Aon
U.S. Health & Benefits

Accolade: The Effect of Personalized Advocacy on Claims Cost

A Case Study of Two Employer Groups

October, 2018

Preparation of This Report

This report has been prepared to present Aon's analysis of the medical utilization and financial results of two self-insured employers utilizing Accolade's innovative consumer engagement and personalized navigation model. We will refer to these groups as **Employer A** and **Employer B** in this report. The analysis covers the 2016 calendar year for Employer A and 2014, 2015, and 2016 calendar years for Employer B. The purpose of this analysis is to compare the claims cost under Personalized Advocacy as delivered by Accolade to a broad population of self-insured employers representing the general employer market as captured in the IBM Truven Health MarketScan® Research Databases. The analysis was commissioned by Accolade.

In conducting the analysis, we have relied on detailed claims and membership data provided to us by Accolade. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonability. As a result of this review, we have no reason to doubt the substantial accuracy and completeness of the information and believe that it has produced appropriate results.

This analysis has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board. The methods used in this report are described in the Data Sources and Methodology sections of this report.

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Executive Summary

The potential for improvements in member experience and reductions in cost for employer medical plans through enhanced member navigation services has been an area of significant interest for employer health plan sponsors. This experience study analyzes two employers utilizing Accolade's personalized advocacy and clinical support services between 2014 and 2016 compared against typical employers during the same period.

By using a pairwise matching technique whereby each Accolade member is matched to controls derived from a population of nearly 16 million employer plan members, we develop cost comparisons of Accolade's customers compared to outcomes achieved by large employers for identical demographic, geographic and comorbidity profiles. We compare the allowed cost experience at Accolade vs. contemporaneous results for similar plan members. This direct comparison methodology addresses key limitations of observational studies that often fail to separate market trends from intervention effects and that do not typically provide robust benchmarks beyond trended historical data.

Compared to a matched control group from the multi-employer database, Accolade's customers experienced:

- Total Allowed Cost for Employer A that is $359 Per Member Per Year (PMPY) or $782 Per Employee Per Year (PEPY) lower than the control group. This represents a 6.5% reduction compared to similar employer groups.

- Total Allowed Cost for Employer B that is $232 PMPY or $527 PEPY lower than the control group for 2016. This result represents a 4.7% reduction compared to similar employer groups.

- Reduced cumulative cost growth from 2014 to 2016 of 2.7% for Employer B compared to 7.8% two-year trend for the control group. Annualized allowed trend was 1.3% for Employer B vs 3.8% for the control group.

- Reductions in cost for Employer A were driven by lowered inpatient, outpatient and professional medical spend compared to control. Reductions in Employer B costs were driven by lower outpatient facility, professional and significantly lower brand and specialty pharmacy spend compared to the matched control group.

- Reductions in cost for complex members managing multiple chronic conditions and lower severity of high-cost claimants at or above the 90th and 95th percentile of costs. For both employers, the largest total cost reductions were driven by adults in the 45-59 age group.

- For Employer B, reduced costs for patients managing common chronic conditions including Musculoskeletal, Mental Health, Diabetes and Hypertension.

While many employers have relied on increases in deductibles and cost-sharing requirements to control cost and utilization, the two employers analyzed in this report maintained plan design richness that was consistently between 2 and 4 actuarial value points higher than the control group. These results demonstrate that Accolade's customers have experienced cost reductions through personalized advocacy beyond what typical employers have accomplished for the same period.

Data Sources

Accolade: Employer A and B Data

Detailed medical and pharmacy claims experience for Employer A (2016) and Employer B (2014-2016) and membership data were provided by Accolade. Eligibility was restricted to members between the ages of 0 and 64 with at least 8 months of enrollment in a given year.

Multi-Employer Benchmark Control Group

The multi-employer benchmark population was derived from the IBM Truven Health MarketScan® Research Databases for 2014, 2015 and 2016. This dataset represents the claims experience of hundreds of commercial employers and payers nationally allowing for robust control group development. Employers represented in the IBM Truven databases tend to be larger self-insured entities with more sophisticated benefits programs in place and thus the cost baselines represented by these databases are broadly representative of the experience of the largest self-insured employer purchasers of healthcare in the country.

The MarketScan® databases were restricted to members from employer groups with complete medical, pharmacy and mental health claims data present. Consistent with the Employer A and B data, we further restricted the eligible members to those between the ages of 0 and 64 with at least 8 months of enrollment in a given year.

Catastrophic claimants exceeding $750,000 of claims in a single year were excluded from both Accolade and multi-employer benchmark populations.

Methodology

To develop appropriate comparison groups for each employer, two separate control groups were derived from the multi-employer benchmark population to match the membership profiles of Employers A and B respectively. Since Employer B was evaluated for each of the years 2014, 2015 and 2016, a separate control group was derived independently from each year's MarketScan database. Each member from Employer A and B was matched to the 3 most similar individuals in the multi-employer database based on multiple variables using pairwise algorithmic matching:

- Age was binned in 3-year intervals and age, gender and adult/child status were matched to the nearest available controls.

