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Using a Return-On-Investment Estimation Model to Evaluate Outcomes From an Obesity Management Worksite Health Promotion Program

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Objective: *Certain modifiable risk factors lead to higher health care costs and reduced worker productivity. A predictive return-on-investment (ROI) model was applied to an obesity management intervention to demonstrate the use of econometric modeling in establishing financial justification for worksite health promotion.* ***Methods:*** *Self-reported risk factors ($n = 890$) were analyzed using χ^2 and t test methods. Changes in risk factors, demographics, and financial measures comprised the model inputs that determined medical and productivity savings.* ***Results:*** *Over 1 year, 7 of 10 health risks decreased. Of total projected savings ($311,755), 59% were attributed to reduced health care expenditures ($184,582) and 41% resulted from productivity improvements ($127,173), a $1.17 to $1.00 ROI.* ***Conclusions:*** *Using an ROI model to project program savings is a practical way to provide financial justification for investment in worksite health promotion when risk reduction data are available.* (J Occup Environ Med. *2008;50:981–990*)

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The benefits to employers of having a healthy workforce are widely acknowledged as a means of lowering an organization's medical costs and achieving higher levels of worker productivity.[1–12] Nevertheless, the decision by employers to invest in health improvement programs often requires an economic justification that includes an estimate of the return-on-investment (ROI) from such programs.[13] In addition, after the programs have been in place for some time, program sponsors may increasingly require evidence that health improvements have produced measurable cost savings, and that these savings outweigh program expenses.[14,15] Of particular interest to employers are programs aimed at managing overweight and obesity among workers.[16] Employers instituting these programs are requiring health management program managers to demonstrate that these interventions achieve health improvements and a positive ROI.[17]

Previous examples of the application of ROI forecasting models to estimate program savings associated with risk reduction in employed populations are found in studies conducted at The Dow Chemical Company, Motorola, and Union Pacific Railroad.[18–20] The ROI models applied were based on the research conducted by Goetzel et al[21] for the Health Enhancement Research Organization (HERO). This research found that employees with certain modifiable risk factors were more costly for employers when compared

to employees lacking the targeted risk factors. In this article, we apply an adaptation of previously developed ROI models to estimate cost savings and ROI realized from an obesity management program implemented at several employer sites. Results for 890 workers enrolled over a 6- to 12-month period in the program were analyzed and input into the ROI model.

Background: The Cost Burden of Obesity

Obesity is now recognized as a national epidemic, with more than two thirds of Americans being overweight (34%) or obese (31%).[22,23] Obesity is linked to many deleterious health conditions, including high blood pressure, type 2 diabetes, coronary artery disease, respiratory problems, osteoarthritis, and cancer.[24,25] Moreover, obesity is associated with an increased risk of death, accounting for approximately 300,000 premature deaths each year in the United States.[26,27]

The large number of overweight and obese Americans places a significant burden on society in general and on employers in particular. Much of this burden is manifested through increased medical care costs and reduced worker productivity, both of which directly impact US businesses. Obesity is associated with greater medical care utilization and higher medical costs.[28,29] Medical expenditures are estimated to be one-quarter to one-third higher for obese workers compared to their normal-weight counterparts.[21,30] Employers are also affected by the lost productivity from obese employees. Obesity is associated with greater absenteeism from work, reduced productivity on the job ("presenteeism"), and higher usage of short-term disability.[31–33]

Nevertheless, overweight and obese individuals who lose even a small amount of weight can improve their health and reduce their likelihood of having an obesity-related disease.[24,34] The Surgeon General promotes weight loss among overweight and obese people, characterizing overweight and obesity as "preventable and treatable problems" where weight loss can "improve health and save lives."[22] By offering obesity management programs to their workers, employers can support employees in their efforts at losing weight, increasing physical activity, and eating a healthful diet.[4,6,9] In return, employers gain healthier employees who have lower health care costs and achieve higher levels of productivity.[11]

Estimating an intervention's ROI involves comparing the cost of offering the program to expected savings resulting from health improvements among workers who participate in that program (ie, monetized as direct medical cost savings and indirect worker productivity improvements). Output from an ROI analysis can then be used to make judgments about the benefits of ongoing investment in health promotion programs.[7,10]

In this study, we apply a predictive ROI model developed for American Specialty Health, Inc (ASH) and its health improvement coaching program operated by its subsidiary Healthyroads, Inc. The purpose of the study is to 1) test whether ASH's obesity management program, *Healthyroads*, produced reductions in participants' health risks, most notably overweight and obesity rates, and 2) explore whether using a predictive ROI model is a practical way of offering financial justification for worksite health promotion programs.

We present our findings by first focusing on behavior change and risk reduction observed by *Healthyroads* program participants, and then translating those health benefits to estimates of direct and indirect cost savings and ROI. In this way, this analysis highlights a practical way in which health improvements in an employed population can be used to predict cost savings and ROI. This, in turn, can be used to establish financial justification for employers' continued investment in worksite health promotion programs.

Materials and Methods

Design

A preexperimental pretest/posttest study design was used to assess changes in health risks among program participants over 1 year. These health risk changes, along with demographic and financial data, were then entered as inputs into a predictive ROI model developed by Thomson Reuters. The ROI model was based on methods described in Leutzinger et al[19] and Ozminkowski et al.[18] In short, the model uses changes in health risks and demographics of employee populations to estimate medical cost savings and productivity savings translated into dollar terms. These, in turn, are compared to program expenses to calculate an ROI estimate.

Intervention

ASH developed the *Healthyroads* health improvement and obesity program to support individuals' attempts at losing weight, improving eating habits, and increasing their physical activity. *Healthyroads* provides telephone counseling to program participants and access to educational materials through a health improvement Web site.

The type and quantity of *Healthyroads* coaching services were customized to individual participants' needs; however, all participants received a standard set of services including access to a personal health coach for up to 48 sessions, written materials to support the coaching sessions, a personal health improvement plan, exercise planning support, nutrition education, and web-based health trackers. Health coaches included registered dieticians, certified personal trainers, certified health education specialists, and other professionals with backgrounds in psychology and health-related fields who supported behavior change and offered health improvement educa-

tion. The health coaching team was aided by medical staff that provided triage and dealt with clinical issues and referrals to participant's personal physician or health plan disease management program, as necessary. Health coaches guided participants to healthier lifestyle habits using techniques grounded in behavior change theories such as the transtheoretical model, motivational interviewing, choice theory, locus of control, social learning theory, positive psychology, and resiliency training. Participants were eligible to receive up to four, 30-minute, telephone-based coaching sessions per month for 1 year. During these coaching sessions, participants set short-term health improvement goals related to physical activity, nutrition, stress management, and weight loss. The coaches also helped participants create a plan to achieve those goals.

Outcomes

Health and financial outcomes were the focus of this investigation. Health outcomes were determined using a pre-post study design by comparing the prevalence of modifiable risk factors for a study cohort at baseline and at the program's conclusion. Health risk data included in the analysis were collected using a custom designed health risk assessment (HRA) mirroring the type of instrument used to collect health risk data for the HERO study.[21] The instrument developed by ASH was modeled after the one used in the HERO study, which has demonstrated adequate reliability and validity.[21,35–37] The HRA contained 23 questions asking about individuals' health risk factors and demographics. The self-reported risk factors measured were height, weight, blood pressure, total cholesterol, blood glucose, physical activity, eating habits, stress, depression, alcohol consumption, and tobacco use (current and former).

Data related to changes in behavior and health risks over the course of the intervention were entered into the *Healthyroads* ROI forecasting model to determine potential cost savings arising from reductions in medical care utilization and improved worker productivity. Savings were then compared to program costs to estimate the ROI from the program.

Participants

Employees from 119 companies of varying sizes contracting with ASH to provide the *Healthyroads* program were eligible to participate in the research study ($n = 1542$). (A few spouses were also allowed to participate in the program and were included in the sample; however, spouses represented a negligible portion of the study sample. The exact number was not available due to data limitations.) Data used for this study represent the experience of 890 employees who volunteered to participate in the program in 2006 and for whom baseline and follow-up data were collected. Companies purchasing the program from ASH offered it directly to their employees, so the location, incentives, and type of recruitment activities varied by employer. Some employers only targeted employees determined to be at high risk (based on their HRA results) whereas others offered the program to all who wished to participate. In some cases, individuals enrolled themselves. Participation rates ranged from about 5% to 40% of eligibles, depending upon the employer.

Individuals were eligible to participate in the program if they were 18 years or older and had a body mass index (BMI) equal to or greater than 30. Also eligible to participate were individuals with a BMI of less than 30 but greater than or equal to 25 and with a comorbid condition of type 2 diabetes, high blood pressure, other cardiovascular conditions, or other obesity-related conditions. Nevertheless, some program participants did not meet either of the above eligibility criteria because they were referred to the program by a disease management or health advocate program where counselors there felt they would benefit from the program.

After enrolling in the program, participants were subject to medical triage. If they were identified with a condition requiring immediate medical attention or an exercise restriction, they were directed to their primary care provider and enrollment was postponed until medical clearance from a physician was obtained.

Participants completed a baseline HRA just before or immediately after an initial consultation with a personal health coach. The baseline HRA was administered on-line and in some cases over the telephone with a health coach. The follow-up HRA was administered by a third party vendor and mailed to participants at the 1-year anniversary of the individual's initial consultation with the health coach. A $25 American Express Reward Card was offered as an incentive to complete and return the HRA. If the individual did not reply after 2 weeks, a second invitation was sent.

Statistical Methods

Data were reviewed to determine whether missing values were systematic (defined as at least half of the responses missing) or random. Missing values were random with responses only missing on 3 of the 13 outcome variables and ranging from 0.1% to 3.5% missing per measure (ie, high alcohol consumption [0.1%], BMI [3.5%], and weight [0.9%]).

Means and standard deviations, where applicable, were calculated for the following descriptive variables at baseline: age (continuous), gender (categorical), race/ethnicity (categorical), marital status (categorical), and program completion rate (categorical). Job type data were not available, so default values from the 2000 US Census were used.[38] Differences between baseline and follow-up period were assessed for the following 10 risk factors: poor eating habits, inadequate physical activity, smoker

(former and current), high total cholesterol, high blood glucose, high blood pressure, high stress, depressed, high alcohol consumption, obese or overweight (derived from weight and BMI). These 10 risk factors were measured as categorical variables (ie, measured in a binary fashion where 1 equaled high risk and 0 equaled lower risk); however, weight and BMI, which were used to determine obese and overweight, were measured as continuous variables. The appendix lists the operational definitions for each categorical risk variable assessed. Means, confidence intervals, and standard deviations, where applicable, were calculated for the risk factors for baseline and follow-up periods, as were the average percentage changes over the two periods. A McNemar's χ^2 test for each categorical risk variable was then conducted. For the two continuous risk variables, t-tests were applied. Statistical significance was determined at the $\alpha = 0.05$ level and analyses were completed using the SAS system (SAS institute, Inc, Cary, NC).

Estimating ROI

Medical expenditures for program participants were projected over time using the ROI Model, which relies upon the demographic and health risk data inputs provided.[21] Medical benefits (or savings) were calculated as the discounted difference between medical expenditures for program participants compared to an artificially created reference group exhibiting no changes in risk over time. Baseline annual medical expenditures were estimated as USD $4804 per person, a figure derived from the 2006 Thomson Reuters MarketScan database, adjusted to 2007 values using the June 2007 Medical Care Consumer Price Index from the Bureau of Labor Statistics. (The average yearly medical cost is calculated from the 2006 MarketScan Database. It includes inpatient, outpatient, and pharmaceutical expenditures for employees with noncapitated health insurance plans.)[39]

Productivity-related benefits were limited to presenteeism (ie, on-the-job productivity gains). Productivity benefits were defined as the discounted difference between productivity-related expenditures for program participants compared to an artificially created reference group exhibiting no changes in risk over time. Productivity-related losses linked to having certain health risks were derived from the medical literature examining these relationships. (For example, the calculation of productivity benefits related to weight loss were based on the following assumptions described by Burton et al.[40] 1) If a person loses significant weight and also reduces another risk factor, 40 hours of productivity are gained annually due to reduced presenteeism. 2) An additional 20 hours are gained for those who lose significant weight and reduce a third risk factor. 3) An additional 20 hours are gained for those who lose significant weight and reduce a fourth risk factor. 4) Finally, an additional 10 hours are gained for those who lose significant weight and reduce a fifth risk factor. Thus, the maximum productivity gain from losing weight and modifying another health risk factor is 90 hours.[40] Annual productivity gain was monetized by multiplying total hours of productivity gained in the year by the participant's average hourly wage.)[30–33,40–43] Average hourly wage data were not available for participants, so an estimated value was derived from national data reported in the June 2007 Bureau of Labor Statistics report on private employer costs for employee compensation (USD $25.93 per employee).[44] Program expense for the *Healthyroads* program averaged USD $300 per employee per year.

Applying the ROI Model

Projected ROI from the *Healthyroads* program was determined by comparing program costs to the medical and productivity savings derived from reductions in health risks as a result of participating in the program. ROI is expressed as a ratio of program savings, or benefit, to program costs. For example, an ROI of 2:1 implies a program saved twice the expense of the program. The Model did not discount program benefits or costs since this program only lasted 1 year. Nevertheless, the Model can discount for analyses that go out more than 1 year.

The *Healthyroads* ROI Model utilizes two types of input. First, the user supplies the current demographic characteristics of employees or beneficiaries in the organization, along with the projected annual

TABLE 1
Demographic Characteristics of the Study Cohort at Baseline

Demographic Characteristic	Average or Percentage	Standard Deviation
N	890	—
Age (avg.)	44.2	10.9
Female (%)	74.3	—
Ethnicity (%)		
American Indian or Alaskan Native	0.7	—
Asian	3.2	—
Hispanic	9.2	—
Black	6.6	—
White	75.3	—
Pacific Islander	0.9	—
Multiracial or other race	0.8	—
Unknown	3.4	—
Overweight or obese (%)	76.4	—
Weight (avg.)	191.4	50.3
Body mass index (avg.)	30.6	7.3

Note: "avg." refers to average value; "—" indicates an inapplicable metric.

increase or decrease in each characteristic. This input generates a demographic profile of the employer's target population. Second, the user provides the risk profile of the targeted population (based on results from HRA administrations) and the actual or expected annual change in each risk factor. The result of the user's input is a health risk profile for the target population.

By analyzing the supplied demographic and health risk inputs, the Model produces estimates of the ROI from the program. The results provide projected savings (both medical and productivity) and projected program costs over a multiyear period. A net present value is also calculated as the present (discounted) value of the projected savings less the program costs, which equals zero under the break-even scenario. The break-even scenario depicts how much each risk factor should be reduced annually in order for the benefits of risk reduction (ie, medical and productivity cost savings) to exactly offset the investment costs of purchasing and administering the program. ROI values larger than 1.00 for the user's defined scenario indicate savings exceeding program investments.

Results

Sample

The cohort group consisted of 890 individuals who participated in either the weight management or wellness *Healthyroads* program. Participants represented a convenience sample with a 42.3% attrition rate from baseline ($n = 1542$) to follow-up period ($n = 890$).

The study cohort was on average 44.2 years old, 74.3% women, 75.3% Whites, 38.0% professional job category, and 11.2% sales job category. At baseline, participants weighed an average 191.4 pounds, had an average BMI of 30.6, and 76.4% were overweight or obese (see Table 1).

TABLE 2
Changes in Health Risks Factors for the Cohort Group

		T1					T2					
	***N* (T1/T2)**	**Min.**	**Max.**	**Mean**	**SD**	**Lower CI**	**Upper CI**	**Mean**	**SD**	**Lower CI**	**Upper CI**	**% pt Δ**	***P* (McNamar's χ^2)**
Poor eating	890/890	0	1	0.66	N/A	0.63	0.69	0.45	N/A	0.41	0.48	−21.3%	<0.0001
Poor exercise	890/890	0	1	0.64	N/A	0.61	0.67	0.49	N/A	0.46	0.52	−15.1%	<0.0001
Former smoker	890/890	0	1	0.25	N/A	0.22	0.28	0.22	N/A	0.19	0.25	−3.3%	0.0032
Current smoker	890/890	0	1	0.07	N/A	0.05	0.09	0.06	N/A	0.05	0.08	−0.7%	0.3763
High cholesterol	890/890	0	1	0.22	N/A	0.20	0.25	0.06	N/A	0.04	0.07	−16.4%	<0.0001
High glucose	890/890	0	1	0.06	N/A	0.04	0.08	0.03	N/A	0.02	0.04	−2.9%	0.0005
High blood pressure	890/890	0	1	0.11	N/A	0.09	0.13	0.02	N/A	0.01	0.03	−8.5%	<0.0001
High stress	890/890	0	1	0.18	N/A	0.15	0.20	0.12	N/A	0.10	0.14	−6.0%	<0.0001
Depressed	890/890	0	1	0.06	N/A	0.04	0.08	0.05	N/A	0.03	0.06	−1.2%	0.1658
High alcohol	890/889	0	1	0.13	N/A	0.11	0.15	0.16	N/A	0.14	0.18	2.9%	0.0132
Overweight or obese	890/890	0	1	0.76	N/A	0.74	0.79	0.71	N/A	0.68	0.74	−5.8%	<0.0001
												Absolute Δ	*P* (*t* test)
BMI	890/859	16.2	64.1	30.6	7.3	30.1	31.0	29.7	6.9	29.2	30.2	−0.9	<0.0001
Weight	890/882	98.0	406.0	191.4	50.3	188.1	194.7	186.9	48.5	183.7	190.1	−4.5	<0.0001

Note: "T1" and "T2" refer to times 1 (baseline) and 2 (follow-up at year 1); "Min" refers to minimum value across T1 and T2, with a value of "0" representing low risk for categorical variables; "Max" refers to maximum value across T1 and T2, with a value of "1" representing high risk for categorical variables; "SD" refers to standard deviation; "N/A" indicates an inapplicable metric; "CI" refers to 95% confidence interval; "Δ" refers to change; "BMI" refers to body mass index.

