

## Quality Bike Products Health and Wellbeing Program

### Background

Quality Bike Products (QBP) is a medium-sized employer group head-quartered in the Twin Cities. The company is a major distributor of bicycle products and other active living components and has aligned its corporate health and wellbeing program closely to its business goals and objectives. Over the past several years, the QBP feels that it's continued focus and attention on supporting employees in adopting and maintaining physical activity and exercise (with a focus on bicycling) in the context of an overall health and wellbeing program has paid dividends.

As a result, the “*QBP Health Reward*” program has been introduced which provides employees with a \$110 credit on their QBP account, an account that may be used to purchase QBP products for personal use. This reward is over and above the already integrated financial incentives related to the primary wellness initiative of QBP, the “bike to work” commuter program. This program pays out approximately \$45,000 per year in commuting rewards.

### Purpose

It is the purpose of this case study to place the QBP health and wellbeing program experience in the context of observed results—both from a perspective of employee health indicators as well as financial impact—and consider the plausibility of the impact of the QBP Health and Wellness program on overall health care cost savings.

### Data Sources

#### *Health-Related Data*

Data providing insight into the employee population's health status comes from the HealthPartners “*Achieve Your Health Potential*” health assessment (HA). HealthPartners was the insurance carrier for QBP prior to 2008 and again from 2009-2011. During this timeframe, QBP has been very active in implementing its health and wellbeing initiatives. The HA was administered and completed by 172 employees in 2007 and again in 2011, this time completed by 421 employees (90.7% participation). Due to this context, the HA brackets rather than embraces the rolling 3-year period. A cohort of 115 employees (27%) was identified who completed both the 2007 and the 2011 HA. This cohort provides us with an opportunity to consider changes in population health over the course of 3 years.

In addition, a list of QBP employees who regularly commute to work and meet criteria for the commuting reward has been compiled. These employees represent a sub-group of QBP's wellness

program participants for whom an additional analysis was conducted to assess their medical claims experience.

### *Financial Data*

Cost-related data comes from three sources:

1. QBP Human Resources has reported on overall “per member per month (pmpm) costs for the years 2007 and 2010 based on company records.
2. HealthPartners has provided data to assess the overall claims experience of the commuters subgroup and compared them to the overall claims experience of the non-commuters (those who did not qualify for the financial incentive).
3. The HA provides a series of summary health scores that reflect the health of the population. Two of these scores, the Modifiable Health Potential Score (MHPS) and the Quality of Life Score (QOLS), are used to predict overall health care expenditures for the population. This approach has been validated in separate analyses and allows for an estimation of cost savings due to health improvement when the change in MHPS and QOLS between 2007 and 2011 is considered.

### **Analysis**

An analysis was conducted to provide the following:

- A. Overall QBP employee population health and productivity profile
- B. Change in health status of the QBP employee population between 2007 and 2011
- C. Change in overall health care costs from 2007-2011
- D. Difference in health care costs incurred among commuters compared to non-commuters during 2010
- E. Estimated health care cost savings from 2007-2011 (3 years) based on changes in health potential scores

### **Results**

- A. *Overall QBP employee population health and productivity profile*

The overall QBP employee population health and productivity profile is summarized based on the 2011 HA results in the Table 1 below:

**Table 1: Selected QBP Health and Productivity Indicators for 2011**

Health Measure	QBP Population (n=421)	Comparison Population (n=108,238)	QBP Relative Status
THPS	881	844	Better
MHPS	432	404	Better
QOLS	117	116	Similar/Better
Low Risk for Diabetes and/or HD	86.5%	62.1%	Better
High-Risk for Diabetes and/or HD	11.4%	30.6%	Better
Diagnosed with Diabetes and/or HD	2.2%	7.4%	Better
HRPL-Absenteeism	1.1%	1.8%	Better
HRPL-Presenteeism	4.8%	5.2%	Better
HRPL-Overall	5.7%	6.4%	Better
Heart disease	0.7%	2.5%	Better
Diabetes	1.4%	5.4%	Better
Depression	17.1%	17.7%	Similar/Better
Obese	28.9%	14%	Better
Low physical activity	18.3%	34.2%	Better
Low fruits and veggies intake	63.2%	66%	Better
Tobacco use	7.4%	10.3%	Better
Hazardous use of alcohol	5.9%	2.1%	Worse
Perceived health status (poor)	2.9%	5.1%	Better