- Geography was matched for all members at the MSA/CBSA-level with approximately 97% of all Employer A and 98% of all Employer B members matched to controls within their local areas. Members where insufficient local controls were found were matched nationally.

- Presence of chronic conditions was matched by developing chronic condition indicators for each member based on primary medical diagnostic codes according to the Chronic Condition Indicator and Clinical Classifications Software (CCS) developed by the AHRQ Healthcare Cost and Utilization Project (HCUP). Diagnostic Laboratory and Imaging claims were excluded from the development of the indicators. The number of chronic conditions were further reduced by removing indicators with low explanatory power as measured by a regularized generalized linear model predicting the concurrent allowed member cost.

- The final list of chronic condition indicators used for patient matching included:

    - Primary Cancer or Metastatic Cancer
    - Multiple Sclerosis
    - Rheumatoid Arthritis
    - Osteoarthritis
    - Irritable Bowel Disease
    - Esophageal / Upper GI Diseases
    - Renal Failure
    - Hepatitis
    - Blood Disorders
    - Pregnancy Indicators
    - Neurological Disorders
    - Hypertension or Cardiovascular Disease
    - Immune System Diseases
    - Diabetes or Diabetes with Complications
    - Lower Back / Disc Diseases
    - Asthma / COPD
    - Mental and Mood Disorders
    - Substance Abuse Disorders

    Members were always matched to other members with the exact same conditions and combinations of conditions present. Members with no chronic conditions were always matched to controls with no chronic conditions present.

Overall, we were able to match over 99.8% of all members in Employer A and 99.9% in Employer B. Remaining members were dropped from the study; these were typically members with rare combinations of multiple chronic conditions where an insufficient number of controls could be found. For Members where multiple identical matches were identified, the controls were selected at random from the identical match candidates.

We performed testing pre-and post-matching and found that all member variables had standardized mean difference values of less than 0.01 post-matching indicating appropriate balance of the covariates between the Accolade employer and derived control groups.

We performed sensitivity testing around the catastrophic exclusion level and found the results to be similar at the $1,000,000, $750,000 and $500,000 exclusion levels with the $750,000 level being selected for the analysis. All members exceeding $750,000 in allowed claims in a given year were excluded from the analysis from both the Employer groups and the Control population. Control to Treatment ratios of over 3:1 were also tested and found to produce consistent results with the 3:1 ratio but with lower local geography match rates.

All measurements of cost and utilization metrics were derived from the raw claims experience of the matched members and calculated using identical methods for Employer A, Employer B and the matched multi-employer datasets. For the purposes of measuring Inpatient Utilization, inpatient stay start and end dates were identified based on facility claims and all medical services occurring on those days were grouped as part of the inpatient cost. Outpatient claims were split into facility and professional claims on the basis of the presence of facility revenue codes. Pharmacy claims were classified into generic, brand and specialty claims according to the IBM Truven Health Red Book™ database, with specialty drugs being defined as brand medications with a 30-day supply cost exceeding $1,000.

Methodology Discussion

The most challenging aspect of studying the effects of interventions on benefit costs is the difficulty of obtaining appropriate contemporaneous controls for comparison. Few employers are able to conduct randomized experiments within their benefit programs and industry studies typically rely heavily on observational evaluations across years that are easily influenced by selection bias, reversion-to-the-mean, or choice of major assumptions such as trend, plan design, or relative risk factors. By trending forward baseline data, pre/post comparisons often fail to account for industry trends affecting all employers broadly such as the reduction of inpatient utilization, increase in outpatient and specialty drug utilization and increase in generic dispensing ratios that are common across the industry.

The matching methodology used in this analysis addresses several key measurement challenges. By deploying a computationally-intensive pairwise matching technique on one of the largest claims datasets in the country we can develop appropriate controls for each participant matched on over 20 dimensions of geography, demographics and chronic condition presence. The results of this study compare claims experience of the two Accolade customers to contemporaneous claims experience from other employers, thus avoiding the need to adjust for market trend, population changes and other manual adjustments. The goal of this process is to ensure that the distributions of risk exposure across the measurement and control populations are as close as possible with the key

remaining difference being the “treatment effect” of the population health intervention performed by Accolade.

We believe the results produced by this methodology are conservative and more readily generalizable to the broader employer market for several reasons:

- The control population is derived from some of the largest and most competitive employer benefit programs in the country

- We measure and report on the differences between actuals at Accolade and employer control norms. In practice, many Accolade clients have started their journey with cost baselines above the employer norms and thus initial results could significantly exceed the cost reductions reported here. Conversely employers who are already achieving cost results below the general employer norms may have a smaller window for improvement.

