personify™ HEALTH

Report

Impact of Personify Health Wellbeing Programme

A Third Party Validated Study of the Personify Health Wellbeing Programme

Conducted by MERATIVE™

Abstract

Personify Health offers a suite of solutions through its innovative personalised health platform to optimise employers' investment in their members' health and wellbeing. Merative Health Insights (also known as Truven Health Insights) identified five mutual employer clients (>60k participants) who use both Merative's data warehousing services and Personify's wellbeing offerings.

Merative conducted an evaluation of the impact of member engagement on medical and pharmacy costs and utilisation by five Personify Health wellbeing clients. **The hypothesis was that engaged members would be better users of the health care system and cost less.** The analysis compared Personify wellbeing clients to the Merative MarketScan®, which represents a benchmark database of approximately 4,500 customers that include 40% of the Fortune 100 employers, seven of the top 10 U.S. payers, 70+ state, local and federal government agencies, and approximately 293 million lives. The benchmark was adjusted by age, gender, relationship (employee or spouse), geography, and plan type (HDHP, CDHP, HMO, PPO/POS). In addition, the report evaluates absolute cost changes as well as cost trends between Personify wellbeing platform participants (engaged) and non-participants (control).

The following are the highlights of this study:

14% lower healthcare costs for Personify wellbeing participants across total inpatient and pharmacy compared to market benchmark

- Personify Health wellbeing participants had 14% lower costs year over year, potentially indicating a cost savings, amounting to $699 PMPY. Costs were lower across inpatient (29%) and pharmacy (38%) when compared to the adjusted market benchmarks, potentially reflecting more effective utilisation and management.

- Engaged participants had a larger proportion of outpatient costs compared to inpatient costs, showing more use of lower costs.

More favourable utilisation behaviours such as higher preventative care utilisation, lower mental health cost trends, and decreased inpatient utilisation for engaged participants

- In 2022, engaged participants demonstrated a more proactive approach to managing their wellbeing with 21% greater spend on preventive health and 23% more preventive visits compared to the control group.

- Engaged participants reduced spend by 3% and 9% in anxiety and depression, respectively, from 2021 to 2022. The engaged group also had 3% fewer cases of depression and a 6-percentage point lower growth rate in anxiety compared to the control group, potentially indicating positive mental and emotional health outcomes from the wellbeing program – especially in the post-pandemic years.

- In 2022, engaged members had 11% fewer acute admits compared to a non-engaged group and a 5-percentage point improvement in cost efficiency related to avoidable admits, potentially driven by higher preventative care utilization and better management of overall health and wellbeing.

Key cost drivers for the engaged group were major outpatient procedures, pharmacy costs, and high growth rates of diabetes and CAD, emphasising the importance of appropriate care use and the need for benefit plan optimisation

- The engaged group had 28% higher costs in major outpatient procedures in 2022, driven within OB/GYN, GI, and orthopedic service lines. Within these areas, health plan administration strategies can drive cost optimisation.

- Engaged members had 8% higher costs compared to the control group. This offers an opportunity for specialty drug cost strategies like alternative payment models or site of care navigation.

- In 2022, engaged members had 7% and 10% higher prevalence in diabetes and coronary artery disease (CAD), respectively, and an erosion in cost efficiency compared to controls. This may indicate that members are seeking care management through their wellbeing program.

The wellbeing program encompasses a variety of features that may have motivated engaged participants to be preemptive with regards to their health and find support for their emotional wellbeing. In addition, the clients included in this study also utilised additional Personify Health services, such as coaching or digital therapeutics, that may have also had a positive impact on their health behaviours and contributed cost -savings.

Introduction and Scope

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Personify Health offers a suite of services through its innovative personalised health platform to optimise employers' investment in their members' health and wellbeing. It brings together health plan administration, holistic wellbeing, and navigation solutions in one simple to use, intelligent, and extensible platform that engages members, to delivering outcomes. The Personify platform empowers members to achieve success every day by building and sustaining routines that form healthy habits. Using data-driven personalisation and science-backed methodology, Personify weaves relevant, trusted interventions into members' daily lives that translate into meaningful change and measurable outcomes.

