

Trends in GLP-1 Utilization for Diabetes and Obesity in the US: A Retrospective Analysis (2017-2023)

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Obective: To understand longitudinal changes in GLP-1 utilization in the US after the 2021 obesity indication approvals.

Background

Glucagon-like peptide-1 (GLP-1) agonists are a class of medications utilized to treat type 2 diabetes mellitus (T2DM) and obesity. GLP-1 is an incretin hormone inactivated by dipeptidyl peptidase-4 (DPP-4) and stimulates insulin secretion after an oral glucose load via the incretin effect.¹

GLP-1s have been on the market since 2005 (Byetta) for treatment of T2DM and 2014 (Saxenda) for obesity. In 2021 and 2023, Wegovy and Zepbound, respectively, were also approved for obesity, changing the market drastically.

Methods

This retrospective cohort study utilized US claims data from Forian's Data Product, CHRONOSTM, a nationally representative, integrated open and closed claims hybrid ecosystem, from 2017 to 2023. Adult patients who were treated with a GLP-1 were included in the analysis and included both GLP-1s for Obesity and T2DM as well as Dual GIP/GLP-1s.

Volumes were aggregated quarterly and annually, and normalized to the dataset population to observe utilization trends and measure directional growth. All study variables were defined by NDC, CPT, HCPCS, and ICD-10-CM codes.

Results

Compared to the first quarter of 2021, which includes January through March, GLP-1s indicated for diabetes saw 2.15x and 2.31x increases in patient and prescription volumes, respectively, in the last quarter of 2023, including October through December. In that same timespan, patient and claim volumes for GLP-1s indicated for obesity grew 11.77x and 14.78x.

Overall, the GLP-1 patient volume in the US grew by 3.06x from Q1 of 2021 to Q4 of 2023, while the overall prescription volume grew by 3.02x.

Conclusions

Utilization of GLP-1s in the US has increased dramatically since 2021, likely driven by the expansion of treatment to include obese patients. Additional research will assess and compare longitudinal differences in specific GLP-1s and age- and gender-specific rates in the US, as well as directional longitudinal capture post-Zepbound approval/launch at the end of 2023.

Launch	Brand name (generic)	Therapeutic Area
April, 2005	Byetta (exenatide)	T2DM
January, 2012	Bydureon (exenatide)	T2DM
January, 2010	Victoza (liraglutide)	T2DM
December, 2014	Saxenda (liraglutide)	Obesity
November, 2016	Xultophy (insulin degludec/liraglutide)	T2DM
July, 2016	Adlyxin (lixisenatide)	T2DM
November, 2016	Soliqua (insulin glargine/lixisenatide)	T2DM
December, 2017	Ozempic (semaglutide)	T2DM
September, 2019	Rybelsus (semaglutide)	T2DM
June, 2021	Wegovy (semaglutide)	Obesity
May, 2022	Mounjaro (tirzepatide)	T2DM
November, 2023	Zepbound (tirzepatide)	Obesity
November, 2024	Generic exenatide	T2DM
December, 2024	Generic liraglutide	T2DM