- We use allowed costs (pre-plan design) and do not explicitly adjust for plan design richness and induced utilization; such an adjustment would have resulted in greater reported cost reductions as both Employer A and B maintained materially higher benefit richness compared to the multi-control norms and neither employer offered a high-deductible, HSA-compatible plan to their population.

Employer A

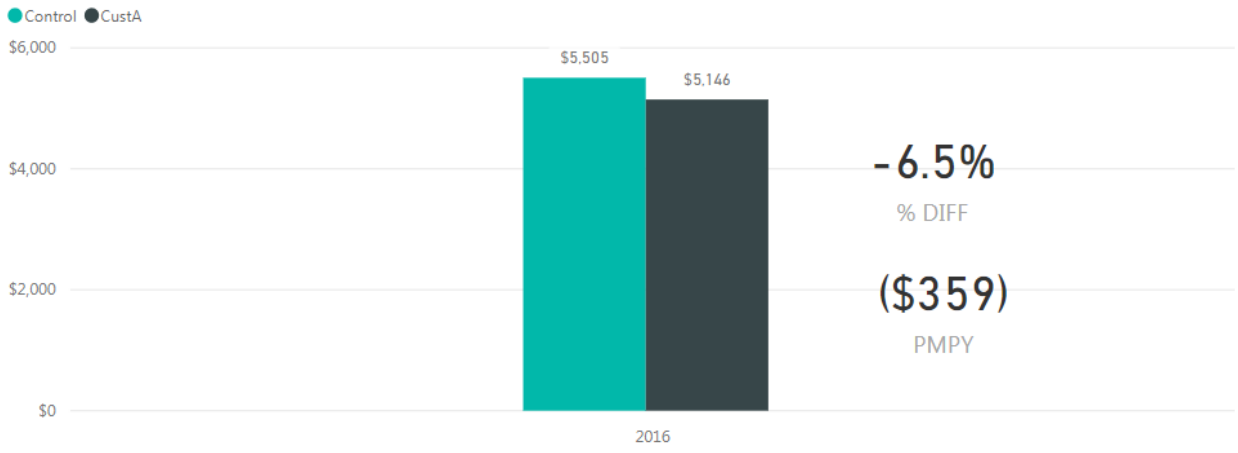
Employer A is a medium-size population of over 10,000 members with presence in most states. We evaluated Employer A claims experience in 2016 only with Accolade services having been implemented effective 1/1/2016. Employer A implemented Accolade services after exceeding 15% medical trend prior to 2016 despite previous plan design richness reductions and vendor changes. Accolade has engaged with more than 60% of the families of Employer A during the initial year.

This analysis reports costs on an “Allowed” basis prior to the application of plan design cost-sharing. Employer A members were offered standard PPO plans with copays for office visits and deductibles and coinsurance for major services. We measured an overall Actuarial Value of 85% based on 2016 experience which exceeded the matched control group richness level of 83%. There were no HSA-compatible high-deductible plan options offered. As a result, no further adjustments for plan design were made and any actuarial richness adjustments would have resulted in greater cost reductions.

Average age at Employer A was 37 across all members which is above average for typical employers prior to matching.