Note: 87.4% of QBP vs. 58% of Comparison population is between age 20 and 40 years old; THPS = Total Health Potential Score; MHPS = Modifiable Health Potential Score; QOLS = Quality of Life Score; HRPL = Health-Related Productivity Loss; HD = Heart Disease

B. *Change in health and productivity status of the QBP employee population between 2007 and 2011*

The change in QBP employee population health and productivity profile is summarized based on the changes observed among a cohort of 115 employees from 2007-2011 (3-year change):

**Table 2: Selected QBP Health and Productivity Changes for 2007-2011 (3-year Change)**

Health Measure	2007 QBP Cohort (n=115)	2011 QBP Cohort (n=115)	Change
THPS	844	877	33 (Good)
MHPS	410	432	22 (Good)
QOLS	109	113	4 (Good)
Low Risk for Diabetes and/or HD	87.0%	85.2%	-1.8% * (Not Good)
High-Risk for Diabetes and/or HD	12.2%	13.0%	0.8% * (Not Good)
Diagnosed with Diabetes and/or HD	0%	0.9%	0.9% * (Not Good)
HRPL-Absenteeism	2.5%	2.2%	-0.3% (Good)
HRPL-Presenteeism	7.9%	6.7%	-1.2% (Good)
HRPL-Overall	9.7%	8.4%	-1.3% (Good)
Heart disease	0%	0%	No change
Diabetes	0.9%	1.7%	0.8 * (Not Good)
Depression	20%	20%	No change
Obese	16.5%	15.7%	-0.8% (Good)
Low physical activity	27.8%	21.7%	-6.1% (Good)
Low fruits and veggies intake	74.8%	58.3%	-16.5% (Good)
Tobacco use	8.7%	4.3%	-4.4% (Good)
Hazardous use of alcohol	16.5%	8.7%	-7.8% (Good)
Perceived health status (poor)	6.1%	6.1%	No change

Note: \* = change score represents change in less healthy direction, i.e., no improvement); THPS = Total Health Potential Score; MHPS = Modifiable Health Potential Score; QOLS = Quality of Life Score; HRPL = Health-Related Productivity Loss; HD = Heart Disease

C. *Change in overall health care costs from 2007-2011*

QBP Human Resources has reported, based on a review of company records, that the company experienced an overall decrease of 4.4% in the pmpm health care costs from 2007 to 2011. This reduction is in stark contrast compared to the average pmpm increase of 24.6% in health care costs for companies across the nation for the same time period. This reduction in health care costs reflects the collective impact of health care related decisions and actions made at QBP including increased use of generics as opposed to brand name prescriptions, improvements in healthier eating patterns, increased physical activity, less tobacco use and other, perhaps unobserved, positive changes.

Using the average 2010 pmpm claims costs of \$231.03, estimated savings at 4.4% over 3 years are:

$$[\$231.03 \times 4.4\%][36 \text{ months}][464 \text{ employees}] = \underline{\$169,880}$$

D. *Difference in health care costs incurred among commuters compared to non-commuters during 2010*

Following a review of 2010 claims data, HealthPartners, QBP’s health insurance plan, reported unadjusted pmpm paid health care claims for the group of commuters as compared to the non-commuters at QBP. Commuters included those individuals who participated in the QBP “Bike to Work” program and met the requirements for incentive payout. Table 3 below shows the results of this claims reviews:

**Table 3: Commuter vs. Non-Commuter Claims Review of Claims Paid during 2010**

	<b>PMPM</b>	<b>Member Months</b>
<b><i>Average across all employees</i></b>	<i>\$231.03</i>	<i>6451</i>
<b>Non-Commuters</b>	\$261.30	5266
<b>Commuters</b>	\$96.53	1185
<b>Difference between Commuters and Non-Commuters</b>	<u>\$167.77</u>	

It should be noted that the claims review is based on all members of the insurance plan which includes spouses and dependents. Based on this analysis, assuming that approximately 100 employees are considered to be commuters (based on 1185 member months), an estimated annual savings of \$200,000 is realized for this entire group ( $\$167.77 \times 12 \text{ months} \times 100 \text{ commuters} = \$201,324$ ), or a total 3-year estimated savings of approximately \$600,000.