Figure 1. List of Approved GLP-1 since 2005, by TA

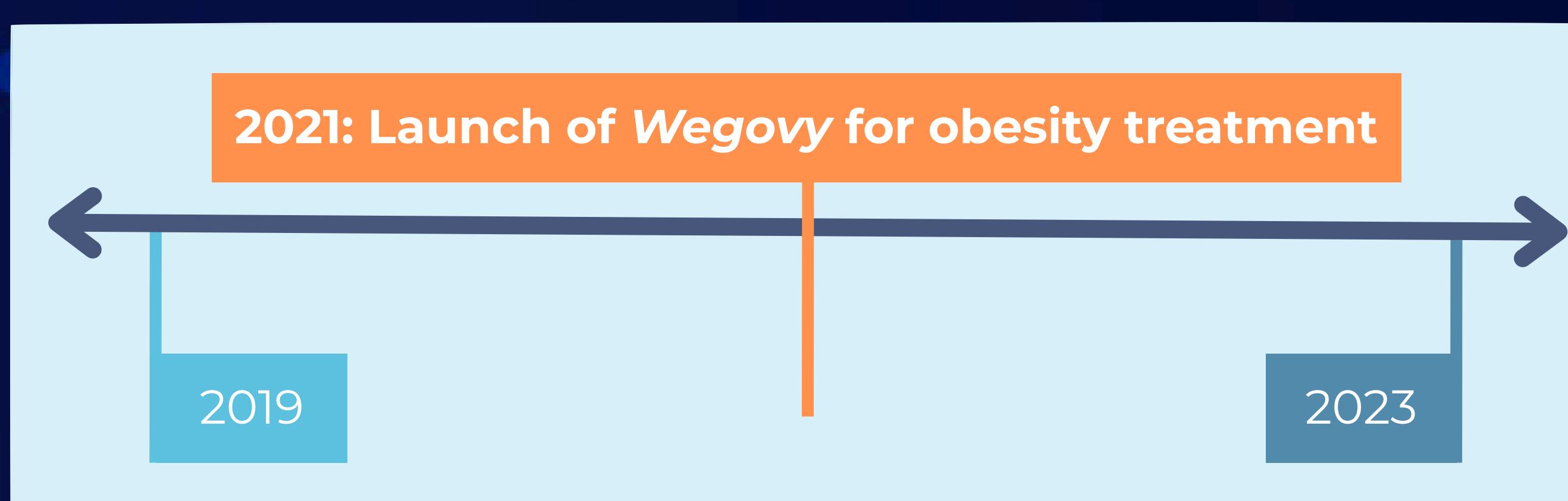


Figure 2. Study Timeline

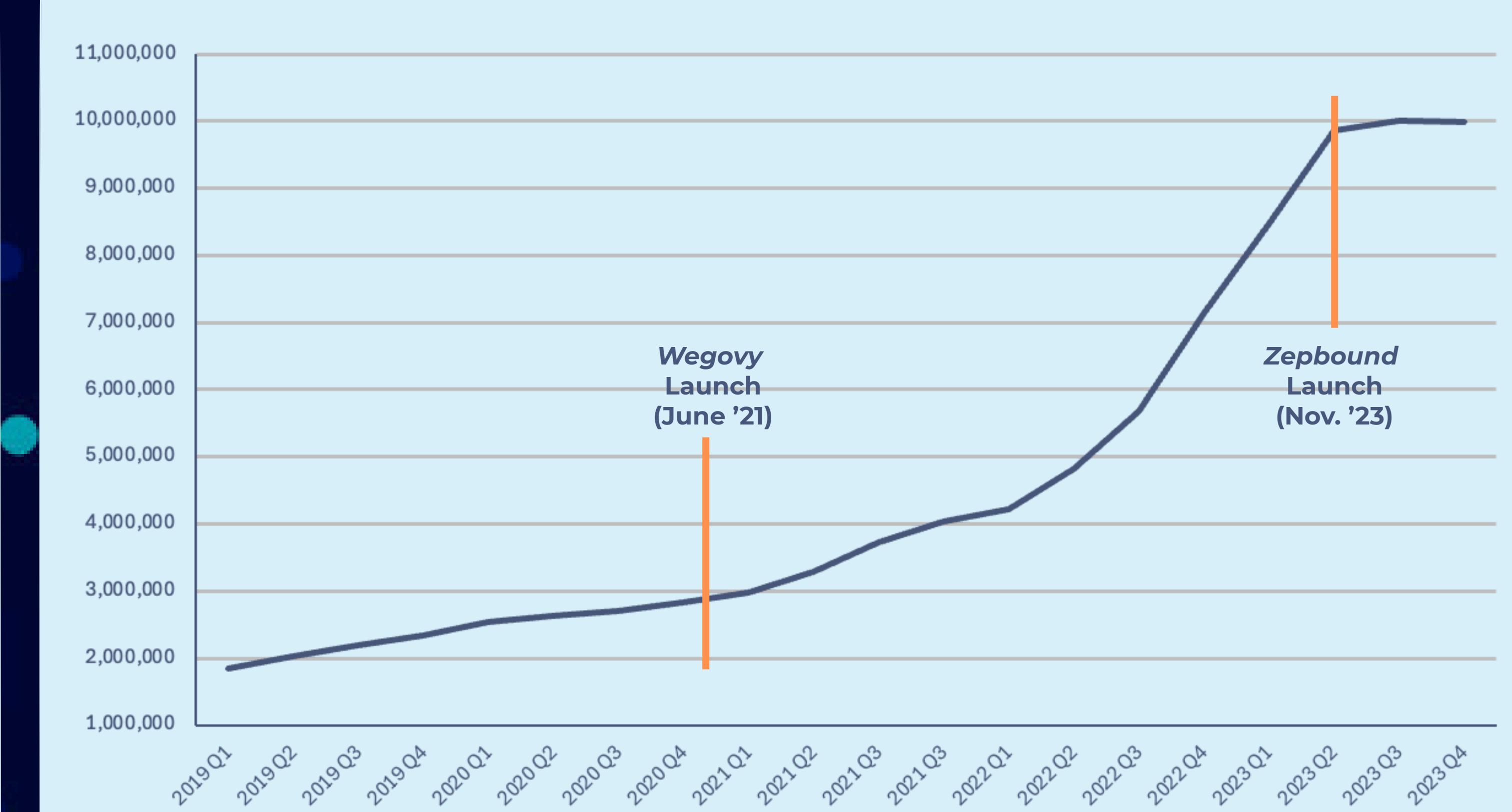


Figure 3. GLP-1 quarterly claims volume from 2019-2023

Quarter	GLP-1	GLP-1 for Obesity	All GLP-1 (includes duals)
2021 Q1	-	-	-
2021 Q2	1.04	1.18	1.04
2021 Q3	1.14	2.93	1.18
2021 Q4	1.14	3.52	1.19
2022 Q1	1.30	4.12	1.36
2022 Q2	1.45	4.57	1.53
2022 Q3	1.59	4.10	1.78
2022 Q4	1.65	4.39	2.14
2023 Q1	1.96	10.53	2.69
2023 Q2	2.12	18.71	3.11
2023 Q3	2.17	18.81	3.16
2023 Q4	2.09	14.78	3.02

Figure 4. Quarterly claim growth factor, by GLP-1 category

1. Collins L, Costello RA. Glucagon-Like Peptide-1 Receptor Agonists. [Updated 2024 Feb 29]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK551568/>.