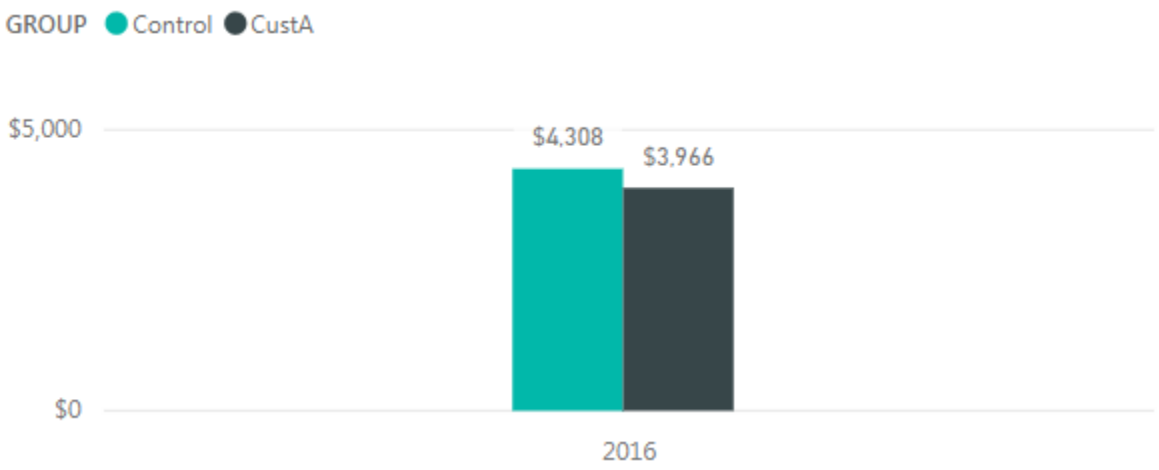
Total Allowed Costs

A1: Employer A, Total Allowed Costs vs Control, 2016

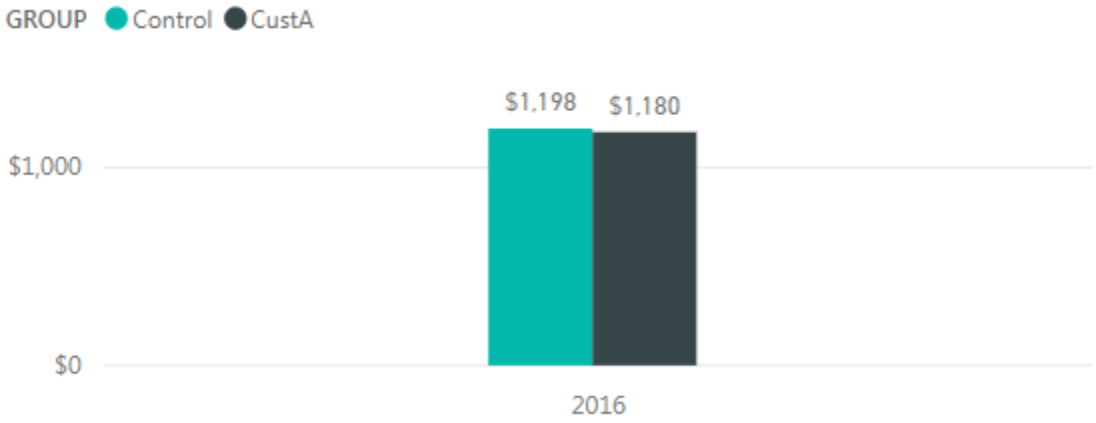


We compare the total allowed medical costs PMPY to the matched control group in Chart A1 and find a $359 per member reduction in cost or 6.5% for 2016, the first year that Accolade was implemented for this employer. On a per employee basis, this results in costs that are $782 PEPY lower compared to equivalent groups.

A2: Employer A, Total Allowed Medical Costs vs Control, 2016



A3: Employer A, Total Allowed Pharmacy Costs vs Control, 2016



Analyzing spend components for Medical and Pharmacy separately in Charts A2 and A3, we find the bulk of the reduction for Employer A was driven by lower medical spend compared to control, with medical spend per member being 7.9% lower. Pharmacy spend for 2016 was consistent with the control group.

Cost Comparisons by Spend Category

Table A4: Employer A Breakdown Spend Category, 2016

Component	Employer A PMPY	Control PMPY	Ratio	Difference PMPY
Inpatient Spend	$1,077	$1,125	95.7%	-$48
Outpatient Facility Spend	$1,551	$1,597	97.1%	-$46
Outpatient Professional	$1,339	$1,585	84.5%	-$246
Drugs: Generics	$248	$269	92.2%	-$21
Drugs: Brand	$448	$441	101.6%	$7
Drugs: Specialty	$483	$488	99.0%	-$5
Total Difference PMPY				**-$359**

Table A4 breaks down the spend categories further showing Employer A costs compare favorably to benchmark across major categories with the largest reductions driven by Medical Inpatient, Outpatient Facility and Outpatient Professional Spend.

Cost Comparisons by Demographics

Table A5: Employer A Breakdown by Age Group, 2016

Age Bracket	Employer A PMPY	Control PMPY	Ratio	% Members	% Costs
0-14	$1,988	$2,539	78.3%	14.7%	5.7%
15-29	$2,888	$3,011	95.9%	21.1%	11.9%
30-44	$4,528	$4,746	95.4%	20.8%	18.3%
45-59	$7,082	$7,503	94.4%	34.8%	47.9%
60-64	$9,684	$10,286	94.1%	8.6%	16.2%

Table A5 groups Employer A members against control group members by age bracket comparing total annualized costs. Younger children for Employer A had costs significantly below benchmark, but only represented 15% of the total group. The largest age group, adults aged 45-59, shows a cost reduction of $421 per member per year, representing the biggest portion of total savings across the population. We find cost reductions were more significant for members aged 45+ compared to younger members ages 15-44.

Comorbidity Group Comparison

Table A6: Employer A Breakdown by # Chronic Conditions, 2016

Chronic Conditions	Employer A PMPY	Control PMPY	Ratio	% Members	% Costs
0	$1,483	$1,840	80.6%	64.1%	18.5%
1	$7,311	$7,479	97.8%	24.5%	34.9%
2	$14,759	$16,707	88.3%	8.2%	23.5%
3+	$36,813	$34,588	106.4%	3.2%	23.0%

Employer A had 36% of members diagnosed with at least one chronic condition, representing nearly 82% of all costs. Compared to the control group, we found consistently lower costs for members with up to 2 comorbidities. For members with 3 or more chronic conditions, we found the costs to be above benchmark; however, that difference is not statistically significant due to the small sample size at Employer A and high volatility of these complex patients.

