. <https://doi.org/10.1097/md.00000000000021016>



examine the potential financial implications for the State of Vermont should it decide to cover obesity medications for the Medicaid population. This document will provide details of a fiscal analysis which estimates that coverage of the recent Food and Drug Administration (FDA) approved medications for weight loss could result in an annual gross cost of \$30 million to \$70 million for the Vermont Medicaid program. However, manufacturer participation in the Medicaid Drug Rebate Program (MDRP) could result in a lower net cost for Medicaid. In general, for drugs covered under the Medicaid Drug Rebate Program, the gross cost could be reduced by an estimated range of 23-55%.³

It is important to note that weight loss drugs for obesity are currently not covered under the Vermont Medicaid benefit. The coverage policies are governed by Title XIX of the Social Security Act, which influences the inclusion or exclusion of weight loss agents. Moreover, Vermont also considers Medicare regulations when determining coverage, and currently, Medicare does not allow for the coverage of such medications.

There is a common consensus that effective treatments for obesity will lead to improved population health outcomes and the reduction of long-term healthcare costs. This review examines whether, despite improvements in health outcomes, the cost of the new medications allows for a reduction in healthcare costs over time. It also examines factors like adherence to medication rates and use of medications consistent with their FDA approval.

Consequently, the DVHA supports coverage for weight loss medication in a clinically appropriate and fiscally responsible manner and makes the following recommendations:

1. Treatment of obesity in accordance with national guidelines, which indicate comprehensive lifestyle intervention (behavioral modifications) as the recommended initial step, unless prohibited by a medical condition.
2. Coverage of select medications, when utilized according to current treatment guidelines and FDA indications, including the use of lifestyle interventions in conjunction with the medications, unless prohibited by a medical condition.

³ Park, E. (2022, November 3). *New MACPAC data on the highly effective Medicaid drug Rebate program*. Center for Children and Families. <https://ccf.georgetown.edu/2022/11/03/new-macpac-data-on-the-highly-effective-medicare-drug-rebate-program/>



3. Additionally, DVHA urges healthcare leaders in the State to increase the opportunity to participate in lifestyle modifications, and specifically develop comprehensive lifestyle programs for the treatment of obesity, to help reduce the need for lifelong medication use.

While the DVHA supports coverage for weight loss medication as indicated above, the potential fiscal impact (cost) cannot be absorbed in the current budget. Broad and open coverage of weight loss drugs would create pressure resulting in restricted access to other healthcare services, and/or causing rapid growth in healthcare costs that would threaten sustainable access to high-value care for all Vermont Medicaid members. Changes to Medicaid programs, services, and policies generally require a coordinated review to ensure alignment with federal and State regulations as well as Vermont Medicaid policies and practices. DVHA recommends a full policy, budget, and reimbursement process to support the systematic coordination of Agency of Human Services (AHS) departments in creating access to weight loss drugs. This process serves as an internal safeguard against any unintended consequences of proposed changes and allows for budget review.



1. Introduction

Obesity has emerged as a critical public health concern in the United States, impacting not only individual health but also placing a substantial burden on the economy. This document delves into the specific implications of obesity on the population and economy of the state of Vermont. Furthermore, it explores the recommendations provided by DVHA, particularly concerning the coverage, utilization management, and fiscal responsibility associated with weight loss medications.

The concerns about the fiscal impact of incorporating new weight loss drugs into coverage prompt a call for managed and fiscally responsible policies. The DVHA advocates for a comprehensive approach, suggesting the need for a thorough policy, budget, and reimbursement process. This approach aims to ensure that any changes in coverage align with both state and federal guidelines, promoting coordination and regulation within the healthcare system.

Utilization management strategies are proposed by the DVHA to guarantee appropriate prescribing, considering both clinical and fiscal factors. This strategic approach aims to optimize the effectiveness of weight loss interventions while managing the associated costs efficiently.

One crucial consideration is the expanded approval by the FDA for the newest weight loss drugs, now including individuals diagnosed with overweight and weight-related chronic illnesses. Given that Vermont's overweight prevalence exceeds 30%, this expansion poses a potentially significant financial burden on the state. The document further examines emerging trends, such as the use of anti-obesity drugs in conjunction with bariatric surgery, highlighting the necessity of understanding the long-term costs and challenges associated with obesity management.

Addressing obesity within the Vermont Medicaid population requires a nuanced and comprehensive strategy. The DVHA extends support for the detailed analysis presented in this report, emphasizing its value as a tool for informed decision-making. The information provided serves as a foundation for tailored interventions that address the unique characteristics and challenges faced by the population, ultimately fostering improved health outcomes, and alleviating the economic burdens linked to obesity.



In alignment with national guidelines, the DVHA recommends a comprehensive approach to address obesity, starting with lifestyle interventions. The DVHA supports the use of pharmacological interventions for obesity treatment when combined with lifestyle changes. Additionally, the DVHA encourages healthcare leaders in Vermont to consider establishing comprehensive lifestyle programs for obesity treatment, aiming to reduce long-term medication dependence. This multi-faceted approach aligns with the goal of improving health outcomes and mitigating the economic impact of obesity within the state.

Obesity, linked to non-communicable diseases, may decrease life expectancy by 2.7 years, costing 8.4% of health spending. Globally, obesity driven by poor diets and sedentary lifestyles caused 5 million deaths in 2019. Severe COVID-19 risks increase with obesity. Socioeconomic impacts perpetuate inequality, affecting employment and productivity. The Organization for Economic Co-operation and Development (OECD) countries witnessed a rising trend, with 60% of adults overweight or obese in 2019. Regulatory measures, from nutritional education to taxes, aim to curb obesity rates, highlighting the need for holistic approaches and innovative interventions.

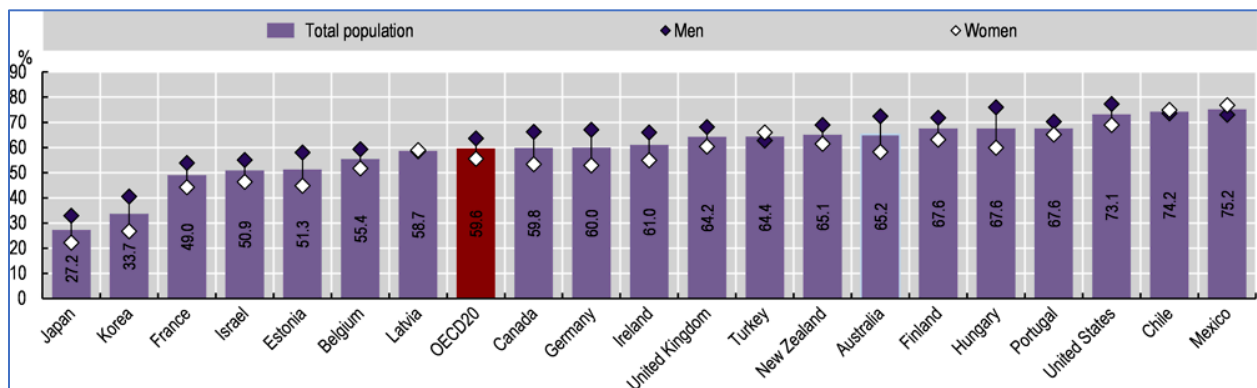


Figure 1: Measured overweight (including obesity) rates among adults, by sex, 2019 (or nearest year) Source: OECD Health Statistics 2021.



2. Project Goals

- a) **Efficacy Comparison:** Assess and contrast the efficacy of medication-based and non-medication interventions for weight loss among Vermont Medicaid members. These aspects will be addressed in Part Two of this document.
- b) **Safety Assessment:** Assess the safety profile and potential adverse effects associated with diverse weight loss interventions, ensuring the well-being of Vermont Medicaid members.
- c) **Cost-Effectiveness and Sustainability:** Evaluate the cost-effectiveness and long-term sustainability of both medication-based and non-medication interventions for weight loss within the Vermont Medicaid context.
- d) **Evidence-Based Recommendations:** Provide evidence-based recommendations for healthcare providers and policymakers, facilitating informed decisions on diverse modalities for healthy weight attainment among Vermont Medicaid members.
- e) **Research and Innovation:** Investigate non-drug approaches to weight loss, exploring innovative possibilities unique to Vermont, aiming to pioneer novel interventions and solutions in the pursuit of healthier outcomes.



3. Scopes, Objectives, Assumptions, and Limitations

Project Scopes:

- Examination of the prevalence and impact of obesity within the Vermont Medicaid population.
- In-depth analysis of the financial implications on Vermont Medicaid plans related to obesity coverage.
- Evaluation of state and national data to understand the broader context of obesity costs directly and indirectly.

Project Objectives:

- Identify the percentages of Vermont Medicaid members diagnosed with obesity.
- Assess the financial burden on Vermont Medicaid if coverage was expanded to include weight loss medications.
- Provide a detailed financial overview, including production, distribution, dosage, and healthcare utilization costs for different medication categories.
- Explore the potential health improvements and associated costs with medication vs. lifestyle/non-medication approaches.
- Review relevant literature, such as insights from the New England Journal of Medicine, to understand the impact of interventions on reducing death from myocardial infarction (MI), stroke, and other factors.
- Identify key variables influencing cost estimates and their potential impact on decision-making.
- Acknowledge and outline the limitations of the analysis, particularly regarding unknown outcomes or costs.
- Provide insights into how the analysis will be utilized for the development of future documents supporting the plan for covering medication and non-medication interventions in Vermont Medicaid.

Assumptions:

- The proposed interventions will be accessible and accepted by much of the Vermont Medicaid population.
- The cost estimations are based on current market conditions and healthcare infrastructure stability.



- Health outcomes improvements are assumed to have a direct correlation with the chosen interventions.
- The prevalence of obesity is expected to remain relatively stable over the analyzed period.

Limitations:

- The lack of long-term health outcome data hampers our ability to predict unforeseen adverse health outcomes and their associated costs.
- There's difficulty in accounting for market variables, such as the introduction of new medications, and the unpredictable fluctuations in healthcare costs.
- The analysis cannot account for unpredictable external factors that may influence obesity rates or the effectiveness of interventions.
- There is variability in how individual patients respond to medications and lifestyle changes.
- The analysis does not consider potential changes in healthcare policies or reimbursement structures.
- The absence of real-time data can result in a delay in reflecting the most current health and economic conditions.
- The unpredictable pricing of new drugs presents a challenge when adjusting the state plan to include coverage for weight loss medications.
- This review document does not consider potential disparities in access to healthcare resources among different demographic groups within the Vermont Medicaid population.
- Analyzing the cost-benefit of obesity treatments, including medication and non-medication approaches, is complex. Challenges include measuring long-term health outcomes, uncertainties in medication responses and adherence, and the gradual impact of lifestyle changes. Factors such as motivation, socioeconomic, and culture further complicate the precise quantification of benefits, underscoring the importance of cautious interpretation.
- The exploration and consideration of natural supplements, hormone treatments, and other medical interventions are excluded from this discussion. These topics will be covered in part two of this document.

4. Understanding Obesity in the United States

Prevalence and Demographics



Overweight, obesity, and severe obesity are distinguished by the Body Mass Index (BMI), which estimates body fat and associated health risks by comparing an individual's weight to their height. Overweight is defined by a BMI of 25.0 to 29.9, indicating an excess of body weight that may consist of muscle, bone, fat, and water. Obesity is identified by a BMI of 30.0 or higher, signifying significant fat accumulation that increases the risk of chronic conditions such as heart disease, diabetes, and certain cancers. The World Health Organization (WHO) establishes these classifications, highlighting BMI's importance in evaluating health outcomes related to weight. CDC further categorizes obesity severity into Class 1 obesity (BMI 30 to <35), Class 2 or severe obesity (BMI 35 to <40), and Class 3 or very severe/morbid obesity (BMI \geq 40), with each level indicating greater health risks due to increased body fat.

In the context of our document, which focuses on obesity's impact on the economy of the US and Vermont, as well as interventions, understanding the prevalence and consequences of these conditions is crucial. The document will discuss the economic burden of obesity-related healthcare costs and productivity losses. Additionally, it will cover both medication and lifestyle interventions to address this significant public health issue comprehensively.

The CDC provides Adult Obesity Prevalence Maps, offering an overview of obesity across the United States based on race, ethnicity, location, and educational attainment. Data from the Behavioral Risk Factor Surveillance System (BRFSS) shows notable disparities among different demographic groups in obesity rates from 2017 to March 2020:

- Obesity prevalence is consistent across age groups: 39.8% for ages 20–39, 44.3% for ages 40–59, and 41.5% for ages 60 and over.
- Non-Hispanic Black adults have the highest obesity prevalence (49.9%), followed by Hispanic adults (45.6%), non-Hispanic White adults (41.4%), and non-Hispanic Asian adults (16.1%).
- Adults with a family income above 350% of the Federal Poverty Level (FPL) have a lower obesity prevalence (39.0%) compared to those with a family income between 130% and 350% FPL (46.5%).
- Non-Hispanic Black women and non-Hispanic Asian men exhibit the highest and lowest obesity prevalences among women and men, respectively.



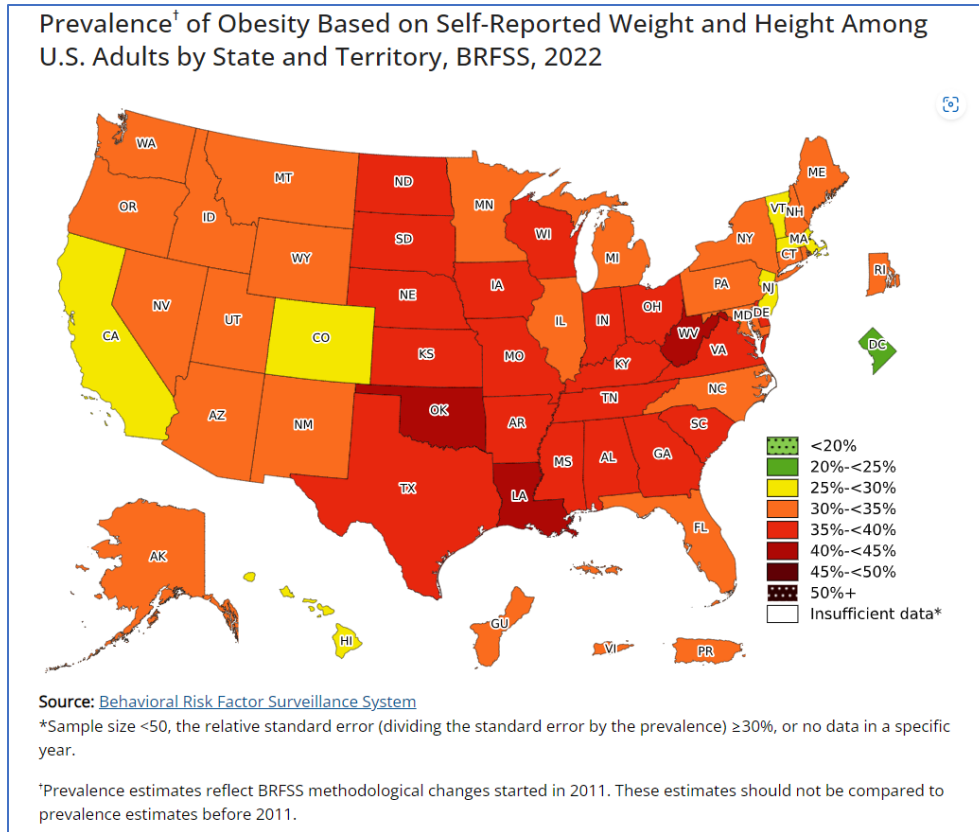


Figure 2: Adult Obesity Prevalence Map

With respect to education, the trend is for individuals with the least education to have the highest prevalence of obesity. According to the CDC in 2023, 36.5% of adults without a high school degree were obese, compared to 27.1% for college graduates⁴. This correlation between educational levels and obesity prevalence is particularly relevant to the Medicaid population.