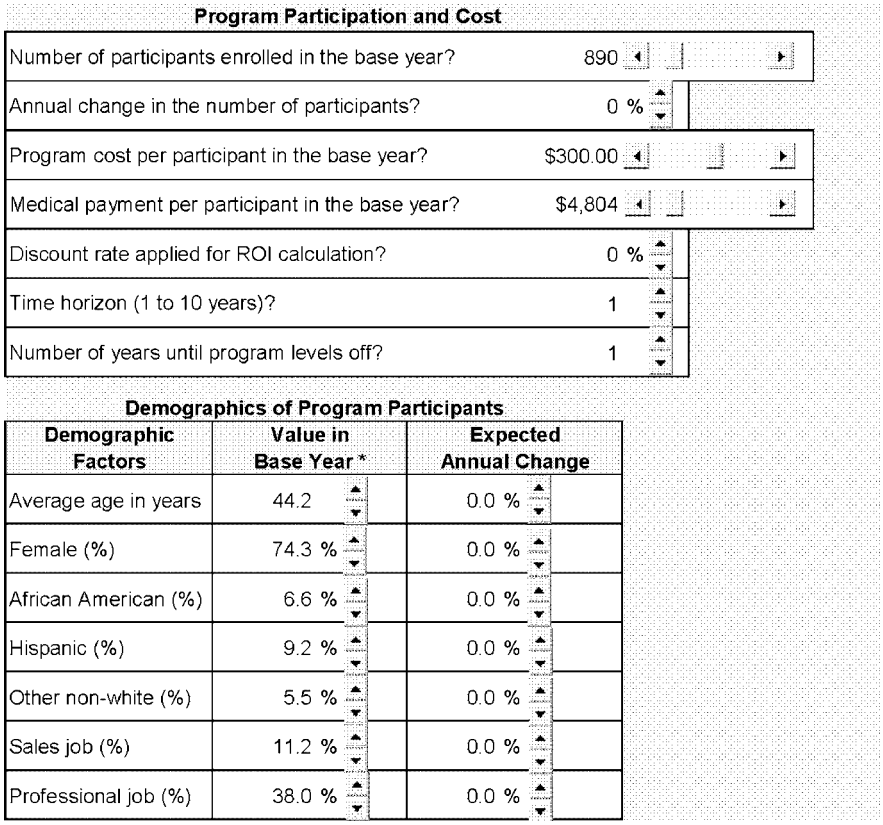

Fig. 1. ROI model inputs screen—demographics and financial measures.

Changes in Health Risks

Over 1 year, there were statistically significant reductions in 7 of 10 health risk categories for participants, 1 risk category (high alcohol consumption) significantly increased (from 13% prevalence to 16%), and smoking status and depression remained unchanged (see Table 2). There were sizable decreases in high-risk prevalence for poor eating habits (21.3% reduction) and poor physical activity (15.1% reduction). All of the biometric measures related to overweight and obesity decreased significantly, including percent overweight or obese (5.8% reduction), weight (4.5 pounds reduction), and BMI (0.9% reduction).

ROI Analysis

Figure 1 presents a screenshot of the inputs entered into the ROI Model. As shown, the inputs mirror the baseline characteristics and health risk profile of program participants at baseline as well as additional financial metrics needed to execute the mathematical calculations in the Model.

Figure 2 highlights the changes in weight and BMI experienced by study participants, ie, a 4.5-pound reduction in weight and a 0.9-point reduction in BMI. Also shown are the other changes in the risk profile of program participants from time 1 to time 2. Although the Model inputs call for "expected" changes, the values inserted reflect the actual changes in risks for program participants from baseline to follow-up.

Table 3 presents the results of the ROI analysis performed for the *Healthyroads* program. As shown, compared to the reference scenario where no changes would have been expected to occur during the study period, total employer expenses were reduced by $311,755. Of total projected expense reductions, 59% are attributed to a 4.3% reduction in health care expenditures ($184,582) and 41% are attributed to productivity enhancements ($127,173). When combined, projected medical and productivity savings in year 1 are higher than the cost of the *Healthyroads* program ($267,000), thus producing an net present value of $44,755 and an ROI of $1.17 to $1.00. Also shown is the break-even point for the program estimated to be 3.20, meaning that all risks would need to be reduced an average of 3.20% points in order for the program to pay for itself.

Discussion

This article describes the application of an econometric ROI Model to estimate the financial impact of 1 year changes in health risks for individuals participating in the *Healthyroads* Obesity Management Program. The Model was applied to demonstrate how medical and productivity cost savings may be estimated by observing reductions in the health risks in an employed population. To populate the Model, actual health risk data for 890 individuals participating in a year-long risk reduction program were entered. The Model then estimated cost savings due to changes in that population's health risk profile.

In 1 year, program participants experienced significant reductions in seven risk factors (poor diet, inadequate physical activity, high total cholesterol, high blood glucose, high blood pressure, high stress, and obesity) whereas high alcohol consumption increased. Two risks remained unchanged (depression and smoking). All biometric measures related to overweight and obesity decreased significantly (weight, BMI, and percent overweight or obese). These improvements in the risk profile of participants drove projected reductions in health care expenditures and improved worker productivity as estimated by the Model. Specifically, 59% of projected employer savings totaling $311,755 were related to reductions in health care spending

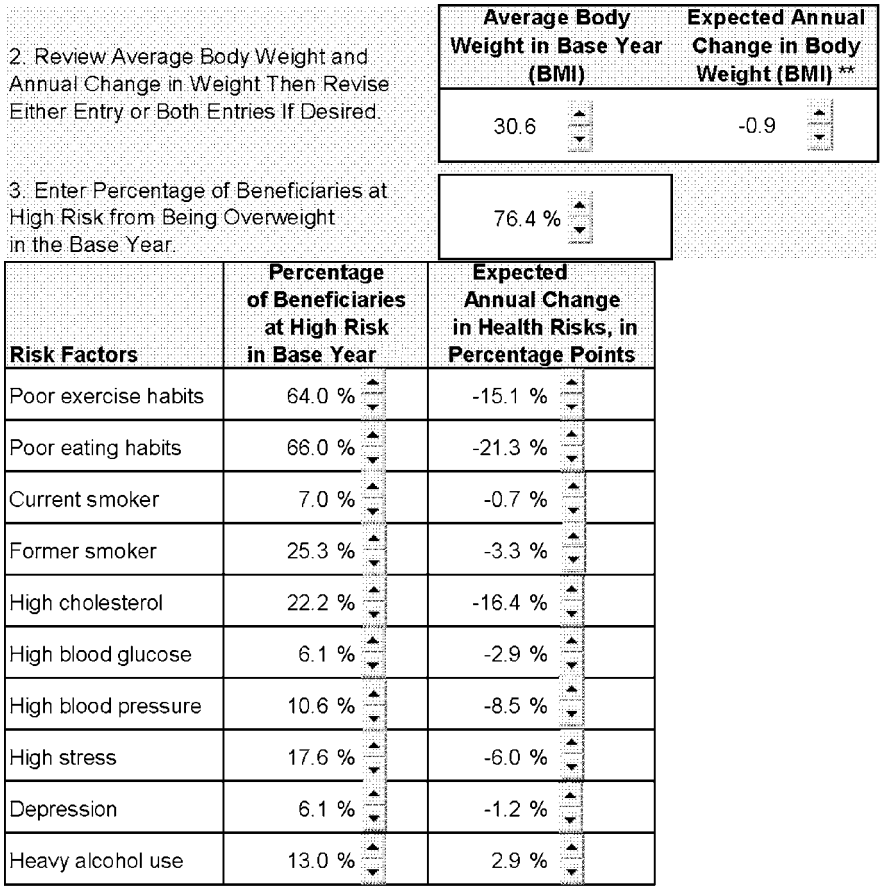

Fig. 2. ROI model input screen—time 1 and time 2 changes in weight and health risks for program participants.

TABLE 3
Year 1 Results

	Reference Scenario (No Program)	Program Scenario	Break-Even Scenario (Risks are Reduced by 3.20% Per Year)
Total expenditure (2009–2009)	$4,275,560	$4,090,978	$4,029,345
Change between baseline and year 1 follow-up	0.0%	−4.3%	−5.8%
Medical savings		$184,582	$246,215
Productivity savings		$127,173	$20,782
Total savings		$311,755	$266,998
Program cost		$267,000	$267,000
Net present value		$44,755	−$2
Return on investment		$1.17	$1.00

and the remaining savings were due to improvements in productivity. Our findings were consistent with other research examining the relationship between risk reduction and cost savings. Specifically, a recent study by Mills et al[45] also found correlations between reductions in health risk, absenteeism, and presenteeism and several literature reviews have shown decreases in health care and productivity expenditures associated with risk reduction in an employed population.[1,7,10]

A modest $1.17 savings for every dollar invested in the program was estimated by the Model. Put into context, this represents a potential return of 17% over 1 year for the employers funding the program. Although such immediate, short-term returns on investment from risk reduction programs are unlikely, several studies have found larger returns over longer time periods.[7,45] Employers could potentially achieve bigger savings in health care costs and productivity if the observed risk changes persisted beyond the study period.

To test whether the savings projected match actual savings, these employers would need to initiate a retrospective analysis of medical claims and productivity data, an endeavor that is time-consuming, intensive, and expensive. In reality, a rigorously conducted retrospective claims analysis could cost hundreds of thousands of dollars and may not be justified given the total expense of the program itself.

Limitations

This analysis has several limitations worth noting. First, the analysis of changes in health risks over time for study participants relied on a pre-post test research design. Thus, in the absence of a control group, one cannot be certain that the changes observed in the study sample might not have occurred naturally in the absence of the program. Nevertheless, naturally occurring improvements of such magnitude as observed here are unlikely without some type of intervention. In fact, most health risks, especially overweight and obesity, generally worsen over time as people age.[46,47]

Second, attrition in the study sample was observed whereby only 57.7% of the individuals beginning the program returned for a follow-up assessment. The health risk profile of participants not returning for follow-up assessments is not clear. To avoid a potential selection bias, participants were offered financial incentives to complete their surveys and so even those who did not

change their health habits could gain by returning the survey. Nonetheless, the assessment of cost savings due to risk reduction may be biased in favor of showing greater effect than was realized.

Third, the ROI model assumes that individuals who improve their risk profile will spend fewer medical care dollars and improve their productivity proportionately. To date, most studies that have examined the relationship between health risk factors and financial outcomes such as those reported here have relied upon cross-sectional analyses rather than longitudinal studies.[21,48] The research literature is lacking studies that correlate changes in costs to specific changes in risk factors. Nevertheless, longitudinal studies by Edington et al[49] have shown that, in general, as health risks improve, costs go down.

A fourth limitation pertains to the possibility of selection bias because participants in the program self-selected into the program and thus were likely to be more motivated to improve their health than workers in general. This is true for almost all voluntary health promotion programs and their evaluations.

A fifth limitation is possible regression to the mean. Many of the health risk metrics were notably high at baseline (eg, 66% had poor eating habits and 46% were obese). Therefore, it is possible that some participants in the study sample experienced a ceiling effect and that a reduction in health risks was likely due to regression to the mean. Nevertheless, as noted above, with rare exception, many risk factors, especially those that involve biometric measures, tend to deteriorate over time when left unattended. Another possibility is that some participants may have reported better health habits at the study's conclusion as a means of providing a socially desirable response.

Sixth, the data collected using the HRA were self-reported. There is evidence that self-reporting of health habits is not always accurate.[50] In future studies, the investigators may wish to collect biometric data alongside self-reports to validate the measures and make adjustments where necessary.

Conclusions

Our study demonstrates ways in which an econometric ROI Model can be used by employers to estimate cost savings from risk reduction programs and provide a business justification for their health promotion programs. In this case, significant improvement in program participants' health risk profile over 1 year produced an estimated $1.17 to $1.00 ROI.

Using the ROI Model featured here, or other similar models built on an empirical database, offers employers a lower-cost alternative to very resource intensive evaluation studies that require extensive analysis of financial data to provide a business case for health promotion programs. Most employers cannot justify the time and expense needed to conduct rigorous evaluations of their programs. Also, financial analyses that tap into administrative claims databases often require thousands of subjects for the analysis to be valid, and such analyses are not feasible for small employers. The approach presented in this study offers an alternative strategy for program evaluation when these barriers exist. Having available modeling programs that simulate cost savings associated with risk reduction in an employed population can help program managers develop credible and defensible business cases for initial and continued investment in health promotion programs that can satisfy the requirements of company finance officers.

Appendix

Poor eating: 3 or more times per week eating at fast food restaurant, or less than two servings of fruits and vegetables per day

Poor exercise: not currently following an exercise program, or exercise less than 2 days per week

Former smoker: smoked at one point in their lives, but not currently

Current smoker: currently smoke

High cholesterol: 240 mg/dL or higher

High glucose: greater than 126 mg/dL

High blood pressure: greater than 140/90 mm Hg

High stress: poorly manage stress in life

Depressed: feel sad or depressed almost all the time, or most of the time

High alcohol: consume five or more alcoholic beverages on 1 day or more per week

Obese or overweight: BMI $\geq$25.

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Healthyroads™

MEMBER
COMMUNICATIONS SAMPLES

EMPLOYEE PROGRAM OVERVIEW EMAIL

Welcome to the Healthyroads® program, which is provided to you at no cost by your employer as part of your benefits. We are excited to introduce you to a new world of wellness with the following health improvement services:

Healthyroads.com: Our website features tons of tools (and we're always adding more!), including a Personal Health Assessment (PHA) that can help you identify areas of improvement, online classes, a wellness library, fun blog content, daily wellness email/text reminders, and more!

[**Healthyroads Coaching® for Weight Management, Tobacco Cessation, Stress Management, and/or Healthy Living**: These programs provide you with one-on-one telephone-based coaching to help you get healthy in a whole new way. You'll also have access to a variety of educational resources and an optional Milestone Kit when you complete a progress review session with your coach.]

[**Healthyroads Health Coaching**: This comprehensive health improvement program offers telephone-based and online coaching to help you understand and deal with a variety of complicated health conditions, including diabetes, metabolic syndrome, congestive heart failure, back/spine pain conditions, asthma, COPD, hypertension, and heart disease.]

[**Health Navigator**: This program provides you with the opportunity to discuss your Healthyroads.com Personal Health Assessment (PHA) or biometric screening results with a Healthyroads Coach® in just 5 to 7 minutes.]

[**Healthyroads Incentives®**: Earn points and get rewarded for participating in various health improvement activities, such as completing Healthyroads Coaching sessions, participating in a worksite challenge, taking the Healthyroads Personal Health Assessment (PHA), and more.]

[**Healthyroads Connected!®**: Healthyroads Connected! lets you choose how you wish to exercise and track your activity. You can choose from **many popular wearable fitness devices and apps** that integrate with Healthyroads and use the one that works best for you. Simply register the device on the manufacturer's website, then log in to Healthyroads to connect and allow for data to be transferred to Healthyroads for activity tracking. If you prefer to work out at the gym, the Healthyroads CheckIn!™ app can track your workouts at one of our **30,000+ fitness facilities nationwide**. There are also **8,000+ fitness facilities** contracted to send session data directly to Healthyroads so you don't have to do a thing—except go work out, of course! (Healthyroads will not cover the cost of the wearable device.)]

[**Biometric Screenings:** By attending either an onsite screening or a screening at a local contracted facility, you can learn vital health statistics, including:

- Blood pressure
- Lipid panel (total cholesterol, HDL, LDL, and triglycerides)
- BMI and/or waist circumference
- Glucose/blood sugar

Your results will automatically populate to your Personal Health Assessment so that you can identify potential health-related issues and risks.]

[**Challenges:** Healthyroads Challenges offer a fun and creative way to get healthy with your coworkers and teammates. If you prefer, you can also create your own individual or team-based challenges. Topics for the challenges include physical activity, nutrition, and healthy living, and they often tie in with the time of year—making them relevant and inspiring to you and your life. Plus, challenges are integrated with Connected!, so you can earn points toward your incentive (if applicable).]

However you choose to participate, know that better health is in your hands. And getting started is just a click away. Go to **Healthyroads.com** to register and enroll in the programs available to you. For more information, call Healthyroads customer service at **877.330.2746** between 5 a.m. and 6 p.m. Pacific time.

want to learn more?
LOG IN TO HEALTHYROADS

[Healthyroads may use and/or provide participation information to your plan sponsor/employer or its contracted entities that administer your plan for incentive fulfillment purposes. Healthyroads may also use this information to provide you with other services on behalf of your plan sponsor/employer. Your participation serves as your consent for Healthyroads to use and/or provide this information as stated above.