Personify Health sought to evaluate the impact of member engagement on medical and pharmacy costs and utilisation. The objective of this evaluation was to compare Personify Health wellbeing client' healthcare costs to the MarketScan benchmark database, which is a claims database representing Merative's book of business. The MarketScan benchmark for the comparator population was adjusted by age, gender, relationship (employee or spouses), geography, and plan type (HDHP, CDHP, HMP, PPO/POS). The adjusted benchmark database had a sample size of 4.5 million lives.

In addition, the study evaluated the impact of the Personify wellbeing programme on members' medical and prescription drug costs and cost trends over time. Merative sought to calculate a cost savings amount based on members' claim data experience. To compare engaged and non-engaged control participants, a cost and utilisation trend study compareding first-year intervention to second-year intervention. The features used for matching between engaged and non-engaged control members include age, salaried indicator, region (based on state), gender, employee status, plan type, DCG concurrent relative risk score, medical patient count (as a measure of engagement at baseline), evidence of a chronic condition using Merative's Medical Episode Grouper, and relationship to subscriber (self or dependent). The sample size for the pooled group was 61,202 members.

Review of Results

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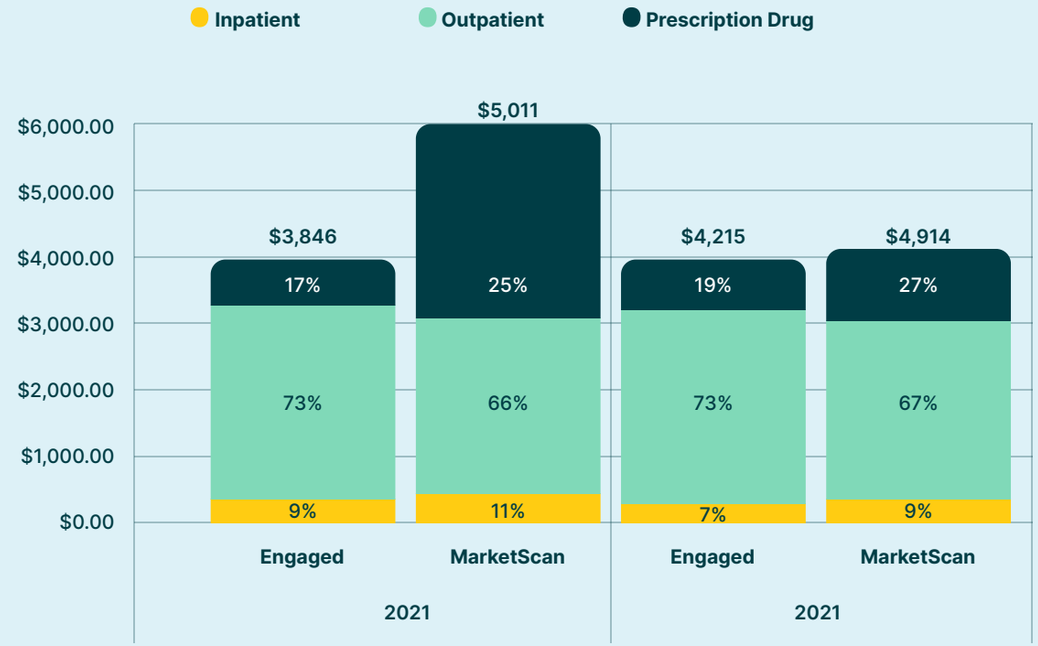
Lower medical costs for Personify Health wellbeing participants across total inpatient and pharmacy compared to market benchmark

Using an adjusted benchmark, Personify Health wellbeing programme participants demonstrated 14% lower costs year over year, potentially indicating a cost savings amounting to $699 PMPY. Costs were lower across inpatient (29%) and pharmacy (38%) when compared to the adjusted market benchmarks. Engaged participants had a larger proportion of outpatient costs compared to inpatient costs, showing more use of lower costs. While the MarketScan group observed a reduction in total costs from 2021 to 2022, the overall costs of Personify Health engaged wellbeing participants remained lower than the market rate.