Regarding age and obesity in Vermont:

- 28% of young adults (18–24 years old), 33% of individuals aged 25-44, 36% of those in the 45-64 age range, and 36% of individuals aged 65 and above are obese. It's notable that over one-third of Vermont adults aged 20 and older are overweight (35%), reflecting national statistics for U.S. adults aged 20 and older.

⁴ Adult Obesity Prevalence Maps. (2024, September 12). Obesity. <https://www.cdc.gov/obesity/php/data-research/adult-obesity-prevalence-maps.html>



Economic and Health Impacts

Obesity is a widespread and critical health issue in the United States, with its prevalence climbing to 41.9% by March 2020, up from 30.5% in 1999–2000. The World Health Organization (WHO) has documented trends in obesity among adults, defined by a BMI of 30 or above, showing a slight increase over recent years. For instance, in 2016, the combined prevalence for men and women was 36.2%, a slight rise from 35.6% in 2015. The rates for men were 35.5% in 2016 and 34.7% in 2015, while for women, they were 37.0% in 2016 and 36.4% in 2015. These statistics have been monitored since 1983, highlighting the enduring nature of the obesity epidemic, which significantly contributes to health problems such as heart disease, stroke, diabetes, and certain cancers. Addressing this epidemic is crucial for public health.

Indicator Period Dim1 Location	Prevalence of obesity among adults, BMI & Greater Equal; 30 (age-standardized estimate) (%)					
	2016			2015		
	Both sexes	Male	Female	Both sexes	Male	Female
	18+ years	18+ years	18+ years	18+ years	18+ years	18+ years
Togo	8.4 [5.9-11.4]	3.9 [1.9-6.8]	12.5 [8.3-17.5]	8.1 [5.7-10.9]	3.7 [1.8-6.3]	12.0 [8.0-16.8]
Tonga	48.2 [41.8-54.0]	41.4 [32.2-50.5]	54.5 [46.3-62.3]	47.5 [41.3-53.2]	40.6 [31.7-49.5]	53.9 [45.9-61.6]
Trinidad and Tobago	18.6 [13.6-24.3]	10.8 [5.7-17.8]	26.0 [17.7-35.2]	18.0 [13.2-23.4]	10.4 [5.6-17.1]	25.3 [17.3-34.1]
Tunisia	26.9 [22.1-31.7]	19.1 [13.1-25.7]	34.3 [27.0-41.5]	26.3 [21.7-30.9]	18.5 [12.8-24.7]	33.7 [26.7-40.7]
Turkmenistan	18.6 [14.2-23.6]	15.9 [10.0-23.0]	20.9 [14.6-28.0]	18.0 [13.8-22.7]	15.3 [9.6-22.2]	20.3 [14.3-27.0]
Tuvalu	51.6 [45.0-57.9]	47.0 [37.7-56.4]	56.2 [47.3-64.4]	50.9 [44.4-57.0]	46.2 [37.1-55.4]	55.6 [46.9-63.8]
Uganda	5.3 [3.6-7.3]	1.8 [0.9-3.3]	8.6 [5.5-12.4]	5.0 [3.5-6.9]	1.7 [0.8-3.1]	8.2 [5.4-11.8]
Ukraine	24.1 [18.5-30.2]	22.0 [14.2-30.7]	25.7 [18.0-34.2]	23.7 [18.3-29.7]	21.5 [14.0-29.9]	25.5 [18.0-33.7]
United Arab Emirates	31.7 [26.2-37.4]	27.5 [20.3-35.0]	41.0 [33.7-48.8]	31.0 [25.7-36.5]	26.8 [19.9-34.0]	40.5 [33.4-48.0]
United Kingdom of Great Britain and Northern Ireland	27.8 [24.9-30.7]	26.9 [22.9-30.9]	28.6 [24.7-32.8]	27.2 [24.6-29.8]	26.2 [22.5-29.9]	28.1 [24.5-31.9]
United Republic of Tanzania	8.4 [6.3-11.0]	4.0 [2.1-6.6]	12.7 [9.1-17.1]	8.0 [6.1-10.5]	3.7 [1.9-6.3]	12.1 [8.8-16.3]
United States of America	36.2 [32.3-40.1]	35.5 [30.0-41.2]	37.0 [31.6-42.4]	35.6 [31.9-39.3]	34.7 [29.7-40.1]	36.4 [31.3-41.4]

Figure 3: Prevalence of obesity among adults, BMI & greater or equal to 30 (age-standardized estimate) (%)

The Trust for America’s Health (TFAH) examined national data, focusing on information from the CDC’s Behavioral Risk Factor Surveillance System (BRFSS) from 2017 to 2020. Their analysis revealed a national obesity rate of 41.9%, indicating that nearly four in ten American adults are obese. This is a notable increase from a decade ago when no state had an adult obesity rate of 35% or higher. The report, released ahead of the 2022 White House Conference on Hunger, Nutrition, and Health, points out significant demographic disparities in obesity rates, with Black adults showing the highest rate at 49.9%, followed by Hispanic adults at 45.6%, white adults at



41.4%, and Asian adults at 16.1%. It also noted higher obesity rates in rural areas compared to urban and suburban ones.

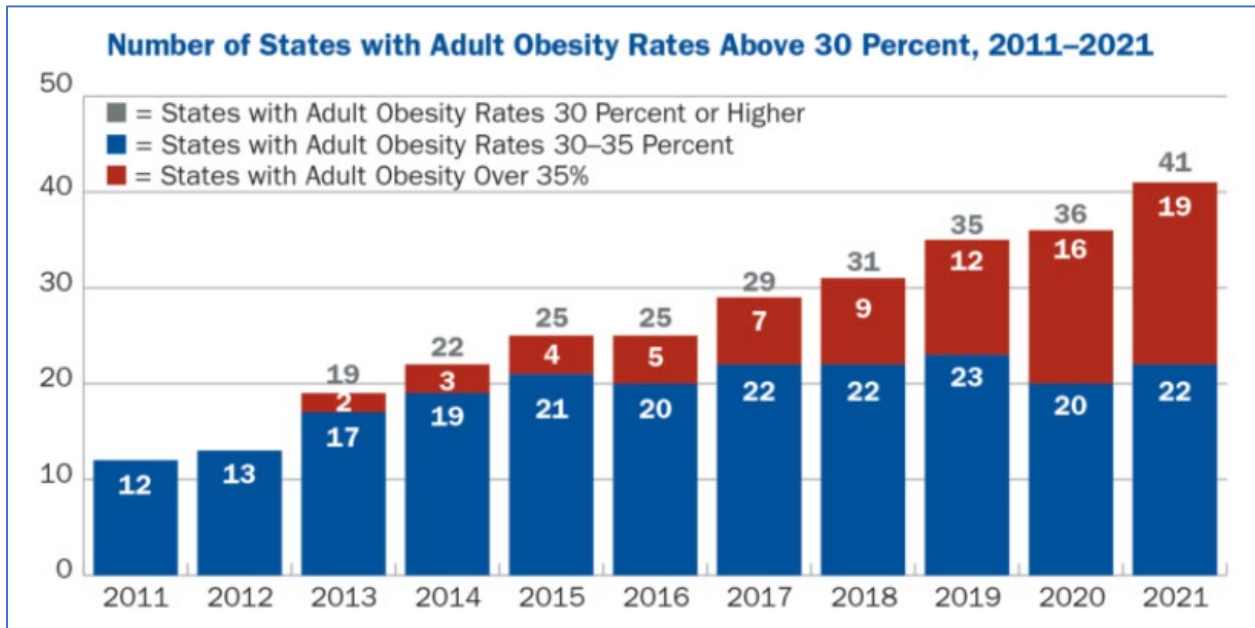


Figure 4: TFAH Analysis of BRFSS Data for 2017 – 2020

The economic impact of obesity is profound, with direct medical costs in the U.S. reaching \$260 billion in 2016. The CDC's 2019 estimate puts the annual medical cost of obesity at nearly \$173 billion, with obese adults incurring \$1,861 more in medical costs than those of a healthy weight. Studies have further elucidated the financial burden, with per capita medical spending for obese individuals being significantly higher than that for individuals of normal weight.

The workplace also feels the impact of obesity through medical costs and lost productivity, costing U.S. employers \$45 billion annually in 2008. This underscores the broader economic repercussions of the obesity epidemic on workforce productivity and the economy at large.





Figure 5: Obesity-Related Diseases

In terms of health, obesity increases the risk of numerous conditions, including high blood pressure, high cholesterol, type 2 diabetes (T2D), breathing problems, joint issues, and gallstones. It also affects children, leading to psychological issues, lower self-esteem, and social challenges, which can persist into adulthood. The CDC reported a rise in the age-adjusted prevalence of obesity from 30.5% in 1999–2000 to 42.4% in 2017–2018, with severe obesity also increasing during this period.



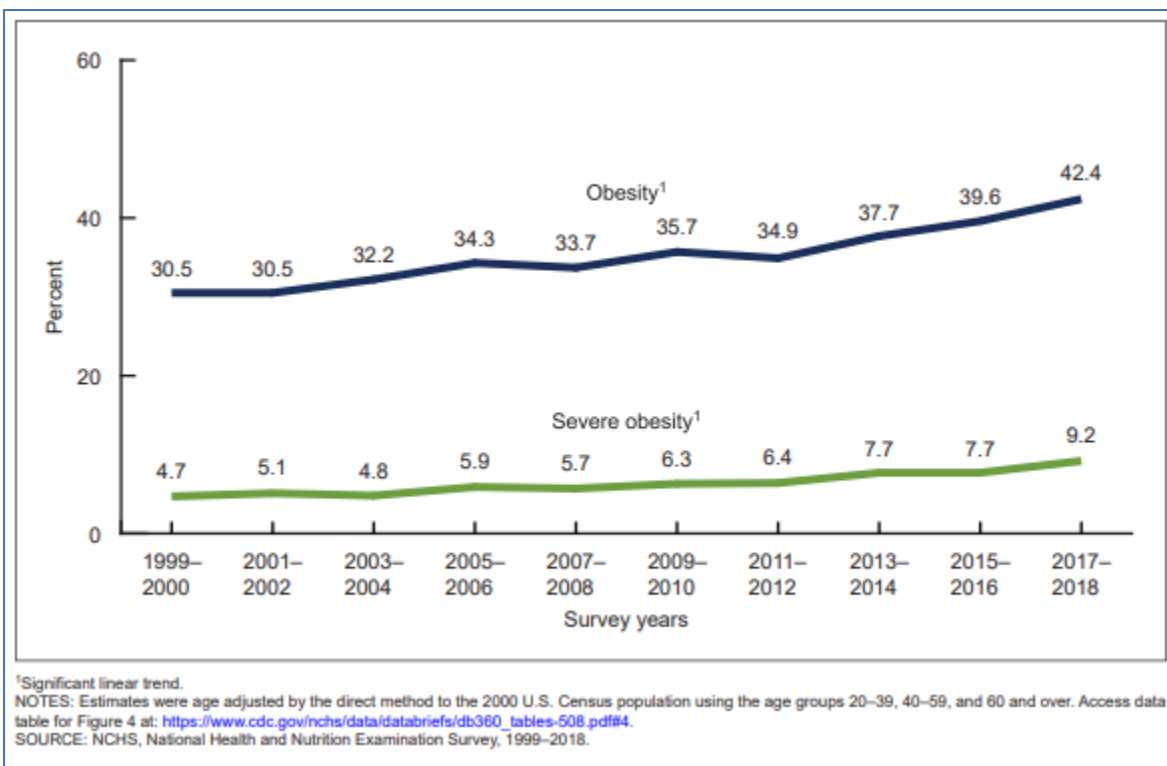


Figure 6: Trends in age-adjusted obesity and severe obesity prevalence among adults aged 20 and over: United States, 1999–2000 through 2017–2018

Obesity prevalence varies across different demographic groups, with non-Hispanic Black adults having the highest prevalence, followed by Hispanic, non-Hispanic White, and non-Hispanic Asian adults. Factors such as age, income, and education level also influence obesity rates.

Given the increasing prevalence and substantial economic burdens of obesity, a comprehensive approach is essential for addressing this epidemic. The emphasis on cost-effective strategies for obesity prevention is crucial for enhancing public health outcomes and reducing the economic strain from healthcare costs and lost productivity.

Researchers have aimed to provide accurate estimates of healthcare costs related to excess weight, highlighting the importance of nuanced and cost-effective obesity prevention strategies. A study using data from the Medical Expenditure Panel Survey (MEPS) between 2011 and 2016, adjusting for BMI self-report bias and employing a two-part model to control for confounding factors, has contributed to a deeper understanding of the economic impact of obesity, emphasizing the necessity of preventing extreme weight gain across all ages.



Results:

- An analysis of medical expenditures by BMI presents a J-shaped curve, indicating higher costs for females. The expenditures are lowest at a BMI of 20.5 for adult females and 23.5 for adult males.
- For every one-unit increase in BMI above 30, there is an average additional annual cost of \$253 per person.
- Obesity results in excess annual medical costs of \$1,861 per adult, contributing to an annual total of \$172.74 billion in expenditures.
- Adults with severe obesity face excess costs of \$3,097 each.
- Childhood obesity is linked to additional costs of \$116 per child and \$1.32 billion in medical spending annually, with severe childhood obesity costing \$310 per child.

Findings:

- Costs escalate with age, reaching a peak between 60 and 70 years old for those with severe obesity.
- Obesity-related expenses are higher for females and increase with age across all adults.
- While childhood obesity accounts for a small fraction of the total obesity-related costs, it is a significant predictor of obesity in adulthood.
- The study highlights the critical need to prevent excessive weight gain at all ages and underlines the substantial economic burden of the obesity epidemic, which amounts to over \$170 billion in excess medical costs each year in the United States.