E. *Estimated health care cost savings from 2007-2011 (3 years) based on changes in health potential scores*

Another way of estimating the impact of the health and wellbeing program at QBP is to consider the relative improvement in population health and estimate cost savings based on that improvement in health which can be associated with less need and demand for medical care resources. The HealthPartners “Achieve Your Health Potential” HA includes a set of summary health scores that represent health factors associated with modifiable health behaviors and quality of life related variables that may change over time in response to positive health changes made by individuals. Aggregating those observations across the population reflects improvement in population health due to changes made in personal health factors largely considered to be under volitional personal control. Subsequently, the MHPS and the QOLS summary health scores have been correlated against medical claims and allow for the prediction of health care expenses. Finally, a Modifiable Summary Score (MSS) is created that adjusts the relative differences between MHPS and QOLS so that the combined improvement in both of these scores can be expressed as a cost savings in dollars.

As outlined in Table 2, a 22-point improvement was noted for the MHPS and a 4-point improvement was observed for the QOLS. We create a composite, weighted score (MHPS and QOLS combined) as a MSS of 23.2-point improvement. Each MSS point has been determined to be worth \$13.00 and, as a result, average estimated cost savings per employee per year (pepy) equals:

$$\$13.00 \times 23.2 \text{ points} = \underline{\$301.60} \text{ pepy.}$$

Several assumptions or scenarios can now be made regarding the program’s impact. Table 4 presents these scenarios:

**Table 4: Assumptions and Scenarios of QBP Program Impact Based on MSS Change**

	<b>Assumptions</b>	<b>Estimated Financials</b>	<b>Estimated Overall Impact (3 years)</b>
<b>Scenario 1</b>	“Conservative” assumptions: Only the cohort of 115 employees are considered successful at improving health and it is assumed that the remainder of employees did not change their health status and therefore did not incur any savings	115 employees x \$301.60 cost savings per year x 3 years	\$104,052
<b>Scenario 2</b>	“Optimistic” assumptions: All employees (N=464) are considered to have improved their	464 employees x \$301.60 cost savings per year x 3 years	\$419,827

	overall health at a similar level as the cohort group		
Scenario 3	“Middle-of-the-Road” assumptions: some employees improved (cohort), some stayed the same, and the minority increased health risks (based on Table 2 high risk groups)	Overall savings considered a reasonable estimate based on changes observed in overall health of the population. Average between Scenario 1 and 2	\$262,500

**Productivity Loss Reduction**

Between 2007 and 2011, QBP reduced overall productivity loss by 1.3% based on the cohort data and as quantified using the HA with its integrated Work Productivity and Activity Impairment (WPAI) scale. A 1.3% loss reduction translates into a gain of 27 hours of worker time per year. Assuming a \$50,000 annual salary, 27 hours at \$24.04 per hour equals a \$649 per employee per year productivity loss reduction. Extrapolated to 464 employees, this productivity impact generates an annual savings of \$301,136 and a 3-year savings of \$903,408.

**Conclusions**

Overall, QBP employee health profiles look very favorable compared to other populations based on HA results. Furthermore, overall population health has improved significantly over the past 3 years based on changes in summary health scores.

Overall health improvement was supported by an observed reduction in productivity loss.

QBP has experienced a reduction in their health care costs (pmpm) of 4.4% over the past 3 years. Based on several approaches to quantify savings as a result of health improvement, the following has been documented:

- 4.4% reduction in pmpm is associated with an estimated 3-year savings of \$170,000
- Approximately 100 commuters have incurred an estimated 3-year savings of \$600,000
- A cohort of 115 employees incurred an estimated 3-year savings of \$105,000

Based on these results, it seems reasonable to conclude that the QBP health and wellbeing program has generated improvements in the health of the employee population and is associated with a positive financial impact.