



**BlueCross BlueShield**  
of Oklahoma

WHITE PAPER

Employees need  
to **integrate** health  
into their lives. It's  
hard **for** them to  
feel **better** with  
high **cost and** risk  
in the way of **care.**

## The Value of Connected Benefits in Diabetes Management

# A 2021–2022 Comparative Analysis of Medical and Pharmacy Benefits (Carved-in vs. Carved-out)

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## Abstract

This white paper presents a detailed comparative analysis of the cost of managing diabetes within the context of medical and pharmacy benefits. This study evaluates the “true” cost of managing diabetes through the “carved-in” (connected medical and pharmacy benefits) and “carved-out” (medical benefit only) approach during plan years 2021 and 2022. By examining medical and pharmacy expenses, this study aims to demonstrate the financial value and cost-effectiveness of connected benefits. This white paper offers potential decision-making insights for health care providers, employer groups and members with diabetes. This study found medical cost savings of 8%–10% (\$24–\$38 per member per month, PMPM) and better health outcomes, with the average risk lowered by 7%–16% for members with connected benefits.

## Introduction

Diabetes has become a critical global issue, affecting millions of people and continuing to pose significant health risks to the affected population.<sup>1</sup> Diabetes will be “the defining disease of this century” as global cases are projected to surpass one billion by 2050, according to an editorial series by STAT published in June 2023. This represents a 60% surge in the prevalence of Type 2 diabetes, which made up 96% of the cases worldwide in 2021.<sup>2</sup>

### Diabetes and Associated Risks

Diabetes is a common metabolic disorder characterized by elevated glucose (sugar) levels in the bloodstream. It increases the risks of secondary conditions such as heart disease, stroke, peripheral neuropathy, renal disease, blindness, and amputation along with reduced life expectancy.<sup>3</sup> There are three types of diabetes: gestational diabetes mellitus is any degree of hyperglycemia recognized during pregnancy; Type 1 diabetes is immune-mediated diabetes; and Type 2 diabetes is non-immune mediated diabetes.<sup>3,4</sup>

APPROXIMATELY

**90%–95%**

of Americans with diabetes have Type 2 diabetes, which is also becoming more prevalent in children, teens and young adults.<sup>1,5</sup>

## Type 2 Diabetes and Its Onset Factors

Type 2 diabetes is the most common type of diabetes in the U.S. The best predictors of increased risk for Type 2 diabetes and its progression are elevated fasting plasma glucose, abnormal glucose tolerance tests, obesity, and impaired insulin action.<sup>3</sup> Insulin, a hormone generated in the pancreas, regulates the amount of glucose in the blood as an energy source in the body. Cells in a person with Type 2 diabetes do not respond normally to insulin, a condition known as insulin resistance. Prediabetes and Type 2 diabetes occur when the pancreas can no longer generate enough insulin to keep glucose within normal levels. High blood sugar damages the body, causing other severe health conditions or comorbidities such as heart disease, vision loss and kidney disease.<sup>5, 6</sup>

## Why It's Important

Type 2 diabetes can cause significant health issues and comorbidities such as cardiovascular issues, kidney disease and neuropathy, reducing quality of life and resulting in depression. Diabetes-related complications can escalate quickly to high-risk situations or life-threatening emergencies which can also result in higher medical costs. Members with diabetes have more inpatient stays, more emergency room utilization, and need interventions to improve both physical and mental health. Members with diabetes and multiple chronic conditions report various barriers to self-care, such as physical limitation, lack of knowledge and the increasing cost of health care.<sup>6</sup>

Diabetes costs can be categorized into four major components, which contribute to 88% of medical expenditures:

1. Hospital inpatient care (30% of the total member cost)
2. Prescription medications to treat complications of diabetes (30%)
3. Anti-diabetic agents and diabetic supplies (15%)
4. Physical office visits (13%)<sup>7</sup>

## The Role of Connected Pharmacy in Medical Outcomes and Savings

When employers integrate pharmacy benefits alongside medical and behavioral health benefits, it expands the line of sight into members' diabetes care. Utilization Management programs and outreach are more personalized. Members receive better guidance to maintain safe, effective and appropriate drug use. Medical and pharmacy care management teams help them close gaps in care and increase adherence, reducing their risk of future complications and achieving medical savings for themselves and their employers.