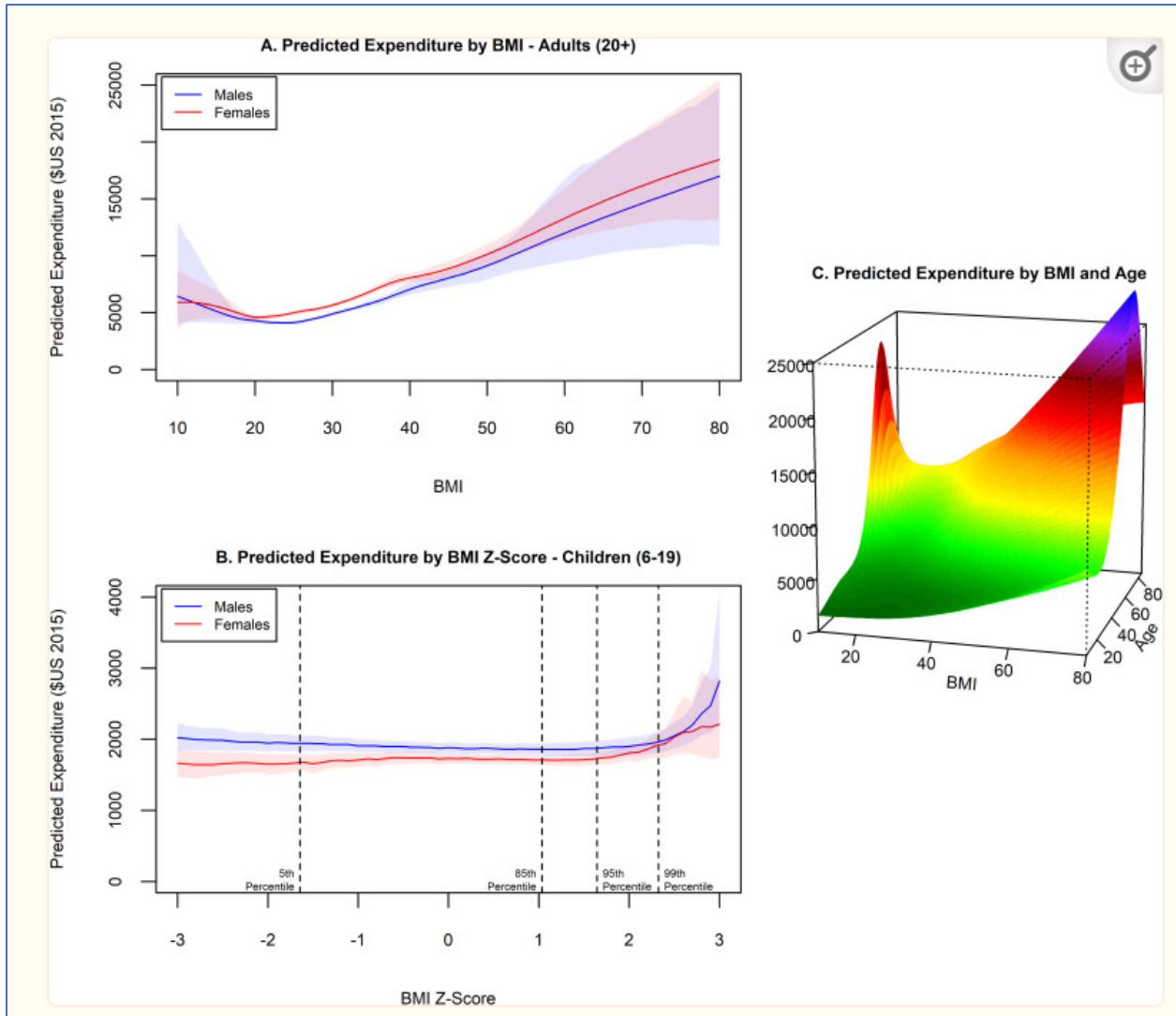


Figure 7: Estimated BMI-related medical expenditures, children, and adults



DVHA Review of Obesity and Implications for Covering Obesity Medications

Obesity Status (BMI range)	Total Cost Per Person ^a (95% CI)	Excess Cost Per Person ^b (95% CI)	Excess Cost (Billions)-Population-level ^f (95% CI)
Children (6-19)^d			
Non-Obesity (BMI < 95 th ile)	1,871 (1,826-1,918)	Reference	Reference
Obesity (BMI ≥ 95 th ile)	1,987 (1,893-2,072)	116 (14-201)	1.32 (0.16-2.29)
<i>BMI Category</i>			
Underweight (BMI < 5 th ile)	1,913 (1,806-2,039)	41 (-59-161)	0.09 (-0.13-0.35)
Normal weight (5 th ile ≤ BMI < 85 th ile)	1,873 (1,821-1,925)	Reference	Reference
Overweight (85 th ile ≤ BMI < 95 th ile)	1,852 (1,794-1,916)	-21 (-84-45)	-0.21 (-0.83-0.44)
Moderate Obesity (95 th ile ≤ BMI < 120% x 95 th ile)	1,882 (1,803-1,957)	9 (-83-96)	0.07 (-0.61-0.70)
Severe Obesity (BMI ≥ 120% x 95 th ile)	2,183 (2,013-2,327)	310 (124-474)	1.27 (0.51-1.94)
Adults (20+)			
Non-Obesity (BMI < 30)	4,525 (4,450-4,616)	Reference	Reference
Obesity (BMI ≥ 30)	6,385 (6,221-6,558)	1,861 (1,656-2,053)	172.74 (153.70-190.61)
<i>BMI Category</i>			
Underweight (BMI < 18.5)	4,419 (3,970-4,921)	228 (-201-721)	0.85 (-0.75-2.68)
Normal weight (18.5 ≤ BMI < 25)	4,191 (4,092-4,306)	Reference	Reference
Overweight (25 ≤ BMI < 30)	4,812 (4,716-4,936)	621 (503-756)	50.19 (40.64-61.12)
Moderate Obesity (30 ≤ BMI < 35)	5,672 (5,548-5,808)	1,480 (1,305-1,650)	77.03 (67.91-85.83)
Severe Obesity (BMI ≥ 35)	7,288 (7,002-7,594)	3,097 (2,777-3,413)	126.39 (113.35-139.29)

Figure 8: Total and excess annual medical expenditures by BMI category (\$US 2019)

The study titled "Real-world Costs of Obesity-Related Complications Over Eight Years: A US Retrospective Cohort Study of 28,500 Individuals" published in the International Journal of Obesity sheds light on the substantial healthcare expenses linked to complications arising from obesity. It aimed to explore the relationship between the burden of comorbidities—represented by both the number and type of 14 specific “Obesity Related Conditions” (ORCs)—and the total healthcare expenditures over time for individuals with obesity in the United States.

The research encompassed adults (aged 18 years and older) who were identified through linked electronic medical records and administrative claims databases, with recorded BMI values ranging from 30 to less than 70 kg/m² between January 1, 2007, and March 31, 2012 (the index date). Eligibility required participants to have been continuously enrolled in a healthcare plan for at least one year prior to the index date (baseline year) and for a minimum of eight years following it. Based on the type and number of ORCs identified during the baseline year, participants were classified into categories. The main metric evaluated was the annual total adjusted direct healthcare costs per person.

The study's cohort consisted of 28,583 individuals, of which 12,686 had no ORCs, 7,242 had one ORC, 4,180 had two ORCs, and 4,475 had three or more ORCs at baseline. The results indicated that both the number of ORCs and the duration of follow-up (over eight years) were



correlated with increases in annual adjusted direct healthcare costs. Outpatient services accounted for the largest share of baseline annual direct costs across all ORC groups. With respect to specific ORCs, the study observed a general upward trend in costs throughout the follow-up period. Notably, chronic kidney disease and type 2 diabetes saw the most significant percentage increases in costs, rising by 78.8% and 47.8% respectively from the first to the eighth year.

This study highlights in a real-world US context that the number of obesity-related complications is a crucial factor driving healthcare costs among individuals with obesity from the point of initial obesity classification and continuing for at least eight years thereafter.



5. Obesity Among Children in the US

WIC-Enrolled Children

Obesity disparities among children are starkly evident, with those from low-income families, often recipients of Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) assistance, experiencing higher rates compared to their higher-income counterparts. The collaborative efforts of the CDC and the United States Department of Agriculture (USDA) are instrumental in monitoring childhood obesity, particularly within priority groups served by the WIC program. Biennially analyzed, the WIC Participant and Program Characteristics Report (WIC PC) furnish essential demographic and nutrition risk data on WIC participants nationwide. WIC eligibility is contingent upon meeting residential, income, and nutrition risk criteria, highlighting the pivotal role of nutrition during pregnancy and early childhood. Examining WIC data from 56 states and territories between 2010 and 2020 reveals both significant declines and increases in obesity among 2 to 4-year-olds. Notably, the national trends⁵ indicate a decrease in obesity rates from 15.9% in 2010 to 14.4% in 2020 among WIC-enrolled children aged 2 to 4. The combined prevalence of overweight and obesity also declined from 32.5% in 2010 to 29.8% in 2020. However, demographic variances persist in higher obesity rates among Hispanic and American Indian or Alaska Native children. In 2020, 12.3% of WIC-enrolled infants aged 3 to 23 months exhibited high weight-for-length, demonstrating variations across states and territories. Encouragingly, from 2010 to 2020, 35 states reported significant declines in high weight-for-length among infants, with notable variations among racial and ethnic groups.

Medicaid-Covered Children

In Vermont, the rate of childhood obesity among youths aged 10 to 17 is 13.0%, which ranks Vermont as 5th among all states and D.C. in terms of having the lowest rate of childhood obesity. This rate is slightly higher among high school students in Vermont, at 13.1%, positioning Vermont at 36th among states and D.C. It's noteworthy that Vermont's obesity rate among adults is 29%, which ranks it 43rd among states, indicating a lower adult obesity rate compared

⁵ *Ages 10-17 - State of childhood obesity.* (2024, April 18). State of Childhood Obesity. <https://stateofchildhoodobesity.org/demographic-data/ages-10-17/>



to many other states. The state also experiences a significant issue with food insecurity among children, with a rate of 10.3%⁶.

Comparatively, the national data provided by the Kaiser Family Foundation (KFF) indicates that over one in six children aged 10-17 in the U.S. have obesity, translating to a 17% rate according to the 2020-2021 National Survey of Children's Health (NSCH)⁷. The obesity rates show significant variations based on insurance coverage, race/ethnicity, and household income. Specifically, children covered by Medicaid are more than twice as likely to have obesity compared to those with private insurance. This is reflected in the 26.0% obesity rate among Medicaid-enrolled children versus 11.4% for children with private insurance alone. The data further highlights higher obesity prevalence among Black, Hispanic, and children of other or multiple races compared to White children, with the prevalence being highest among children from lower-income households⁸.

⁶ State of Childhood Obesity. (n.d.). *State Data: Vermont*. State of Childhood Obesity; Robert Wood Johnson Foundation. <https://stateofchildhoodobesity.org/state-data/?state=VT>

⁷ Williams, E., Burns, A., & Rudowitz, R. (2023, August 17). *Obesity Rates Among Children: A Closer Look at Implications for Children Covered by Medicaid*. KFF. <https://www.kff.org/medicaid/issue-brief/obesity-rates-among-children-a-closer-look-at-implications-for-children-covered-by-medicaid/>

⁸ State of Childhood Obesity. (n.d.). *Ages 10-17*. State of Childhood Obesity; Robert Wood Johnson Foundation. <https://stateofchildhoodobesity.org/demographic-data/ages-10-17/>



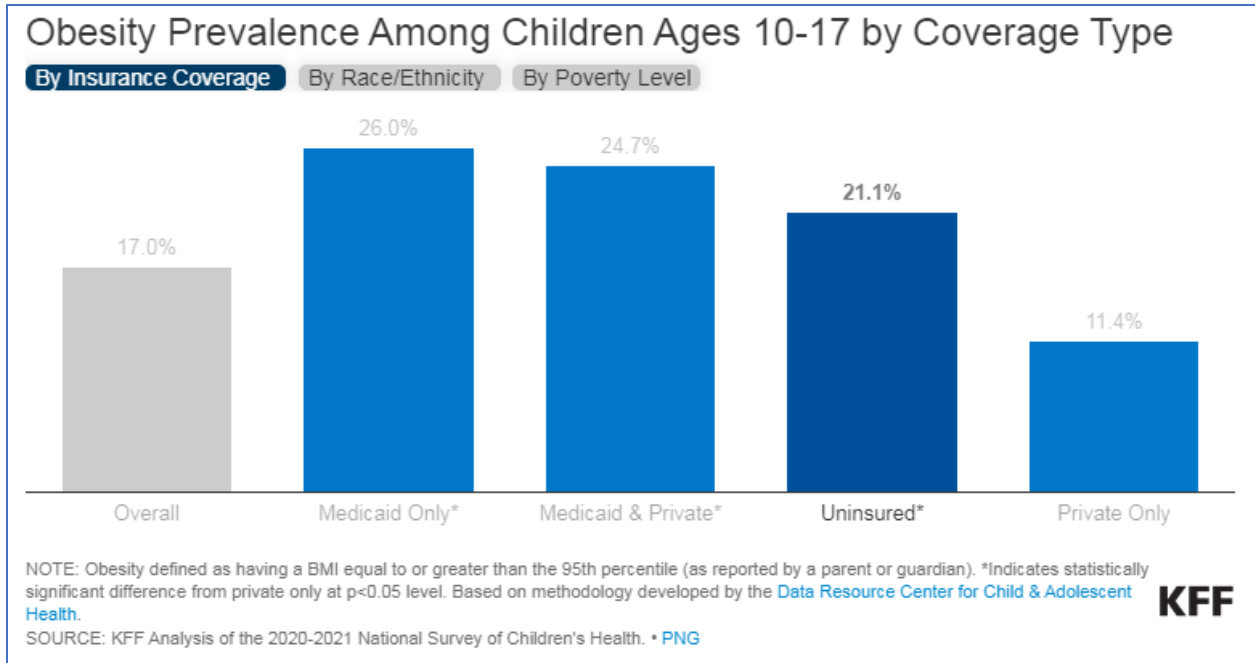


Figure 9: Obesity Prevalence among children by Insurance Coverage

Vermont's childhood obesity figures show a slightly better situation when compared to the national average, yet the issue is significant, especially considering the state's efforts in combating this health concern. Factors contributing to the disparities include economic and social dynamics like food insecurity, limited access to healthy foods, and constrained opportunities for physical activity. Moreover, the state's rural nature and higher food expenditure per capita could exacerbate these challenges, making it harder for some families to access affordable, nutritious food options and maintain active lifestyles⁹.

Despite Vermont's comparative advantage in having a lower rate of childhood obesity than the national average, the state still faces challenges in ensuring equitable access to nutritious food and opportunities for physical activity, which are critical in addressing and preventing childhood obesity. These efforts are particularly important for children covered by Medicaid, who are shown to have higher obesity rates and associated health risks.

⁹ Petenko, E. (2019, October 21). *Vermont's childhood obesity now highest in New England*. VTDigger. <https://vtdigger.org/2019/10/21/vermonts-childhood-obesity-now-highest-in-new-england/>



6. The Vermont Perspective

In Vermont, the obesity rate among adults aged 20 and older is approximately 27%, which is notably lower than the national average of 34% for U.S. adults within the same age group. The primary tool for determining obesity is BMI, which, despite its widespread use as a population-level indicator of weight-related health risks, has limitations when applied to individuals due to its indirect measurement of body fat.

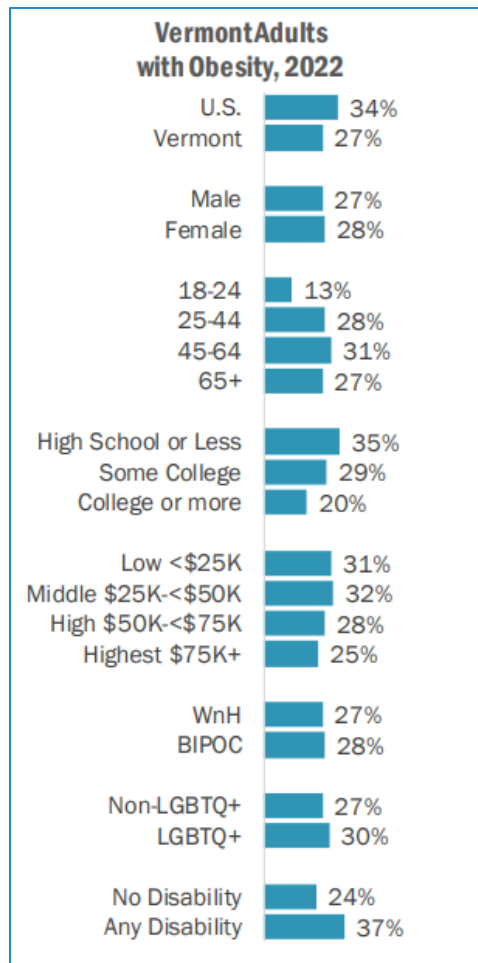


Figure 10: Vermont Adults with Obesity, 2022

Obesity rates between genders in Vermont do not show significant statistical differences. Adults aged 25 and older are more likely to experience obesity compared to younger individuals. Education and income levels also influence obesity prevalence; those with some college



education or less and those from middle-income households are more susceptible to obesity than those with higher educational achievements or incomes. Interestingly, the data does not reveal significant differences in obesity rates across various races, ethnicities, sexual orientations, or gender identities. However, adults with disabilities are more prone to obesity than those without.

