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Health Actuary Calculates that Virta's Diabetes Reversal Solution Saves $433 PPPM

$10,400
Total 2-Year Savings

$433
PPPM savings

> Virta engaged a health actuary to calculate the cost savings from the Virta treatment. The actuarial analysis focused on Virta's demonstrated clinical outcomes, both in its peer-reviewed publications as well as across its commercial book of business.

Virta Health Background

Virta's approach to diabetes is the first non-surgical treatment proven to reverse diabetes. At one year, clinical trial patients eliminated 63% of diabetes-specific medications. 94% of patients eliminated or reduced insulin usage. Furthermore, the results are sustainable; and, one year retention rate of 83% is far better than other diabetes programs involving medication adherence or weight loss[1].

Virta estimates total two year savings to be about $10,400 or $433 PPPM; below we explain how these savings are achieved. To reverse diabetes, Virta provides patients with individualized nutritional therapy, overseen by a physician who is able to titrate anti-diabetic medications thereby eliminating diabetes drugs. In addition to a physician-led care team, Virta provides a dedicated health coach, diabetic testing supplies and related equipment, access to a patient community, and exclusive content such as meal plans to support patients. Through improved metabolic health, Virta patients are able to control blood sugar.

Weight loss is an expected "side effect" of the treatment. Virta patients see sustained improvement in HbA1c, on average experiencing a 1.3 point drop at one year[1]. At one year, clinical trial patients lost 30 lbs. on average, or 12% of total body weight[1]. Below we show cost savings for Virta's treatment with a typical working age population.

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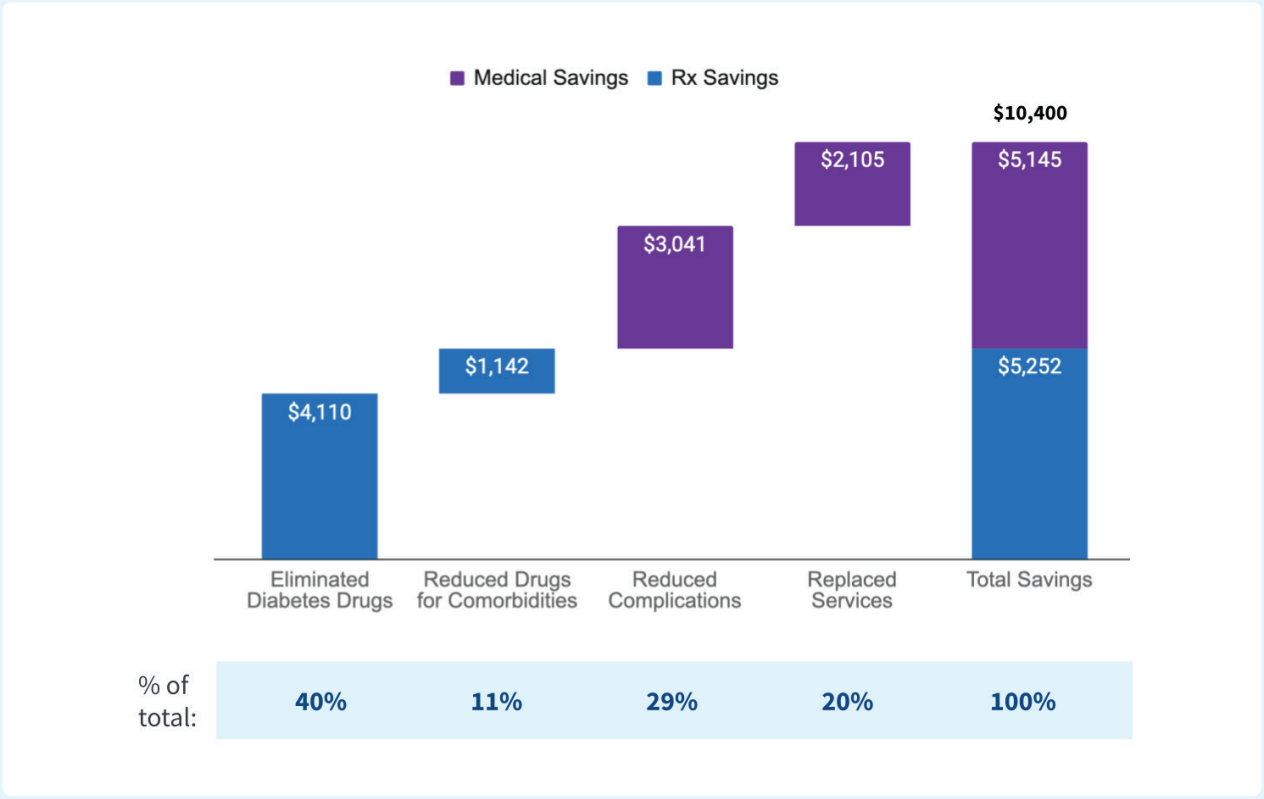
About the Analysis

Virta engaged a health actuary to calculate the cost savings from the Virta treatment. The actuarial analysis focused on Virta's demonstrated clinical outcomes, both in its peer-reviewed publications as well as across its commercial book of business. The analysis then applied evidence-based savings estimates across a number of key spending categories, including eliminating diabetes drugs, eliminating other drugs, reducing blood sugar, and replacing supplies.

