The Five-Year Budget Impact of Introducing Semaglutide 2.4 mg for Obesity Management in Saudi Arabia: A Real-World Patient Flow and Complication-Driven Model

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KEY LEARNINGS

Introducing Semaglutide 2.4 mg into Saudi Arabia's public obesity care pathway can reduce total health system spending over five years in Kingdome of Saudi Arabia

BACKGROUND

- Obesity is a chronic, relapsing condition strongly associated with type 2 diabetes, dyslipidemia, hypertension, nonalcoholic fatty liver disease, osteoarthritis, sleep apnea, and cardiovascular disease. Saudi Arabia faces high obesity prevalence, driving substantial clinical and economic burden in the public payer system.[1-4]
- Medication and role: Semaglutide 2.4 mg is a GLP-1 receptor agonist indicated for chronic weight management as an adjunct to reduced-calorie diet and increased physical activity. Clinical evidence shows clinically significant weight loss and cardiometabolic risk reduction, translating to fewer downstream complications and health resource use.[6-12]
- Unmet need and rationale: Despite high disease burden, real-world treatment engagement is limited; only approximately 2.4% of eligible adults progress to physician discussion of anti-obesity medications. Existing pharmacotherapy and bariatric capacity constraints leave a large gap between need and access. A medicine that delivers greater and sustained weight loss offers the potential for complication cost offsets and budget sustainability.[13-15]
- Public payers bear high costs for obesity-related complications, particularly cardiovascular events and diabetes management. Bariatric surgery volumes remain constrained relative to eligible demand, and pharmacotherapy use is low. [15-16]

OBJECTIVE

- To evaluate the financial impact of introducing Semaglutide 2.4 from a public payer perspective by incorporating real-world treatment pathways, comorbidity burden, and complication-specific cost offsets using a localized real-world flow model.

CONCLUSIONS

- Incorporating Semaglutide 2.4 mg into Saudi Arabia's public obesity care pathway yields meaningful clinical improvements with favorable five-year budget implications.
- Targeted adoption among eligible patients supports value-based decision-making and long-term sustainability of obesity-related healthcare budgets

METHODS

- A budget impact model was developed to assess the financial impact of introducing Semaglutide 2.4 mg for obesity management from a Saudi public payer perspective, over a 5-year time horizon (2025-2029).
- The model's data were sourced from local experts, medical databases, national datasets, and Saudi public procurement pricing (NUPOC Tender and SFDA Price)
- Input parameters included drug acquisition costs, monitoring and administration costs, bariatric surgery costs, discontinuation rate, and obesity-related complication costs (cardiovascular events, diabetes care, Asthma, Sleep apnoea, Hip/knee osteoarthritis, Chronic kidney disease Hypertension, Metabolic Dysfunction-Associated Steatohepatitis (MASH) dyslipidemia management).
- The obesity-eligible population (BMI ≥27 kg/m²) over 5 years was estimated from reported prevalence rates, stratified by real-world engagement steps including diagnosis, follow-up, and treatment discussions.
- The model compared the budget impact for two scenarios: the current scenario without Semaglutide 2.4 mg using existing anti-obesity medications; and a hypothetical scenario where eligible patients receive Semaglutide 2.4 mg within the treatment mix. (Figure 1)
- To account for uncertainty, Probabilistic sensitivity analysis was conducted by varying the input parameters for drug costs, cardiovascular outcomes, and complication costs by ±10%.

RESULTS

1. In 2024, nearly 538,798 Saudi adults with obesity discussing anti-obesity medication were identified as eligible candidates for semaglutide 2.4 mg treatment.
2. Semaglutide 2.4 mg showed an annualized per patient cost that was approximately 30% lower over five years compared to existing anti-obesity medications. (Figure 2)
3. The projected cumulative cost savings from introducing semaglutide 2.4 mg over five years totaled SAR 2.632 billion ($701.8 Millions) for the eligible population. (Figure 4)
4. The budget analysis demonstrated progressive and sustained cost savings over time, with a 13.13% overall reduction in total healthcare budget requirements. (Figure 3)
5. While overall complication costs declined—especially for cardiovascular outcomes, sleep apnea, and asthma—some costs, such as for dyslipidemia and type 2 diabetes, increased over the five-year period. (Figure 3)
6. The probabilistic analysis shows consistent outcomes across multiple scenarios with a deterministic value of -13.05%, indicating cost savings rather than cost increases

Figure 1. | Model structure

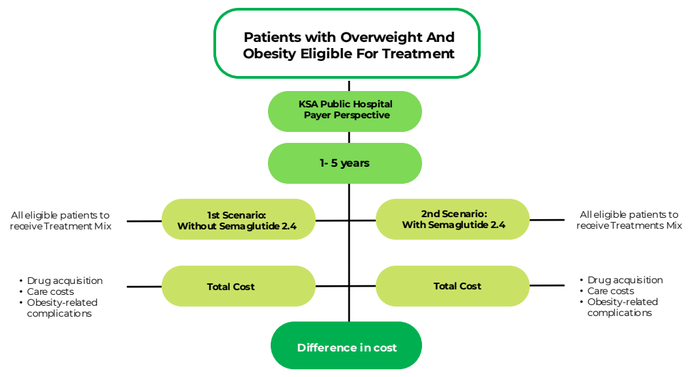

Figure 2. | Budget Impact 1-5 Year in KSA

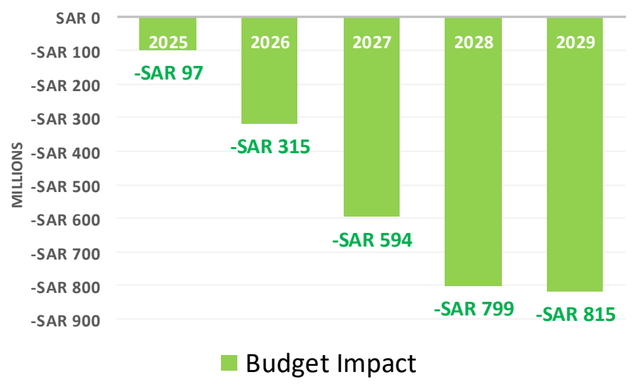

Figure 3. | Complication Cost Saving After The Introduction of Semagltuide 2.4 mg