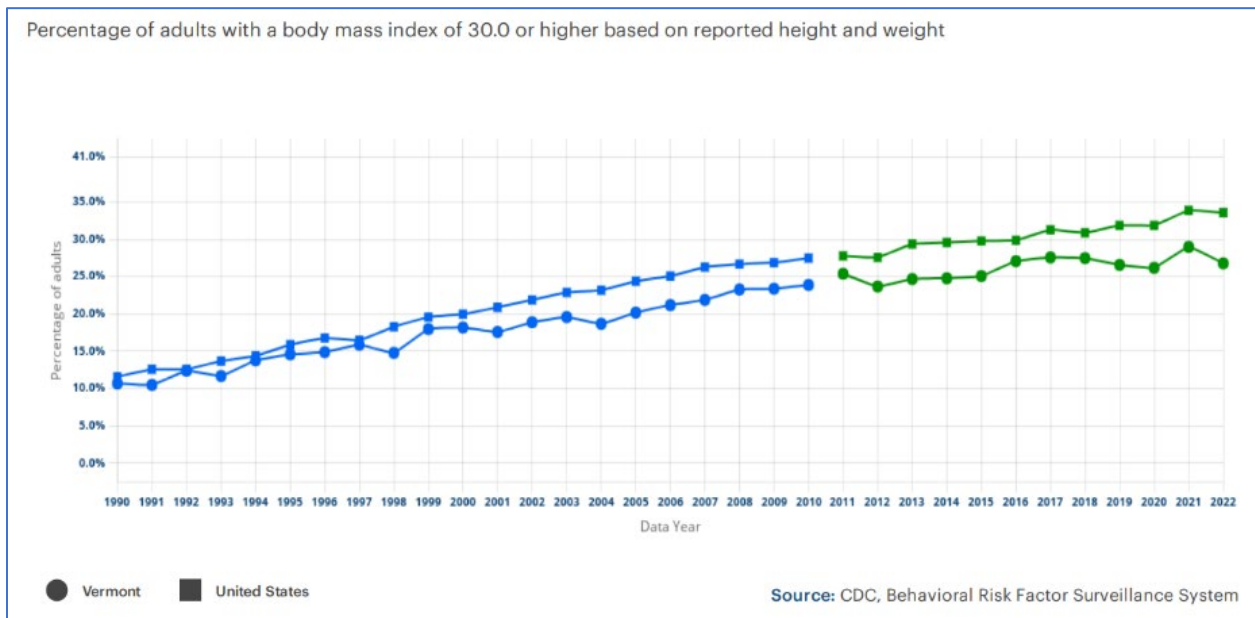


Figure 11: Obesity trends Vermont and the US

The obesity prevalence in Vermont has remained relatively stable when comparing data from 2021 and 2013. An analysis of obesity trends from 1990 through 2022, utilizing data from the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS)¹⁰, offers insight into the progression of obesity rates over time and allows for comparison with national trends.

Dr. Jan Carney, Associate Dean for Public Health at the University of Vermont College of Medicine, expresses concern over the growing rates of overweight and obesity, along with

¹⁰ America's Health Rankings analysis of CDC, Behavioral Risk Factor Surveillance System, United Health Foundation, AmericasHealthRankings.org, accessed 2024.



associated health risks in Vermont¹¹. She warns against normalizing these conditions amidst rising levels of inactivity and unhealthy diets among Vermonters. Dr. Carney emphasizes the urgent need for widespread, evidence-based initiatives to improve access to healthy foods and physical activity opportunities for all ages and communities across Vermont. She advocates for a concerted effort to communicate the importance of a healthy lifestyle as a fundamental aspect of lifelong health.

This summary encapsulates the critical elements regarding obesity prevalence in Vermont, the methodological considerations of BMI, demographic variances, and the state's stable obesity rates over recent years. It also highlights the call to action by health experts for more robust public health strategies to address this issue.

¹¹ Housekeeper, E. (2015, September 23). *Prevalence of Obesity in Vermont & Nation Show Alarming Trend*. UVM Public Health; Larner College of Medicine. <https://www.uvm.edu/publichealth/obesity-in-vermont/>



7. Obesity, Mortality, and Weight Loss Strategies

Obesity significantly increases the risk of mortality from myocardial infarction (MI) and stroke. This relationship stems from the fact that obesity can lead to various conditions such as hypertension, diabetes, dyslipidemia, and inflammation. These conditions, in turn, accelerate atherosclerosis development, a leading cause of cardiovascular diseases. Additionally, the extra body weight puts additional strain on the heart, further increasing the risk of cardiac complications and mortality.

To mitigate the impact of obesity on mortality, it is crucial to adopt both pharmacological and non-pharmacological strategies. Medications like statins, antiplatelet agents, and antihypertensive drugs have proven effective in reducing cardiovascular risks among obese individuals. Equally important, however, are non-medication approaches, including lifestyle modifications. Emphasizing healthy eating, regular exercise, and behavioral changes can significantly reduce the risk of death from cardiovascular events linked to obesity. These lifestyle changes not only aid in weight loss but also enhance overall cardiovascular health.

Research consistently supports the effectiveness of lifestyle modifications in decreasing mortality related to cardiovascular conditions in obese patients. By combining necessary medications with sustainable lifestyle adjustments, individuals can significantly lower the risks associated with obesity, thereby reducing the likelihood of mortality from MI and stroke. This holistic approach is essential for addressing the profound effects of obesity on health and longevity.



8. The Economic Burden of Obesity on Vermont Medicaid

The findings from the study¹² presented at the Obesity Medicine Association's annual conference highlight the significant financial implications of weight loss on healthcare costs. Dr. David Arterburn emphasized the rising interest in weight loss and the effectiveness of anti-obesity medications in driving treatment advancements. Analyzing national data, a clear correlation between BMI and healthcare expenditure was identified, with costs escalating notably for patients with a BMI over 35. However, weight loss interventions, including medications, offer substantial potential savings. For instance, a 15% weight loss for patients in the "class one obesity" category could save approximately \$1,107 annually, while a 30% reduction could lead to savings of \$1,907. These savings correspond with transitions to lower BMI categories, indicating a direct relationship between weight loss and cost reduction. This underscores the importance of interventions targeting weight loss not only for health improvement but also for economic benefit, particularly for patients with higher BMIs where significant savings are achievable through substantial weight loss.

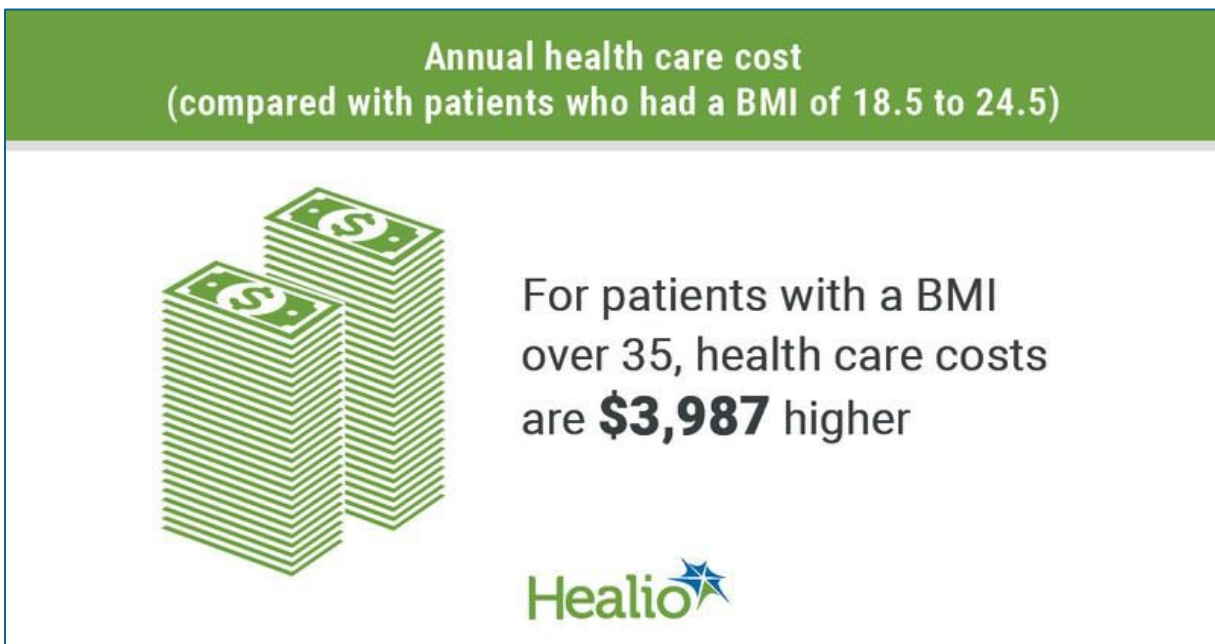


Figure 12: Data derived from Arterburn D. *Paradigm shifts and price wars: The bright and bumpy future of obesity treatment*. Presented at: *Obesity Medicine 2024*. April 24-28, 2024; Denver.

¹² Bascom, E. (2024, May 2). *The cost of obesity: How much can patients save by losing weight?* Healio.com. <https://www.healio.com/news/primary-care/20240502/the-cost-of-obesity-how-much-can-patients-save-by-losing-weight>



8.1. Direct Costs

Incorporating obesity coverage into Vermont's Medicaid plans involves several cost factors:

- **Medical Expenses:** Obesity is linked to various health conditions like diabetes, heart disease, and hypertension, necessitating additional expenses for consultations, medications, and potential surgeries.
- **Emergency and Hospital Admissions:** Managing complications arising from obesity may require urgent care or hospitalization, adding to healthcare costs.
- **Preventive Measures:** Integrating weight management programs, nutritional counseling, and fitness initiatives within coverage can aid in mitigating obesity-related complications, ultimately reducing costs.
- **Prescription Medications:** Covering medications for obesity management is essential, though it increases the overall expenses.
- **Bariatric Surgeries:** Vermont Medicaid covers bariatric surgery for eligible members as per criteria set by bariatric surgeons. Although costly, it's seen as a cost-effective strategy for some patients in the long term.
- **Health Promotion and Education:** Investing in campaigns to educate about obesity prevention and management can decrease the prevalence and the financial burden of obesity over time.
- **Collaboration with Healthcare Providers:** Partnering with providers can help negotiate better rates for obesity treatment and services, effectively managing expenses.
- **Data Monitoring and Analysis:** Enhancing DVHA's capacity to collect and analyze obesity-related data could offer insights for more efficient resource allocation and cost control, although DVHA currently has limited capabilities in this area.

By addressing these aspects, Vermont Medicaid aims to manage the costs associated with obesity coverage while promoting healthier outcomes for individuals. This comprehensive approach reflects the program's commitment to both immediate healthcare needs and long-term preventive strategies.

8.2. Indirect Costs

Obesity not only has a profound impact on individual health but also significantly influences the broader economy, leading to indirect costs that permeate various sectors in Vermont.



- **Lost Productivity:** Health issues related to obesity often lead to increased absenteeism and reduced productivity in the workplace. This diminishes business operations and, by extension, the state's overall economic output.
- **Healthcare Costs for Employers:** Businesses in Vermont face substantial healthcare costs for employees with obesity. The rise in insurance premiums and expenses for treating obesity-related health conditions escalates healthcare expenditures for employers.
- **Impact on Education:** Childhood obesity can negatively affect educational outcomes. Health issues may result in more frequent school absences and diminished academic performance, potentially affecting the state's future workforce and economic competitiveness.
- **Public Health Expenditures:** Vermont incurs significant public health expenditures in tackling obesity-related health issues. This includes funding for campaigns, preventive programs, and interventions aimed at curbing obesity rates.
- **Reduced Workforce Participation:** Individuals with obesity may encounter challenges in participating in the workforce due to health limitations. This reduction in the labor force affects economic productivity and may lead to a greater reliance on public assistance programs.
- **Increased Disability and Workers' Compensation Claims:** The risk of disability and workplace injuries is higher among individuals with obesity. This results in increased disability claims and workers' compensation costs, imposing an additional financial strain on businesses and the state.
- **Impacts on Tourism and Hospitality:** The prevalence of obesity can adversely affect Vermont's tourism and hospitality industry. Health-related concerns among potential visitors could impact the sector and its associated businesses.
- **Environmental Impact:** Obesity's link to the transportation and food industries can have environmental implications. The increased demand for transportation and energy-intensive food production contributes to environmental degradation, necessitating further conservation and sustainability efforts.

These factors illustrate the comprehensive and multifaceted economic challenges posed by obesity in Vermont, underscoring the need for integrated health, economic, and environmental policies to address this issue effectively.



9. DVHA review of Obesity and Implications for covering Obesity Medication

GLP-1 drugs, known for their recent surge in popularity, have significantly influenced healthcare operations. Initially prescribed for diabetes and obesity, these medications are now being evaluated for a broader range of conditions, including cardiovascular disease, sleep apnea, Alzheimer's disease, substance-use disorder, kidney disease, and smoking cessation. The American Hospital Association (AHA) has highlighted the potential for FDA approval of GLP-1 drugs for sleep apnea, indicating a future expansion of their applications.

Beyond their therapeutic potential, GLP-1 drugs offer valuable data insights for hospitals. This data can inform ongoing and future research, with the potential to train artificial intelligence for enhanced analysis. Dandelion Health¹³ has initiated an open GLP-1 data library, which includes nearly 10 million patient records, aiding in understanding these drugs' impacts on patient health.

The high cost of GLP-1 drugs, particularly Ozempic and Wegovy, has drawn significant scrutiny from the U.S. Senate. A Senate committee criticized Novo Nordisk's pricing, highlighting the stark contrast between U.S. prices and those abroad. In the U.S., Novo Nordisk charges \$969 per month for Ozempic, while the same medication costs \$155 in Canada, \$122 in Italy, \$71 in France, and \$59 in Germany. Similarly, the price for Wegovy in the U.S. is \$1,349 per month¹⁴. In 2023, the U.S. spent over \$38 billion on these drugs, marking them as the top pharmaceutical expense. The rising costs of GLP-1 drugs have raised concerns about the financial sustainability of Medicare and Medicaid. In 2022, Medicare spending on these drugs escalated to \$5.2 billion from just \$57 million in 2018¹⁵. A Senate report warned that without price

¹³ Dandelion Health. (2014). *Access data to build clinical AI*. Dandelion Health. <https://dandelionhealth.ai/dandelion-data>

¹⁴ US Senate. Health, Education, and Pensions Committee. (2024). *Breaking Point: How Weight Loss Drugs Could Bankrupt American Health Care*. <https://www.sanders.senate.gov/wp-content/uploads/Wegovy-report-FINAL.pdf>

¹⁵ Cubanski, J., & Neuman, T. (2024, March 28). *Medicare Spending on Ozempic and Other GLP-1s Is Skyrocketing* | KFF. KFF. <https://www.kff.org/policy-watch/medicare-spending-on-ozempic-and-other-glp-1s-is-skyrocketing/>



reductions, these costs could potentially bankrupt the U.S. healthcare system. It is interesting to note that the US. Senate came to similar conclusions to ours.

Four key findings from the Senate Committee report¹⁶:

1. If half of Americans with obesity took weight loss drugs, it would cost \$411 billion annually.
2. If half of all Medicare and Medicaid enrollees with obesity took weight loss drugs, it would cost the government \$166 billion every year.
3. Weight loss drugs could raise total annual prescription drug spend by Americans to \$1 trillion.
4. If Wegovy was sold in the U.S. for the same price as it is in Denmark (\$186 a month), the U.S. healthcare system could save up to \$317 billion dollars annually if half of adults with obesity took the drug. Medicare and Medicaid could save \$128 billion per year under those conditions.

