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Contents

Introduction	1
Background	2
Payer coverage	3
Biopharma	4
Digital health	7
Healthcare services	8
Medtech	9
Healthcare IT	10

EMERGING TECH RESEARCH

# Healthcare Future Report: Weight Loss Drugs

How broad adoption of GLP-1 drugs could change care delivery, outcomes, and economics

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## Introduction

The development of GLP-1 agonist drugs to treat diabetes and, increasingly, support weight loss represents one of the most significant trends shaping the healthcare industry today. Given the prevalence of obesity in the US and worldwide and the documented link between obesity and other conditions—including [cardiovascular disease](#), the leading cause of death globally—we believe the effects of this new drug class will extend far beyond the drugmakers themselves. In this note, we sketch out potential short- and long-term implications of the rise of weight loss drugs on the VC and PE healthcare ecosystems—spanning biopharma, digital health, healthcare services, medtech, and healthcare IT.

## Background

The US Food and Drug Administration (FDA) approved Novo Nordisk's Ozempic for diabetes treatment in 2017. Over the past year, the drug has attracted considerable attention for its off-label use as a weight loss aid. Currently, four GLP-1 agonist drugs have FDA approval (see the table below). Of these, only Wegovy is indicated for weight loss, although additional approvals are expected soon. Unprecedented attention has resulted in soaring demand for both diabetes- and weight-loss-indicated products, causing significant supply chain and manufacturing bottlenecks.

### Current FDA-approved GLP-1 agonists\*

Drug	Manufacturer	FDA approval year	Indication
Ozempic (semaglutide)	Novo Nordisk	2017	Type 2 diabetes
Rybelsus (semaglutide)	Novo Nordisk	2019	Type 2 diabetes
Wegovy (semaglutide)	Novo Nordisk	2021	Chronic weight management
Mounjaro (tirzepatide)	Eli Lilly	2022	Type 2 diabetes

Source: PitchBook • Geography: Global  
\*As of September 29, 2023

In June 2023, Eli Lilly published results from a phase 2 clinical trial of retatrutide, another GLP-1 agonist drug, in which participants lost an average of 28% of their body weight, or 58 pounds.<sup>1</sup> Participants in the study had a body mass index (BMI) of at least 30, or a BMI of 28 or higher plus one or more weight-related conditions. In August 2023, Novo Nordisk published data from a major clinical trial of Wegovy in which the drug reduced major adverse cardiovascular events by 20% in patients with a BMI over 25.<sup>2</sup> Industry observers believe that additional trial results for GLP-1 agonists showing similar clinical promise will be released in the future.

1: "Lilly's Phase 2 Retatrutide Results Published in The New England Journal of Medicine Show the Investigational Molecule Achieved Up to 17.5% Mean Weight Reduction at 24 Weeks in Adults With Obesity and Overweight," Eli Lilly, June 26, 2023.

2: "Novo Nordisk A/S: Semaglutide 2.4 Mg Reduces the Risk of Major Adverse Cardiovascular Events by 20% in Adults With Overweight or Obesity in the SELECT Trial," Novo Nordisk, August 8, 2023.

## Payer coverage

A key question for the widespread adoption of weight loss drugs is that of payer coverage. In general, we believe that compelling clinical results and popular pressure will result in broad coverage of these drugs for patients with obesity. In many cases, payers may impose prior authorization requirements to limit coverage to patients who have a BMI above a certain threshold or who have comorbidities.

### *Employer-sponsored plans and self-insured employers*

Ozempic (labeled for diabetes treatment) has already become a high-cost drug for many employers, and coverage of weight loss drugs could represent a significant additional cost burden. Moreover, employers are unlikely to see substantial downstream benefits in avoided cardiovascular disease and other comorbidities within their employee populations because these conditions tend to develop later in life. However, despite reports that some self-insured employers are dropping weight loss drug coverage,<sup>3</sup> we believe that employee pressure will force many employers to begin covering weight loss drugs within the next two to three years.

