The Cost-Effectiveness Of Semaglutide 2.4 mg In People With Overweight/Obesity And Cardiovascular Disease From The SELECT Trial

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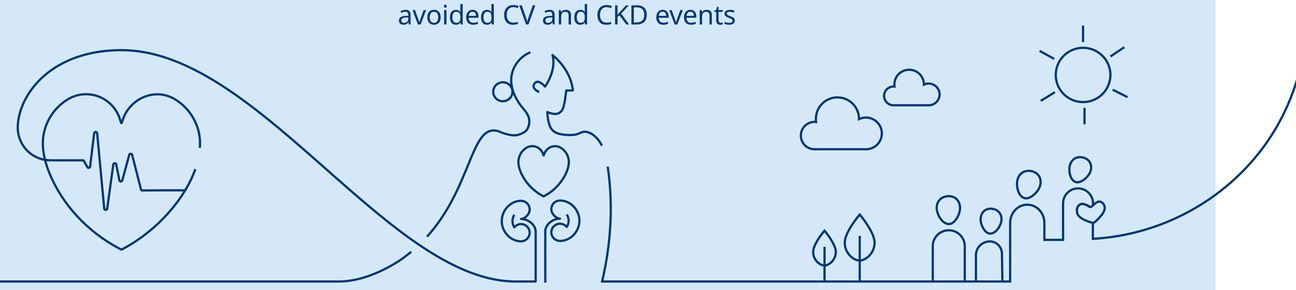
Treatment with **semaglutide 2.4 mg** was predicted to be **cost-effective** at a $150,000 WTP threshold using US list price

6,091 fewer CV events per 100,000 subject

$11,508 per subject savings due to delayed diabetes and avoided CV and CKD events

$140,512 ICER ($/QALY)



Aim

SELECT is the only cardiovascular (CV) outcomes trial to demonstrate reductions in risk of major adverse CV events for a weight-management pharmacotherapy (semaglutide 2.4 mg) in addition to standard of care in subjects with overweight/obesity and CV disease without type 2 diabetes (T2D)[1]

We used SELECT data to assess the health economic impacts of participation in the SELECT trial beyond weight loss from a US payer perspective

Methods

- The cohort-level Markov state cost-effectiveness model (Figure 1) assesses clinical and health economic outcomes in the US setting for subjects with body mass index ≥ 27 kg/m² receiving once-weekly semaglutide (target dose 2.4 mg) compared with placebo, in addition to standard of care
- Baseline characteristics, treatment effects, adverse event rates, discontinuation, and survival equations were aligned to SELECT trial data and extrapolated to a lifetime horizon (39 years)
- Treatment costs were sourced from US list prices; costs and benefits were discounted at 3.0% per year. Cost-effectiveness was assessed against willingness-to-pay (WTP) thresholds described by the Institute for Clinical and Economic Review[2] and the American Heart Association (AHA)/American College of Cardiology (ACC)[3]
- The average discount from list price for anti-obesity glucagon-like peptide-1 receptor agonists in the US has been estimated to be 41%;[4] application of this discount to semaglutide 2.4 mg was explored in scenario analyses
- Probabilistic sensitivity analysis (PSA) sampled inputs from appropriate distributions around mean values over 1,000 iterations

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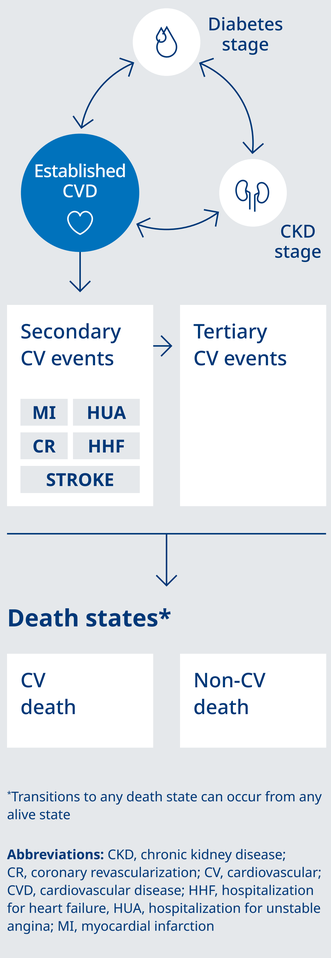
FIGURE 1: COST-EFFECTIVENESS MODEL STRUCTURE