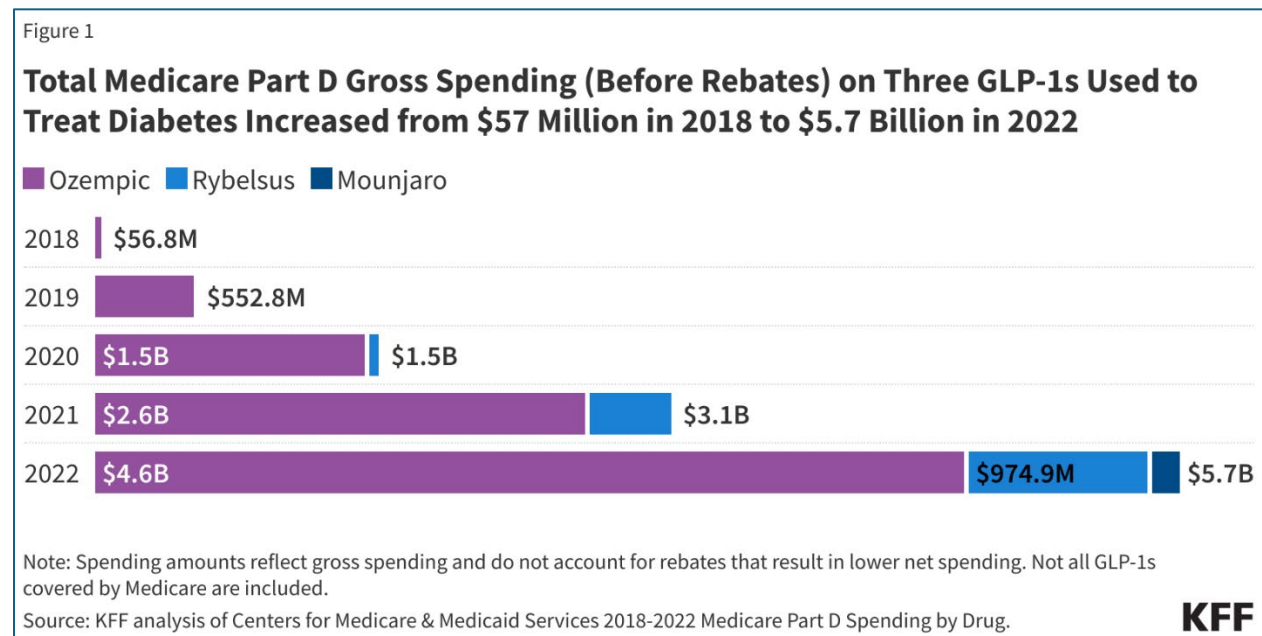


Figure 13: Medicare total spending hit \$5.7 billion in 2022 for GLP-1s, up from \$57 million in 2018.

Medicare is currently prohibited from covering GLP-1s solely for weight loss, but recent FDA approvals and guidance may change this for specific conditions. While five state Medicaid programs offer unrestricted coverage of Wegovy and Saxenda, many states and organizations

¹⁶ US Senate. Health, Education, and Pensions Committee. (2024). *Breaking Point: How Weight Loss Drugs Could Bankrupt American Health Care*. <https://www.sanders.senate.gov/wp-content/uploads/Wegovy-report-FINAL.pdf>



remain hesitant due to the high costs. For instance, North Carolina's State Health Plan has ceased coverage due to projected costs, whereas Illinois is expanding coverage for state employees, potentially costing up to \$210 million annually. Health systems such as Ascension and the Mayo Clinic have limited or discontinued coverage for weight loss drugs in their employee health plans. Insurers like UnitedHealth are advocating for price reductions, emphasizing the challenge of high U.S. prices compared to Western Europe.

In evaluating the optimal strategies for managing obesity within Vermont's Medicaid population, understanding the available, effective, and cost-associated medication options is crucial. This insight is pivotal for budgeting and resource allocation, ensuring the efficient use of funds for maximum health benefits. The medication classes for weight loss include:

- Anorectics
- GLP-1 (glucagon-like peptide-1) receptor agonists
- Combined GLP-1 receptor agonists and glucose-dependent insulinotropic polypeptide (GIP) receptor agonists
- Opioid antagonists combined with bupropion (a type of antidepressant),
- Reversible gastrointestinal (GI) lipase inhibitors.

For informed decision-making, it is vital to have a comprehensive overview of whether Vermont Medicaid covers these medications beyond weight loss, their costs, potential benefits for weight loss, known adverse effects, and any contraindications. This detailed analysis facilitates the creation of a realistic and precise budget, enabling the strategic allocation of financial resources to enhance the efficacy of medication interventions in obesity management.

This approach underscores the importance of evidence-based decision-making in healthcare policy and administration. It emphasizes the need for a thorough understanding of the therapeutic options available to address obesity, a major public health concern. By tailoring the budget to include effective weight loss medications, Vermont Medicaid can significantly impact patients' health outcomes, improving their quality of life and potentially reducing long-term healthcare costs associated with obesity-related conditions.



9.1. Drug Information Chats: Anorectic

Medication	Coverage/PA	Retail Cost#	Weight Loss Per Package Inert.	Known Adverse Events/Outcomes	Contraindications
Phentermine-Topiramate Combo (Qsymia)	Not Covered	\$169.19	Mean change in weight between 5.1% - 10.9%	Paresthesia, dizziness, dysgeusia, insomnia, constipation, dry mouth, depression	Glaucoma, hyperthyroidism, during or within 14 days following the administration of monoamine oxidase inhibitors, hypersensitivity to sympathomimetic amines, pregnancy
Amphetamine sulfate (Evekeo tab)	Nonpreferred Covered only for ADHD	\$125.82	Fraction of pound per week: Only studied in few weeks' increments recommend use only as short-term adjunct in regimen of weight reduction	Headache, stomachache, trouble sleeping, unpleasant taste, nervousness, dizziness, impotence, vomiting, itching, diarrhea or constipation, dry mouth, mood swings	Cardiovascular disease, Hypertension, Hyperthyroidism, Glaucoma, Agitation
Phentermine	Not Covered	\$17.31	No clinical studies, fraction of pound per week	Primary pulmonary hypertension, valvular heart disease, withdrawal with prolonged administration, restlessness, dizziness, dry mouth	Cardiovascular disease, Hypertension, Hyperthyroidism, Glaucoma, History of drug abuse

#Price per <https://www.goodrx.com/> on 03/14/2024



9.2. Drug Information Chats: GLP-1 receptor agonists.

Medication	Coverage/PA	Retail Cost#	Weight Loss Per Package Inert.	Known Adverse Events/Outcomes	Contraindications
Wegovy (semaglutide)	Not Covered	\$1388.00	In overweight and obese population reported 9.6% - 16% weight loss	Nausea, diarrhea, vomiting, constipation, abdominal pain, headache, fatigue, dyspepsia, flatulence, gastroenteritis, GERD. Small risk of pancreatitis.	Personal or family history of medullary thyroid carcinoma or in patients with multiple endocrine neoplasia syndrome type 2, pregnancy
Saxenda (liraglutide)	Not Covered	\$1388.00	In overweight and obese population reported 4.9% - 7.4% weight loss	Nausea, diarrhea, vomiting, constipation, abdominal pain, headache, fatigue, dyspepsia, flatulence, gastroenteritis, GERD. Small risk of pancreatitis.	Personal or family history of medullary thyroid carcinoma or multiple endocrine neoplasia syndrome type 2, pregnancy
Ozempic (semaglutide)	Covered/ No Prior Authorization (PA) for Type 2 Diabetes (T2D)	\$998.62	Mean baseline weight loss from 3.8 kg at week 30 to 4.8 kg at week 56	Nausea, diarrhea, vomiting, constipation, abdominal pain, headache, fatigue, dyspepsia, flatulence, gastroenteritis, GERD. Small risk of pancreatitis.	Personal or family history of medullary thyroid carcinoma (MTC), Multiple endocrine neoplasia syndrome type 2 (MEN 2), Hypersensitivity to semaglutide or any component of the formulation
Trulicity (dulaglutide)	Covered/ No PA for T2D	\$852.41	Mean body weight decreases at 26 weeks-1.4 kg - 2.3 kg	Nausea, diarrhea, vomiting, constipation, abdominal pain, headache, fatigue, dyspepsia, flatulence, gastroenteritis, GERD. Small risk of pancreatitis.	Personal or family history of medullary thyroid carcinoma (MTC), Multiple endocrine neoplasia syndrome type 2 (MEN 2), Hypersensitivity to dulaglutide or any component of the formulation



DVHA Review of Obesity and Implications for Covering Obesity Medications

Victoza (liraglutide)	Covered/ No PA for T2D	\$842.01	Mean body weight decreases at 52 weeks- 2.1 kg to 2.5 kg	Nausea, diarrhea, vomiting, constipation, abdominal pain, headache, fatigue, dyspepsia, flatulence, gastroenteritis, GERD. Small risk of pancreatitis.	Personal or family history of medullary thyroid carcinoma (MTC), Multiple endocrine neoplasia syndrome type 2 (MEN 2), Hypersensitivity to liraglutide or any component of the formulation
Byetta (exenatide)	Nonpreferred/ PA required for T2D	\$888.76	Mean body weight decreases at 24 weeks- 2.7 kg - 2.9 kg	Nausea, diarrhea, vomiting, constipation, abdominal pain, headache, fatigue, dyspepsia, flatulence, gastroenteritis, GERD. Small risk of pancreatitis.	Personal or family history of medullary thyroid carcinoma (MTC), Multiple endocrine neoplasia syndrome type 2 (MEN 2), Hypersensitivity to exenatide or any component of the formulation
Rybelsus (semaglutide) tablet	Nonpreferred/ PA required for T2D	\$998.62	Mean weight loss at 26 weeks 2.3 kg	Nausea, diarrhea, vomiting, constipation, abdominal pain, headache, fatigue, dyspepsia, flatulence, gastroenteritis, GERD. Small risk of pancreatitis.	Personal or family history of medullary thyroid carcinoma (MTC), Multiple endocrine neoplasia syndrome type 2 (MEN 2) , Hypersensitivity to semaglutide or any component of the formulation
Bydureon (exenatide)	Nonpreferred/ PA required for T2D	-	Mean A1C decrease at week 26 as monotherapy 1.6%. no mention weight in studies	Nausea, diarrhea, vomiting, constipation, abdominal pain, headache, fatigue, dyspepsia, flatulence, gastroenteritis, GERD. Small risk of pancreatitis.	Personal or family history of medullary thyroid carcinoma (MTC), Multiple endocrine neoplasia syndrome type 2 (MEN 2), Hypersensitivity to exenatide or any component of the formulation

≠Price per <https://www.goodrx.com/> on 03/14/2024



9.3. Drug Information Chats: combined GLP-1 receptor agonists and glucose-dependent insulinotropic polypeptide (GIP) receptor agonists.

Medication	Coverage/PA	Retail Cost#	Weight Loss Per Package Inert.	Known Adverse Events/Outcomes	Contraindications
Mounjaro (tirzepatide)	Nonpreferred/ PA required for T2D	\$1102.00	Body weight change at week 40 range from 6.3 kg to 7.8 kg	Nausea, diarrhea, vomiting, constipation, abdominal pain, headache, fatigue, dyspepsia, flatulence, gastroenteritis, GERD. Small risk of pancreatitis.	Personal or family history of medullary thyroid carcinoma or multiple endocrine neoplasia syndrome type 2, known serious hypersensitivity to tirzepatide or any of the excipients
Zepbound (tirzepatide)	Not Covered	\$1092.00	In overweight and obese population reported 5%-20% weight loss after 72 weeks of treatment	Nausea, diarrhea, vomiting, constipation, abdominal pain, headache, fatigue, dyspepsia, flatulence, gastroenteritis, GERD, Hair loss, hypersensitivity reactions. Small risk of pancreatitis.	

#Price per <https://www.goodrx.com/> on 03/14/2024



9.4. Drug Information Charts: opioid antagonists combined with bupropion (a type of antidepressant)

Medication	Coverage/PA	Retail Cost#	Weight Loss Per Package Inert.	Known Adverse Events/Outcomes	Contraindications
Contrave (naltrexone /bupropion)	Not Covered	\$516.56	Mean decrease 5.4% body weight with drug	Nausea, constipation, headache, vomiting, dizziness, insomnia, dry mouth, diarrhea	Chronic opioid use, acute opioid withdrawal, uncontrolled hypertension, seizure disorder, bulimia or anorexia nervosa, abrupt discontinuation of alcohol, benzodiazepines, barbiturates, and antiseizure drugs; concomitant use of MAOIs, patient receiving linezolid or IV methylene blue, pregnancy

#Price per <https://www.goodrx.com/> on 03/14/2024



9.5. Drug Information Charts: Reversible gastrointestinal (GI) lipase inhibitors.

Medication	Coverage/PA	Retail Cost#	Weight Loss Per Package Inert.	Known Adverse Events/Outcomes	Contraindications
Orlistat (generic for Xenical)	Not Covered	\$282.20	5% to 10% weight loss when studied up to 4 years	Oily spotting, flatus with discharge, fecal urgency, fatty/oily stool, oily evacuation, increase defecation and fecal incontinence	Patients with chronic malabsorption syndrome or cholestasis, pregnancy

#Price per <https://www.goodrx.com/> on 03/14/2024



10. Evaluating the Cost-Effectiveness of Obesity Medications

To approximate a comparison between the cost of GLP-1 medications for obesity and bariatric surgical procedures, DVHA analyzed members who underwent bariatric procedures from 2021 to 2023. The analysis excluded costs for office visits, nutritional counseling, and mental health counseling, as these expenses are incurred regardless of the treatment method. The average total cost per member for a bariatric procedure was approximately \$16,000. In contrast, the monthly cost of semaglutide to treat obesity is approximately \$1,500, based on GoodRx pricing as of 05/28/2024. While drug manufacturers do have the option to offer rebates to payers resulting in lower net cost of their products, these potential rebates are not guaranteed for these medications and have not been factored in. Even with potential rebates, the lifelong cost of weight-loss medication far exceeds the cost of bariatric surgery, which is proven to be safe and effective.

10.1. Cost of Medication vs. Improved Health Outcomes

Investing in weight loss and obesity interventions involves direct costs, such as those related to the production and distribution of medications and healthcare utilization. However, these investments also offer the potential for significant returns through improved health outcomes. The challenge, especially in the U.S. where pharmaceutical companies command high reimbursement rates, is the initial cost of covering new GLP-1 medications for obesity. These costs would be expected to significantly exceed the capacity of DVHA's current pharmacy budget, necessitating future budget adjustments to accommodate coverage of these medications.

The long-term benefits of weight loss are compelling, successful weight management can lead to decreases in obesity-related health issues including diabetes, cardiovascular diseases, sleep apnea, and joint problems. Although the broad range of cost reductions to the health system—from savings on medical treatments and hospitalizations to enhanced productivity and quality of life—can be difficult to quantify, they underscore the potential societal impact of effective obesity interventions.



A cost-benefit analysis aims to determine whether the current cost of an intervention justifies its benefits. This assessment becomes particularly complex with new medications, given the uncertainties about their long-term effectiveness and how they compare to traditional weight loss methods through diet and exercise. Questions also arise about the sustainability of weight loss and the continuity of benefits if the drugs are discontinued.

The Institute for Clinical and Economic Review (ICER) addressed these concerns in their October 2022 report¹⁷, *Medications for Obesity Management: Effectiveness and Value*. ICER's mission is to ensure sustainable access to high-value healthcare for all Americans. Their evaluation of new treatments involves three key questions:

1. The comparative effectiveness of new treatments in improving patient lives.
2. The fair pricing of treatments based on clinical evidence and patient perspectives.
3. The translation of evidence into insurance coverage to optimize patient outcomes.

The ICER report concludes that while the new weight loss drugs are effective, their current prices are not cost-effective. The report suggests that the prices of new obesity treatments should reflect their benefits to patients and society, moderated by the uncertainty about long-term benefits and the potential size of the treatment population.

Specifically, the report sets cost-effective price benchmarks for two GLP-1 medications with FDA indications for weight loss and for two other drugs found to be cost-effective. The report distinguishes between the Annual Net Price, based on estimated rebates, and the Annual Health Benefit Price Benchmark, which represents the break-even cost according to ICER's pricing methodology.



¹⁷ Atlas SJ, Kim K, Beinfeld M, Lancaster V, Nhan E, Lien PW, Shah K, Touchette DR, Moradi A, Rind DM, Pearson SD, Beaudoin, FL. *Medications for Obesity Management: Effectiveness and Value*; Final Evidence Report. Institute for Clinical and Economic Review, October 20, 2022. <https://icer.org/assessment/obesity-management-2022/>.