### *Medicare*

Medicare is currently prohibited by a 2003 law from covering drugs prescribed for weight loss.<sup>4</sup> Lawmakers are pushing for legislation that would remove this prohibition.<sup>5</sup> Although the cost to Medicare would be significant, we believe that Medicare coverage is likely given the potential for total cost of care reductions as a result of weight loss. Under the Inflation Reduction Act, Medicare could negotiate prices for semaglutide (Ozempic, Wegovy, and Rybelsus) beginning in 2027 and for tirzepatide (Mounjaro) beginning in 2031.<sup>6</sup>

### *Medicaid*

As with Medicare, state Medicaid agencies could see significant population health benefits from widespread adoption of weight loss drugs due to high rates of obesity and heart disease among socioeconomically disadvantaged groups. However, coverage will require careful planning given the inflexibility of state Medicaid budgets. As of April 2023, 10 states covered weight loss drugs via Medicaid, while an additional five offered limited coverage.<sup>7</sup> Of the 10 that cover weight loss drugs, nine have begun negotiating manufacturer discounts for GLP-1 agonists in exchange for preferred formulary placement.<sup>8</sup>

3: "Health Plans Are Dropping Weight Loss Drugs Like Flies," *Becker's Payer Issues*, Jakob Emerson, July 31, 2023.

4: "What Could New Anti-Obesity Drugs Mean for Medicare?" KFF, Tricia Neuman and Juliette Cubanski, May 18, 2023.

5: "Lawmakers Push for Obesity Coverage Through Medicare," *The Hill*, Joseph Choi and Nathaniel Weixel, August 11, 2023.

6: "What Could New Anti-Obesity Drugs Mean for Medicare?" KFF, Tricia Neuman and Juliette Cubanski, May 18, 2023.

7: "Good Luck Paying for Those \$10,000 Obesity Drugs Everyone's Talking About," *Bloomberg*, Emma Court and Robert Langreth, April 27, 2023.

8: "Next-Gen Weight-Loss Drugs Receive Tentative Embrace by Medicaid," *Bloomberg Law*, Ganny Belloni, July 26, 2023.

### *ACA exchange plans*

Many plans under the Affordable Care Act (ACA) currently exclude coverage for obesity and weight loss treatment.<sup>9</sup> Because beneficiaries of ACA exchange plans are highly sensitive to premium increases, these plans have little incentive to cover weight loss drugs absent federal or state regulation.

In the UK and Europe, where drugs are regularly priced significantly below US rates, coverage is also progressing slowly due to the potential for widespread use. The UK's National Health Service is now prescribing Wegovy at no cost to patients with a BMI over 30 and at least one weight-related comorbidity. In Denmark, where Novo Nordisk is based, Wegovy has not received public health insurance coverage. The public insurance plan in Germany, where Wegovy launched in June 2023, is statutorily prohibited from covering weight loss medications.<sup>10</sup> Adoption in Europe could be further slowed by the European Medicines Agency's investigation of potential side effects, including suicidal ideation.<sup>11</sup> We believe the UK will represent an important test case of the population-level effects of pharmaceutical weight loss treatment for payers and national health systems considering coverage.

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## Biopharma

### *Short-term outlook*

**Big pharma landscape:** Industry giants such as Novo Nordisk and Eli Lilly are strategically well placed for short-term dominance in the market. Additionally, Pfizer, Amgen, and Boehringer Ingelheim are poised to join these ranks as significant market players. This is attributed to the promising results from clinical trials of their respective drugs: Pfizer's danuglipron, a small molecule drug in phase 2; Amgen's AMG-133, an antibody drug also undergoing phase 2 trials; and Boehringer Ingelheim's survodutide, a peptide drug in phase 3 trials. As these companies fortify their market positions, other industry heavyweights are likely to seek entry via strategic M&A transactions to acquire key assets and specialized knowledge. Novartis, for instance, may be particularly motivated to explore new avenues given the disappointing phase 2 outcomes of its obesity drug, MBL-949. Notably, a prior asset that was developed by Novartis and initially unsuccessful in muscle disease treatments was later licensed to Versanis Bio and drove Versanis Bio's massive exit after showing promise in obesity treatment.

**Funding opportunities for new products:** Companies with robust intellectual property portfolios and advanced clinical-stage pipelines stand to gain significantly from the burgeoning market for weight loss drugs via large funding rounds, lucrative M&A transactions, or successful IPOs. For instance, Carmot Therapeutics recently achieved unicorn status following a \$150.0 million Series E funding round, propelled by the promise of its phase 2 GLP-1 drugs. Additionally, Novo Nordisk's smaller

9: "The Government Will Finally Cover Obesity Care for Its Employees—But Not the Rest of Us," The Hill, Dr. Shauna Levy, February 24, 2023.

10: "Health and Science Weight Loss Drug Wegovy Has Launched in Germany—But Users Across Europe Face a Long and Costly Wait," CNBC, Karen Gilchrist, July 26, 2023.