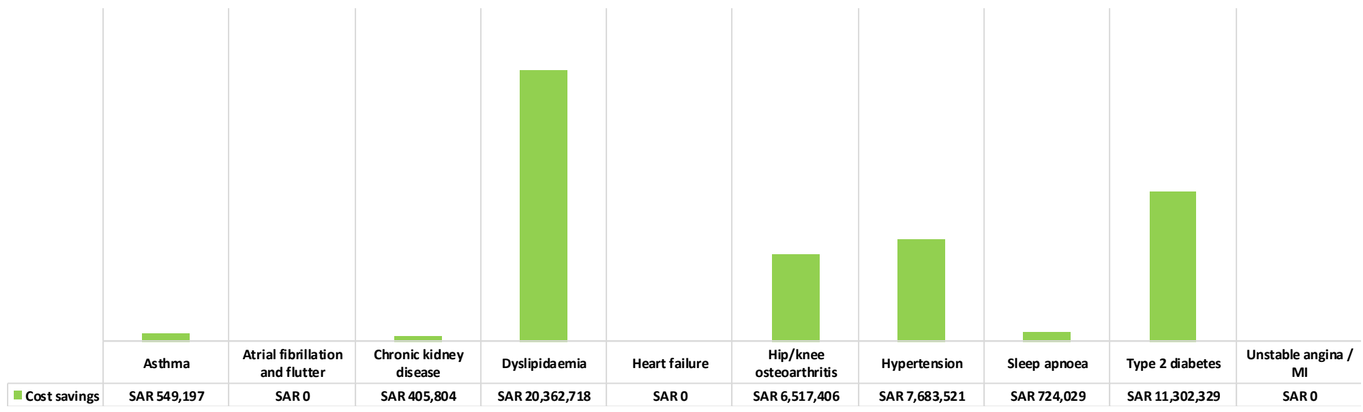

Figure 4. | Disaggregated 5-Year Costs of Managing Obesity after The Introduction of Semagltuide

Parameter	Current scenario (without Sema. 2.4mg)	New Scenario (with Sema. 2.4mg)	Difference (Value in SAR)	Difference (%)
Therapeutic management cost	SAR 8,871,485,263 ($2,359,815,080)	SAR 6,294,752,219 ($1,674,404,090)	-SAR 1,048,431,044 (-$278,882,658)	-30%
Obesity related complications cost	SAR 10,722,127,682 ($2,852,085,963)	SAR 3,710,881,065 ($987,094,363)	-SAR 11,246,617 (-$2,991,600)	-0.10%
Total	SAR 20,049,260,340 ($5,333,103,250)	SAR 6,540,798,676 ($1,739,852,448)	-SAR 2,632,979,661 (-$700,372,590)	-13.13%

References

1. A systematic review of obesity burden in Saudi Arabia. ScienceDirect, 2024. *(Source: https://www.sciencedirect.com/science/article/pii/S1319016424002433)*
2. The Burden of Obesity in Saudi Arabia: A Real-World Cost-of-Illness Study. Clinicoecon Outcomes Res, 2025. *(Source: https://pmc.ncbi.nlm.nih.gov/articles/PMC11934871/)*
3. The economic burden of overweight and obesity in Saudi Arabia. PLOS ONE, 2022. *(Source: https://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0264993)*
4. Prevalence, awareness, attitudes, practices, and management of obesity in Saudi Arabia. PMC, 2025. *(Source: https://pmc.ncbi.nlm.nih.gov/articles/PMC12045844/)*
5. Moiz A. A Systematic Review and Meta-Analysis of Semaglutide RCTs. PubMed. 2024 Jun 30.
6. Anam M. Efficacy of Semaglutide in Treating Obesity: A Systematic Review. PMC. 2022 Dec 15.
7. Miranda S. Impact of semaglutide on lipid profiles in overweight and obese patients. ScienceDirect. 2025.

References cont'd:

8. Butt MI, et al. Efficacy and safety of semaglutide: real-world tertiary care experience from Saudi Arabia. Ann Saudi Med. 2024 Nov 23.
9. Saudi Heart Association. Position Statement on Obesity and CVD. Saudi Heart Association; 2024 Oct.
10. Novo Nordisk Science Hub. Semaglutide improves cardiometabolic risk factors in adults. 2025.
11. Ministry of Health. Saudi clinical guidelines for obesity management. MOH, Saudi Arabia. 2025.
12. WHO/NCDCCS. Saudi guideline on the prevention and management of overweight and obesity. 2025.
13. AlOtaibi HF, et al. Saudi Healthcare Providers' Perspectives and Clinical Practice Patterns in Obesity Management: A National Cross-sectional Survey. PMC, July 13, 2025
14. Almughais ES, et al. Awareness and Perception of Anti-obesity Medications among Al-Ahsaa, Riyadh, and Hail Populations, Saudi Arabia. Cureus, June 2023.
15. Alghalyini B, et al. Awareness and Attitudes of the Saudi Population Towards Bariatric Surgery. PMC, December 12, 2024.
16. Bjornson AM, et al. Costs of obesity, obesity-related complications, and weight loss interventions. PMC, December 31, 2024.

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