Engaged participants used more preventive care, experienced lower mental health cost trends, and used fewer inpatient stays when compared to controls

	Engaged		Control		% Change		
Preventive Care Utilisation	**2021**	**2022**	**2021**	**2022**	**Engaged**	**Control**	**Difference**
Preventive Cost PYPM	$247	$272	$204	$225	10%	10%	-0.2% ppts
Cholesterol Screening Rate	62%	58%	52%	50%	-6%	-4%	-2% ppts
Mammogram Screening Rate	63%	65%	51%	51%	4%	-0.4%	4% ppts
Cervical Cancer Screening Rate	32%	29%	28%	26%	-11%	-7%	-3% ppts
Preventive Visits (per 1,000)	649	652	506	530	0.5%	5%	-4% ppts

Higher preventive care utilisation

In 2022, engaged participants spent 21% more on preventive health and had 23% more preventive visits compared to control, indicating a proactive approach to managing their wellbeing. Engaged participants also had higher cholesterol, mammogram, and cervical cancer screening rates across all years. While the control group had a greater increase in preventive visits from 2021 to 2022, the engaged group had a greater number of total visits per year than the control group.

Lower growth rate of mental health costs

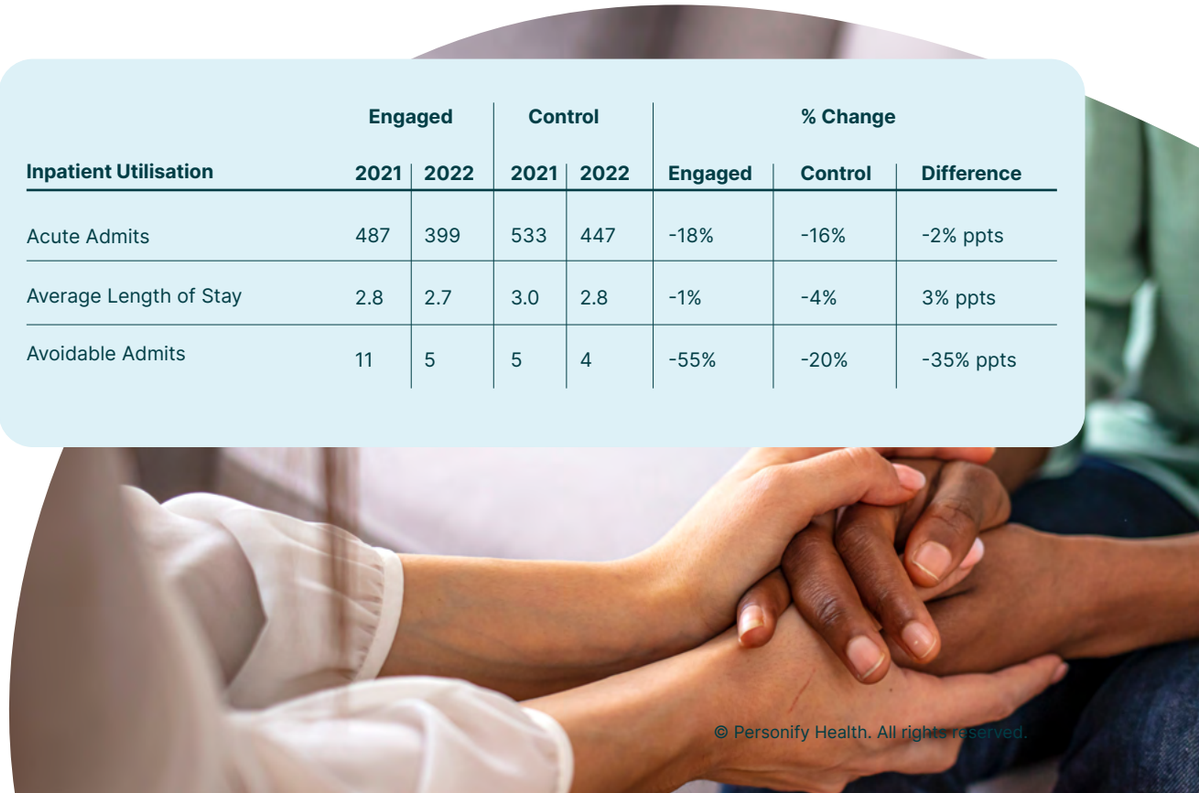
Engaged participants reduced spend by 3% and 9% in anxiety and depression, respectively, from 2021 to 2022. The engaged group also had 4% fewer cases of depression and a 6 % percentage point lower growth rate in anxiety, potentially indicating positive mental and emotional health outcomes from the wellbeing programme - especially in the post-pandemic years.