THE ANNUAL COST OF DIABETES IS

**\$412.9 BILLION<sup>8</sup>**

# THE VALUE OF CONNECTED BENEFITS

**When medical and pharmacy benefits are connected, they are administered by a single carrier, creating the potential for better care coordination between medical and pharmacy benefits.<sup>9</sup>**

## The Care Cost Savings of Members With Diabetes

In a study of 2021 data, performed by HealthScape Advisors in 2022, BCBSOK's medical costs and key utilization and engagement metrics for administrative service only groups were assessed. The study also examined the impact of connected pharmacy benefits on members with chronic conditions, including diabetes. In aggregate, members with diabetes diagnoses who had connected medical and pharmacy benefits cost their employers 14% less, or an average of \$737 Per Member Per Year savings.<sup>10</sup>

## How Connected Benefits are Making a Difference for Members With Diabetes

Focusing on the 2021 and 2022 plan years, this integrated diabetes study evaluates the true cost of managing diabetes through the carved-in (connected medical and pharmacy benefits are administered under the employer's health plan) and carved-out (only medical benefits are administered under the employer's health plan) models. By examining medical and pharmacy expenses, this study aims to provide an understanding of the financial impacts of managing members with diabetes and contribute to a deeper understanding of the value and cost-effectiveness of connected medical and pharmacy benefits.

# Hypothesis/Objective

## The Integrated Diabetes Study

This Integrated Diabetes Study was conducted in Illinois and Texas markets. To gain a holistic view of the care journey of members with diabetes, the following business areas analyzed medical and pharmacy costs and health outcomes of members with and without connected benefits.

- Client and Product Analytics: Identified the key trend differential and risk factor adjustments between members with and without connected benefits.
- Enterprise Data Science: Created the "Likelihood of High-Cost" model using predictive modeling to forecast diabetes costs for members with carved-in pharmacy benefits.
- Health Care Management Reporting: Identified HCM program engagement rates and tracked outreach and engagement of members with diabetes.
- Health Care Management Support: Identified success stories and metrics related to improved medical outcomes of members with diabetes.
- Pharmacy Care Management Support: Tracked member success stories and metrics related to improved adherence and prescription cost management strategies.
- Rx Analytics: Tracked clinical performance of members with diabetes and monitored pharmacy spending related to medication adherence, utilization management navigation, prior authorization, step therapy and dispensing/quantity limits.
- Behavioral Health: Identified the correlation between diabetes and behavioral health issues such as depression.

Methodology

The study's methodology and results have been reviewed and validated by internal analytics and actuarial teams. The research focused on a cohort of commercial group members in Illinois and Texas with a primary diagnosis of Type 2 diabetes. Medical and pharmacy data for 77,000 members with connected benefits was compared with data for 67,000 members with medical-only benefits. Members with connected medical and pharmacy benefits had standard care management programs as part of their integrated benefits. HCM, PCM, Mercer Health Advantage or Configurable Care Management programs provide member guidance to improve health outcomes and medical savings. Medical costs for members with and without connected benefits were compared across six diabetic conditions (disease bands), focusing on members with diabetes as the primary condition. The severity of the specific diabetic conditions is color coded below.

- 1. Diabetes with Acute Complications
- 2. Diabetes with No or Unspecified Complications
- 3. Diabetes with Ophthalmic Manifestation
- 4. Diabetes with Neurologic or Peripheral Circulatory Manifestation
- 5. Type 1 Diabetes Mellitus
- 6. Diabetes with Renal Manifestation

Based on all diagnoses presented in claims, the Verscend (Cotiviti) risk engine was used to assign a principal risk driver and score. Risk scores are a relative measure of the underlying illness burden. On an individual basis, the risk score accounts for member demographics (age and gender) and chronic disease indicators. Each principal risk driver category (disease band) creates a homogeneous subset of members with similar disease load, fitting within a narrow risk band.