Cumulative gross savings per participant, over 2 years



Achieving $10,400 of Savings at Two Years ($433 PPPM)

To estimate gross savings over two years, we compare a typical population with type 2 diabetes "without Virta" to anticipated financial results with the Virta intervention. To project "without Virta", we relied on a pharmacy cost trend of 8.8% for a population with type 2 diabetes and a medical cost trend of 6.5%. We calculated the 8.8% trend by relying on the ADA's 2012[2] and 2017[3] reports. We rely on AON's 2020 trend study for medical trend[4].

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Eliminating Diabetes Drugs

The Virta treatment produces measurable demedication resulting in savings from eliminated diabetes drugs. To calculate the expected savings, we use data which includes for each patient whether or not a patient is taking a specific class of antidiabetic by day (for instance insulin or SGLT-2). Each month, the percentage of patients remaining in that class are calculated and applied to the cost of this therapeutic class for a large commercial population of people with type 2 diabetes. Overall trends on cost reduction are determined by combining all classes of drugs.

Eliminating Drugs For Comorbidities

Savings also occur from other classes of drugs besides antidiabetics. By controlling A1c, the Virta treatment also reduces the need for other medications such as blood pressure medication. The general trend is that demedication of antidiabetics is loosely associated with a reduction in cost of other medications as well. We assume a modest reduction in the first year (7%) and the second year (9%).

A Note on Member Engagement

One common misconception relating to Virta's treatment is that it is only appropriate for a "select" group of people with type 2 diabetes or that results for Virta patients cannot generally be compared to claims experience for typical people with type 2 diabetes.

The Virta diabetes reversal treatment is appropriate for all people with type 2 diabetes ages 18 to 79 with a short list of clinical exclusion criteria. During the clinical study, the Virta intervention group was compared to a control group given usual care; both groups were independently recruited and had high engagement rates—we fully expect Virta's results to be directly comparable to all other people with type 2 diabetes.

Reducing Blood Sugar

Controlling blood sugar has been associated with reducing medical complications in inpatient and ED settings in several research studies. To estimate the impact of lowering A1c, we rely on research from the study "Does Prescription Drug Adherence Reduce Hospitalizations and Costs? The Case of Diabetes."[5] We apply a roughly 30% reduction to inpatient and ED costs, which is the midpoint of estimates evaluated in this paper. This cost savings amount is consistent with a Milliman study showing complications were roughly 10% of the total costs of people with type 2 diabetes[6].

Replacing Services and Supplies

The Virta treatment includes services and supplies that should replace services typically covered through medical insurance, such as diabetic supplies (including test strips & lancets), physician office visits, and outpatient labs. For reasonableness, we compared these costs to the attributable costs of diabetes as published by the American Diabetes Association. We assume Virta is able to replace roughly 50% of these services.

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Potential Limitations

The results of this analysis are based on a specific set of assumptions. Random fluctuations in the incidence and severity of claims will impact the extent to which the projections in this analysis materialize.

About the Actuary

This analysis was done by John Rogers, ASA, MAAA, MS. John has extensive experience conducting advanced analysis of claims data, including storyboarding pathways of care and cohorting clinical conditions. Previously John led business intelligence and health economics at a regional Medical Advantage plan. He holds degrees from MIT and the Naval Postgraduate School.

To learn more about our ROI analysis, or to get access to the full actuarial model, please contact partner@virtahealth.com

1 Hallberg SJ, McKenzie AL, Williams P, et al. Effectiveness and Safety of a Novel Care Model for the Management of Type 2 Diabetes at One Year: An Open Label, Non-Randomized, Controlled Study. Diabetes Ther. 2018. DOI: 10.1007/s13300-018-0373-9

2 Economic Costs of Diabetes in the U.S. in 2012, American Diabetes Association, 2012. https://care.diabetesjournals.org/content/early/2013/03/05/dc12-2625

3 The Cost of Diabetes, American Diabetes Association, 2017. https://www.diabetes.org/resources/statistics/cost-diabetes

4 2020 Global Medical, Aon, 2020. Trend https://www.aon.com/2020-global-medical-trend-rates-rising-health-plan-costs-risk-factors/index.htm

5 Does prescription drug adherence reduce hospitalizations and costs? The case of diabetes., Encinosa et al., 2010. https://pubmed.ncbi.nlm.nih.gov/20575232/

6 The cost and quality gap in diabetes care: an actuarial analysis, Fitch et Al., 2012. https://www.milliman.com/en/insight/the-cost-and-quality-gap-in-diabetes-care-an-actuarial-analysis