Catastrophic Claims Distribution Comparison

Table A7: Employer A: Conditional Tail Expectation of Cost Distribution, 2016

Cost Distribution Percentile	Conditional Tail Expectation ($PMPY)					
	Members with 0 or 1 conditions			Members with 2 or more chronic conditions		
	Employer A	**Control**	**Ratio**	**Employer A**	**Control**	**Ratio**
75th and above	$10,517	$11,321	**92.9%**	$62,446	$64,800	**96.4%**
80th and above	$12,486	$13,397	**93.2%**	$71,687	$75,175	**95.4%**
90th and above	$20,629	$21,841	**94.5%**	$104,213	$114,713	**90.8%**
95th and above	$32,730	$34,040	**96.2%**	$142,455	$166,476	**85.6%**

In Table A7 we divide the population into members with 0 or 1 chronic conditions or complex members managing 2 or more chronic conditions who tend to exhibit a significantly wider distribution of costs. We compare the cost ratios of Employer A against the Control group based on the expected cost of members exceeding a given percentile in the cost distribution, capturing the Conditional Tail Expectation. Employer A members sustain lower conditional tail expectations at all levels 75th percentile and above. For the top 10% (90th Percentile) of complex members, Employer A's cost level of $104,213 in 2016 was $10,500 or 9.2% lower than the corresponding top 10% of the

control population and for the top 5% (95th Percentile) Employer A experienced a 14.4% reduction in the conditional tail expectation for high-cost claimants.

Note: Due to the small sample sizes for Customer A and high variance for chronic conditions, we did not find condition-level comparisons to result in credible samples to include in this analysis.

Employer B

Employer B is a large Fortune 500 population of over 100,000 members with national presence in most US states and metropolitan areas. We evaluated Employer B claims experience between 2014 and 2016 with Accolade services having been implemented prior to 2014. Accolade has engaged with more than 65% of the families of Employer B during the study period.

This analysis reports costs on an “Allowed” basis prior to the application of plan design cost-sharing. Employer B employees were offered two national-carrier PPO options with copays for office visits and deductibles and coinsurance for other services. There were no HSA-compatible high-deductible plan options offered and Employer B maintained the same plan designs between 2014 and 2016 with stable enrollment by plan option. We measured an overall Actuarial Value of 87% based on 2016 experience which exceeded the employer norms where average richness was 83%. As a result, no further adjustments for plan design were made and any actuarial richness adjustments would have resulted in greater cost reductions.

There were no substantial changes to networks or discounts during this period.

Average age at Employer B was 29 across all members which is below average for typical employers prior to matching.