Your employer is committed to helping you achieve your best health status. Rewards for participating in a wellness program are available to all employees. If you think you might be unable to meet a standard for a reward under this wellness program, you might qualify for an opportunity to earn the same reward by different means. Contact your location HR representative and they will work with you (and, if you wish, with your doctor) to find a wellness program with the same reward that is right for you in light of your health status.]

MEMBER PROGRAM LAUNCH BROCHURE

- Provides details of Healthyroads program
- Client may use creative hours to modify or customize

INTRODUCING
the Healthyroads Wellness® Program

Benefits to Help You and Your Family Achieve Better Health

Dear Employee:

A healthy company cannot exist without healthy employees. The everyday choices we make can help us live healthier, happier, and more fulfilling lives—both at work and at home. And that's why your employer is offering an essential tool as part of your overall benefits package—a comprehensive wellness program.

The goals of this program are to:

- Provide you with information about your current health status.
- Help you set realistic health improvement goals.
- Arm you with health management tools and resources to help you reach your goals.
- Lower health care costs—An effective wellness program can make a difference in these costs over time. Your participation will benefit your lifestyle and may help you save money on health care costs in the future.

Your participation in this effort is completely voluntary and will allow you to:

- Access lifestyle coaching services to help you set, reach, and maintain your goals.
- Complete an online Personal Health Assessment (PHA) that will help you identify potential health-related issues and risks.
- Use a variety of online services to keep tabs on your health and your goals.

The details of the program are outlined in this booklet. Please review this information carefully so you understand how it works and can take full advantage of the opportunities it offers to you. You may see additional information on our wellness initiatives as new activities are introduced and/or become available to you through your employer.

Each of us can take steps, even small ones, to improve our overall well-being. We hope you will join us by participating in this worthwhile effort. We are thrilled to offer a program that will focus on the well-being of your company's most valuable asset—YOU.

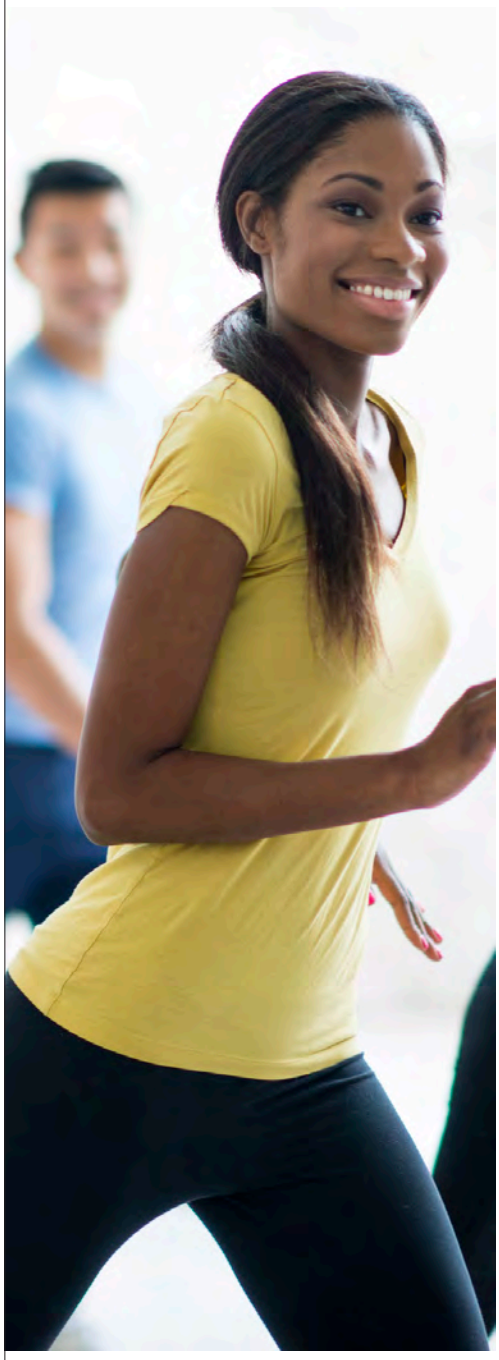
Yours in health,

George DeVries
CEO and Chairman, Healthyroads

TRAVELING YOUR HEALTHY ROAD:

INVEST IN YOUR HEALTH WITH OUR WELLNESS INCENTIVE PROGRAM

Participation in the wellness incentive program is completely voluntary, but we encourage all eligible employees and their spouses/domestic partners to take advantage of the program so that they can receive valuable information on their health status and risk factors—as well as have access to wellness-related resources, including online classes, physical activity tracking, challenges, and more. Plus, you'll be making efforts that will pay off—both literally and figuratively!



HOW TO EARN
YOUR INCENTIVE:

You can earn incentives by successfully participating in certain activities. The requirements are below, but each is also explained in more detail, along with the timing to be sure you can plan ahead and invest in your success. If your spouse or domestic partner is covered under our eligible plans, he or she must complete the activities in order to earn the incentive.

To be eligible for the incentive, you must complete both of the following required activities by [DATE]:

PERSONAL HEALTH ASSESSMENT (PHA)

The Personal Health Assessment is an online, private* questionnaire about your health and lifestyle. Your answers will generate suggestions for achieving health improvement. It is available on **www.healthyroads.com**. The PHA can be found on your landing page after you sign in.

BIOMETRIC SCREENING

You can fulfill your screening requirement in one of **3 ways:**

1. Attend a screening offered at many work locations between [DATE] and [DATE].
2. Visit a Quest Diagnostics® Patient Service Center (PSC) at your convenience beginning [DATE], but no later than [DATE].
3. Have your biometric measurements completed as part of your annual physical or preventive screening. Visit Healthyroads.com to print the Healthyroads® Health Care Provider form, which should be completed and submitted by your doctor directly to Healthyroads by [DATE].

Once you complete the PHA and if your biometric screening results are at or below the defined ranges for at least 2 of the following, you have earned the incentive:

OUTCOME LEVELS:
BMI less than or equal to 30 or a waist circumference of less than or equal to 40 inches for men and less than or equal to 35 inches for women
Total cholesterol less than or equal to 200 mg/dL
Fasting blood glucose between 70 and 99 mg/dL
Blood pressure below 120/80 mmHg

If you haven't met the outcome levels above, you can still earn the incentives. Just complete the following by [DATE]:

 4 telephonic coaching sessions	 2 online classes
 1 health challenge	 1 preventive medical screening

* Healthyroads may use and/or provide participation information to your plan sponsor/employer or its contracted entities that administer your plan for incentive fulfillment purposes. Healthyroads may also use this information to provide you with other services on behalf of your plan sponsor/employer. Your participation serves as your consent for Healthyroads to use and/or provide this information as stated above.

Incentives may be considered taxable income you are required to report.

Finish your biometric screening early so you know what you need to complete during this incentive cycle!

Remember, it is important to focus on areas where you are at risk, as indicated by your biometric results. Use these engagement activities to target the areas that will lead to improved biometric outcomes, and eventually, to a healthier life.

LOCATE YOUR COMPASS:
GET IN THE KNOW WITH A PHA

Complete your PHA by [DATE]!

We are all at different points on a journey to better health. Some of us are just starting out. Others may be considered healthy, but perhaps we could use some encouragement to keep going. Wherever you are, it is important to keep traveling your path and learning more!

With the Healthyroads Personal Health Assessment (PHA), you can identify potential health issues related to daily nutrition, fitness, and lifestyle habits and see how to improve your health.

The PHA consists of a series of questions about your health-related activities and behaviors. After completing the voluntary questionnaire, you'll be able to identify areas of improvement that might be perfectly suited for a Healthyroads Coaching program!

1 2 3 4

Follow these easy steps to complete your PHA:

1. Go to **Healthyroads.com.**
2. If you are not currently registered, log in as a first-time user by clicking the "REGISTER" button on the home page:
   - Enter your first name, last name, and date of birth.
   - Read and agree to the Healthyroads Terms and Conditions.
   - Create a unique username and password that is at least 8 characters in length.
   - If you encounter any difficulties during the registration process, please call **877.330.2746** for assistance.
3. On your Healthyroads home page, look for the PHA link in the carousel images after you sign in. Allow about 10 minutes to complete it.
4. Once finished, you'll be able to receive scores around different areas of your health.

   You can also begin using Healthyroads.com tools, online classes, and more to reach your goals!

Fulfilling this requirement by [DATE] will help you set your course and guide you to suggested engagement activities to achieve better health. You will be eligible to earn incentives as long as you take a PHA by [DATE].

GET YOUR BEARINGS

WITH A BIOMETRIC SCREENING

Complete your screening between [DATE] and [DATE] to get a pulse on your health numbers!

BMI – Body Mass Index (BMI) looks at your weight in relation to your height to find out if you weigh more than is healthy for you. Many health problems are linked to being overweight or obese. **The normal range is between 18.5 and 25.**
CHOLESTEROL – Cholesterol is a fatty substance that is made by the body. Cholesterol is made in the liver and is also found in animal-based foods you eat. Plant-based foods do not have cholesterol. You need some cholesterol to help build cells, produce hormones, and support nerve function. Cholesterol is a problem only when levels in the blood get too high. Then the cholesterol starts to form waxy plaque. This can clog your arteries and cause heart disease. **A total cholesterol level of less than or equal to 200 mg/dL is desirable.**
GLUCOSE – This is the level of blood sugar in your bloodstream. Diabetes is a health problem in which blood sugar (glucose) is too high. This occurs because people with diabetes have a hard time moving glucose into their cells where it can be used as energy. Over time, high blood glucose levels can increase your risk of developing diabetes complications including heart attack, stroke, and kidney failure, among others. **Normal levels for a fasting blood glucose test are between 70 and 99 mg/dL.**
BLOOD PRESSURE – Blood pressure measures the force of blood against the blood vessel walls. A healthy blood pressure level is important. High blood pressure can lead to many health problems including hardened arteries, stroke, congestive heart failure, kidney failure, and heart attack. The good news is that there are many things you can do to help keep your blood pressure normal. **A normal blood pressure is below 120/80 mmHg.**

Knowing your numbers is the first step to knowing your risk areas and creating an action plan with your health care providers to decrease your risk.

The biometric screening should be completed by **[DATE]** so that you stay on your path to wellness and have time to complete other activities. You will get credit for the biometric screening as long as it is completed by **[DATE]**.

Watch for biometric screening events to be held at our company sites—or you can complete a biometric screening at a Quest Diagnostics PSC or through your doctor's office using a Healthyroads Health Care Provider form.

NEXT STOP:

THE HEALTHYROADS COACHING® PROGRAM

Enroll by [DATE] at the latest, and complete at least 4 sessions by [DATE] to receive incentive credit!

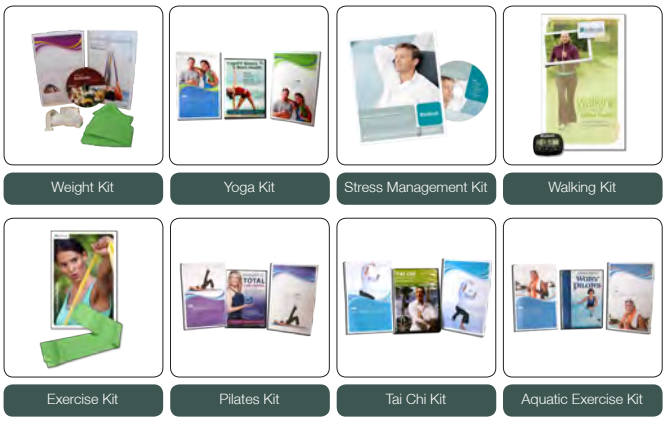
We want you to have the tools you need to change or continue your path to better health. If your biometric numbers aren't where you want them to be, the Healthyroads Coaching program can help you decrease your risks or manage a health condition.

Whether your goal is to manage your weight, quit smoking, exercise more, or stress less, Healthyroads Coaching programs give you the motivation and information you need to change your everyday habits and reduce the risks of serious health conditions that can result from obesity, smoking, and other unhealthy behaviors.

Healthyroads Coaching is offered over the phone by trained health coaches who are able to provide the education, motivation, and support for your unique personal health goals.

To enroll in the program, go to the Health Resources section on **Healthyroads** and follow the prompts.

Participation in a coaching program is **completely voluntary**—YOU choose the Healthyroads Coaching program that best suits your needs. When you participate in the coaching program and complete a progress review session with a coach, you can choose one of 8 Milestone Kits, which feature exercise, weight management, or stress management products that can help you reach your health goals.



SCHEDULING COACHING

Your first coaching session can be scheduled on Healthyroads.com or by calling Healthyroads at **877.330.2746**, Monday through Friday, from 8 a.m. to 9 p.m. Eastern. Coaching calls are limited to one call per week, subject to availability of coaching staff.

FUEL UP WITH ONLINE CLASSES (E-COACHING)

Complete 2 online classes by [DATE] to receive one credit toward the incentive.

The self-guided classes can help you learn more about a variety of health and fitness topics—at your own pace. Focus on the classes suggested by your PHA results or those of special interest to you that will help you reach your goals. Each offering is based on up-to-date clinical information and made up of interactive classes and tools you can view from your home or office. Class handouts, quizzes, and optional articles are also provided to help you get more from your learning experience.

GET IN GEAR
WITH A HEALTHYROADS CHALLENGE

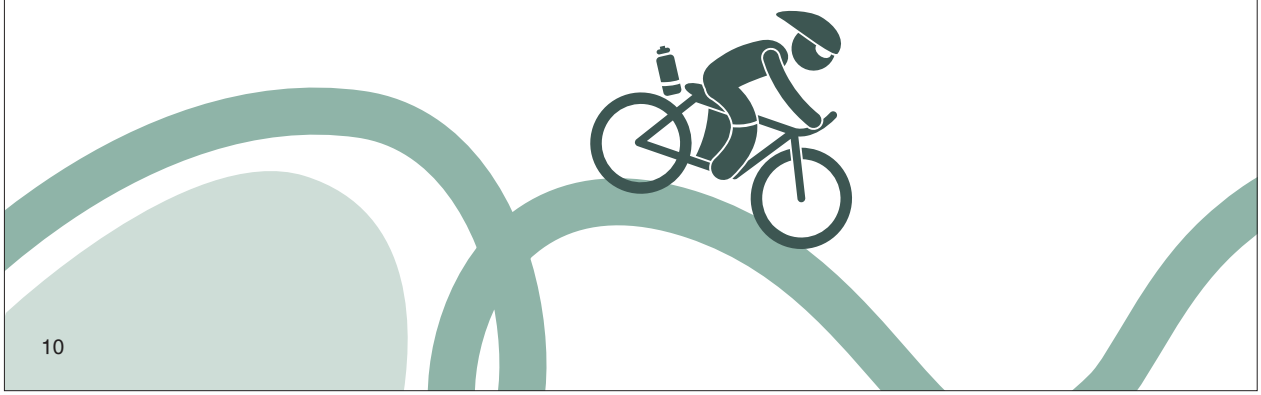
With our fun worksite challenges, you can actually look forward to getting active, eating better, and stressing less. Rally (or take on) your coworkers and see your health change for the better. You can also create your own team-based, one-on-one, or individual challenges. Or, just motivate yourself to get healthier by completing Today's Challenge, which is emailed to you around a topic of your choosing daily.

SUPPORTERS
Designate an eligible member as a "Supporter" at any time during a challenge to get the motivation you need to help you stay on track with your goals. Supporters can send virtual cheers to give you an extra boost of encouragement!

KEEP GOING:
GETTING THE MOST FROM YOUR PREVENTIVE CARE VISIT

Maintaining or improving your health is important. Focusing on preventive care, along with following the advice of your doctor, can help you stay healthy. Routine checkups and screenings can help you avoid serious health problems, allow you and your doctor to work as a team to manage your health, and assist you in reaching your personal health and wellness goals.

To get the most from your preventive care exam, visit your medical provider's website and find the guideline recommendations that are right for you. Print the results and talk to your doctor about your specific health questions and concerns—and use the guidelines along with the advice of your doctor.



PIT STOP

AT HEALTHYROADS.COM ONLINE TOOLS

In addition to the coaching program, Healthyroads.com provides a comprehensive set of wellness tools to help you reach your goals. **They include:**

ONLINE CLASSES

These self-guided coaching classes allow participants to study a variety of health improvement topics.

HEALTH INFORMATION

Get helpful health information through the wellness library, which includes evidence-based, fully referenced articles and videos on fitness, nutrition, stress management, and other personal health improvement topics.

FUN BLOG CONTENT

Discover health tips and recipes, learn about current issues in an experts' corner, and find other fun facts on www.healthyroadsblog.com.

DAILY WELLNESS EMAIL AND TEXT REMINDERS

Register for a daily wellness email or text reminder, offered Monday through Friday, and choose from a variety of topics.

INCENTIVES

View a summary of your incentives activity, history, and rewards available.

PERSONAL SCORECARD

Receive scores around different areas of your health to help you identify potential health issues related to daily nutrition, fitness, and lifestyle habits so you can see how to improve your wellness.

THE HEALTHYROADS CONNECTED!® PROGRAM

Choose from many popular wearable fitness devices and apps* and pick the one that works best for you. Register the device and allow for data to be transferred to Healthyroads for activity tracking.

If you prefer to work out at the gym, the Healthyroads CheckIn!™ app can track your workouts at one of our 30,000+ fitness facilities nationwide.