	Engaged		Control		% Change		
Mental Health Cost & Prevalence	**2021**	**2022**	**2021**	**2022**	**Engaged**	**Control**	**Difference**
Depression ($)	$98	$89	$93	$87	-9%	-6%	-3% ppts
Depression (per 100)	5.9	6.5	6.0	6.7	9%	12%	-3% ppts
Anxiety ($)	$64	$62	$53	$59	-3%	11%	-14% ppts
Anxiety (per 100)	5.9	6.3	5.7	6.4	7%	13%	-6% ppts

Reduced inpatient utilisation health costs

In 2022, engaged members experienced 11% fewer acute admits, potentially driven by higher preventative care utilisation and better management of health and wellbeing. Further, the engaged participants experienced a 55% reduction in avoidable admits compared to a 20% reduction in avoidable admits by the control group.

	Engaged		Control		% Change		
Inpatient Utilisation	**2021**	**2022**	**2021**	**2022**	**Engaged**	**Control**	**Difference**
Acute Admits	487	399	533	447	-18%	-16%	-2% ppts
Average Length of Stay	2.8	2.7	3.0	2.8	-1%	-4%	3% ppts
Avoidable Admits	11	5	5	4	-55%	-20%	-35% ppts



Key cost drivers for the engaged members included major outpatient procedures, pharmacy costs, and higher growth rates of populations with diabetes and CAD, emphasising the importance of appropriate care use and the need for benefit plan optimisation

Major outpatient procedures as a cost driver

The engaged group had 28% higher costs for major outpatient procedures in 2022. These costs were driven by gastrointestinal (colonoscopies and endoscopies), OB/GYN (hysterectomies), and orthopedic procedures. The higher costs were, in part, driven by higher use of these procedures. Benefit design and health plan administration strategies can be leveraged to drive cost optimisation for these types of procedures.

Outpatient Procedure Costs & Prevalence	Engaged		Control		% Change		
	2021	2022	2021	2022	Engaged	Control	Difference
Major OP Procedures	$548	$742	$843	$580	35%	-31%	66.6% ppts
Gastrointestinal ($)	$182	$216	$157	$187	19%	19%	-0.4% ppts
Gastrointestinal (per 1000)	62.97	77.45	55.08	63.59	23%	15%	7.5% ppts
OB/Gyn ($)	$64	$79	$81	$61	23%	-25%	48.1% ppts
Gastrointestinal ($)	8.91	9.67	9.67	9.67	9%	-40%	48.4% ppts
Gastrointestinal (per 1000)	$63	$68	$68	$68	8%	26%	-18.1% ppts
OB/Gyn ($)	8.02	8.60	8.60	8.60	7%	17%	-10.1% ppts

Higher pharmacy costs for engaged members

Addressing pharmacy costs offers an opportunity for PBM-specific cost optimisation, particularly in specialty medications where engaged members had 8% higher costs compared to the control group in 2022.

	Engaged		Control		% Change		
Pharmacy Costs	**2021**	**2022**	**2021**	**2022**	**Engaged**	**Control**	**Difference**
Total Rx	$660	$821	$689	$794	24%	15%	9.2% ppts
Rx Non-Specialty	$621	$740	$634	$718	19%	13%	5.9% ppts
Rx Specialty	$39	$81	$55	$75	108%	36%	71.3% ppts

Significant increase in diabetes and CAD growth rates and CAD growth rates health costs

Engaged members had 7% and 10% higher prevalence in diabetes and coronary artery disease (CAD), respectively, in 2022, compared to the control population. Engaged populations experienced higher trend rates compared to the control group. These higher costs and trends may be driven by members' increased awareness and motivation from their engagement in the Personify wellbeing programme.

	Engaged		Control		% Change		
Condition Cost & Prevalence	**2021**	**2022**	**2021**	**2022**	**Engaged**	**Control**	**Difference**
Diabetes ($)	$141	$201	$184	$228	43%	24%	18.6% ppts
Diabetes (per 100)	5.43	6.3	5.3	5.88	16%	11%	5.1% ppts
CAD ($)	$20	$34	$33	$20	70%	-39%	109.4% ppts
CAD (per 100)	0.70	0.85	0.64	0.77	21%	20%	1.1% ppts

Conclusion

Conclusion

Engaged wellbeing participants using Personify Health had lower health care costs than the adjusted market comparison group across inpatient, outpatient, and pharmacy costs, potentially reflecting effective utilisation and management of healthcare resources. Engaged members also demonstrated higher use and spend on preventive services, suggesting a proactive approach to managing their health. This likely plays a role in their longer-term lower overall healthcare costs compared to the market benchmark.