Total Allowed Costs

B1: Employer B, Total Allowed Costs vs Control, 2014-2016

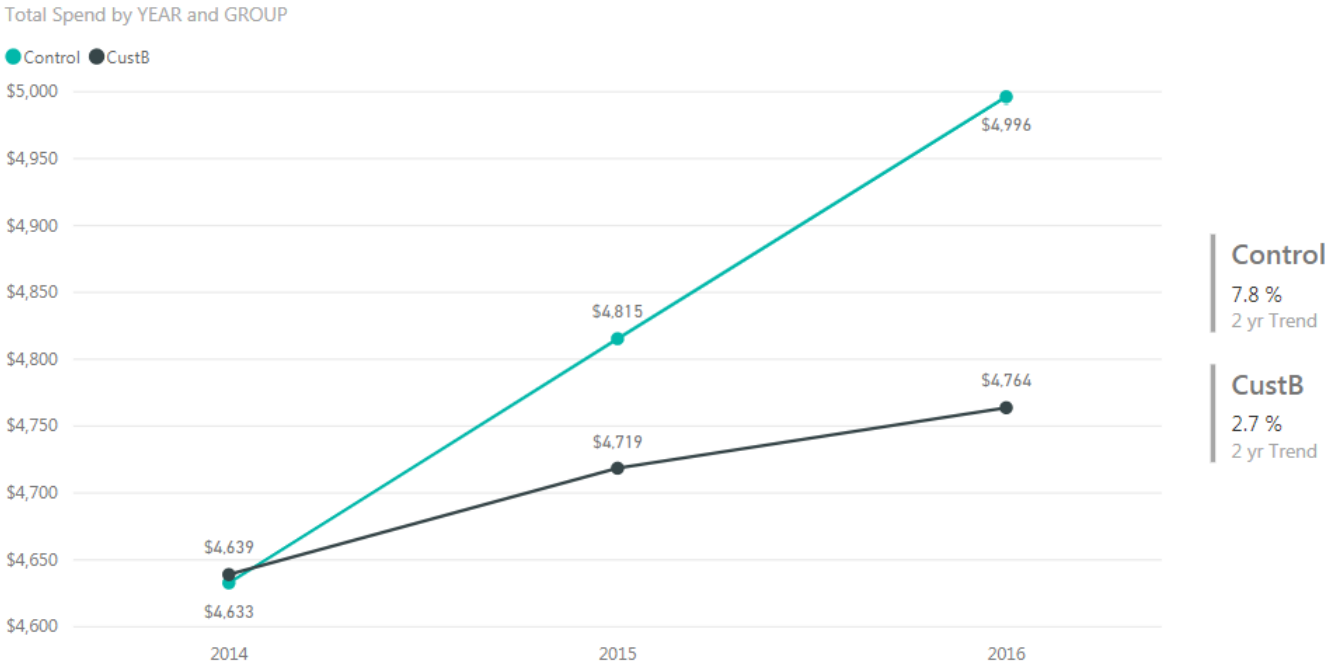
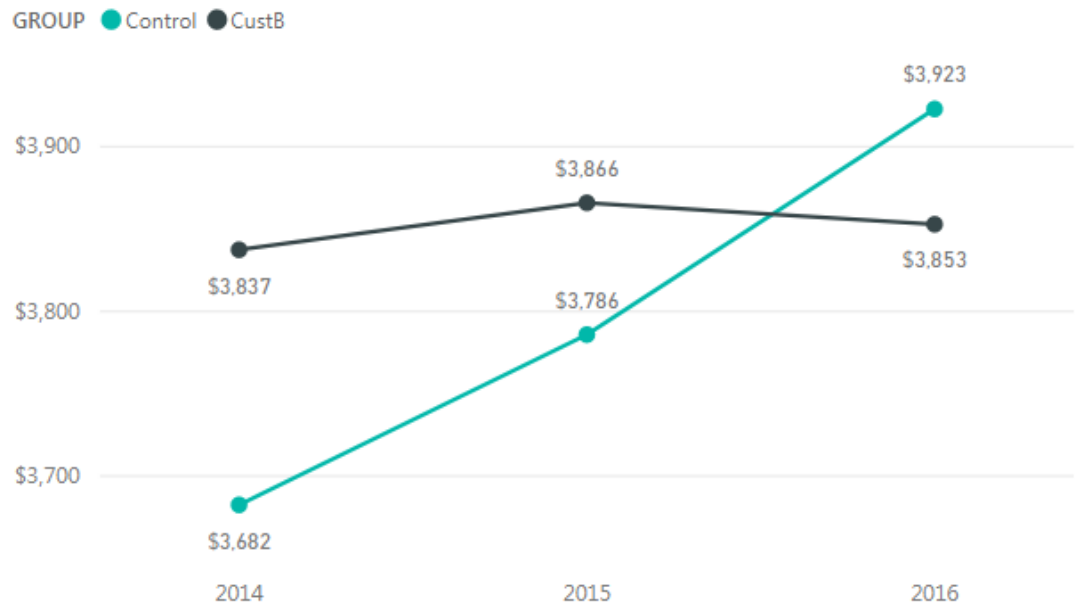
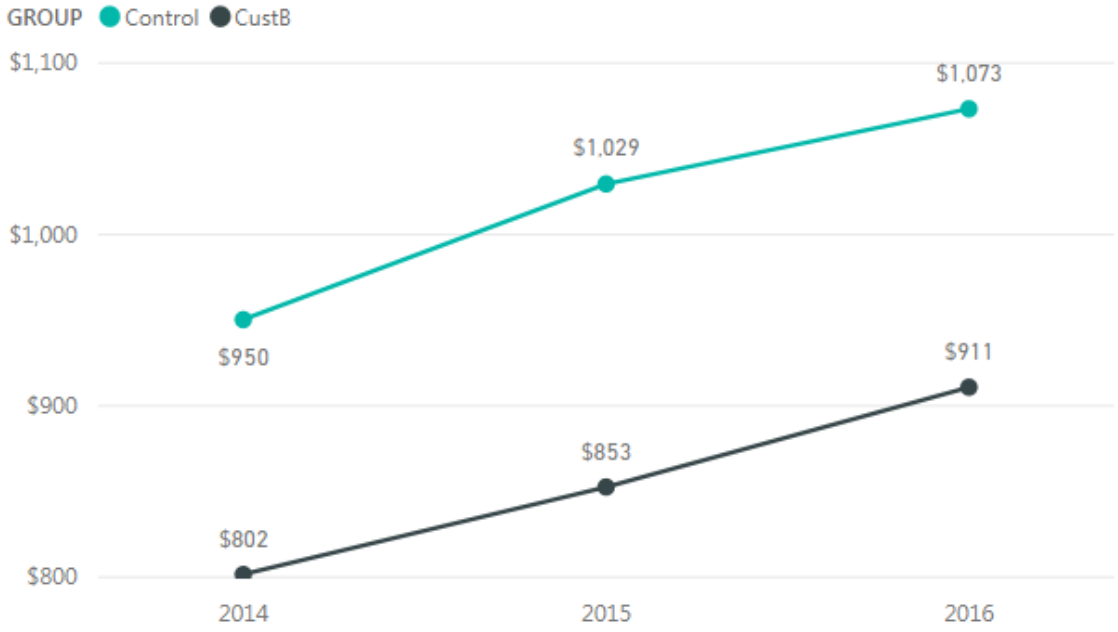