Semaglutide	\$13,618	\$7,500 – \$9,800
Liraglutide	\$11,760	\$3,800 – \$4,900
Phentermine/ Topiramate	\$1,465	\$3,600 – \$4,800
Bupropion/ Naltrexone	\$2,095	\$1,800 - \$2,400

Of the medications evaluated, only the phentermine/topiramate combination was found to be priced cost-effectively. Nonetheless, considering the significant initial costs, payers in Vermont, along with providers, patients, and advocates, must assess the affordability of these medications in the current economic context. DVHA utilized ICER’s report to analyze the cost-benefit of these medications at current prices for Vermont’s Medicaid population, aiming to assist in the determination of their affordability and value.

10.2. Cost Benefit Analysis for Vermont Medicaid

A thorough fiscal analysis is crucial when considering the expansion of Vermont Medicaid coverage to include weight loss medications. This analysis delves into the cost-benefit dynamics of various weight loss interventions, including medications and lifestyle adjustments, emphasizing the net financial implications of incorporating weight loss drugs into Vermont Medicaid coverage. The analysis primarily hinges on two factors: the cost of deploying an intervention, specifically a weight loss drug coupled with medical monitoring, and the financial benefits that ensue, notably through avoided healthcare expenses.

The figures in Table 1 represent a medical cost comparison when a payer’s members are treated with various interventions. The reported costs are average values calculated per individual treated across an estimated lifetime or a 20-year span. The drug costs, adapted from the ICER’s *Final Evidence Report*, consider predicted rebates ranging from 20% to 73% off the wholesale acquisition cost for drugs like semaglutide, liraglutide, phentermine-topiramate, and naltrexone-bupropion. Table 2 estimates the net costs of multiple interventions when analyzed over an approximate lifetime horizon of 30 years. In this analysis, it was assumed that patients would discontinue drug intervention at a 2-year maximum treatment duration, at which point all



patients were assumed to stop drug treatment. This assumption was based on the real-world observations that the majority of patients discontinued drug treatments within 2 years. Table 2 has been adapted from a report posted in the Journal of Managed Care and Specialty Pharmacy.



Monetary Valuation:

Intervention	Intervention Costs	Non-Drug Medical Costs	Total Medical Cost	Cost increase compared to Lifestyle Modifications*
Semaglutide	\$285,800	\$106,200	\$392,100	\$212,900
Liraglutide	\$240,800	\$135,200	\$377,000	\$197,800
Phentermine-Topiramate	\$39,700	\$142,800	\$182,600	\$3,400
Naltrexone-Bupropion	\$52,200	\$155,100	\$207,300	\$28,100
Lifestyle Modifications	\$11,400	\$167,800	\$179,200	-

Table 1: Medical cost comparison, per treated individual over approximately 20 years of pharmacological interventions and lifestyle modifications.

* Costs are calculated based on individual medical costs after 20 years of intervention



Intervention	Obesity Treatment Costs ¹⁸	Obesity Monitoring Costs	Cost of Acute & Chronic Complications	Total Medical Costs	Total Cost Increase Vs No Treatment at 30 years
Semaglutide	\$26,399*	\$11,928	\$91,713	\$130,040	\$25,086
Liraglutide	\$20,455*	\$11,818	\$94,513	\$126,786	\$21,832
Phentermine-Topiramate	\$2,249*	\$11,691	\$95,138	\$109,078	\$4,124
Naltrexone-Bupropion	\$3,021*	\$11,724	\$95,231	\$109,996	\$5,042
Lifestyle Modifications (diet and exercise)	0	\$11,660	\$96,242	\$107,902	\$2,948
No Treatment	0	0	\$104,954	\$104,954	-

Table 2: Medical cost comparison of pharmacological interventions utilized over a two-year duration compared to lifestyle modifications or no treatment at approximately 30 years.

*Per individual after 20 years

¹⁸ Patients could discontinue intervention drug treatment because of any reason before the 2-year maximum treatment duration, at which point all patients were assumed to stop drug treatment. This assumption was based on the real-world observations that most patients discontinued drug treatments within 2 years.



The findings displayed in Tables 1 and 2 are derived from professional publications. (See Appendix 4 for details on methodology and citations.) They illustrate the long-term net costs associated with GLP-1 drugs and oral combination drugs over approximately 20 and 30 years. These costs, when juxtaposed with lifestyle modification expenses, indicate a substantial increase in spending per individual—\$212,900 for semaglutide and between \$3,400 and \$28,100 for oral combination drugs. The analysis presented in Table 2 for a two-year drug intervention period—reflecting the typical duration for GLP-1 weight loss products—suggests an increased lifetime net cost ranging from \$2,958 to \$25,086 per individual. Specifically, a two-year treatment with semaglutide is projected to elevate lifetime medical costs by \$25,086 per treated individual, with total healthcare costs including semaglutide reaching \$130,040, compared to \$104,954 without treatment.

Summary Points:

Lifetime All-Cause Medical Costs Compared to Lifestyle Modifications or No Treatment:

- Semaglutide (Wegovy®/Ozempic®): \$212,900 increase in lifetime medical costs.
- Phentermine-topiramate (Qsymia®): \$3,400 increase in lifetime medical costs.
- Naltrexone-bupropion (Contrave®): \$28,100 increase in lifetime medical costs.
- Net costs after 20 years could be approximately \$1.1 billion in excessive costs for adding GLP-1 drug coverage for weight loss to Vermont Medicaid.
- Net costs after 20 years could be approximately \$17.6 million for adding coverage of the oral combination agent-phentermine-topiramate (Qsymia®) for weight loss to Vermont Medicaid.

According to the ICER report, from an economic standpoint the combination of phentermine/topiramate, when combined with lifestyle modifications, appears cost-effective compared to lifestyle modifications alone. Conversely, GLP-1 drugs such as semaglutide and liraglutide exceed accepted cost-effectiveness thresholds, while bupropion/naltrexone only achieves cost-effectiveness if the net price decreases or if evaluated against higher cost-effectiveness benchmarks.

The analysis underscores that FDA-approved weight loss drugs are not cost-neutral at their current list prices, given that anticipated medical cost savings do not surpass the drugs' wholesale or rebated costs. However, the societal impacts of obesity treatment including



enhanced productivity and mental health benefits, were not accounted for in this cost-benefit analysis. These factors could potentially mitigate net costs and justify Medicaid coverage for weight loss medications beyond purely financial considerations.

DVHA has conducted a separate fiscal analysis for Medicaid coverage of weight loss drugs, estimating a treatable population of about 52,000 individuals, or 28% of those covered under Vermont Medicaid, with a potential 10% uptake rate. This report suggests that the choice of treatment significantly influences long-term costs, highlighting the necessity of judicious drug utilization management to optimize outcomes and minimize expenses for the State of Vermont.

10.3. Key Factors Affecting Cost-Benefit of GLP-1 drugs.

Two significant factors that might adversely affect the cost-effectiveness of GLP-1 weight-loss medications are poor drug adherence and indication creep. Poor drug adherence occurs when a patient does not take a medication at the frequency prescribed --or stops taking it all together. This is significant because the ICER report and subsequent analyses assume lifelong adherence to these medications. However, a recent report by the Blue Cross Blue Shield Association found that most patients discontinue GLP-1 drug use before reaching a clinically meaningful health benefit. In these cases, the GLP-1 medications significantly increase expenditures without achieving the expected improved health outcomes. The study also looked at which patients had the best medication adherence, and this may help provide guidance to payers, including DVHA as they determine for which patients and in which situations, the GLP-1 medications are best.¹⁹

Key Takeaways from the Study Include:

- High Discontinuation Rate: 58% of patients discontinue GLP-1 drug use before reaching a clinically meaningful health benefit.
- Early Dropout: 30% of patients stopped using weight loss drugs within the first month of treatment.

¹⁹ *Real-World Trends in GLP-1 treatment Persistence and prescribing for weight Management.* (2024b). https://www.bcbs.com/sites/default/files/BHI_Issue_Brief_GLP1_Trends.pdf



- Prescribing Practices: Most GLP-1 prescriptions are issued by primary care providers, yet patients with prescriptions from endocrinologists or obesity medicine specialists were more likely to adhere to the treatment.
- Frequency of Physician Visits: Increased frequency of physician visits, regardless of the physician's specialty, correlates with higher treatment adherence.
- Age Factor: Patients aged 18 to 34 were more prone to early discontinuation of treatment.
- Gender Neutrality: Gender did not influence dropout rates within the first 12 weeks of treatment.
- Impact of Coexisting Conditions: Patients with coexisting conditions, such as peripheral vascular disease or diabetes, especially those with three or more similar conditions, showed higher adherence to the treatment.

Dr. Razia Hashmi, vice president of clinical affairs at BCBSA, commented on the findings, highlighting that most patients do not experience lasting benefits from these medications. "This study shows most people are unlikely to see lasting benefits. Unfortunately, weight loss isn't as simple as filling a prescription," Dr. Hashmi stated.²⁰

That individuals frequently discontinue GLP-1 medications is supported by data presented to the Department of Vermont Health Access's Drug Utilization Review (DUR) Board, in a report known as a "retroDUR." The report based on a review of Vermont Medicaid pharmacy claims showed that 40% of Vermont Medicaid members starting a GLP-1 Receptor Agonist for Type 2 Diabetes discontinued its use within a year (See Appendix 3). These findings underscore a significant concern: starting but not consistently staying on these costly medications negates potential health benefits and drives up costs.

Indication creep is the practice of using medications beyond their initial approved indications. This expansion of use is often propelled by pharmaceutical companies seeking to broaden their market, which ultimately leads to increased cost burden for consumers and payers. Earlier this year semaglutide was approved by the FDA for the additional indication of reducing risks of major adverse cardiovascular events (MACE) including cardiovascular death, non-fatal heart

²⁰ *Most Americans do not use Weight-Loss drugs long enough to see meaningful Weight-Loss.* (2024, May 21). Blue Cross Blue Shield Association. <https://www.bcbs.com/about-us/association-news/most-americans-stop-weight-loss-drugs-before-seeing-meaningful-benefit>



attack (myocardial infarction) or non-fatal stroke in adults with either overweight or obesity and established cardiovascular disease (CVD).

Another example of the push for new markets for GLP-1 drugs is illustrated by an article in *Axios*, titled "Weight-loss drugs are increasingly combined with bariatric surgery,²¹" which discusses a growing trend of incorporating anti-obesity drugs alongside bariatric surgery as a continuous adjunct, diverging from the traditional reliance on surgery alone. This is noteworthy since bariatric surgery, which is covered by Vermont Medicaid and includes both open and minimally invasive endoscopic procedures, is already recognized for its cost-efficiency and superior weight reduction outcomes compared to GLP-1 medications. Other examples of new indications for GLP-1s being explored include sleep apnea, substance use disorder, and shopping addiction²².

The combination of these medications with bariatric surgery is just one example of potential off-label use that could significantly inflate costs beyond current projections. Other examples of new indications for GLP-1s being explored and which could substantially increase DVHA's pharmacy spend include sleep apnea, substance use disorder, and shopping addiction. If DVHA is to cover the GLP-1 medications for weight loss, DVHA must be permitted to use clinical criteria and the prior authorization process to guard against off-label use and to direct members to less costly alternatives when appropriate.

²¹ Reed, T. (2023, December 19). *Weight-loss drugs are increasingly paired with bariatric surgery*. *Axios*. <https://www.axios.com/2023/12/19/ozempic-with-bariatric-surgery-weight-loss-drugs>

²² Ilanga, M., Heard, J. C., McClintic, J., Lewis, D., Martin, G., Horn, C., Khorgami, Z., Richards, J., Chow, G. S., & Lim, R. B. (2023). Use of GLP-1 agonists in high risk patients prior to bariatric surgery: a cohort study. *Surgical Endoscopy and Other Interventional Techniques*, 37(12), 9509–9513. <https://doi.org/10.1007/s00464-023-10387-1>



11. Summary of Concerns & Long-Term Implications

While pharmaceutical companies highlight the benefits of weight loss medications, there are significant long-term uncertainties regarding their health outcomes and costs. An analysis of these concerns, considering the context of Vermont, reveals several critical areas requiring further examination:

- **Sustainability of Weight Loss:** The Institute for Clinical and Economic Review (ICER) report does not account for scenarios of weight regain. The long-term effectiveness of these medications, in terms of maintaining initial weight loss, remains uncertain. This gap in modeling affects the assessment of their enduring efficacy.
- **Adherence to Weight Loss Medications:** Manufacturers of weight loss drugs have explained that continued, life-long treatment would be necessary to maintain the weight reductions seen with treatment. On the contrary, various sources have suggested that those treated, often do not remain adherent to the drugs over long periods of time. Additionally, the continued shortages of these drugs, seen across the country, presents a significant burden to those attempting to remain adherent to treatment.
- **Broader Health Impacts:** Data on the extended use of these medications and their effects on overall health, including cardiovascular health, metabolic parameters, and potential interactions with existing chronic conditions, is limited. A thorough understanding of these aspects is necessary for a comprehensive evaluation.
- **Adverse Events:** Long-term use may uncover adverse events not observed in short-duration studies. It is vital to monitor these medications over extended periods to identify any delayed or rare side effects that may arise.
- **Tolerance and Dependence:** The risk of individuals developing tolerance, necessitating higher doses for the same effect, and the potential for dependence or withdrawal symptoms, needs to be investigated to ensure the safety and feasibility of long-term use.
- **Diversion Risks:** The potential for diversion, particularly with the high demand for GLP-1 medications and numerous news stories regarding the emergence of a black market for these drugs, poses a significant concern.²³ Paradoxically, VT Medicaid's 0-\$3 copays,

²³ Rai, B. a. W. a. P. (2023, November 15). *Weight loss injection hype fuels online black market*. <https://www.bbc.com/news/health-67414203>



could create an incentive for individuals struggling with financial security, to sell their medications forsaking their own healthcare needs.

- **Mental Health Impact:** The psychological consequences of prolonged use of weight loss medications, which include effects on mood, body image, and overall well-being, require detailed exploration. Assessing these psychological aspects is critical for a holistic evaluation.
- **Long-Term Lifestyle Changes:** The role of lifestyle modifications in conjunction with medication use is an integral component of sustainable weight management and is included in the FDA's approved indication for these drugs. Evaluating whether individuals can adopt and maintain healthier behaviors over time is crucial for determining the intervention's overall success.
- **Comorbidities:** Understanding how these medications affect obesity-related comorbidities and assessing whether they contribute to improved health outcomes over the long term is vital and a key consideration in determining coverage.

This analysis underscores the importance of addressing these uncertainties to fully understand the long-term implications of weight loss medications on health outcomes and costs, particularly for states like Vermont considering the broader impact on their Medicaid program and overall public health. Additionally, these findings underscore the complexity of managing obesity through medication and the importance of continuous medical supervision and support to enhance patient adherence and achieve desired health outcomes.



12. Future Directions in Obesity Treatment

In the second part of our series, we will explore upcoming advancements and persisting uncertainties in the field of weight loss medications. This examination will juxtapose the health benefits derived from pharmacological treatments against those obtained through non-pharmacological (lifestyle) interventions. Furthermore, DVHA will investigate additional strategies such as natural supplements, hormonal therapies, and various medical interventions not covered in the initial segment.

The DVHA is committed to providing comprehensive insights into both pharmacological and non-pharmacological obesity treatments. These insights aim to assist civic and healthcare leaders in Vermont in making informed, medically sound, and economically prudent decisions regarding obesity treatment options.