4	Diabetes with Acute Complications
5	Diabetes with No or Unspecified Complications
4	Diabetes with Ophthalmic Manifestation
4	Diabetes with Neurologic or Peripheral Circulatory Manifestation
3	Type 1 Diabetes Mellitus
4	Diabetes with Renal Manifestation

5 - Very High Risk
4 - High Risk
3 - Medium Risk
2 - Low Risk
1 - Very Low Risk
0 - No Additional Risk

Members with diabetes diagnoses who had connected medical and pharmacy benefits cost their employers 14% less.<sup>10</sup>



# Medical Study Results

## Medical Cost for Carve-in vs. Carve-out Pharmacy Benefits

Looking at the data, two things were revealed. Type 2 diabetes as a primary risk driver stabilizes over time, lowering average risk for members by 7%–16% across the six diabetic disease bands. Additionally, when benefits are connected, members in disease bands with no or unspecified complications experience care management that lowers comorbidity and risk while achieving better health outcomes.



### Medical Cost Savings

Based on the total allowed cost, medical cost savings were 8%–10% (\$24–\$38 PMPM) lower for members with carved-in pharmacy. Members with connected benefits are managed to lower medical costs than members with medical-only benefits. Changes in cost drivers for members with connected medical and pharmacy benefits resulted in lower current medical costs and lower future expected medical costs.



### Medical CGM Supplies Lowered the Total Cost of Care

A portion of the study focused on 6,093 members\* with uncontrolled Type 1 or 2 diabetes who were guided to use their pharmacy benefits to obtain preferred continuous glucose monitoring supplies that resulted in better control of their blood sugar. They were able to avoid inpatient and outpatient utilization and ER visits, which resulted in medical cost savings of \$255 PMPM. This represents a \$170 PMPM reduction in total cost of care between medical and pharmacy costs.

\* The CGM cohort included 6,093 members, 52% with Type 1 diabetes and 48% with Type 2 diabetes.



### Lower Medical Cost of 8%–10% Resulted From an Observed 6.7% Lower Risk Trajectory\*\*

This holistic examination of the care journey of members with diabetes views pharmacy as a treatment continuum.

\*\* Risk trajectory percentage based on the Texas population with diabetes.



### Medical Services Cost

Members with connected benefits received more preventive screenings and regular monitoring. Their diabetes was better controlled, and they had fewer events requiring ER, urgent and in-patient intervention compared to members without connected benefits.

- Outpatient costs were \$9–\$17 PMPM lower.
- Outpatient ER costs were \$4–\$6 PMPM lower.
- Inpatient costs were \$4–\$6 PMPM lower.



### Medical HCM Engagement

Integrated medical and pharmacy claims help identify members who can benefit from care management programs that guide them to use their benefits and get better health care. This holistic line of sight provides actionable data and optimizes care management. Year-over-year, health care management engagement for members with carved-in benefits was 108%–126% higher. Members with connected medical and pharmacy benefits were more engaged with health care management services. Targeted outreach and programs help close clinical gaps, increase appropriate utilization and improve health outcomes.



### Medical Professional Services

Professional costs were \$1–\$2 PMPM higher for members with connected benefits, reflecting higher utilization of professional services for prevention and monitoring. By analyzing real-time data, we can reach members when it matters. They receive treatment that is coordinated, personalized and timely.