Chart B1 compares the costs at Employer B to the control groups for each of the three years during the 2014-2016 period. We find Employer B had a similar starting point as the benchmark in 2014 but sustained significantly lower growth rates in 2015 and 2016 resulting in 2016 cost being 4.7% below the control group. This result corresponds to an annualized trend rate for allowed cost of 1.3% for Employer B vs 3.8% for similar risks in the multi-employer sample. 2016 cost levels at Employer B were $232 PMPY lower than control members, or $527 PEPY lower for Employer B.

B2: Employer B, Total Allowed Medical Costs vs Control, 2014-2016



B3: Employer B, Total Allowed Pharmacy Costs vs Control, 2014-2016



Analyzing spend components for Medical and Pharmacy in Charts B2 and B3, we find that Medical trend for Employer B was flat at 0.4% growth for the period, while the benchmark population medical costs increased by 6.5% from 2014 to 2016. The lower trend resulted in Employer B medical costs at 1.8% below the benchmark for 2016.

Pharmacy costs for the three years were consistently lower for Employer B compared to the control group, with Pharmacy cost in 2016 being over 15% lower than benchmark.

Cost Comparisons by Spend Category

Table B4: Employer B Breakdown Spend Category, 2016

Component	Employer B PMPY	Control PMPY	Ratio	Difference PMPY
Inpatient Spend	$1,073	$1,027	104.5%	$46
Outpatient Facility Spend	$1,263	$1,289	98.0%	-$26
Outpatient Professional	$1,516	$1,607	94.3%	-$91
Drugs: Generics	$189	$222	85.1%	-$33
Drugs: Brand	$273	$350	78.0%	-$77
Drugs: Specialty	$448	$502	89.2%	-$54
			Total Difference PMPY	**-$232**

Decomposing the Medical and Pharmacy spend categories further in Table B4, we see the bulk of the Medical spend reductions were driven by lowered Outpatient Facility and Outpatient Professional Spend, while the Pharmacy reductions were driven by Brand and Specialty cost reductions with Brand drug spend being 22% below the multi-employer control group norm.

Cost Comparisons by Demographics

Table B5: Employer B Breakdown by Age Group, 2016

Age Bracket	Employer B PMPY	Control PMPY	Ratio	% Members	% Costs
0-14	$2,507	$2,534	98.9%	23.3%	12.3%
15-29	$3,331	$3,587	92.9%	22.7%	15.9%
30-44	$5,061	$5,265	96.1%	30.5%	32.5%
45-59	$7,397	$7,864	94.1%	20.8%	32.4%
60-64	$12,412	$12,224	101.5%	2.7%	7.0%

Table B5 groups Employer B members against control group members by age bracket comparing total annualized costs. All age groups with the exception of 60-64 reported lower costs compared to the control groups. The most significant dollar reduction per member was for the 45-59 group where Employer B members were $467 PMPY lower than benchmark, driving nearly 45% of the total savings for the entire group. With only

21% of the membership in the 45-59 category and a younger overall demographic at Employer B, this suggests that employers with an older demographic could generally expect to see greater absolute dollar savings even if percentage savings are similar.

Comorbidity Group Comparison

Table B6 shows a comparison of average costs for all members with 0,1,2, or 3 and more chronic conditions present. All comorbidity levels for Employer B have lower costs compared to the control group in 2016. While only 3 percent of members are managing three or more conditions, this highly complex group represents the largest total cost reduction compared to the control group with Customer B being $2,878 per member lower in cost. Over half of the total dollar cost reduction is generated by the sickest 9% of members with 2, 3 or more chronic conditions.

Table B6: Employer B Breakdown by # Chronic Conditions, 2016

Chronic Conditions	Employer B PMPY	Control PMPY	Ratio	% Members	% Costs
0	$1,690	$1,760	96.0%	68.9%	24.5%
1	$7,486	$7,769	96.4%	21.8%	34.4%
2	$16,511	$17,114	96.5%	6.6%	23.1%
3+	$32,647	$35,525	91.9%	2.6%	18.1%