11: "EU Extends Ozempic Review to Include More Weight-Loss, Diabetes Drugs," Reuters, Bhanvi Satija, Khushi Mandowara, and Maggie Fick, July 11, 2023.

\$16.4 million acquisition of Embark Biotech, with up to \$500 million in milestone payments, suggests that early-stage startups also have room to maneuver. On the IPO front, Structure Therapeutics recently completed an upsized offering, raising \$185.3 million in February 2023, fueled by its own phase 2 GLP-1 small molecule drug, GSK-1290.

**International startups show promise:** Emerging international startups such as China's GMAX Biopharm and Sciwind Biosciences, along with South Korea's D&D Pharmatech, may become key competitors in the GLP-1 market in the future. Their clinical advancements may serve as springboards for substantial funding rounds or lucrative M&A deals. For established international entities, strategic partnerships play a pivotal role in reinforcing their market presence, facilitated by significant capital investment and localized regulatory advantages. For example, China's Innovent Biologics is collaborating with Eli Lilly for its phase 3 obesity drug, mazdutide. Similarly, Boehringer Ingelheim's obesity drug is built by a partnership with Denmark's Zealand Pharma. However, some established international players are focused on internal development, as seen with China's Jiangsu Hansoh Pharmaceutical and its phase 2 GLP-1 drug, Noiglutide.

**Other M&A:** Finally, we expect companies flush with cash reserves from GLP-1 drug sales to be active in M&A in the coming years. Eli Lilly's \$1.9 billion purchase of Versanis Bio and Novo Nordisk's \$1.0 billion acquisition of Inversago Pharma exemplify this trend.

#### *Long-term view*

**Expansion of drug indications:** Once neglected in drug development, obesity is now an increasingly competitive field. As evidence strengthens the links between obesity and various comorbid conditions—such as cardiovascular disease, nonalcoholic steatohepatitis (NASH), addiction, and certain cancers—the scope of drug indications will likely broaden, expanding the addressable market beyond the current estimates of more than \$100 billion for obesity alone.

**Improved efficacy and delivery:** The obesity treatment sector is anticipated to reach a point of saturation with multiple effective drug options. Consequently, investors should focus on startups introducing new intellectual property, particularly those leveraging emerging modalities or new biological insights that offer additional benefits. Triple GIP/GLP-1/glucagon receptor agonists (such as Eli Lilly's retatrutide) are poised for dominance due to superior clinical validation over other mechanisms. However, patient practicality is also key because it increases ease of use and dosage longevity. Oral therapeutics have advantages in lower costs and ease of use despite weaker clinical results and daily dosing. Examples of upcoming oral drugs include Eli Lilly's orforglipron, Novo Nordisk's Rybelsus, Structure Therapeutics' GSK-1290, Viking Therapeutics' VK-2735, and Pfizer's danuglipron. All are attractive due to oral administration, room-temperature stability, and scalable small-molecule manufacturing. In contrast with oral therapeutics, greater dosage longevity is seen as the core advantage of Amgen's antibody approach for AMG-133. However, this is offset by its antibody composition,

which increases costs and complexities in biomanufacturing, distribution, and administration. Looking farther ahead, advancements in gene and cell therapy for obesity treatment will be of considerable interest to investors. These innovations have the potential to shift the treatment paradigm toward single-dose cures, thus revolutionizing the field.

**Trial recruitment challenges:** As the patient pool contracts due to increased adoption of existing treatments, future trials may face challenges in recruitment, requiring next-generation treatments to demonstrate superior efficacy—not just novel chemical compositions. Emerging startups, especially those late to the market, may face slower clinical trial enrollments if existing treatments prove sufficiently effective.

**Long-term effects of GLP-1s:** The long-term effects of GLP-1 agonists and other obesity drugs remain unknown and are of particular concern given that patients may need ongoing treatment to avoid regaining weight. Previous efforts in the obesity GLP-1 space have demonstrated associated risks. For instance, Johnson & Johnson’s efinopegdutide, which was licensed from South Korea-based Hanmi Pharmaceutical, was discontinued due to concerns over blood glucose side effects following its phase 2 trials in 2019. One potential risk with current drugs is the loss of muscle mass during overall weight reduction, necessitating changes in future trial endpoints to measure both fat and muscle loss. Adverse long-term effects could prompt regulatory interventions, either limiting drug adoption or catalyzing legal challenges.