Key aspects that will be addressed in future analyses include:

- A detailed cost-benefit analysis comparing pharmacological and non-pharmacological obesity treatment methods.
- An examination of the economic impact, which will cover healthcare expenditures related to medications, surgical procedures, and continuous care, alongside costs associated with non-pharmacological interventions, such as lifestyle and behavioral modification programs.
- Consideration of the broader economic implications, including the benefits of improved productivity and enhanced quality of life resulting from effective obesity treatment strategies.
- A focus on interventions that offer long-term economic advantages, aiming to decrease obesity-related healthcare expenditures and foster a positive effect on societal health.
- An emphasis on a data-informed strategy, utilizing contemporary research and empirical outcomes to guide the selection of the most cost-efficient and beneficial combination of pharmacological and non-pharmacological interventions for obesity management.



This approach will ensure that decisions regarding obesity treatment in Vermont are guided by a careful evaluation of their long-term efficacy, cost-effectiveness, and potential to improve the overall well-being of the population.



13. Final Considerations

Weight loss interventions are crucial in tackling the global health crisis of obesity, which extends beyond cosmetic concerns to significantly affect health by increasing risks for cardiovascular diseases, diabetes, and certain cancers. Effective interventions not only improve individual well-being but also enhance public health by reducing the strain on healthcare systems. These interventions emphasize a holistic health approach, linking physical and mental well-being closely. Recognizing the significance of weight loss interventions is essential for nurturing healthier populations and developing sustainable healthcare models for the future.

Furthermore, evaluating these interventions is key to ensuring transparency, cost-effectiveness, and better access to effective weight management solutions. For healthcare providers, selecting appropriate treatments involves a detailed understanding of each patient's unique needs, including lifestyle changes and non-pharmacological options. Bariatric surgery and lifestyle modifications—such as diet, exercise, behavioral counseling, and education—are effective strategies. Comprehensive Lifestyle Intervention (CLI) programs that integrate these elements and include a maintenance phase of at least 12 months have shown promising results (Lifestyle Modification Approaches for the Treatment of Obesity in Adults - PMC (nih.gov)).

The recent approval of GLP-1 medications, contingent on lifestyle modification studies, underscores the necessity of incorporating lifestyle interventions into a holistic obesity treatment strategy within the Vermont Medicaid population. This highlights the potential for Vermont to explore the creation of lifestyle modification programs and the importance of including such programs in Vermont Medicaid and other insurance plans.

DVHA plans to further explore these non-pharmacological approaches, including natural supplements for weight loss, in the next section of their review. This comprehensive approach aims to provide sustainable, long-term solutions for managing obesity, aligning with broader health system goals.



14. Concluding Comments

DVHA's examination of obesity in the United States, and Vermont, reveals the complexity of this public health issue. DVHA has highlighted the significant correlation between obesity and healthcare costs, especially among vulnerable populations such as WIC program participants and Medicaid beneficiaries. This underscores the need for targeted interventions. DVHA's analysis of Vermont's Medicaid system shows the critical economic impact of obesity, leading to strategic recommendations for comprehensive treatment and coverage plans.

The issue is further complicated by the very high cost of the new GLP-1 medications, triggering the need for DVHA's cost-benefit analysis of these medications compared to other medications available for weight loss, lifestyle modification, and surgical procedures to treat and manage obesity. The analysis is made even more complex by studies that show a large portion of patients stop treatment, likely minimizing or even negating any health benefit from the medication, giving no value to the dollars spent. Additionally, it was noted that due to the newness of the medications there are still considerable uncertainties about long-term results and their long-term effects.

The comparison between medication-based interventions and lifestyle changes underscores the unique benefits of each. Medications can offer quick, targeted solutions, especially for those with specific health conditions or lifestyle challenges, while lifestyle modifications provide sustainable weight management and overall health. Further, it was noted that the FDA approval for GPL-1s for weight loss was based on studies in which all study participants engaged in diet and exercise-based lifestyle modifications.

The need for an integrated approach linking the use of medications with lifestyle modifications cannot be understated and is perhaps best captured by this quote about the use of GLP-1 medication from Dr. Courtney Younglove, medical director of Heartland Weight Loss clinic in Overland Park, Kansas.



“Without a comprehensive lifestyle intervention and proper medical oversight, these drugs have the potential to do significant harm.”²⁴

DVHA believes there is a clear need for a comprehensive, whole-person approach to the treatment and management of obesity. An approach that integrates long-term behavioral health support, dietary counseling, and exercise. DVHA will explore this further in part 2 of this report on obesity treatment and management.

Additionally, DVHA recognizes that not covering weight-loss medications contributes to health disparities, and at the same time covering them would be a significant upfront challenge to the state budget and one which the current DVHA budget could not meet. DVHA emphasizes the importance of Vermont developing a comprehensive, multi-disciplinary approach to obesity that addresses health inequities and promotes long-term well-being. Addressing the high costs of obesity, both in healthcare dollars and in terms of quality of life, is critical.

Finally, DVHA believes that prevention needs to be a key ingredient to any statewide strategy to mitigate the human and financial costs associated with obesity to address obesity. Consequently, DVHA encourages all those in Vermont who care about the obesity epidemic to focus on the development of policies and treatment plans, that support healthy lifestyle modifications, and which will provide to all Vermonters the infrastructure needed to achieve those modifications.

²⁴Tehrune, C. (2023, July 11). *Exclusive: Most patients using weight-loss drugs like Wegovy stop within a year, data show*. Reuters. [Exclusive: Most patients using weight-loss drugs like Wegovy stop within a year, data show | Reuters](#)



Glossary of Acronyms and Terms: Definitions and Descriptions

ADHD	<p>Attention Deficit Hyperactivity Disorder</p> <p>A neurodevelopmental disorder characterized by inattention, hyperactivity, and impulsivity.</p>
AHS	Agency of Human Services
BMI	<p>Body Mass Index</p> <p>A numerical value derived from an individual's weight and height, used to classify underweight, normal weight, overweight, and obesity.</p>
BRFSS	<p>Behavioral Risk Factor Surveillance System</p> <p>A health-related telephone survey that collects data on health-related risk behaviors, chronic health conditions, and use of preventive services.</p>
CDC	<p>Centers for Disease Control and Prevention</p> <p>A national public health institute in the United States focused on protecting public health and safety.</p>
CLI	<p>Comprehensive Lifestyle Intervention</p> <p>Programs aimed at helping people with disabilities live independently in their communities.</p>
DUR	<p>Drug Utilization Review</p> <p>A process used by healthcare providers to ensure prescribed drugs are used appropriately, safely, and effectively.</p>
DVHA	<p>Department of Vermont Health Access</p> <p>The agency responsible for providing access to health care services for Vermont residents.</p>
FDA	<p>Food and Drug Administration</p> <p>A federal agency of the United States Department of Health and Human Services responsible for regulating food safety, pharmaceuticals, medical devices, and more.</p>
FPL	<p>Federal Poverty Level</p> <p>A measure of income issued annually by the Department of Health and Human Services used to determine eligibility for various programs.</p>
GERD	<p>Gastroesophageal Reflux Disease</p> <p>A chronic digestive disorder where stomach acid frequently flows back into the esophagus, causing irritation.</p>
GIP	Glucose-dependent Insulinotropic Polypeptide



	An incretin hormone that stimulates insulin secretion in response to eating.
GI	Gastrointestinal Pertaining to the stomach and intestines.
GLP-1	Glucagon-Like Peptide-1 A hormone involved in the regulation of glucose metabolism and insulin secretion, often targeted in the treatment of T2D.
ICER	The Institute for Clinical and Economic Review An organization that evaluates the clinical and economic value of medical treatments.
KFF	Kaiser Family Foundation A non-profit organization focusing on national health issues and the U.S. role in global health policy.
MAOI	Monoamine Oxidase Inhibitor A class of medications used to treat depression by inhibiting the activity of monoamine oxidase, an enzyme that breaks down neurotransmitters.
MEPS	Medical Expenditure Panel Survey A set of large-scale surveys of families, individuals, medical providers, and employers, focusing on the cost and use of health care and health insurance coverage.
MI	Myocardial Infarction Commonly known as a heart attack, it occurs when blood flow to the heart muscle is blocked.
MTC	Medullary Thyroid Carcinoma A type of thyroid cancer that originates from the parafollicular cells (C cells) of the thyroid gland.
NSCH	National Survey of Children's Health A survey that provides data on the physical and emotional health of children in the U.S.
OECD	The Organization for Economic Co-operation and Development An international organization that works to build better policies for better lives, focusing on economic progress and world trade.
ORC	Obesity Related Conditions A screening tool used to assess the risk of opioid addiction in patients.



PA	<p>Prior Authorization</p> <p>A health plan cost-control process that requires providers to obtain approval before performing a service to qualify for payment.</p>
T2D	<p>Type 2 Diabetes</p> <p>A chronic condition characterized by insulin resistance and high blood sugar levels, commonly associated with obesity and lifestyle factors.</p>
TFAH	<p>The Trust for America’s Health</p> <p>A non-profit organization that promotes optimal health for every person and community and makes the prevention of illness and injury a national priority.</p>
USDA	<p>United States Department of Agriculture</p> <p>A federal agency responsible for developing and executing federal laws related to farming, forestry, rural economic development, and food.</p>
VDH	<p>The Vermont Department of Health</p> <p>The state agency responsible for public health in Vermont.</p>
WHO	<p>The World Health Organization</p> <p>An international organization dedicated to public health, established by the United Nations to promote health and control diseases worldwide.</p>
WIC	<p>Special Supplemental Nutrition Program for Women, Infants, and Children</p> <p>A federal assistance program that provides nutritional support to low-income pregnant women, breastfeeding women, and children under the age of five.</p>
WIC PC	<p>WIC Participant and Program Characteristics Report</p> <p>A peer counselor who provides breastfeeding education and support within the WIC program.</p>

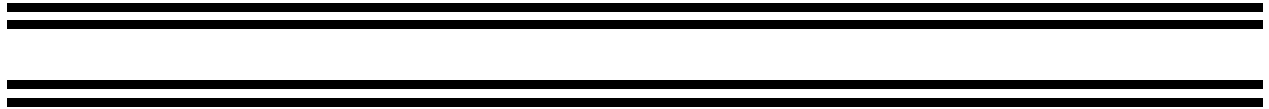


Appendices

Appendix 1: DVHA Weight Loss Drug Coverage Fiscal Analysis Draft



Report to The Department of Vermont Health Access



Fiscal Analysis for Coverage of Weight Loss Drugs in the Vermont Medicaid Population

Submitted to: Department of Vermont Health Access (DVHA) Senior
Leadership
Submitted by: DVHA Pharmacy Unit

Prepared by: Lisa Brouillette Hurteau, Pharm.D.
Director of Pharmacy Services, DVHA

Taylor Robichaud Pharm.D.
Clinical Pharmacist, DVHA

Ashley MacWalters, MPH, CPhT
Health Program Administrator, DVHA

Report Date: August 19, 2024



Introduction - Weight Loss Drug Coverage Policy

Title XIX of the Social Security Act was passed to establish Medicaid coverage, section 1927 describes payment for covered outpatient drugs.¹ The classes of drugs and specific medical diagnoses that may be excluded from coverage under Medicaid programs are detailed in section 1927, this includes agents used for weight loss.² The Vermont Medicaid State Plan specifically excludes coverage of drugs for weight loss, in accordance with section 1927 of the Social Security Act.³ Therefore, weight loss agents are currently noncovered for Vermont Medicaid members. Alterations to the State Plan require a State Plan Amendment (SPA) accompanied by a full budget, clinical, and economic analysis. DVHA continues to monitor the clinical research and fiscal impact of these medications and reviews all requests for coverage changes.

Members under twenty-one years of age may qualify for noncovered services through the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefit. States are required to provide comprehensive services and furnish all Medicaid coverable, appropriate, and medically necessary services needed to correct and ameliorate health conditions, based on certain federal guidelines, for those under twenty-one. For beneficiaries covered under the EPSDT benefit, DVHA will review each request for covered and noncovered services based on medical necessity and a case-by-case basis, as defined by Health Care Administrative Rule 4.106.⁴ To request coverage under the EPSDT benefit for any weight loss related treatment, a Medicaid enrolled provider should submit a pharmacy prior authorization request.

Fiscal Analysis-Vermont Medicaid

Eligible Population- Utilizing Vermont Medicaid Enrollment Reports

Vermont Medicaid Population (Enrollment Reports) = 174,000 members

Adult Members (above 20 years of age) = **108,800 Adult Members**

Adolescent Members (12 to 19 years of age) = **27,300 Adolescent Members**

Estimated Treatable Population based on FDA approved Indications

Adult members with obesity= 108,800 members multiplied out to 27% (VDH Reported Obesity Rate⁵)= **29,376 members with diagnosed obesity**

Adult Members overweight with comorbid conditions= 89,200 members multiplied out to 35% (VDH Reported Overweight Rate⁵) multiplied out to 40% (BMJ article reported rate of comorbid conditions⁶) = **15,232 members overweight with diagnosed comorbid condition**

Adolescent members over with BMI \geq 95%= 27,300 multiplied by 15% (VDH estimates⁷) = **4,095 adolescent members with diagnosed obesity**

3,424 members are already on GLP medications.

Total treatable population = Approx. **45,279 total members or 26% of total population**

Patient Uptake and Gross Costs

A large portion of these members may not qualify for drug treatment, some may discontinue due to adverse effects or treatment failure, and many may have contraindications to the



drugs, etc. In addition, Vermont Medicaid will use utilization management strategies including prior authorizations to ensure clinically and fiscally appropriate prescribing of weight loss drugs.

Several Medicaid States have been covering GLP weight loss drugs throughout calendar year 2023. The uptake for these products in the eligible population (26% of total population) ranges from 0.36% (Rhode Island) to 1.18% (Michigan).⁸ It is projected that the number of prescriptions and patient uptake will continue to increase rapidly as drug shortages are resolved, members continue to receive **lifetime** prescriptions for these drugs, and coverage policies allow for greater utilization. Using an estimate of 5-10% uptake for future spending and assuming a steady state in volume is reached, the gross spend for DVHA would be estimated at **\$30-\$70 million dollars annually**.

Average Gross cost, utilizing wholesale acquisition cost (WAC), of top three weight loss drugs equates to \$1,252 per month.

% Patient Uptake	Number of Members (Approx.)	Monthly Gross Cost (Approx.)	Annual Gross Cost (Approx.)
0.36% (first year)	163	\$200,000	\$2,400,000
1.18%	534	\$670,000	\$8,000,000
5% (steady state volume)	2,263	\$2,800,000	\$33,600,000
10% (estimated future uptake)	4,528	\$5,700,000	\$68,400,000

**Values reported as gross pharmaceutical costs based on WAC price. Net costs to DVHA may be lower based on federal and supplemental rebates.*

References:

1. Social Security Act-TITLE XIX (Grants to states for medical assistance programs) https://www.ssa.gov/OP_Home/ssact/title19/1900.htm
2. Section 1927. Social Security Act. Payment for Covered Outpatient Drugs. https://www.ssa.gov/OP_Home/ssact/title19/1927.htm
3. State Plan Under Title XIX of the Social Security Act. Medical Assistance Program, Vermont. <https://humanservices.vermont.gov/sites/ahsnew/files/documents/State-Plan-for-Web-12.19.23.pdf>
4. Early and Periodic Screening, Diagnostic and Treatment (EPSDT) Services. Health Care Administrative Rules 4.106. <https://humanservices.vermont.gov/sites/ahsnew/files/documents/MedicaidPolicy/HCARAdopted/Adopted%20Clean%20EPSDT%20HCAR%204.106.pdf>
5. Behavioral Risk Factor Surveillance system. Vermont Department of Health. 2022 Report. <https://www.healthvermont.gov/sites/default/files/document/HSI-BRFSS-2022-DataSummary.pdf>
6. Prevalence and recognition of obesity and its associated comorbidities: cross-sectional analysis of electronic health record data from a large US integrated health system. BMJ. (2017). [Prevalence and recognition of obesity and its associated](#)



[comorbidities: cross-sectional analysis of electronic health record data from a large US integrated health system | BMJ Open](#)

7. Vermont State Nutrition, Physical Activity, and Obesity Profile. Vermont Department of Health. 2016 Report. [State Nutrition, Physical Activity, and Obesity Profile. \(cdc.gov\)](#)
8. State Drug Utilization Data. 2023 Data Reporting. Medicaid.gov. [State Drug Utilization Data | Medicaid](#)



Appendix 2: RetroDUR Results: GLP-1 Receptor Agonist Adherence



February 20, 2024

Overview

The medications in the GLP-1 receptor agonist drug class are an important addition to the available treatments for type 2 diabetes. Their mechanisms of action include augmentation of insulin secretion, suppression of glucagon secretion, deceleration of gastric emptying, and reduction of calorie intake and body weight. In addition to controlling glucose levels and reducing hemoglobin A1c levels, the drugs have been shown to have a significant reduction in major adverse cardiovascular events (MACE) in those with cardiovascular disease and induce significant weight loss.¹ The American Diabetes Association (ADA) guidelines now suggest using GLP-1 agonists preferentially over insulin in those who do not reach goal A1c targets with oral therapy.² The GLP-1 receptor agonists are given subcutaneously, either twice a day, once a day, or once weekly. However, compliance with the medications has presented as a possible concern. The available data in the Medicaid population is limited, but an analysis of adults in the U.S. showed overall 50.9% and 47.4% of patients were adherent to GLP-1 therapy at 12 months and 24 months, respectively.³ The common side effects of these medications include nausea, vomiting, and diarrhea and serious side effects include bowel obstructions. In addition, some people with type 2 diabetes do not respond to the drugs. In commercially insured patients, costs have been shown to be a factor in discontinuation rates due to high out of pocket costs.