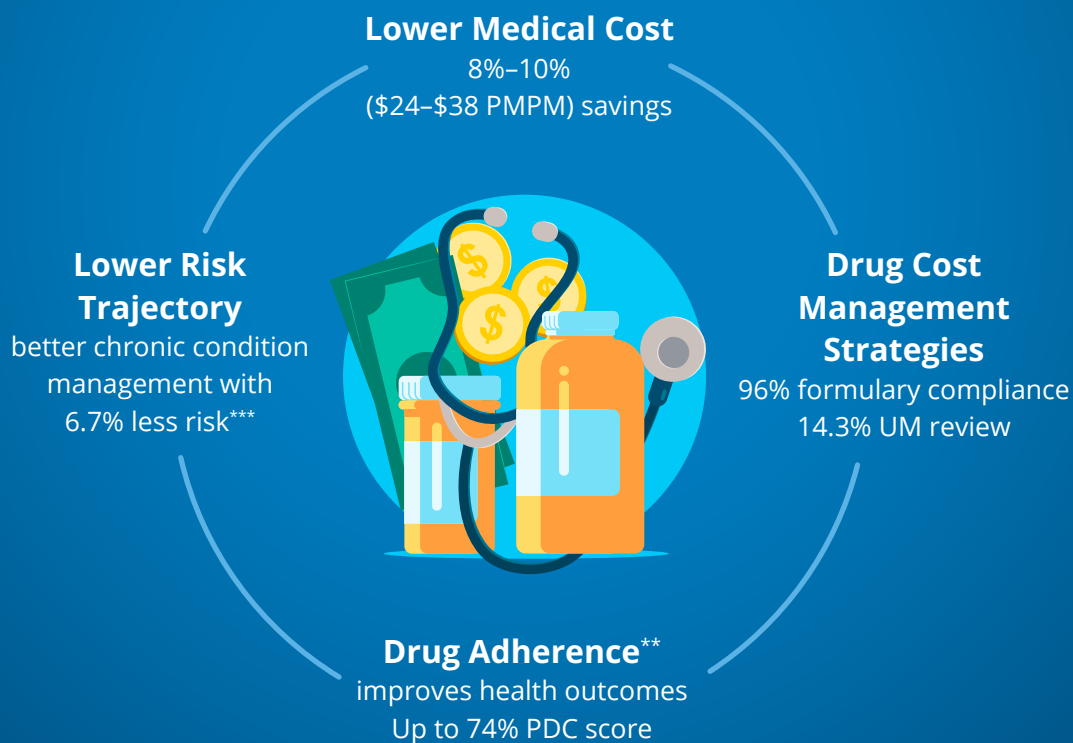
With diabetes, finding **savings** can be confusing. Stress can **add up**. Help employees see their care more clearly **with connected benefits**.

## Medical Services Utilization (Carve-out Metrics)

- Members with carved-out pharmacy had 13% more ER and urgent professional visits.
- ER visits/1,000 were higher for members with carved-out vs. carved-in pharmacy benefits.
- Outpatient visits/1,000 were 13% higher for members without connected benefits.

# Integrated Care Journey of Members With Diabetes

**Medical + Pharmacy Costs =  
Total Cost of Care ~\$1,500 PMPM**



\* Medical costs and pharmacy net cost per member per month = cost to the study population (77,000 Illinois and Texas members with diabetes as the principal risk factor, and carved-in pharmacy benefits).

\*\* Drug costs include ingredients and utilization adherence. The components of trend (AWP inflation, network discounts and rebates) change year-over-year.

\*\*\* Risk trajectory percentage is based on the Texas population.



# Pharmacy Study Results

Pharmacy data for the 77,000 utilizers with carved-in pharmacy benefits was analyzed for benefit years 2021 and 2022. Pharmacy data is not available for members with medical-only benefits. The available data revealed that the study population filled 2.2 million prescriptions in the diabetes medication category totaling \$530 million in 2022.

## Components of Rx Trend (Study Population)



### Rx Trend 13.7% Increase

The data shows that while members with carved-in pharmacy had lower medical costs, their pharmacy costs were slightly higher, which may be due to increased medication adherence.



1. Utilization increased by 10.3% on prescriptions filled for diabetes control.



2. Drug mix increased by 5.2% — Member benefits allow for a choice of generic, preferred or non-preferred brand medications, affecting overall pharmacy costs, but possibly also supporting medication adherence.



3. Cost trend decreased by 1.8% — Even with increased utilization, groups with connected benefits saw a negative cost trend, reflecting our network discounts, rebate programs — which focus on lowering the costs of brand and specialty drugs — and the change in average wholesale price inflation.

## Drug Cost Management Strategies

- National industry drug trend increases year-over-year as utilization increases. Our prescription cost management strategies reduce overall pharmacy costs through formulary compliance, member guidance toward preferred brands and utilization management programs. UM programs review medications based on clinical criteria and safety edits, resulting in plan-paid savings. Our UM programs help ensure that members maintain safe, effective and appropriate drug use, enabling them to lower their risk of future complications and realize medical cost savings for themselves and their employers.
- 96% Formulary Compliance: Formulary compliance occurs when members use medications covered under their benefit design. High formulary compliance may reflect effective formulary pricing and increased member engagement.
- 14.3% Utilization Management Review: UM reviews ensure that the medications utilized are appropriate, safe and cost effective [NIH, AMCP]. This includes prior authorization, step therapy and dispensing/quantity limits. Fourteen percent of members with diabetes encountered UM reviews with a 44% approval rate.
- Findings reflected 1.6 times year-over-year increase in UM reviews, resulting in plan-paid savings of \$0.38 PMPM.