You can also choose from more than 8,000 fitness facilities contracted to send session data directly to Healthyroads so you don't have to do a thing—except go work out, of course!

*Healthyroads does not cover costs associated with the purchase of an app or device.

Healthyroads™

A LIFELONG JOURNEY

Use these tools to take stock in your health and continue on your path today, tomorrow, and forever. The way to a healthier you is at your fingertips! Log on to Healthyroads.com or call 877.330.2746 and travel to health today.

Your employer is committed to helping you achieve your best health status. Rewards for participating in a wellness program are available to all employees. If you think you might be unable to meet a standard for a reward under this wellness program, you might qualify for an opportunity to earn the same reward by different means. Contact your location HR representative and they will work with you (and, if you wish, with your doctor) to find a wellness program with the same reward that is right for you in light of your health status.

WEB PORTAL OVERVIEW MEMBER FLIER

- May be cobranded with client's logo, at no charge

GET ONLINE AND GET HEALTHY!

The Healthyroads® website offers state-of-the-art tools to help you reach your personal goals—and they're easy and fun to use.

PERSONAL HEALTH ASSESSMENT (PHA) AND SCORECARD
The PHA is a short health and lifestyle survey, and the scorecard it generates helps you identify potential health risks.

THE HEALTHYROADS CONNECTED!® PROGRAM
Choose from many popular wearable fitness devices and apps* and pick the one that works best for you. Register the wearable device and grant permission for data to be transferred to Healthyroads for activity tracking.

The Healthyroads CheckIn!™ app can track your workouts at one of our 30,000+ fitness facilities nationwide.

You can also choose from 8,000+ fitness facilities contracted to send session data directly to Healthyroads.

**Healthyroads does not cover costs associated with the purchase of an app or wearable device.*

INCENTIVES
View a summary of your incentives activity and history, if offered as part of your plan.

CHALLENGES
Take on your coworkers and see your health change for the better. You can also create your own team-based, one-on-one, or individual challenges. Or, just motivate yourself to get healthier by completing Today's Challenge, which is emailed to you around a topic of your choosing daily.

HEALTH INFORMATION
Get helpful health information that includes evidence-based, fully referenced articles and videos on health improvement topics.

ONLINE CLASSES
These self-guided coaching classes allow you to study a variety of health improvement topics.

FUN BLOG CONTENT
Discover health tips and recipes, learn about current issues in an experts' corner, and find other fun facts by visiting **www.healthyroadsblog.com**.

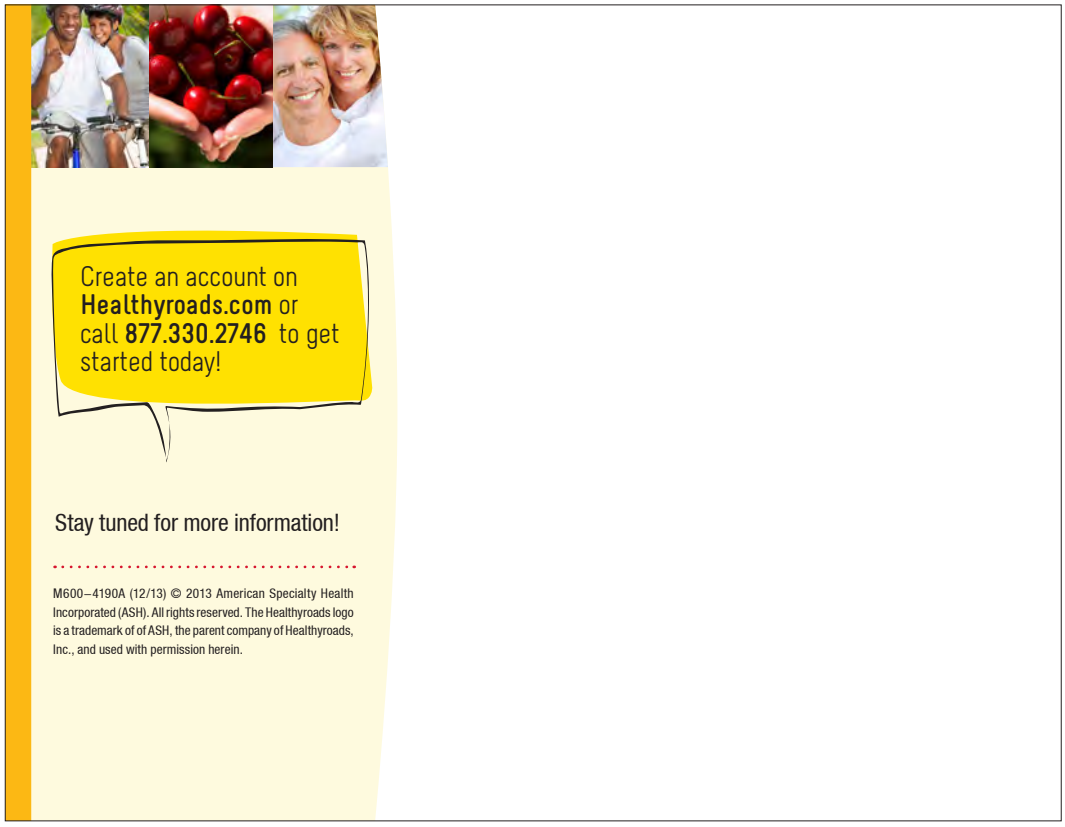
DAILY WELLNESS EMAIL AND TEXT REMINDERS
Register for a daily wellness email or text reminder, offered Monday through Friday, and choose from a variety of topics.

Simply sign up on **Healthyroads.com** by entering your name and date of birth to confirm you have the benefit and creating your user name and password to get started. A few minutes is all it takes to get on your road to better health!

Healthyroads

MEMBER/SPOUSE LAUNCH POSTCARD

- May be printed and mailed to members' homes
- May be cobranded with client's logo, at no charge



MEMBER MULTI-MODALITY COACHING FLIER

- May be cobranded with client's logo, at no charge

ONSITE BIOMETRIC SCREENING POSTER

- May be cobranded with client's logo, at no charge
- Other biometric screening materials also available

MEMBER COACHING FLIER: FRONT

- May be cobranded with client's logo, at no charge

THE HEALTHYROADS COACHING® PROGRAM

- Are you so busy you find yourself eating on the run and not being physically active on most days?
- Have you been thinking about losing weight, quitting tobacco, or decreasing your stress levels, but don't know how to get started?
- Or maybe you are simply interested in obtaining a wellness incentive but don't know what Healthyroads Coaching is about?

If any of these scenarios describe you, consider getting your own Healthyroads Coach® to help you take the first step toward a healthier, less stressed you. By participating you may also be eligible to earn an incentive.

What is a Healthyroads Coach?

Healthyroads Coaches are behavior change specialists with a bachelor's degree in a health-related field such as exercise science, nutrition, psychology and/or health promotion. They assist you in building solid strategies that fit into *your* lifestyle and take into account things like your food choices and how much time you devote to being physically active. While they are not health care providers, they assist you to **put into practice** the behavior choices your health care providers may recommend for you.

What can you expect from your Healthyroads Coach?

- An **individualized** approach to helping you achieve your health-related goals
- **Direct education** and **evidence-based** web resources on nutrition, physical activity and stress management
- **Motivation and support** to help you follow through with your health-related goals
- A source of **accountability** to help you stay on track despite challenges that get in the way
- Referrals to other benefits that [CLIENT] makes available to you

Healthyroads™

What can you not expect from your Healthyroads Coach?

- Diagnosis, treatment or management of a medical condition
- Counseling or therapy for a behavioral health condition
- Medical Nutrition Therapy (MNT) for specific health conditions you have been diagnosed with that require a specialized dietary plan, as directed by your health care provider
  - Advice or recommendations for nutritional supplements to treat or manage a specific health condition

Note: Healthyroads Coaches do not take the place of your physician/doctor or any specialty health care provider(s) such as a registered dietitian, mental health practitioner or exercise physiologist.

What's your role as a Healthyroads Coaching participant?

- Be engaged and attentive during your Healthyroads Coaching calls
- Be sure to set aside the necessary time for each call (typically 30 minutes for your first call and 20 minutes for all other calls)
- Develop a wellness vision and set goals that you can track and reach during your sessions

continued on next page

FOLLOWING ARE FREQUENT QUESTIONS AND ANSWERS REGARDING WORKING WITH A HEALTHYROADS COACH:

1 How does the participant/Healthyroads Coach relationship work?

- To schedule an appointment with a Healthyroads Coach you can:
  - Use the toll-free number **877.330.2746** to speak with a Healthyroads customer service representative
  - Schedule your first appointment online at www.healthyroads.com
  - After your first appointment (about 30 minutes), your Healthyroads Coach will schedule follow-up calls with **the frequency, date and time that works best for you**
- How often you meet with your Healthyroads Coach is up to you, but generally it is recommended that you start with calls every week. You can taper off after you are making good progress.
- All employees are entitled to a different number of sessions per year based on their risks. It is important to meet as often as YOU feel you need to set goals, reach them and sustain those behavior changes. If you are working to maintain healthy behaviors, you can use your calls to provide you with additional accountability.
- Once the appointment is set, your Healthyroads Coach will call you at the appointed time.
  - Your Healthyroads Coach will call your preferred phone number, whether it is at work, at home or on your mobile phone.
  - If you are traveling, you can let your Healthyroads Coach know which number is best for you during your trip.
- Most individuals prefer being in a more private space when talking to their Healthyroads Coach. Consider this when you give your Healthyroads Coach your preferred phone number.

2 What is the main goal of the Healthyroads Coaching relationship?

- The ultimate goal of the Healthyroads Coaching relationship is to assist you in reaching and maintaining your health and wellness goals.
- This may lead to other life changes or perspectives, sometimes referred to as transformative change. This is a shift in how you see the world. It is a series of changes that happen when you become aware of what matters most to you.

3 How long will you need to work with a Healthyroads Coach?

- If your employer offers an incentive for Healthyroads Coaching, you must participate in a minimum number of Healthyroads Coaching telephone discussions, based on your health risks and goals.
- All Healthyroads Coaching participants can continue to work with a Healthyroads Coach after achieving their incentive, up to a maximum number of sessions for their risk levels.

4 Can you change a Healthyroads Coach at any time?

- Absolutely! If you ever feel the need to work with another Healthyroads Coach, you can do so at any time. You can let your Healthyroads Coach know or call the customer service line at **877.330.2746**.
- The reasons you may want to ask for a different Healthyroads Coach might include:
  - The Healthyroads Coach is simply not the best match for you personally
  - You may prefer a Healthyroads Coach whose approach is more direct and to the point or one who is more empathetic and supportive
- The key is to make sure Healthyroads Coaching is right for you. Talk with your Healthyroads Coach about what you need to be successful and how he/she can support you best to achieve your health-related goals. The clearer you are, the better experience you will have.

MONTHLY PROMOTION FLIER

- May be cobranded with client's logo, at no charge
- Also available in poster, table tent, and flatscreen formats

REAL MEN WEAR **GOWNS.**

Healthyroads

YES, THEY DO—

If they need to make a point. And here's the point: Real men don't neglect their yearly physicals and health screenings because of that **tired old cliché** "real men don't go to the doctor."

REAL MEN know that most health concerns can be better treated if found early, before symptoms or ill effects are noticed. They know that routine checkups and screenings are a vital part of maintaining health and wellness.

REAL MEN don't get preventive medical tests just for themselves—they get them for their families and loved ones.

REAL MEN will get the right medical tests for their age and health status—and rock that flimsy exam gown while they do it!

REAL MEN actively take part in their health care. For more information on this topic, visit the U.S. Department of Health and Human Services Agency for Healthcare Research and Quality website at **http://goo.gl/vL1mI**—and keep an eye out for their "Real Men Wear Gowns" ad campaign.

REAL MEN also take advantage of the many offerings available through the Healthyroads® program. Go to **Healthyroads.com** to take a personal health assessment or use the personal scorecard to set health improvement goals. Check out the large array of other tools to help build a healthy lifestyle. You can also call a **Healthyroads Coach®** at **877.330.2746** to discuss options for improving and protecting your health.

Real men do whatever it takes to stay healthy and hearty. And they do it in real time—so why not make Men's Health Month this June *your* time to protect your health?

MONTHLY PROMOTION POSTER

- May be cobranded with client's logo, at no charge
- Also available in poster, table tent, and flatscreen formats

Assessment Report

Baseline

Jan 2012 - Dec 2013

Prepared On:

08/16/2013

Executive Summary

ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Age Group
All

Gender
All

Relationship
All

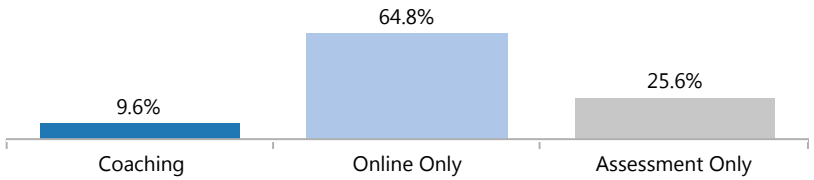
Individuals In This Report

The tables below show the number who completed a Personal Health Assessment and/or a biometric screening.

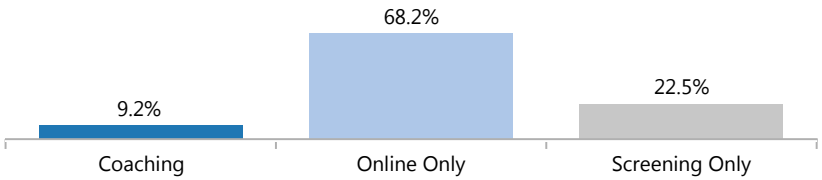
PHA Respondents	Biometric Participants
1,251	998

The figure below shows the proportion who engaged in lifestyle coaching, online activities, or those only taking an assessment.

Engagement after PHA



Engagement after Biometric Screening



Health Risks

The high lifestyle and biometric risks below summarize the sample's health and have been shown to correlate with medical claims expenses. For **Baseline** reports, the green arrows show the client's risks are healthier than the book and the red arrows show the client is worse than the book; a gray square shows risks are equal to the book. For **Cohort** and **Population** reports, the arrows are compared to the initial period and a gray square illustrates risks are unchanged or not reported.

Medical Costs Associated with Risks

The estimated total cost of each risk factor, per HERO II study, was determined by multiplying the per person cost of being high-risk by the number of people having the risk for each year. The estimated medical costs are expressed in inflation-adjusted 2009 dollars. It is important to emphasize that these estimates are NOT actual claims costs but based on modeling only.

Total Estimated Costs for Lifestyle Risks

Total Estimated Costs for Biometric Risks

Prepared On:
08/16/2013

Executive Summary - Self-Reported Biometrics

The tables below show the number who completed a Personal Health Assessment.

The figure below shows the proportion who engaged in lifestyle coaching, online activities, or those only taking an assessment.

Individuals In This Report

PHA Respondents

1,251

Engagement after PHA

Health Risks

The high lifestyle and biometric risks below summarize the sample's health and have been shown to correlate with medical claims expenses. For **Baseline** reports, the green arrows show the client's risks are healthier than the book and the red arrows show the client is worse than the book; a gray square shows risks are equal to the book. For **Cohort** and **Population** reports, the arrows are compared to the initial period and a gray square illustrates risks are unchanged.

Medical Costs Associated with Risks

The estimated total cost of each risk factor, per HERO II study, was determined by multiplying the per person cost of being high-risk by the number of people having the risk for each year. The estimated medical costs are expressed in inflation-adjusted 2009 dollars. It is important to emphasize that these estimates are NOT actual claims costs but based on modeling only.

Total Estimated Costs for Lifestyle Risks

Total Estimated Costs for Biometric Risks

ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Age Group
All

Gender
All

Relationship
All

Filter Field One:
All

Filter Field Two
All

Filter Field Three
All

Filter Field Four
All

Prepared On:
08/16/2013

Respondents Measured in this Report

This report contains data from respondents who completed a Personal Health Assessment and/or a biometric screening. The tables below show the number of respondents that qualified for this report.

ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Relationship
All

Number of Respondents

PHA Respondents

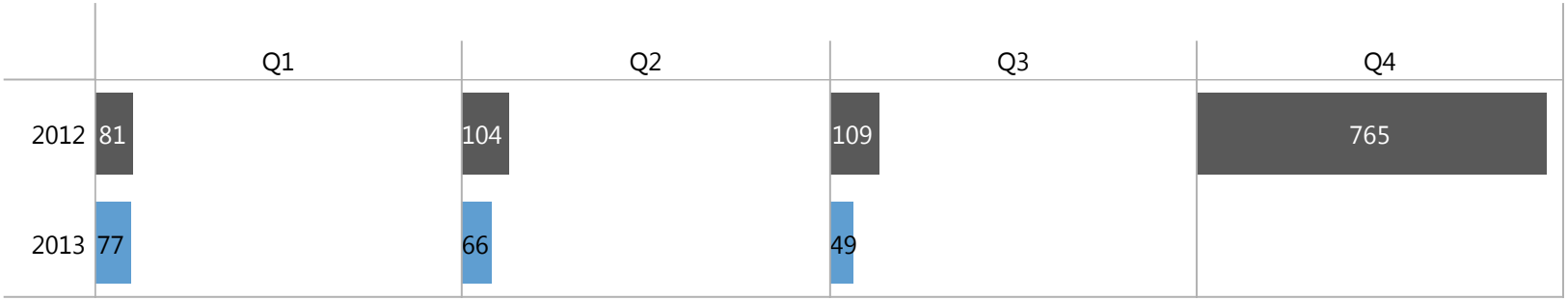
Primary	1,016
Spouse	232
Dependent	3
Total	1,251

Biometric Participants

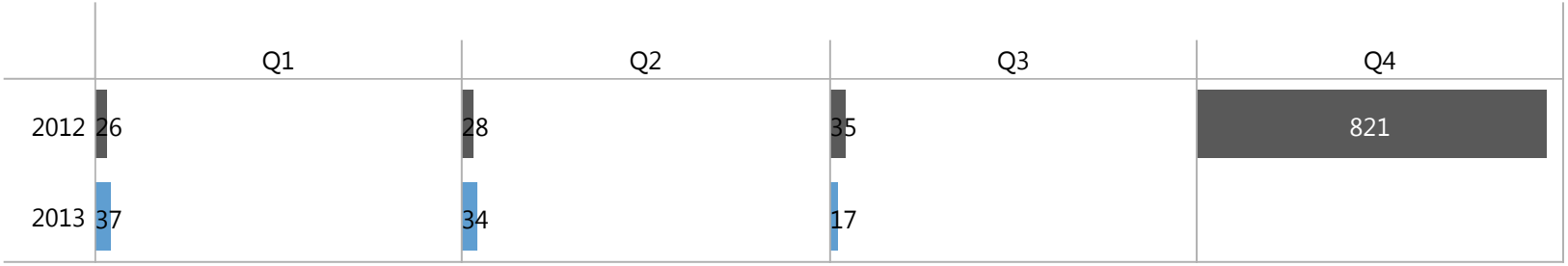
Primary	808
Spouse	190
Total	998

Timing of Assessments

Health Assessments Over Time



Biometric Screenings Over Time



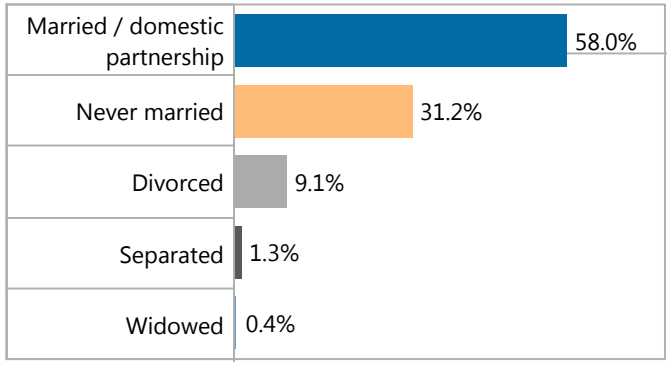
Prepared On:
08/16/2013

Demographics

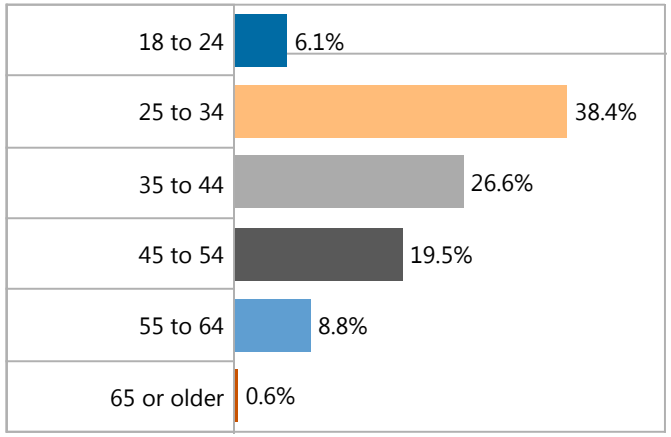
Certain demographic characteristics are known to be correlated with specific risk factors and health behaviors. For example, significant differences in age distributions can help explain why some health risks are more prevalent than others. Further, employee tenure and job type can also inform workplace culture. These associations between demographics and risk factors can guide allocation of resources in wellness interventions. The figures below show key demographic characteristics of the selected sample.

Gender

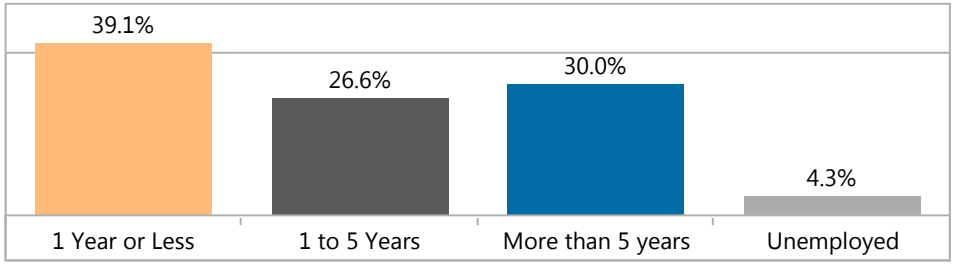
Marital Status



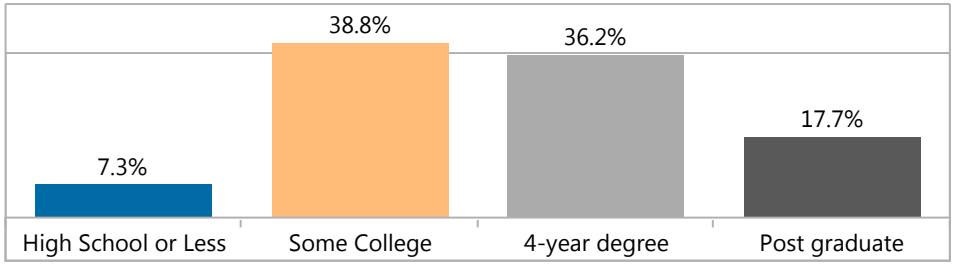
Age Group



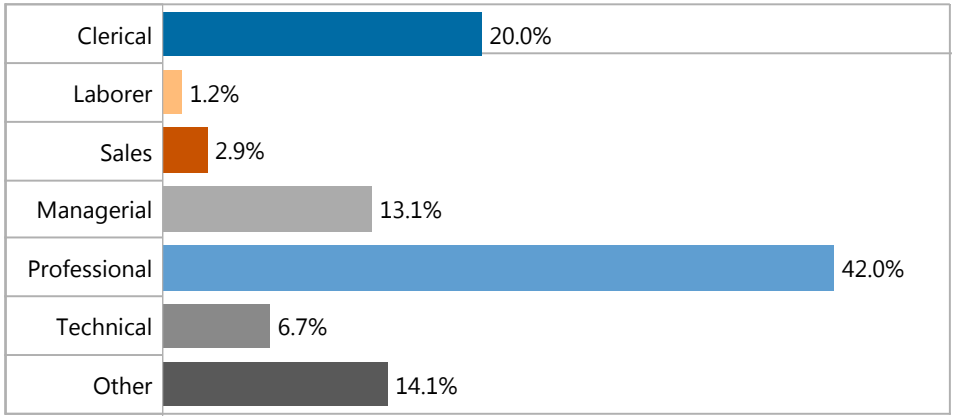
Tenure



Education



Job Type



Report Type
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Occupation
All

Relationship
All

Filter Field One
All

Filter Field Two
All

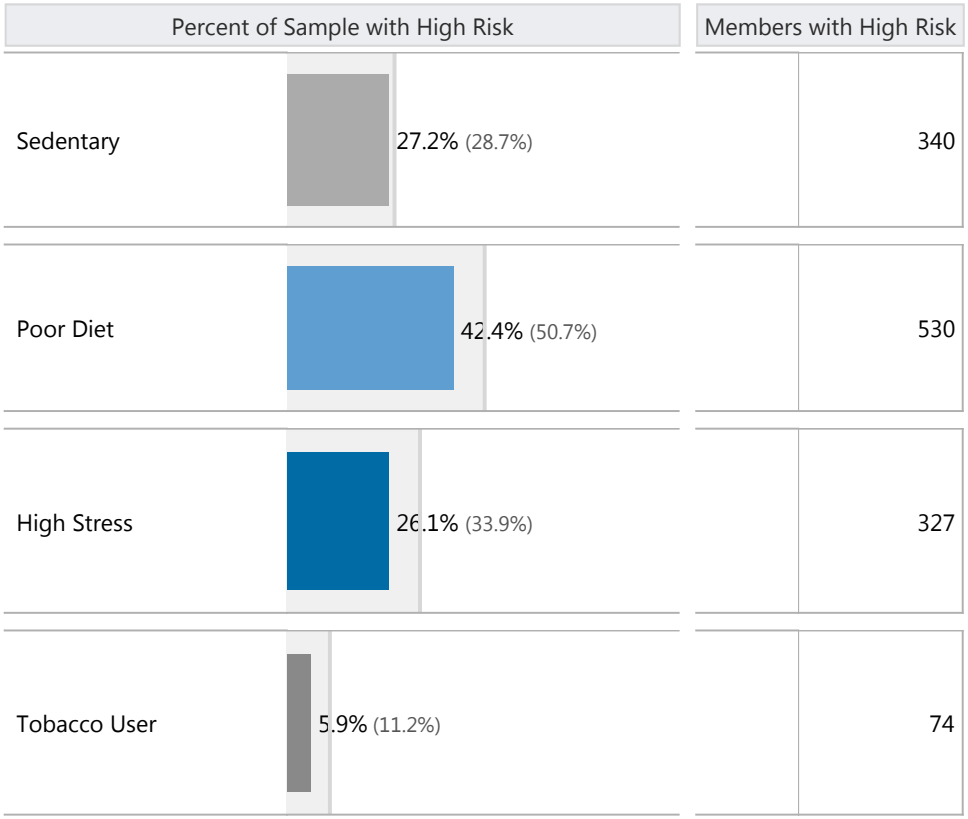
Filter Field Three
All

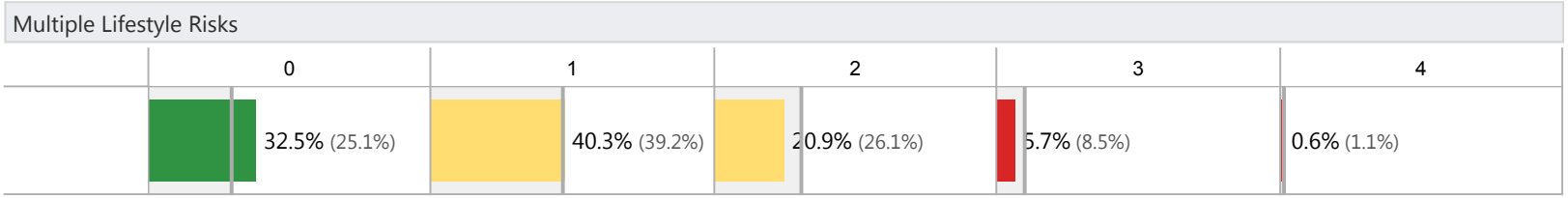
Filter Field Four
All

Prepared On:
08/16/2013

Lifestyle Risks

The figure summarizes the prevalence of high lifestyle risks and the proportion is compared against the book of business experience. Typically diet and stress are the most prevalent lifestyle risks.





High Lifestyle Risk Definitions

Sedentary: *Less than 10 minutes of moderate exercise per week, and no vigorous activity*
Poor Diet: *Daily servings of fruits and vegetables are less than or equal to 1 serving and grain servings are less than or equal to 1 serving*
High Stress: *Score 8 or higher on stress related to home, health, or work.*
Tobacco User: *Currently use tobacco products*

Those Who Changed

ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Occupation
All

Relationship
All

Filter Field One
All

Filter Field Two
All

Filter Field Three
All

Filter Field Four
All

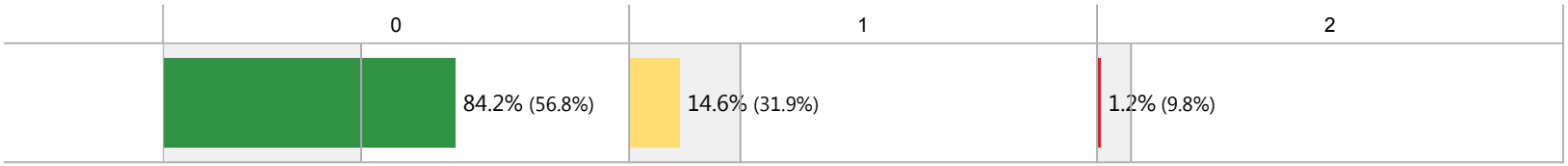
Prepared On:
08/16/2013

Biometric Risks

The figure summarizes the prevalence of high biometric risks and the proportion is compared against the book of business experience. It is important to note that these are biometric measurements and not a clinical diagnosis. Lifestyle programs and medical management are important preventive steps to keep these risk factors from increasing in the future.

	Percent of Sample with High Risk	Members with High Risk
Obese	0.0% (30.3%)	0
High Blood Pressure	6.9% (14.5%)	69
High Fasting Glucose	3.1% (3.8%)	30
High Cholesterol	7.1% (8.4%)	71

Multiple Biometric Risks



High Biometric Risk Definitions

Obesity: *BMI greater than or equal to 30.*
High Blood Pressure: *Measure of at least 140/90 mm Hg*
Fasting Glucose: *Measure of at least 126 mg/dL*
Total Cholesterol: *Measure of at least 240 mg/dL*

Those Who Changed

ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Relationship
All

Filter Field One
All

Filter Field Two

Filter Field Three
All

Filter Field Four
All

Prepared On:
08/16/2013

Self-Reported Biometric Risks

The figure summarizes the prevalence of high self-report biometric risks and the proportion is compared against the book of business experience. It is important to note that these are biometric measurements and not a clinical diagnosis. Lifestyle programs and medical management are important preventive steps to keep these risk factors from increasing in the future.

	Percent of Sample with High Risk	Members with High Risk
Obesity	26.5% (32.2%)	331
High Blood Pressure	5.3% (7.0%)	55
High Fasting Glucose	1.9% (3.7%)	15
High Cholesterol	6.3% (4.4%)	58

High Biometric Risk Definitions

Obesity: *BMI greater than or equal to 30.*
High Blood Pressure: *Measure of at least 140/90 mm Hg*
Fasting Glucose: *Measure of at least 126 mg/dL*
Total Cholesterol: *Measure of at least 240 mg/dL*

Change in Risks

Report Type
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Relationship
All

Filter Field One
All

Filter Field Two
All

Filter Field Three
All

Filter Field Four
All

Prepared On:
08/16/2013

Engagement

The data below summarizes the engagement pattern of the sample and shows the proportion who engaged in lifestyle coaching, online activities, or those only taking an assessment. *Online Only includes: number of web classes, nutrition planners, exercise planners accessed, and challenge interactions.*

ReportType
Baseline

Begin Date
Jan 2012

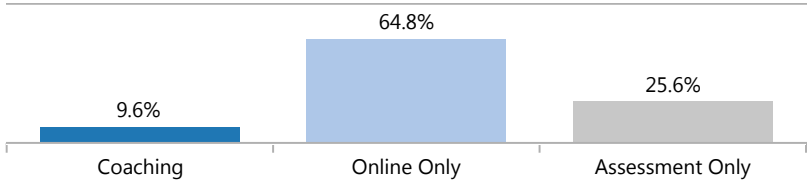
End Date
Dec 2013

Gender
All

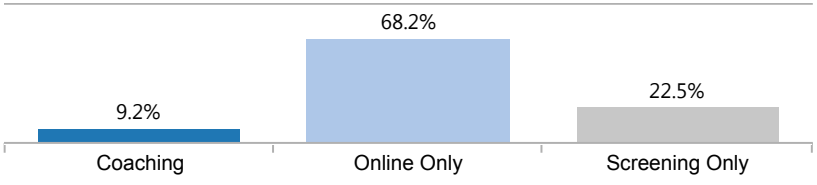
Age Group
All

Relationship
All

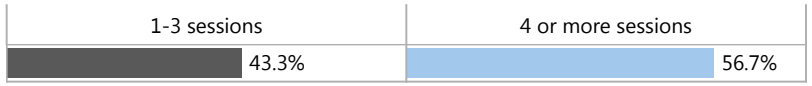
Type of Engagement after PHA

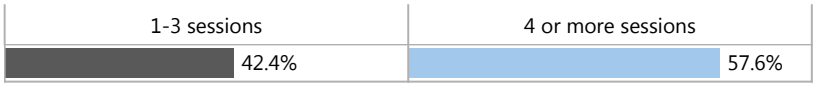


Type of Engagement after Biometric Screening



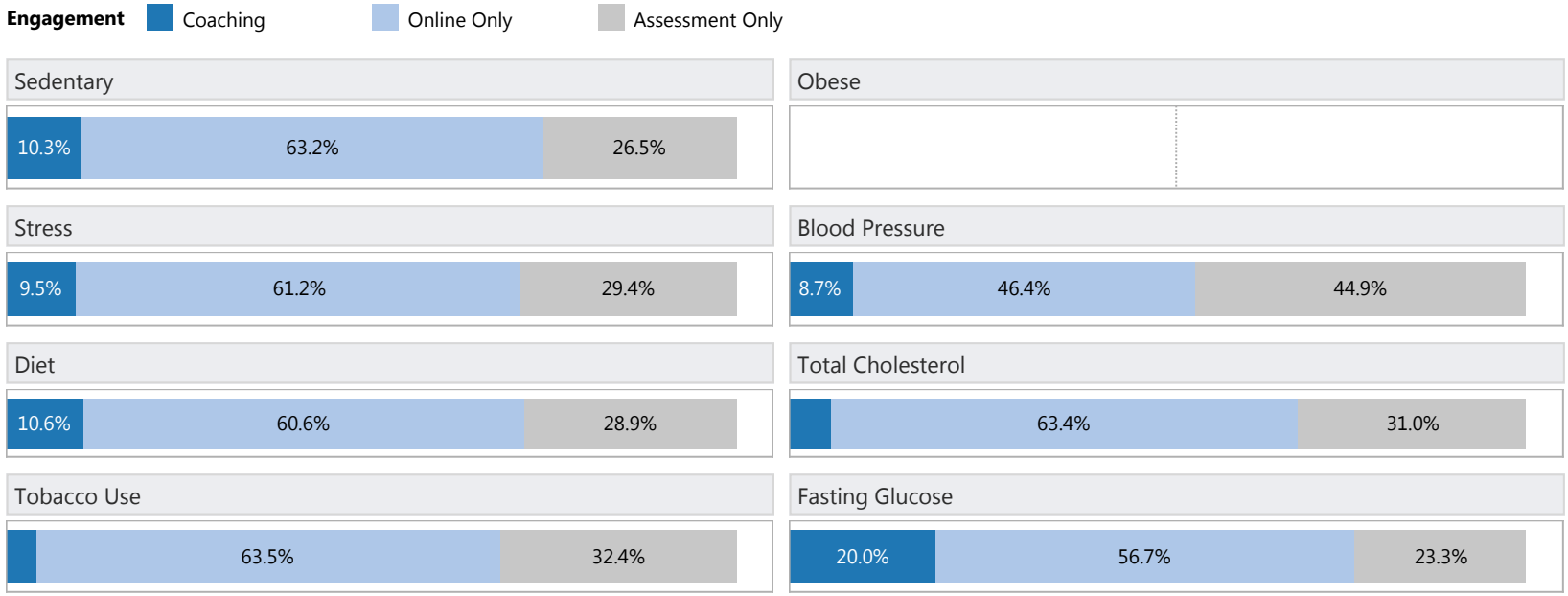
Coaching Intensity





Engagement by Health Risks

The engagement pattern is examined across risks.