### Select VC-backed biopharma companies\*

Company	Potential effect	Last known valuation (\$B)	Total raised (\$M)	Clinical stage of lead obesity drug
Carmot Therapeutics	IPO or acquisition	\$1.25	\$374.0	Phase 2
GMAX Biopharm	Significant funding round or acquisition	N/A	\$90.0	Phase 2
Kallyope	IPO or acquisition	\$1.10	\$479.0	Phase 1
Structure Therapeutics	Acquisition	\$1.25**	\$379.0	Phase 2
Sciwind Biosciences	Significant funding round or acquisition	N/A	\$138.0	Phase 3
D&D Pharmatech	Significant funding round or acquisition	N/A	\$204.7	Phase 1

Source: PitchBook • Geography: Global

\*As of September 29, 2023

\*\*Market capitalization as of September 20, 2023.

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## Digital health

### Short-term outlook

**Telehealth weight loss pivots:** There is a significant [opportunity](#) for telehealth companies to focus on weight loss as a primary business model or add weight loss telehealth to existing platforms. Examples include WeightWatchers' acquisition of VC-backed startup Sequence and new weight loss telehealth programs from digital health unicorns Ro and Noom.

**Headwinds for established nutrition programs:** While weight loss drugs will create new market opportunities, there may be rising pressure on existing nutrition platforms. One initial casualty was Jenny Craig, which declared bankruptcy in May 2023 following an unsuccessful digital pivot.

**Lack of differentiation:** As the market gains steam and similar drugs are offered across multiple vendor platforms, startups could face greater competition and higher marketing costs due to a lack of differentiation.

### Long-term view

**Health and fitness tailwinds:** Broad adoption of weight loss drugs could result in tailwinds for health and fitness platforms as people that previously had overweight or obesity become more active and seek out fitness trackers and other consumer healthtech platforms. Greater fitness activity could also boost demand for digital musculoskeletal platforms.

**New virtual weight loss startups:** We see potential for an entirely new ecosystem of digital health startups to take advantage of a growing population of weight loss patients by offering services including telehealth, medication adherence, and prescription management. To date, only a limited number of weight loss startups have been built from the ground up, and we expect this to change.

## Select VC-backed digital health companies\*

Company	Potential effect	Last known valuation (\$M)	Total raised (\$M)
Ro	New customers via weight loss telehealth offering	\$6,600.0	\$1,030.0
Noom	New customers via weight loss telehealth offering	\$3,700.0	\$668.8
Form Health	Rising adoption of direct-to-consumer (DTC) weight loss platform and demand growth in employer expansion channel	\$62.9	\$26.9
Signos	Tailwind from growing awareness of weight loss options, but potential loss of share to platforms with drug prescription services	\$64.0	\$17.0
Alfie	Rising adoption of DTC weight loss platform and growing provider partner network	N/A	\$4.0

Source: PitchBook • Geography: Global  
 \*As of September 29, 2023

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## Healthcare services

### Short-term outlook

**Demand for clinical trial sites:** We anticipate growing PE interest in clinical trial sites that specialize in cardiovascular and metabolic conditions. PE healthcare specialists are increasingly focused on the pharma services space, and competition by PE firms for clinical trial sites has already been heating up, with multiples reaching 14x to 15x EBITDA.

**Bariatric surgery volume reduction:** Bariatric surgery volumes will likely decrease, as will aesthetic weight loss surgery volumes. While the latter is performed by plastic surgeons who can pivot to other procedure types, bariatric surgery is typically performed by specialists. Providers in this space, including a small number of PE-backed groups, will likely face significant revenue headwinds.

### Long-term view

**Impact on cardiovascular procedure volume:** Independent cardiovascular physician groups have become the object of accelerating PE-driven [consolidation activity](#) over the past three years. These groups, which primarily rely on fee-for-service procedural revenue, may see reduced volume as obesity rates fall, resulting in negative investment scenarios that had been acquired by PE-backed aggregators at high multiples (mid- to high teens). To the extent that independent cardiovascular groups begin taking on risk in value-based care arrangements, weight loss drugs may eliminate some of the low-hanging fruit in terms of total cost of care savings via lifestyle management.

**Increased demand for elder care:** Significant population-level reduction in obesity and cardiovascular disease could increase average life expectancies and therefore grow the demand for service lines that primarily care for older adults, including but not limited to skilled nursing, home health/home care, ophthalmology, oncology, and rheumatology.