## Medication Adherence

- Increased pharmacy utilization trend may also reflect improved medication adherence. Medication adherence is crucial to achieving diabetes control and preventing future complications. Effective member outreach and drug pricing strategies resulted in up to 74% PDC adherence rate across multiple classes of diabetes medications.
- The study population increased adherence to their diabetes medications by up to 74%, demonstrating that while adherence may result in slightly increased pharmacy costs, it also improves overall health outcomes and lower medical spending. Engaging members through outreach and targeted programs that close care gaps and increase adherence reduces their risks and improves their health outcomes.
- The study's findings also indicate that adherence rises among members with comorbidities who are prescribed multiple medications. The adherence rate was assessed for diabetes, hypertension, cholesterol and depression.
- According to studies, a 20% increase in adherence decreases health care use by 4%. Effective utilization management can improve medication adherence by as much as 30%, reduce 30-day hospital readmissions by 24% and reduce ER visits by 30%.<sup>11</sup>

# Comorbidity Insights

This integrated diabetes study focused on Type 2 diabetes and its comorbidities, including cardiovascular complications and diabetes-related depression, as major drivers of medical costs.

## Comorbidity Medical Results

Cardiovascular Comorbidities (Carve-out Metrics): Members with medical-only benefits are at 3%–4% higher risk for diabetes-related cardiovascular complications and higher treatment costs of 10%–11% (\$30–\$40 PMPM), compared to members with connected benefits. Comparatively, members with atherosclerotic cardiovascular disease were managed to lower risk and lower medical costs when they had carved-in pharmacy benefits.

## Depression Comorbidity

The risk of depression is higher in members with uncontrolled diabetes, and the cost of treating diabetes-related depression more than doubles compared to treatment costs for diabetes alone. The total cost of care for diabetes with depression diagnosis was \$26,906 compared to \$13,127 for diabetes alone.

## Comorbidity Pharmacy Study Results

Depression Medication Adherence: Pharmacy data indicated that family medicine practitioners prescribe 56% of antidepressants, while only 12% are prescribed by psychiatrists. The cost of treating members with both diabetes and depression diagnoses is more than double the cost of treating members with diabetes only.

## Data-Driven Health Care: Predicting the Cost of Members With Diabetic Complications

We use predictive modeling tools such as the "Likelihood of High-Cost Model (LOHCM) tool" to identify members who can benefit from care management outreach. Pharmacy data is particularly useful for predictive modeling. The primary role of the LOHCM tool is to identify the top 1,000 active members who are most likely to become high-cost (>\$50K) claimants in future medical spend. Of the top-scoring 1,000 members identified through the LOHC model, 482 members had medical-only benefits compared to 504 members with connected medical and pharmacy benefits. The LOHCM tool correctly identified ~22 additional members for care management interventions (equivalent to a 4.5% increase in accurate predictions). **Pharmacy data can provide more accurate predictions in care management identification models, leading to more targeted patient outreach.**

## Conclusion

This study demonstrates that when pharmacy benefits are connected with medical and behavioral health benefits, diabetes is better managed, progression to complications is delayed and medical costs are reduced. Connected benefits provide a holistic view of the member journey, helping cut through the confusion, and improve care management and the quality of life for members with diabetes.

## We're here for you, so you can be there for them.

This is only one of the many resources we have to empower you with the information you need to support your employees. Reach out to us to learn more about how connected benefits can simplify the health journey for employees with diabetes. We have the clear, concise, measured advice you need to help make sure you're providing the best care to your workforce. That's why we're here. For you, and for them.

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the right message  
to come **through**.  
Connected benefits  
show employees  
you've worked  
through **the confusion**.



For more information  
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