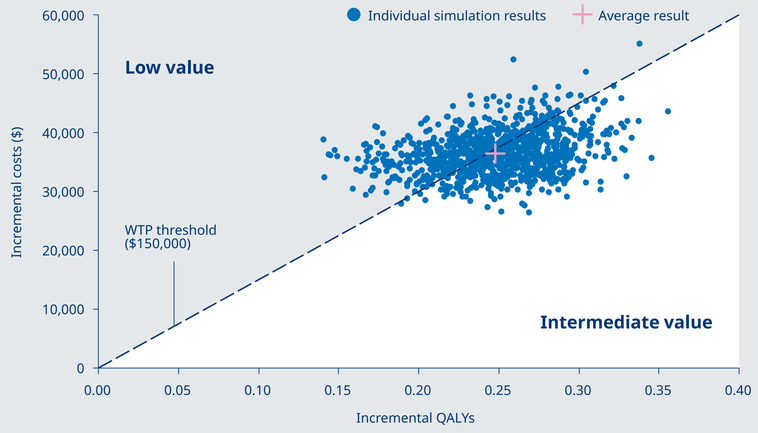


*Transitions to any death state can occur from any alive state

Abbreviations: CKD, chronic kidney disease; CR, coronary revascularization; CV, cardiovascular; CVD, cardiovascular disease; HHF, hospitalization for heart failure, HUA, hospitalization for unstable angina; MI, myocardial infarction

Key results

FIGURE 2: COST-EFFECTIVENESS PLANE



Abbreviations: QALY, quality-adjusted life years; WTP, willingness-to-pay

TABLE 1: COST-EFFECTIVENESS RESULTS (PER PATIENT)

	Placebo	Base case (US list price)	Scenario (41% discount)
Semaglutide 2.4 mg*	N/A	$1,349	$796
Treatment costs†	$0	$47,679	$28,130
Total direct costs	$203,367	$239,509	$219,961
Total QALYs	**9.228**	**9.485**	**9.485**
ICER ($/QALY)		**$140,512**	**$64,514**

*Cost per 28 days,
†Mean semaglutide 2.4 mg treatment duration was 2.95 years
Abbreviations: CV, cardiovascular; QALY, quality-adjusted life year

References: [1] Lincoff et al., New Engl. J Med. 2023;389(24):2221-2232. [2] https://icer.org/wp-content/uploads/2023/10/ICER_2023_VAF_For-Publication_101723.pdf. [3] Anderson et al., Circulation. 2014;129(22):2229-2245. [4] Hernandez and Sullivan, Obesity (Silver Spring) 2024;32(3):472-475.

- Per 100,000 subjects, initiation of semaglutide 2.4 mg was predicted to avoid 6,091 total CV events: 2,464 non-fatal myocardial infarctions, 2,100 coronary revascularizations, 441 non-fatal strokes, and 505 CV deaths
- Initiation of semaglutide 2.4 mg treatment delayed the risk of progression to T2D
- Mean semaglutide 2.4 mg treatment duration was 2.95 years, resulting in per subject treatment costs of $47,679. These were offset by cost savings associated with clinical events avoided, substantially driven by avoidance of T2D ($8,835), chronic kidney disease ($746), and CV events ($1,926)
- Initiation of semaglutide 2.4 mg treatment was associated with 0.257 quality-adjusted life years (QALYs) gained, resulting in an incremental cost-effectiveness ratio (ICER) of $140,512/QALY, i.e. cost-effective at a WTP threshold of $150,000/QALY[2]
- PSA indicated a 56.6% chance of cost-effectiveness at list price (Figure 2)
- In a scenario with a 41% discount on the list price of semaglutide 2.4 mg, the ICER decreased to $64,514 (97.8% chance of cost-effectiveness at a $100,000/QALY WTP threshold)

Summary

- Semaglutide 2.4 mg was predicted to be cost-effective at a $150,000/QALY WTP threshold at US list price and at a $100,000/QALY WTP threshold at an estimated average discounted price
- Semaglutide 2.4 mg is likely to be an 'intermediate value' therapy according to the AHA/ACC value framework[3]

Conclusion

- Treatment with semaglutide 2.4 mg represents a pivotal development in the clinical management of obesity and CV disease
- Treatment as per participation in SELECT was predicted to be cost-effective at a $150,000 WTP threshold, forming an 'intermediate value' therapy at list price