Data Source

Change Healthcare used paid, non-reversed Medicaid pharmacy claims from calendar year 2022 to evaluate the number of members initiating GLP-1 medications, excluding members with Part D, VMAP and Healthy Vermonters coverage. The same claims analysis was completed for 2023 to evaluate medication adherence and discontinuation rates. Members were screened for continuous eligibility, those that remained covered by Vermont Medicaid for the entirety of calendar year 2023 were included in the review.

Data analysis description

Change Healthcare reviewed Vermont paid, non-reversed pharmacy claims in members on GLP-1 receptor agonists. For the members included in the analysis, the reviewers looked at the numbers of members that remained on a GLP-1 medication at months 3, 6, 9 and 12, from the time of the first claim. Additionally, the reviewers examined the medication possession ratio (MPR) to see how many members were adherent to the medications, as prescribed. An



acceptable value of 80% or greater was used as an MPR to be considered adherent with the prescribed regimen.

Results

The results of this analysis show that at 1 year from therapy initiation, starting in CY2022, only 59% of Vermont Medicaid members continued utilizing GLP-1 drugs. After a subgroup review of the 435 members that remained on GLP-1 drugs after 1 year, it was determined that 77% were within acceptable ranges for adherence, described by MPR values.

	Number of Members on Therapy	Percentage of Members on Therapy	Number of Members off Therapy	Percentage of Members off Therapy
Members that started a GLP-1 receptor agonist medications in CY 2022	733	-	-	-
Claims Analysis 3 Months from 1st date of service	634	86.49%	99	13.51%
Claims Analysis 6 Months from 1st date of service	578	78.85%	155	21.15%
Claims Analysis 9 Months from 1st date of service	525	71.62%	208	28.38%
Claims Analysis 1 Year from 1st date of service	435	59.35%	298	40.65%

Chart 1: GLP-1 Claim Rates throughout CY 2023 for Members that initiated a GLP-1 medication in CY 2022

Members with continued GLP-1 medication claims at 1 year from 1st date of Service	Members with MPR >=80%	% Members with MPR >=80%	Members with MPR <80%	% Members with MPR <80%
435	337	77.47%	98	22.53%

Chart 2: Medication Possession Ratios for Members with Continued Claims for 1 Year

Recommendations

Adherence is an important consideration when reviewing health outcomes related to a drug class. Due to the variable side effects of these medications, patients should be educated appropriately and titrated slowly to therapeutic response. The recommendation, as a result of this analysis, is to consider the discontinuation rates for GLP-1 drugs when evaluating the use of these products for all indications (e.g. type 2 diabetes, weight loss). When used for weight loss, clinical trials have shown that long-term use will be needed to prevent treatment failure and



weight regain.⁴ The discontinuation rates commonly seen within this class may have a significant relationship with the expected health outcomes and benefits. Further research is warranted to detail the long-term health outcomes, when weighed against the discontinuation rates, for GLP-1 drugs as a class.

References

1. Mol Metab. 2021 Apr;46: 101102. Diabetes Care 2024: 47(Suppl. 1) Milliman White Paper. GLP-1 agonists in Medicaid: Utilization, growth and management. https://www.milliman.com/-/media/milliman/pdfs/2024-articles/1-18-24_glp1-agonists-in-medicaid-utilization-growth-and-management.ashx
2. Clin Diabetes. 2023; 41(1):4–31. Standards of Care in Diabetes—2023 Abridged for Primary Care Providers. <https://diabetesjournals.org/clinical/article/41/1/4/148029/Standards-of-Care-in-Diabetes-2023-Abridged-for>
3. Weiss T, Carr RD, Pal S, Yang L, Sawhney B, Boggs R, Rajpathak S, Iglay K. Real-World Adherence and Discontinuation of Glucagon-Like Peptide-1 Receptor Agonists Therapy in Type 2 Diabetes Mellitus Patients in the United States. Patient Prefer Adherence. 2020 Nov 27;14:2337-2345. [file:///C:/Users/taylor.a.robichaud/Downloads/Real-World Adherence and Discontinuation of Glucag.pdf](file:///C:/Users/taylor.a.robichaud/Downloads/Real-World%20Adherence%20and%20Discontinuation%20of%20Glucag.pdf)
4. Rubino D, Abrahamsson N, Davies M, et al. Effect of Continued Weekly Subcutaneous Semaglutide vs Placebo on Weight Loss Maintenance in Adults With Overweight or Obesity: The STEP 4 Randomized Clinical Trial. JAMA. 2021;325(14):1414–1425. [Effect of Continued Weekly Subcutaneous Semaglutide vs Placebo on Weight Loss Maintenance in Adults With Overweight or Obesity: The STEP 4 Randomized Clinical Trial | Clinical Pharmacy and Pharmacology | JAMA | JAMA Network](https://doi.org/10.1001/jama.2021.11111)



Appendix 3: Medicaid’s Bariatric Surgery Experience from 2021 to 2023

Procedure Code	Procedure Code Description	Sum of Paid Amount Proxy	Unique Beneficiaries
43644	Bypass of stomach using an endoscope	\$115,478.68	83
43645	Bypass of stomach with reconstruction of small bowel using an endoscope	\$363.83	1
43659	Other procedure on stomach using an endoscope	\$96,503.48	23
43771	Adjustment of stomach reduction device using an endoscope	\$249.36	1
43774	Removal of stomach reduction device and port using an endoscope	\$867.44	3
43775	Partial removal of stomach for weight loss using an endoscope	\$84,873.03	91
43846	Bypass of stomach for weight loss with roux-en-y connection of upper bowel to upper stomach	\$1,990.43	2
43860	Revision of surgically created connection of stomach to small bowel	\$670.48	1
43999	Other procedure on stomach	\$32,700.23	15
Total		\$333,696.96	210



Appendix 4: DVHA Cost-Benefit Analysis Details.

Summary Points

Lifetime All-Cause Medical Costs Compared to Lifestyle Modifications or No Treatment:

- Semaglutide (Wegovy®/Ozempic®)- \$212,900 increase in lifetime medical costs.
- Phentermine-topiramate (Qsymia®)- \$3,400 increase in lifetime medical costs.
- Naltrexone-bupropion (Contrave®)- \$28,100 increase in lifetime medical costs.
- Net costs after 20 years could be approximately \$1.1 billion in excessive costs for adding GLP-1 drug coverage.
- Net costs after 20 years could be approximately \$17.6 million for adding coverage of the oral combination agent-phentermine-topiramate (Qsymia®)

Introduction:

A comprehensive fiscal analysis is essential to considering coverage of weight loss medications. The cost-benefit analysis in this report examines the comparative costs and benefits of interventions for weight loss, with both values expressed as monetary units. This section focuses on associating a net monetary unit to expanding coverage. The two primary inputs used for this analysis include the cost of implementing an intervention, a weight loss drug with medical monitoring, and the resulting monetary benefits, including averted medical costs. The net benefit of an intervention is determined using the cost of an intervention in relation to the cost/savings of the health benefit provided.

Monetary Valuation:

Intervention	Intervention Costs	Non-Drug Medical Costs	Total Medical Cost	Cost increase compared to Lifestyle Modifications (Per individual at 20 years)
Semaglutide	\$285,800	\$106,200	\$392,100	\$212,900
Liraglutide	\$240,800	\$135,200	\$377,000	\$197,800
Phentermine-Topiramate	\$39,700	\$142,800	\$182,600	\$3,400
Naltrexone-Bupropion	\$52,200	\$155,100	\$207,300	\$28,100
Lifestyle Modifications	\$11,400	\$167,800	\$179,200	-

Chart 1: Medical cost comparison, per treated individual over approximately 20 years of pharmacological interventions and lifestyle modifications

Reported costs represent average values per single treated individual over an approximate lifetime horizon or 20 years. Chart 1 has been adapted from an I.C.E.R Final Evidence Report.¹ Gross drug costs assumed a 20%-30% discount for semaglutide and liraglutide and a 40%-73% discount for phentermine-topiramate and naltrexone-bupropion from the wholesale acquisition cost.



Intervention	Obesity Treatment Costs	Obesity Monitoring Costs	Cost of Acute/Chronic Complications	Total Medical Costs	Total Cost Increase Vs No Treatment at 30 years
Semaglutide	\$26,399*	\$11,928	\$91,713	\$130,040	\$25,086
Liraglutide	\$20,455*	\$11,818	\$94,513	\$126,786	\$21,832
Phentermine-Topiramate	\$2,249*	\$11,691	\$95,138	\$109,078	\$4,124
Naltrexone-Bupropion	\$3,021*	\$11,724	\$95,231	\$109,996	\$5,042
Lifestyle Modifications (diet and exercise)	0	\$11,660	\$96,242	\$107,902	\$2,948
No Treatment	0	0	\$104,954	\$104,954	-

Chart 2: Medical cost comparison of pharmacological interventions utilized over a two-year duration compared to lifestyle modifications or no treatment at approximately 30 years

*Patients could discontinue intervention drug treatment because of any reason before the 2-year maximum treatment duration, at which point all patients were assumed to stop drug treatment. This assumption was based on the real-world observations that the majority of patients discontinued drug treatments within 2 years.³

Reported costs represent average values per single treated individual over an approximate lifetime horizon or 30 years. Chart 2 was adapted from Journal of Managed Care and Specialty Pharmacy.² Obesity treatment costs were obtained from the IBM Redbook-2021 and closely associate to WAC pricing.

Calculation of Net Benefits:

As shown in Charts 1 and 2, there have been multiple professional publications developed to demonstrate a cost-benefit analysis for weight loss drugs. The results from Chart 1 detail the net costs for two GLP-1 drugs and two oral combination drugs when used for a duration of approximately 20 years. The net costs of pharmacologic intervention as compared to lifestyle modifications resulted in an increased spend of \$212,900 per individual for semaglutide, and \$3,400-\$28,100 for the oral combination drugs per treated individual. The data presented in Chart 2 details the net costs when drug interventions are utilized for a maximum of a two-year period, as is commonly seen with GLP-1 weight loss products.³ In this analysis, patients were assumed to have discontinued weight loss drugs after a maximum of two years, due to adverse events, drug nonresponse, or satisfaction with drug results. Chart 2 suggests that treating patients for a duration of two years would contribute to a net cost increase of \$2,958 - \$25,086 over the patients estimated lifetime horizon, or 30 years. Specifically, semaglutide treatment for a duration of 2 years resulted in a net medical cost increase of \$25,086 over a treated individual’s lifetime. To clarify, the total medical cost with the inclusion of semaglutide was estimated at \$130,040, and the total medical costs for no treatment was estimated at \$104, 954 over the lifetime of a treated individual.



Summary:

According to an economic analysis presented in the I.C.E.R. report, at current prices and with commonly accepted cost-effectiveness benchmarks, phentermine/topiramate in addition to lifestyle modification is cost effective compared with lifestyle modification alone.¹ The GLP-1 weight loss drugs, semaglutide and liraglutide, exceed cost-effectiveness benchmarks and bupropion/naltrexone is cost effective only if the net price is reduced or using higher price benchmark thresholds.¹

The cost-benefit analysis presented in this report, as supported by clinical publications, suggest that FDA approved weight loss drugs are not cost neutral at current list prices. The anticipated medical cost reductions have not been demonstrated to outweigh the wholesale acquisition cost or rebated wholesale acquisition cost (estimated 20-73% discounts) of the drug interventions. There were limitations included in both trials that could contribute to the net costs increasing or decreasing. In the I.C.E.R. Final Evidence Report, used to create Chart 1, there was an assumption made that members would remain adherent to pharmaceutical treatment for their lifetime. Real-world studies show that most people do not remain on these medications long term. Therefore, a health benefit would not be achieved, because as the medications are discontinued, people regain weight. The inability of patients to maintain long-term adherence increases spending without a realized benefit. However, the societal impact of treating obesity, including increased productivity and positive mental health outcomes, were not recorded in this cost-benefit analysis and may be a consideration in reducing net costs.

DVHA has drafted a fiscal analysis for coverage of weight loss drugs in the Vermont Medicaid population. This separate report detailed the estimated number of treatable members at approximately 52,000 individuals or 28% of the covered population. DVHA estimated the uptake of weight loss drugs, with an upper limit at 10% of the treatable population, resulting in 5,200 unique members. The upper limit utilized for evaluation had been derived from other payer reports and claims history.⁴ Using the cost-benefit analysis from Chart 1 in this report, the net costs after 20 years could be as high as \$1.1 billion in excessive costs for adding GLP-1 drug treatments. By comparison, if the oral combination agent phentermine-topiramate is used as the treatment of choice, the gross costs after 20 years to treat patients with this drug would be approximately \$17.6 million. The staggering difference in the numbers presented here represents the importance of drug utilization management. Ensuring the most appropriate drugs are used in a cost-effective manner will result in substantially reduced long-term costs to the State of Vermont.

References

1. Atlas SJ, Kim K, Beinfeld M, Lancaster V, Nhan E, Lien PW, Shah K, Touchette DR, Moradi A, Rind DM, Pearson SD, Beaudoin, FL. Medications for Obesity Management: Effectiveness and Value; Final Evidence Report. Institute for Clinical and Economic Review, October 20, 2022. <https://icer.org/assessment/obesity-management-2022/>
2. Kim N, Wang J, Burudpakdee C, Song Y, Ramasamy A, Xie Y, Sun R, Kumar N, Wu EQ, Sullivan SD. Cost-effectiveness analysis of semaglutide 2.4 mg for the treatment of adult patients with overweight and obesity in the United States. *J Manag Care Spec Pharm.* 2022 Jul;28(7):740-752. doi: [10.18553/jmcp.2022.28.7.740](https://doi.org/10.18553/jmcp.2022.28.7.740)



3. Ganguly R, Tian Y, Kong SX, et al. Persistence of newer anti-obesity medications in a real-world setting. *Diabetes Res Clin Pract.* 2018;143:348-56.
doi:[10.1016/j.diabres.2018.07.017](https://doi.org/10.1016/j.diabres.2018.07.017)
4. Robbins R. Buried in Wegovy Costs, North Carolina Will Stop Paying for Obesity Drugs. *New York Times*, January 26, 2024.
<https://www.nytimes.com/2024/01/26/business/obesity-drugs-insurance-north-carolina.html>