**Retail pharmacy advantage:** As pharmaceutical treatments for obesity and other chronic conditions proliferate, [retail pharmacies](#) that have made significant primary care bets, including CVS, Walgreens, and Walmart, should reap rewards because they will be able to provide patients with easy access to both prescribers (primary care) and scripts fulfillment.

### Select PE-backed healthcare services companies\*

Company	Potential effect	Last known valuation (\$M)	Sponsor
Grand Health Partners	Reduced demand for bariatric surgery	N/A	DuneGlass Capital
New York Bariatric Group	Reduced demand for bariatric surgery	N/A	Sentinel Capital Partners
Velocity Clinical Research	Increased demand for trial sites specializing in cardiovascular and metabolic disease	\$500.0	GHO Capital

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## Medtech

### Short-term outlook

**Limited impact:** In our view, weight loss drugs are likely to have limited impact on medtech over the next one to two years, although we expect a modest impact on demand for bariatric surgery equipment and supplies as patients choose these drugs instead of opting for surgical alternatives.

**Packaging demand:** Because weight loss drugs must be taken on a recurring basis, demand for injectable primary packaging is set to increase. The COVID-19 pandemic highlighted the need for packaging redundancies, and a wider range of drug packaging vendors could become suppliers for weight loss drugs.

### Long-term view

**Sleep apnea reduction:** Because obesity is a contributing factor for sleep disorders, rising GLP-1 drug adoption could have a negative impact on the market for CPAP machines. Analysts at Morgan Stanley estimate a potential \$2.2 billion market impact to sleep apnea devices and consumables.<sup>12</sup>

**Diabetes monitoring effects:** Initial studies have shown GLP-1 drugs could reduce the need for insulin injections for diabetics.<sup>13</sup> If this impact is borne out in larger populations, insulin-pump makers and glucose monitor vendors could face headwinds, although rising global rates of diabetes should support demand even in a negative-impact scenario.

## Select VC-backed medtech companies\*

Company	Potential effect	Last known valuation (\$M)	Total raised (\$M)
Signifier Medical Technologies	Potential reduced demand for sleep apnea machines if obesity rates subside	\$207.4	\$51.5
GT Metabolic	Potential reduced demand for bariatric surgeries	\$60.2	\$20.2
Nitinotes	Potential reduced demand for endoscopic gastroplasty (a bariatric surgery alternative)	\$23.0	\$38.5
Scientific Intake	Rising demand for SmartByte oral device, an alternative to weight loss drugs, from patients seeking to avoid high costs and side effects	N/A	\$30.3

Source: PitchBook • Geography: Global  
 \*As of September 29, 2023

<sup>12</sup>: "Morgan Stanley Sees Broader MedTech Impact From Weight Loss Drugs," Seeking Alpha, Dulan Lokuwithana, June 4, 2023.

<sup>13</sup>: "Semaglutide in Early Type 1 Diabetes," The New England Journal of Medicine, Paresh Dandona, et al., September 6, 2023.

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## Healthcare IT

### Short-term outlook

**Limited impact:** The short-term impact of weight loss drugs on healthcare IT companies will likely be limited with the exception of B2B telemedicine providers, which have already seen growing demand from both digital health startups and retail incumbents pivoting to provide virtual consultations and prescriptions for weight loss drugs.

**Patient engagement opportunity:** Providers of patient engagement software and services have a key opportunity to capitalize on public interest in weight loss drugs to book primary care appointments and bring additional specialty care in network. However, this is not likely to materially change the business outlook for these providers.

### Long-term view

**Increased prior authorization burden:** Prior authorization burdens could grow (even beyond current levels) for both providers and payers if large patient populations become eligible for weight loss drugs with a prior authorization requirement. This would bolster the already-strong demand for prior authorization workflow software and revenue cycle outsourcing. Unlike authorizations for specialty medications, which often involve complex clinical reviews, weight loss drug authorizations should lend themselves to more automated workflows due to high volume and lower complexity.

**Tailwind for payer tech:** Demand could also increase for payer- and employer-facing payment integrity and cost containment technology and services as payers seek to control rising prescription costs and mitigate unauthorized use.

### Select VC-backed healthcare IT companies\*

Company	Potential effect	Last known valuation (\$M)	Total raised (\$M)
SteadyMD	Rapid growth in demand for B2B telemedicine infrastructure for prescriptions	\$240.0	\$66.5
Cohere	Increased demand for prior authorization automation solutions	\$175.0	\$81.0
Codoxo	Increased demand for payment integrity solutions	\$95.0	\$31.1

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