The Personify platform may have contributed to a positive impact on mental health, with engaged members experiencing reduced growth rates in depression and anxiety costs and prevalence. This is a significant benefit given the growing burden of mental health challenges.

Platform features such as My Care Checklist with Claims Integration, Healthy Habits, and Journeys, and the incentivised structure of the rewards programme, may have motivated engaged participants to be preemptive with regards to their health and find supports for their emotional and physical wellbeing. In addition, these clients also had additional Personify Health services such as coaching that may have also had a positive impact on their health behaviours and health-related expenses.

While Personify's clients had lower overall costs compared to the market benchmark, opportunities exist to optimise utilisation of major outpatient procedures and pharmacy utilisation, specifically specialty medications. Tailoring benefit designs and cost-sharing structures could address these cost drivers.

An increase in diabetes and CAD prevalence rates among engaged members indicateding that they are looking for care through the wellbeing programme, highlighting the need for targeted interventions to address these clinical conditions and improve long-term health outcomes. Digital therapeutic offerings may help curb the rising rates of chronic conditions observed in this study.

Clients

Merative and Personify Health strategically selected five mutual employer clients who utilise both Merative's data warehousing services and Personify Health's wellbeing offerings. These clients were chosen to ensure the study's integrity, as an independent party already possessed the data, supporting the credibility of the results. All five provided consent to be included in the study. These employers each initiated the Personify wellbeing program at or close to the beginning of 2021 and represent diverse industries and organisations, including utilities, financial, manufacturing, and higher education. These employers were mid to large size employers, with a variety of plan types, including PPOs, HDHP, CDHP, and HMOs. Merative conducted data analysis on each employer individually and as a group in a pooled analysis2. The pooled group contained a total sample of 61,202 individuals.

Engagement Definition

To study program impact, Merative employed an analysis to compare a population meaningfully engaged in Personify's wellbeing program to a population that was not meaningfully engaged in Personify at any point. Participants were stratified by Personify into engagement groups, and Personify provided the definition of meaningful engagement. Users were considered "engaged" if they used the platform on at least a weekly basis, while users were considered "controls" if they engaged with the platform on average monthly or less.

Data Sources

Personify Health sent participant engagement data to Merative, who then integrated it with data from each employer's enterprise data warehouse. The data warehouse contains medical and prescription drug claims information as well as benefit eligibility information.

Analysis Plan

To understand the impact of the Personify Health wellbeing offering, an evaluation of costs and trends between the Personify Health pooled engaged population to Merative's MarketScan national database (comparator population). MarketScan is a claims database representing Merative's book of business. Within MarketScan, there are approximately 4,500 customers that include 40% of Fortune 100 employers, seven of the top 10 U.S. payers, 70+ state, local, and federal government agencies, and approximately 293 million lives. The MarketScan benchmark for the comparator population was adjusted by age, gender, relationship (employee or spouse), geography, and plan type (HDHP, CDHP, HMP, PPO/POS). The adjusted benchmark database had a sample size of 4.5 million lives.

To compare engaged and non-engaged control participants, the study evaluated a two-year period. The time periods for this evaluation was 2021 (post-intervention year 1) and 2022 (post-intervention year 2)

Methodological Assumptions and Adjustments

COVID-19

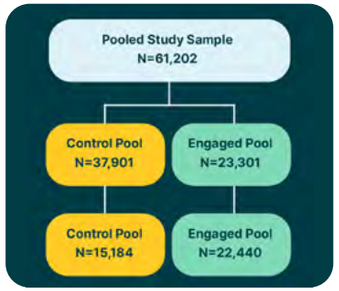
This evaluation timeframe aligns with the COVID-19 pandemic that struck the world in early 2020 and resulted in severe societal measures to stem the spread of the coronavirus infection. Much research has demonstrated the impacts of COVID-19 on the healthcare system and on people's usual interactions with it. This evaluation does not control for those impacts, but participants and controls alike were theoretically exposed comparably.

Inclusion and Exclusion Criteria

Participants and potential controls were excluded from the evaluation if they were high-cost claimants (medical plus pharmacy allowed amounts greater than or equal to $50,000 in any of the study time periods) to avoid the impact of catastrophic claimants. In addition, they were excluded given the focus on wellbeing and broad-based population health instead of acute solutions. High-cost claimants were also excluded from the MarketScan benchmark for comparability. Members were also required to have three years of continuous enrolment as an active member enrolled in their employer's medical and pharmacy benefit program to ensure that claims were available to analyse and to control for employee turnover.