Catastrophic Claims Distribution Comparison

Table B7: Employer B: Conditional Tail Expectation of Cost Distribution, 2016

Cost Distribution Percentile	Conditional Tail Expectation ($PMPY)					
	Members with 0 or 1 conditions			Members with 2 or more chronic conditions		
	Employer B	**Control**	**Ratio**	**Employer B**	**Control**	**Ratio**
75th and above	$10,259	$10,558	**97.2%**	$61,302	$64,665	**94.8%**
80th and above	$12,145	$12,485	**97.3%**	$70,579	$74,505	**94.7%**
90th and above	$19,831	$20,300	**97.7%**	$106,336	$111,492	**95.4%**
95th and above	$30,669	$31,275	**98.1%**	$153,031	$159,674	**95.8%**

In Table B7 we divide the population into members with 0 or 1 chronic conditions or complex members managing 2 or more chronic conditions who tend to exhibit a significantly wider distribution of costs. We compare the cost ratios based on the

expected cost of members exceeding a given percentile in the cost distribution, capturing the conditional tail expectation for Employer B compared to the Control group. Employer B members sustain lower conditional tail expectations at all levels 75th percentile and above. For the top 10% (90th Percentile) of complex members, Employer B's cost level of $106,336 in 2016 was $5,156 or 4.6% lower than the corresponding top 10% of the control population and for the top 5% (95th Percentile) Employer B experienced a 4.2% reduction in the conditional tail expectation for high-cost claimants. Members managing two or more conditions exhibit lower cost ratios compared to healthier members (0 or 1 conditions) suggesting a stronger care management effect for more complex patients at all levels 75th percentile and above.

Chronic Condition Comparisons

Members diagnosed with chronic conditions represent less than 32% of the total population for Employer B in 2016, however they generate over 75% of all medical and pharmacy spend in the group. Table B8 compares the total annualized 2016 costs for members diagnosed with the top 10 conditions by prevalence against members of the control group diagnosed with the same conditions. We find Employer B chronic patients experience lower costs for the same conditions, with the largest reductions observed in patients diagnosed with Mental Health and Musculoskeletal diseases (Disc, Osteoarthritis). *P*-values in Table B8 are reported based on a two-sample mean test indicating that the lower average costs by condition are statistically significant despite the smaller sample sizes, with the exception of Cardiovascular Disease, Nervous System Disorders and Cancer where the differences are not significant.

Given the low average member age for Employer B (29), the prevalence of chronic conditions prior to matching is generally lower than a typical employer population suggesting that older populations with higher condition prevalence could experience more sizable cost reductions under a similar program.

Table B8: Employer B: Top-10 Chronic Conditions by Prevalence, 2016

Condition	% All Members	Employer B PMPY	Control Group PMPY	Ratio	*P*-value
Inv. Disc Disorders; Back Problems	8.9%	$10,942	$12,093	90.5%	< .001
Hypertension (Uncomplicated)	4.7%	$7,954	$8,568	92.8%	.011
Asthma / COPD	4.4%	$8,923	$9,961	89.6%	< .001
Cardiovascular Diseases	4.4%	$22,479	$22,905	98.1%	.605
Nervous System Disorders	4.3%	$21,829	$22,760	95.9%	.145
Mental / Substance Abuse Disorders	3.9%	$11,562	$13,210	87.5%	< .001
Diabetes	3.5%	$14,609	$15,676	93.2%	.015
Upper GI / Esophageal Disease	2.0%	$13,415	$14,620	91.8%	.034
Osteoarthritis	1.5%	$16,555	$18,361	90.2%	< .001
Cancer (Primary)	1.0%	$23,502	$23,879	98.4%	.814

Limitations and Further Study

This analysis has attempted to minimize the impact of many common methodology challenges when it comes to measuring the effect of benefit program changes on member cost patterns. The matching algorithms and comprehensive multi-employer dataset used present a rigorous normalization for risk exposure within each plan year that avoids the use of external assumptions such as trend, geographical and demographic factors.

Factors that could positively or negatively impact the cost comparisons that we could not control for in this study include:

- Significant differences in medical or pharmacy discounts negotiated between Employers A and B and typical large self-insured employers
- Differences in programs, vendors and protocols other than those delivered by Accolade that have influenced patient care and utilization patterns
- Socioeconomic factors that could drive different utilization patterns beyond medical risk exposure
- Differences in Out-of-Network utilization patterns and management
- Differences in claims administration or quality of data provided to us

Both employers maintained similar programs utilizing national medical and pharmacy carriers and standard PPO networks that did not materially change during the study period. The study normalizes for design differences by using Allowed Medical costs as the primary metric of comparison. We further note that both employers maintained plan design richness that exceeded the average richness of the control groups and any further adjustments for plan design would have resulted in more significant cost reductions measured.

This study was designed to capture a realistic cost comparison based on all plan members covered in each plan year and for costs reported within the year: the standard metrics that large employer plan sponsors operate on. Certain detailed comparisons, such as studying the impacts of improved navigation and care management on chronic conditions and clinical disease progression and long-term costs may be better explored by a longitudinal cohort design that tracks the same patients over more than 12-month periods.