Matching

The MarketScan benchmark was adjusted by age, gender, relationship (employee or spouses), geography, and plan type (HDHP, CDHP, HMP, PPO/POS). High-cost claimants were excluded and three-year continuous enrolment applied. The total adjusted MarketScan group contained 4.5 million lives.



Merative matched Personify Health wellbeing participants (engaged) with non-participants (controls) using a k-nearest neighbours matching algorithm. Merative performed statistical testing to ensure the distribution of covariates was not statistically different between participants and controls. Further, Personify Health and Merative sought to match participants with controls within the same employer population. However, some employers did not have a sufficient pool of controls to generate an adequate match. As a result, some controls for some employers, were reused. When reusing controls, Merative weighted its outcomes according to the number of times they were used.

The features used for matching include age, salaried indicator, region (based on state), gender, employee status, plan type, DCG concurrent relative risk score, medical patient count (as a measure of engagement at baseline), evidence of a chronic condition using Merative's Medical Episode Grouper, and relationship to subscriber (self or dependent). The k-nearest neighbours algorithm results in a 100% match. To ensure the highest quality matches were used, Merative used a z-score to drop the lowest performing matches. Match performance is indicated with a distance value.

Health Risk

After matching, additional analysis revealed that the engaged group, on average, had higher DCG risk scores than the control group across all years. In 2021, the engaged group had a mean score of 115 (median = 72) while the control group had a mean score of 108 (median = 64.5). This may indicate that members with higher health risks are more likely to engage with the platform, suggesting that Personify Health drove higher engagement with the population that most needed the solution.

Limitations

This study involved a methodology to match participants with controls based on several potentially confounding factors as well as drivers of one's willingness to participate in the Personify Health wellbeing program and their own health outcomes. However, there are uncontrolled factors that could impact cost, such as differences in network utilisation, unobserved attitudes toward the impacts of COVID-19, social determinants of health, race and ethnicity, and participation in programs outside of Personify Health.

Prior Utilisation of Wellbeing Programme

This study did not control for or account for participation in a wellbeing platform prior to engagement with Personify Health. For example, in 2021 Virgin Pulse acquired Red Brick. Some of the clients analysed in this analysis were using Red Brick prior to transitioning to the platform that is now Personify Health (as a result of the Virgin Pulse/HealthComp merger in 2023). As a result of these prior programs, there may be some legacy behaviours among the engaged participants that carried forward into these results.

Self-Selection Bias

Additional analysis revealed that the engaged group, on average, had higher DCG risk scores than the control group across all years. In 2021, the engaged group had a mean score of 115 (median = 72) while the control group had a mean score of 108 (median = 64.5). This may indicate that the groups have a self-selection bias, where members with higher health risks are more likely to engage with the Personify Health platform. This may indicate that Personify drove higher engagement with the population that needed the solution most.

COVID-19

Participants and controls were matched based on characteristics in a baseline year of 2020. This year was associated with known reductions in health service utilisation, which lead to lower risk scores for members as a result of not receiving as many diagnoses codes. There is a risk that these artificial risk scores could have led to a less optimal match. Merative assessed 2019 risks scores between the engaged group and the comparison group, and this analysis showed very comparable risk scores (0% difference);, however, 2019 data was not available for all clients.

Potential Future Research

Further evaluations of Personify Health wellbeing programme participants should focus on the medium- (3-5 years) to longer-term (5+ years) impacts of programme engagement. This evaluation may indicate that, in the shorter term (1-2 years), engagement with Personify Health is associated with higher spending as participants become more focused on and engaged with their own healthcare needs. However, given that this analysis coincides with a major shock to the healthcare system (COVID-19), Personify Health should also consider conducting a similar evaluation using a different time frame. Given these findings, we may expect to see a long-term positive value impact of higher use of preventive services, medication compliance, and outpatient procedures that avoid high health risks and costs for participants.

In addition, Personify may also consider methods to control for differences between participants and controls other than matching within an employer and reusing matches. For instance, Personify could employ regression to control for differences between the populations and/or consider outside populations for comparison. However, given the consistency of findings in this evaluation, Merative does not expect that an alternative analytic method would have changed the direction of the results.