Prepared On:
08/16/2013

Medical Costs Associated with Risks

ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Relationship
All

A 2012 study published in *Health Affairs* examined the association between ten common modifiable health risk factors and health care costs. This study was a replication of the landmark research conducted by the Health Enhancement Research Organization (HERO) published in 1998 that showed a significantly higher level of medical expenses were associated with 7 out of 10 health risk factors. The 2012 study included a sample of 92,486 employees at seven organizations and found very similar relationships between health risks and costs found in the 1998 study. The results of both studies consistently suggest that significant health care savings may be realized by designing and encouraging participation in programs that successfully modify poor health habits. See Appendix II for abstract of the published paper.

Application of Findings

Using the 2012 model, the table below shows the cost of each health risk and the prevalence in your workforce. The estimated total cost of each risk factor was determined by multiplying the per person cost of being high-risk by the number of people impacted by the risk factor for each year. The data are expressed in inflation-adjusted 2009 dollars. It is important to emphasize that these estimates are NOT actual claims costs but based on modeling only.

Medical Expenses Assigned to Risks - HERO Study

Depression	Sedentary	Tobacco Use	High Stress	High Glucose	Hypertension	Obesity
$2,184	$606	$587	$413	$1,653	$1,378	$1,091

Number of Respondents with Risk

92	340	74	327	30	69	0

Total Estimated Costs for Lifestyle Risks

	Depressive Symptoms	Sedentary	Tobacco User	High Stress	Total Lifestyle Costs
	$200,928	$206,040	$43,438	$135,051	$585,457

Total Estimated Costs for Biometric Risks

	High Glucose	Hypertension	Obesity	Total Biometric Costs
	$49,590	$95,082	$0	$144,672

Prepared On:
08/16/2013

Goetzel, Pei, Tabrizi, et al. **Ten Modifiable Health Risk Factors Are Linked to More Than One-Fifth of Employer-Employee Health Care Spending**. Health Affai..

Medical Costs Associated with Risks - Self-Reported Biometrics

A 2012 study published in *Health Affairs* examined the association between ten common modifiable health risk factors and health care costs. This study was a replication of the landmark research conducted by the Health Enhancement Research Organization (HERO) published in 1998 that showed a significantly higher level of medical expenses were associated with 7 out of 10 health risk factors. The 2012 study included a sample of 92,486 employees at seven organizations and found very similar relationships between health risks and costs found in the 1998 study. The results of both studies consistently suggest that significant health care savings may be realized by designing and encouraging participation in programs that successfully modify poor health habits. See Appendix II for abstract of the published paper.

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ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Age Group
All

Gender
All

Occupation
All

Relationship
All

Filter Field One
All

Filter Field Two
All

Filter Field Three
All

Filter Field Four
All

Medical Expenses Assigned to Risks - HERO Study

Depression	Sedentary	Tobacco Use	High Stress	High Glucose	Hypertension	Obesity
$2,184	$606	$587	$413	$1,653	$1,378	$1,091

Number of Respondents with Risk

92	340	74	327	15	55	331

Total Estimated Costs for Lifestyle Risks

	Depressive Symptoms	Sedentary	Tobacco User	High Stress	Total Lifestyle Costs
	$200,928	$206,040	$43,438	$135,051	$585,457

Total Estimated Costs for Self-Reported Biometric Risks

	High Fasting Glucose	Hypertension	Obesity	Total Biometric Costs
	$24,795	$75,790	$361,121	$461,706

Note. This report contains respondents who completed an assessment in Time 1 and Time 2. It is important to note that not all respondents answer all questions. Therefore a change metric cannot be computed for those who do not answer the question in each time period and the number of people who had a change may be less than expected.

Prepared On:
08/16/2013

Goetzel, Pei, Tabrizi, et al. **Ten Modifiable Health Risk Factors Are Linked to More Than One-Fifth of Employer-Employee Health Care Spending**. Health Affairs. 2012; 11: 2474-2484

Presenteeism and Absenteeism

Worker productivity is a critical factor in the strength and profitability of a company's overall business performance. Absenteeism - the classic drain on individual and total workforce productivity - can be measured through data on short-term disability, continuance days and family medical leave. Beyond the physical presence of employees, however, is their daily performance as compared to their normal level of productivity and work quality.

To address the need for a reliable, research-based measure of presenteeism, Dr. Kenneth Pelletier led a team of researchers at the Stanford University School of Medicine in a study funded by Merck & Co., Inc. The result of that research was the Stanford Presenteeism Scale-6, or SPS-6, which is a survey tool that assesses the relationship between presenteeism, health problems, and productivity for working populations.

As defined by the tool, heightened job performance is increased presenteeism, while diminished presenteeism occurs when employees work less productively or at a poorer quality than usual due to a health or medical problem. SPS-6 measures a worker's perception of his or her ability to overcome the distraction of current physical and/or psychological problems in order to handle job stress, complete tasks, achieve goals and maintain sufficient focus and energy levels. The scale ranges from 6 - 30, with 30 being optimal presenteeism.

The table below shows the SPS-6 average score compared to the book of business and the proportion of the members with scores below 19 (low presenteeism). These individuals may benefit from interventions to improve their ability to deal with the health problems that impact their productivity.

ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Occupation
All

Relationship
All

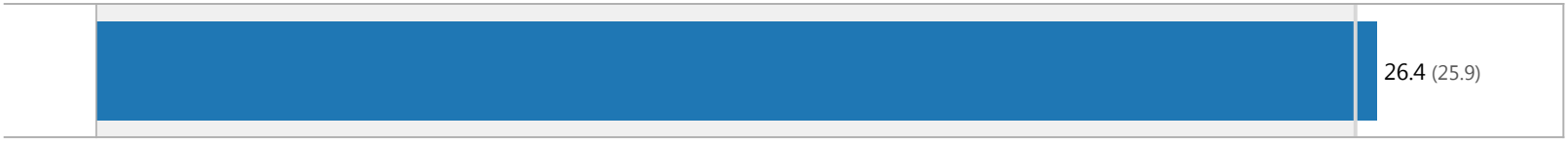
Filter Field One
All

Filter Field Two
All

Filter Field Three
All

Filter Field Four
All

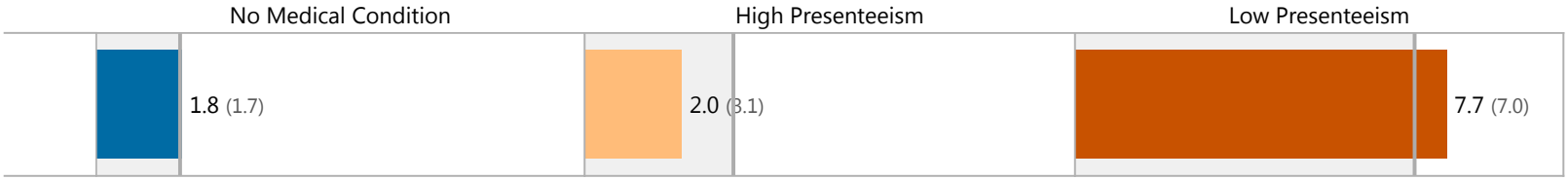
Average Presenteeism Scores



Percent of Respondents with Low Presenteeism

Relationship between Absenteeism and Presenteeism : Average Workdays Missed by Presenteeism Level

Individuals with low presenteeism, high presenteeism and those with no medical condition are compared with the number of days they missed work for an illness (absenteeism). Those with low presenteeism generally miss more work than those managing their condition.



Prepared On:
08/16/2013

Behavioral Health

Depressive symptoms include feeling sad, blue, unhappy, miserable, or down in the dumps. Having depressive symptoms may indicate clinical depression, which is a mood disorder in which feelings of sadness, loss, anger, or frustration interfere with everyday life for weeks or longer. People who are depressed are more likely to use alcohol or illegal substances. Complications of depression also include increased risk of physical health problems and suicide. The proportion of respondents reporting depressive symptoms is shown below. We defined the presence of depressive symptoms by a response of 'YES' to, 'In the past 2 weeks, have you felt little interest or pleasure doing things?' AND 'In the past 2 week, have you felt down, depressed, or hopeless?'

ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Proportion Reported Depressive Symptoms

Age Group
All

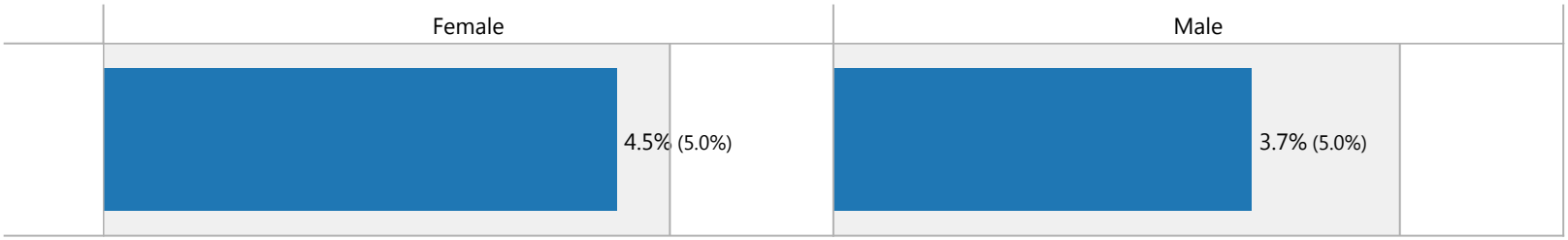
Gender
All

Alcohol intoxication may impair brain and motor skill functions and possibly deteriorates someone's ability to work. Habitual use can elevate an individual's risk for certain cancers, liver disease, and stroke. We defined heavy drinking as more than two alcoholic beverages for males and more than one alcoholic beverage for females per day. This measure is only available for surveys taken January 25, 2013 and beyond.

Occupation
All

Relationship
All

Proportion Reported Heavy Drinking



Filter Field One
All

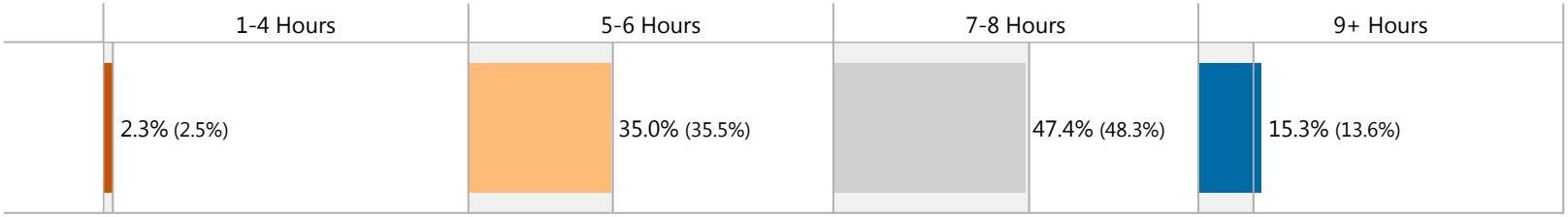
Filter Field Two
All

Filter Field Three
All

Getting enough sleep is important for our health and wellbeing. Most adults require about seven hours of sleep a night. Sleep problems are common: it is thought that about 20% of people are affected. Things that can interfere with sleep include: alcohol, drugs and medication, physical and mental illness, pauses in breathing at night (sleep apnoea), shift work, and stress. The proportion of respondents for categories of sleep hours is shown below.

Filter Field Four
All

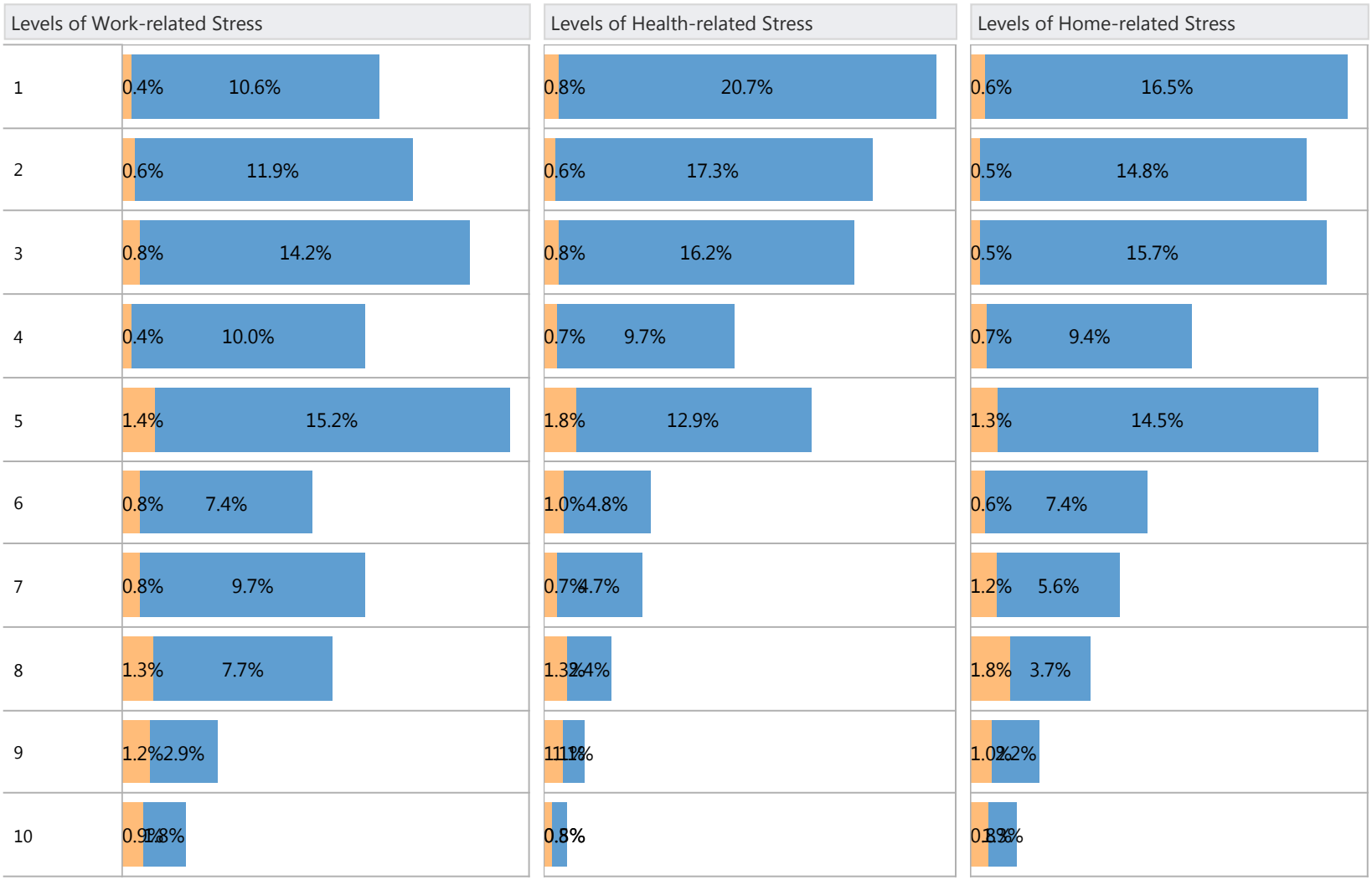
Hours of Sleep



Prepared On:
08/16/2013

Stress: Health, Home, and Work

Stress is common in all aspects of life. High levels of stress have a major impact on employee health, morale, and productivity. In fact, according to one study those with high stress were more likely to be absent 5+ days per year more than those with low stress. Data for those experiencing three key areas of stress are shown below and the respondent's management of stress is overlayed. Those with higher levels of stress are less likely to manage the risk well.



ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Occupation
All

Relationship
All

Filter Field One
All

Filter Field Two
All

Filter Field Three
All

Filter Field Four
All

Prepared On:
08/16/2013

Stress Management
Poorly
Fairly to Very Well

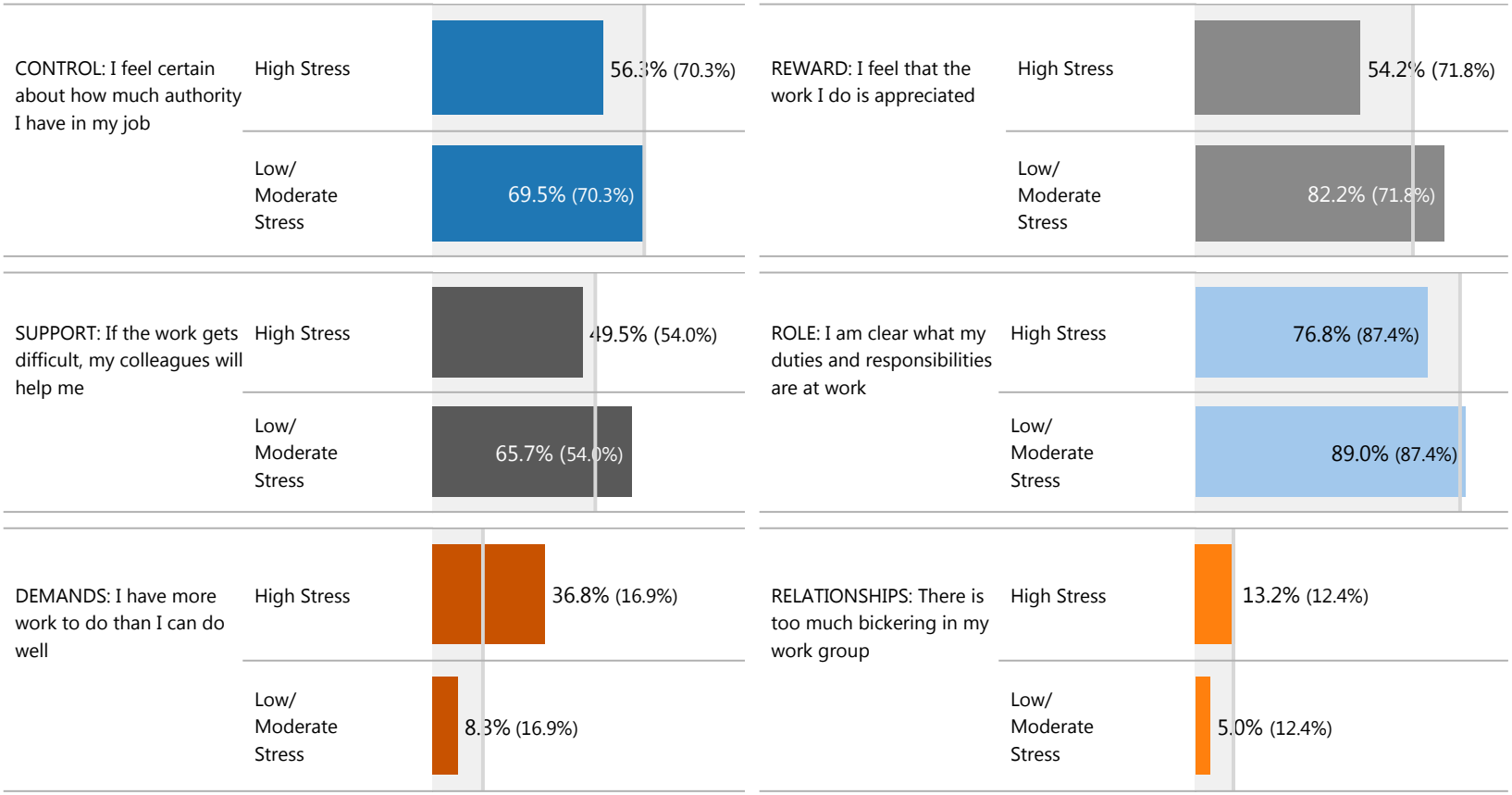
Jacobson BH, Aldana SG, Goetzel RZ, Vardell KD, et al. ***The relationship between perceived stress and self-reported illness-related absenteeism.*** American Journal of Health Promotion 1996; 11(1): 54-61.

Workplace Stressors

In the United States, the estimated cost to organizations from a highly stressed workforce ranges between $150 billion and $180 billion a year, resulting from reduced productivity, accidents, absenteeism, employee turnover, and health insurance and medical expenses. Findings from two nationwide surveys of American workers showed that 69% of those who were surveyed reported reduction in productivity attributed to high levels of stress, and 14% indicated that stress had caused them to quit or change jobs during the past two years.

Mahmood and colleagues developed the Workplace Stressors Assessment Questionnaire to assess multiple workplace stress dimensions. The measure provides insight on employees' view of workplace *control, reward, role, demands, relationships and support.*

Percent That Agree With Statement



ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Occupation
All

Relationship
All

Stratify by Work Stress
Yes

Filter Field One
All

Filter Field Two
All

Filter Field Three
All

Filter Field Four
All

Mahmood MH., Coons SJ., Guy MC., Pelletier KR. ***Development and testing of the Workplace Stressors Assessment Questionnaire.*** Journal of Occupational and Environmental Medicine 2010; 52(12): 1192-200.

Prepared On:
08/16/2013

Medical Conditions and Self-Rated Health

The figure below shows the number of people reporting medical conditions. Hypertension, obesity, arthritis, back and neck disorders generally represent the largest proportion of medical conditions reported. Clients with formal biometric screening programs will often see a rise in diagnosed diabetes, hypertension, and hyperlipidemia generally in the first few years of a wellness program as responders act on lab results. Reductions in these rates also may indicate a combination of medical management and lifestyle interventions have been implemented to manage the condition.

ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Occupation
All

Relationship
All

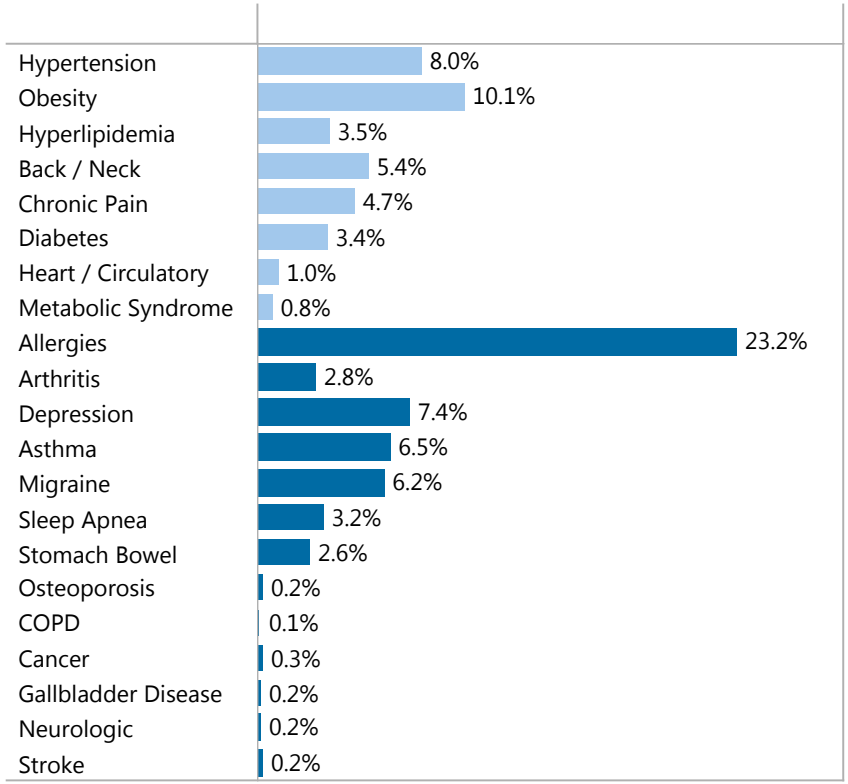
Filter Field One
All

Filter Field Two
All

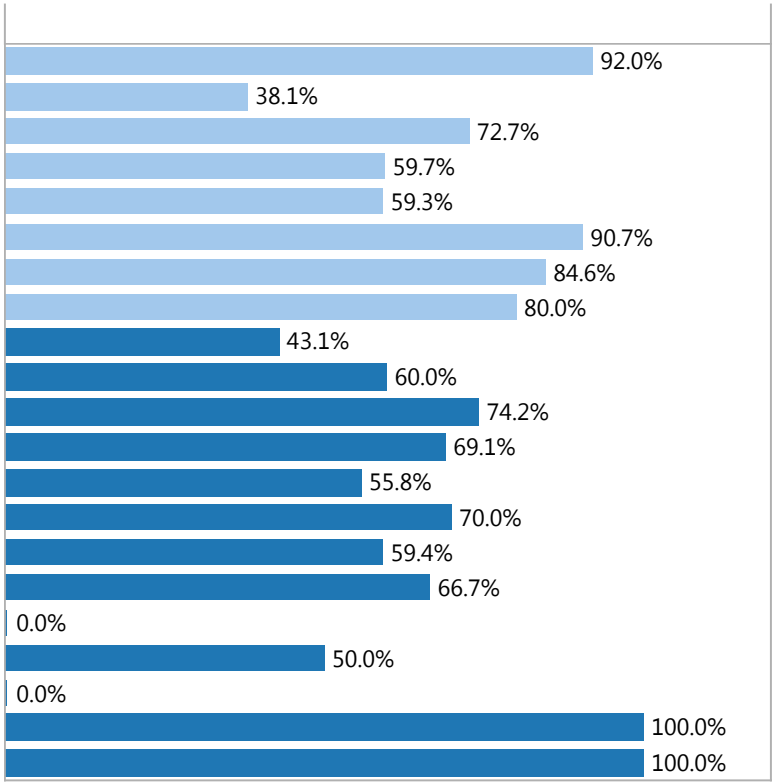
Filter Field Three
All

Filter Field Four
All

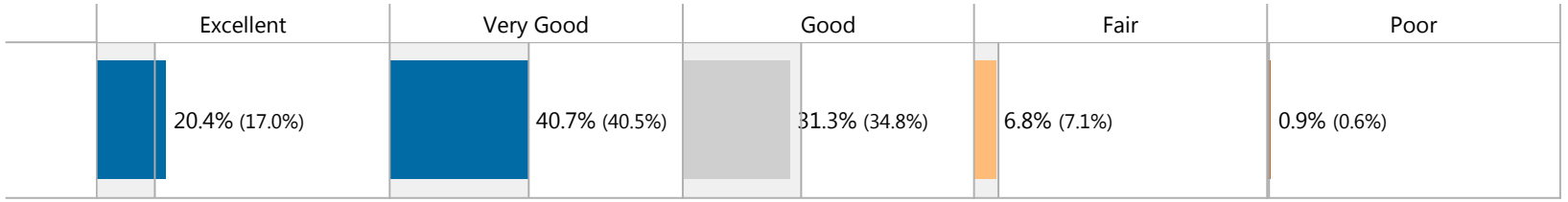
Proportion of Sample Reporting Medical Conditions



Having Condition and % Being Treated



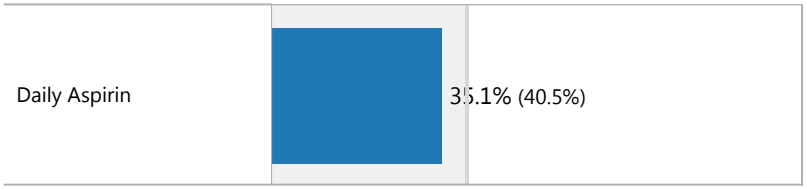
Self-Rated Health

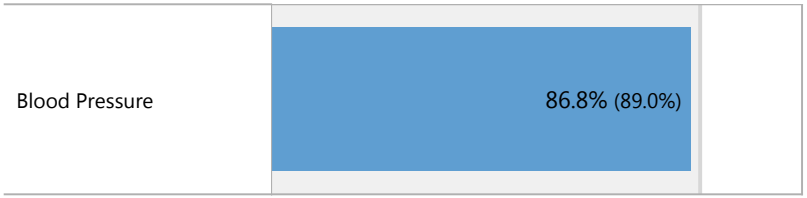


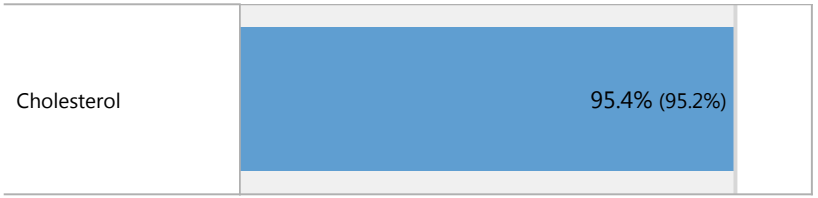
Prepared On:
08/16/2013

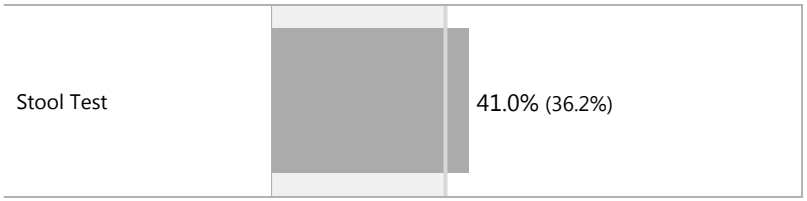
Preventive Health Screenings

A key objective of encouraging individuals to complete personal health assessments is to monitor compliance with recommended preventive health screenings that are appropriate to specific gender and age groups. Usually screening rates are lower in the first year of a wellness program but as the members become more educated about the importance of screenings, these rates increase. Many key preventive health exams are also conducted using biometric screenings at the worksite, and thus, clients should see a large proportion of the sample compliant with screenings such as glucose and cholesterol. The data shown are proportions completing screenings recommended for their gender and age based on guidelines from the U.S. Preventive Health Task Force.

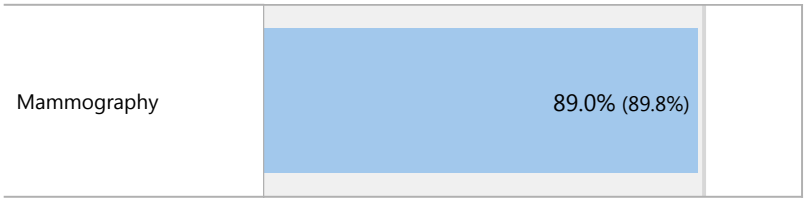








Women's Health



ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Occupation
All

Relationship
All

Filter Field One
All

Filter Field Two
All

Filter Field Three
All

Filter Field Four
All

Prepared On:
08/16/2013

Activity Measures

The Centers for Disease Control recommends individuals achieve 2 hours and 30 minutes (150 minutes) of moderate-intensity aerobic activity (e.g., brisk walking) or 1 hour and 15 minutes (75 minutes) of vigorous-intensity activity every week. To meet these guidelines the frequency of physical activity should be most days of the week and the duration of a bout of activity should be at least 10 minutes. Muscle-strengthening activities that work all major muscle groups are also recommended on 2 or more days a week. The data below shows the prevalence of responders meeting the moderate or vigorous exercise recommendations.

ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Occupation
All

Relationship
All

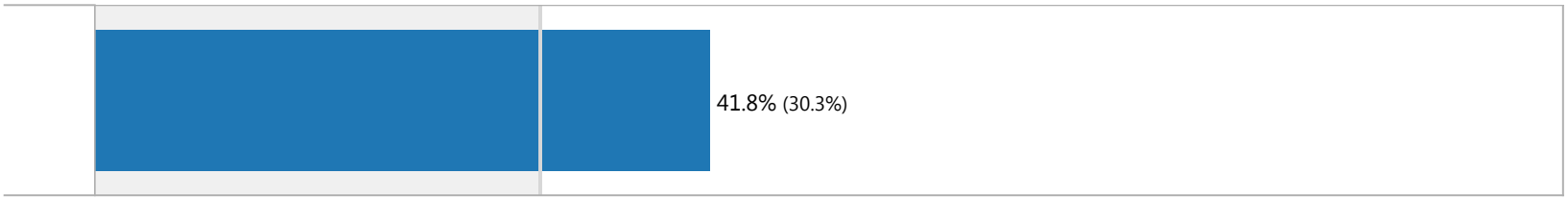
Filter Field One
All

Filter Field Two
All

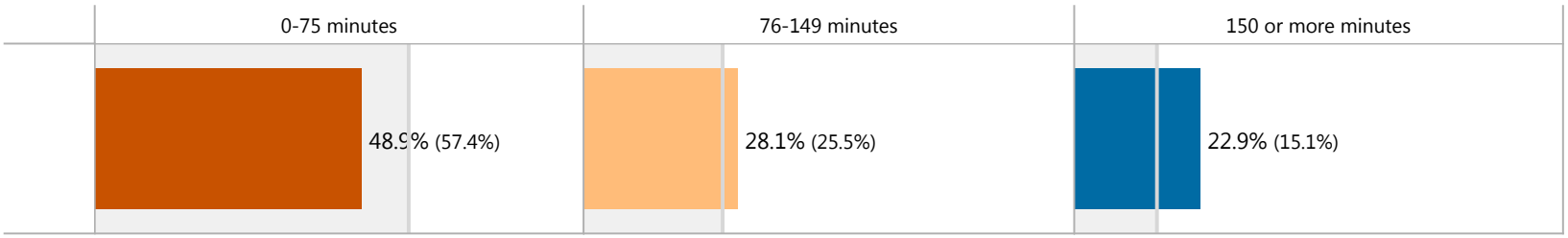
Filter Field Three
All

Filter Field Four
All

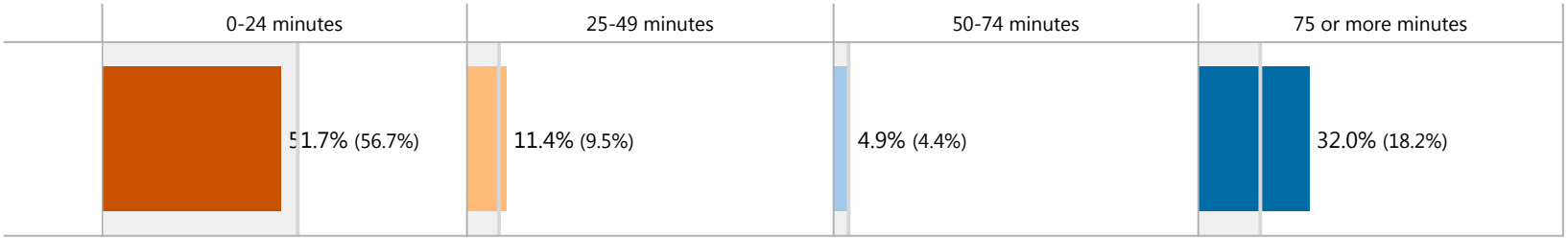
Percent of Population Meeting Recommended Moderate or Vigorous Levels of Physical Activity



Distribution of Moderate Intensity Physical Activity - Minutes per Week



Distribution of Vigorous Intensity Physical Activity - Minutes per Week



Note. In 2013, the questions and responses regarding exercise were changed. The question set was revised to capture at a more granular level the amount and type of exercise activity. It was believed that the questions asked in the earlier surveys caused an overreporting of vigorous activity and an underreporting of sedentary activity. As a result, questions asked after 2013, are not directly comparable with the previous question set.

Prepared On:
08/16/2013

Diet Measures

The U.S. Department of Agriculture and the Department of Health and Human Services released the 2010 Dietary Guidelines for Americans, the federal government's evidence-based nutritional guidance to promote health, reduce the risk of chronic diseases, and reduce the prevalence of overweight and obesity through improved nutrition and physical activity. The report had three major action steps for the American public.
ONE: Reduce the prevalence of overweight and obesity of the US population by reducing overall calorie intake and increasing physical activity. **TWO:** Diet should emphasize intake of vegetables, cooked dry beans and peas, fruits, whole grains, nuts, and seeds. In addition, increase the intake of seafood and fat-free or low-fat milk and milk products. Consume only moderate amounts of lean meats, poultry, and eggs. **THREE:**Significantly reduce intake of foods containing added sugars and solid fats because these dietary components contribute excess calories and few, if any, nutrients. In addition, reduce sodium and refined grains intake that contain added sugar, solid fat, and sodium. Here are the reported fruit, vegetable, and grain servings for your sample.

ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Occupation
All

Relationship
All

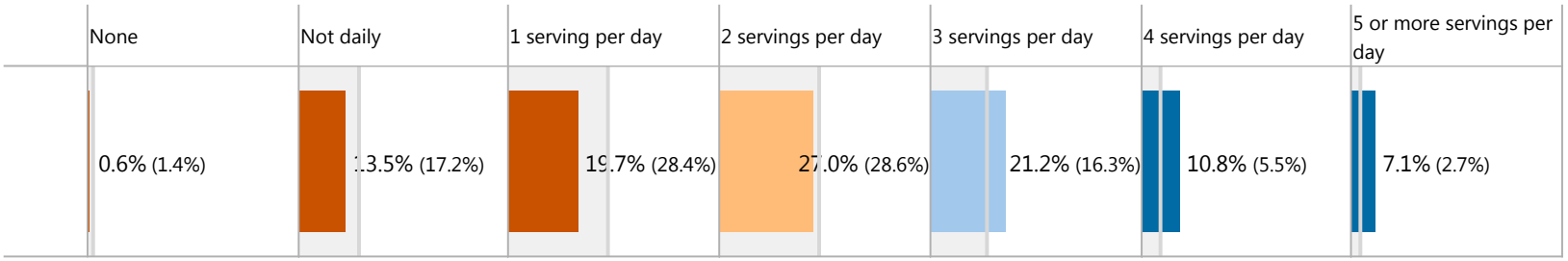
Filter Field One
All

Filter Field Two
All

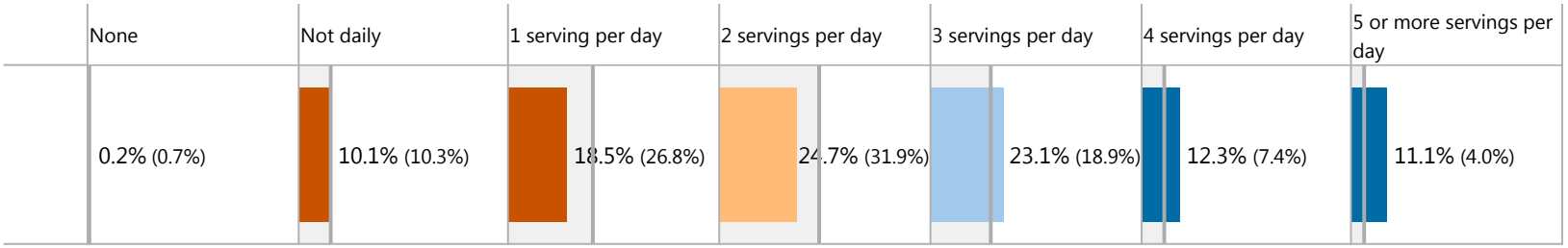
Filter Field Three
All

Filter Field Four
All

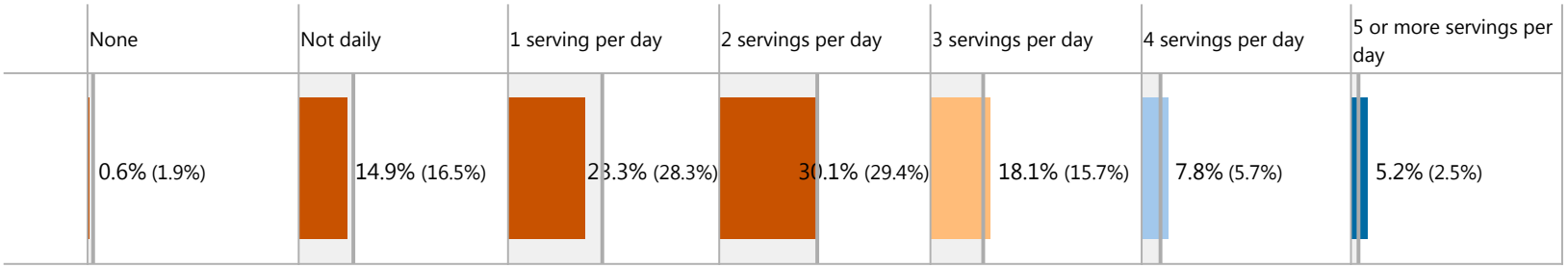
Fruit Servings



Vegetable Servings



Grain Servings

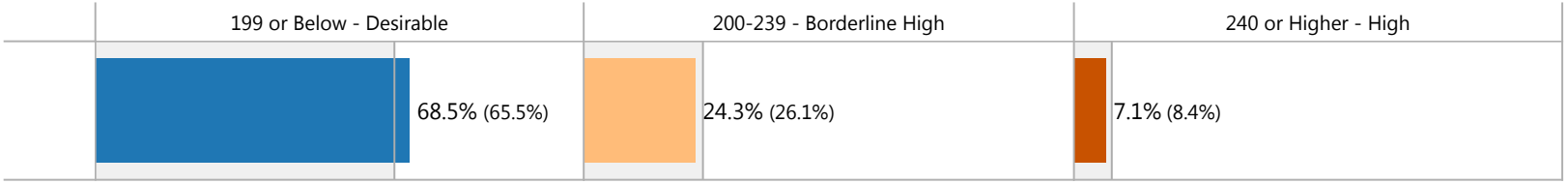


Prepared On:
08/16/2013

Biometric Measures

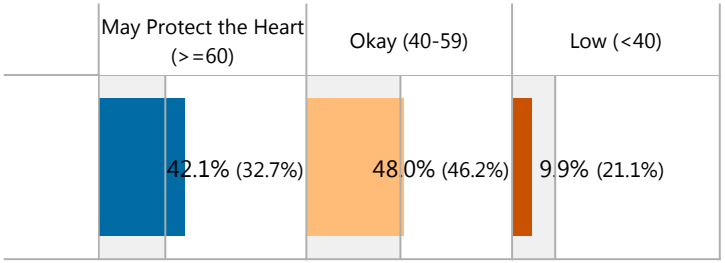
Cholesterol is a fatty substance that is made by the body and is a problem when levels in the blood get too high. It can form waxy plaque that can clog arteries and can cause heart disease. Individuals with total cholesterol (TC) levels in the 'borderline high' and 'high risk' ranges are twice as likely to develop coronary heart disease as those with levels below 200 mg/dL.

Total Cholesterol

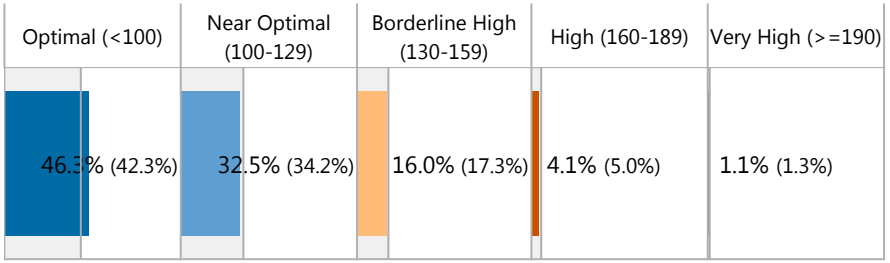


High-density lipoprotein (HDL) cholesterol is sometimes called 'good cholesterol.' HDL values less than 40 mg/dL may significantly increase an individual's risk for heart disease. **Low-density lipoprotein** (LDL) cholesterol is sometimes called 'bad cholesterol.' High LDL cholesterol leads to a buildup of cholesterol in arteries. Individuals with LDL levels greater than 160 are at higher risk for heart disease.

HDL



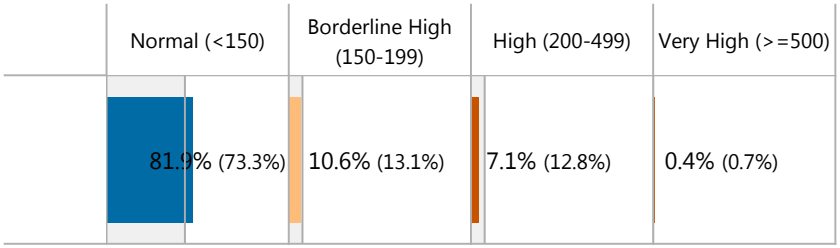
LDL



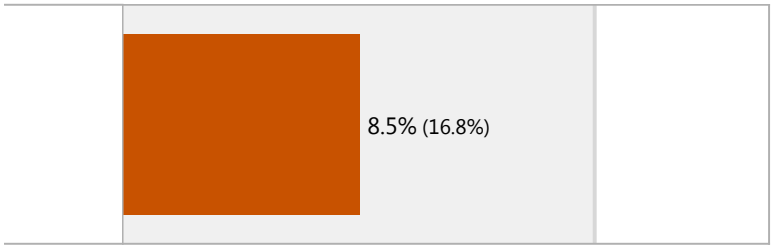
Along with high cholesterol, high **triglyceride** levels have been linked to heart disease. Clinical studies have shown that people with above-normal triglyceride levels have an increased risk of heart disease. People with diabetes or who are obese are also likely to have high triglycerides.

According to the American Heart Association, the optimal **total cholesterol to HDL ratio** is 3.5-to-1 and an acceptable ratio is 5-to-1. Individuals with greater than 5-to-1 ratio are at an increased risk for heart disease.

Triglycerides



Proportion with High Risk HDL to Total Cholesterol Ratio



ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Age Group
All

Gender
All

Relationship
All

Filter Field One
All

Filter Field Two

Filter Field Three
All

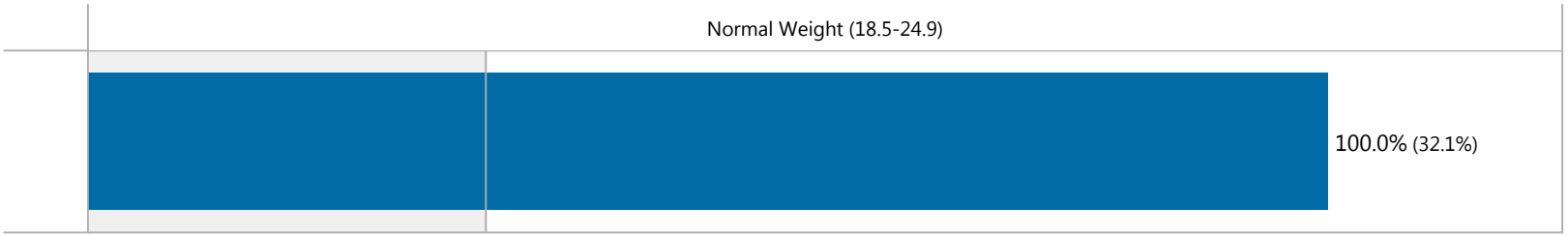
Filter Field Four
All

Prepared On:
08/16/2013

Biometric Measures - 2

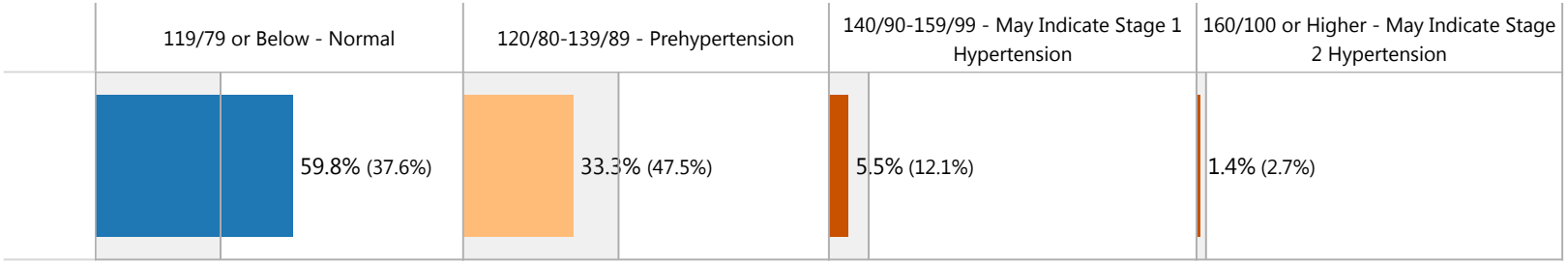
Body mass index (BMI) is a ratio of weight to height and is an indicator showing if one weighs more or less than what is healthy. An individual's weight includes both body fat and lean body mass (everything but fat). Individuals with high BMI may be at risk for Type 2 diabetes, coronary heart disease and stroke, metabolic syndrome, certain types of cancer and other chronic conditions.

Body Mass Index



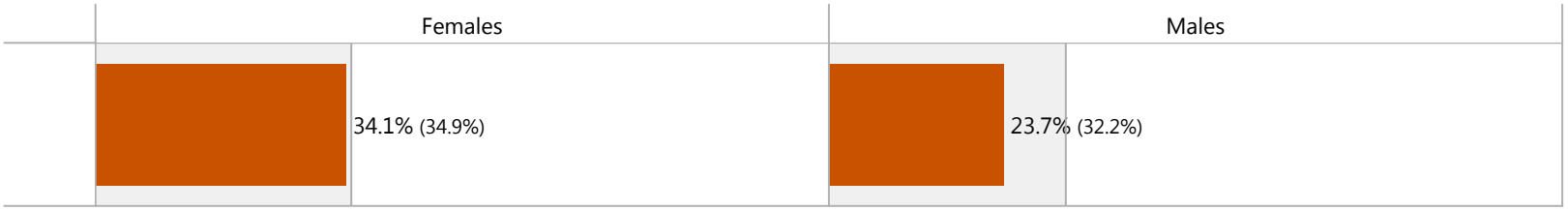
Blood Pressure is the force of blood against the vessel walls. The 'top' number is systolic and the 'bottom' number is diastolic. Individuals that do not control high blood pressure may be at risk for stroke, congestive heart failure, kidney failure, or heart attack.

Blood Pressure



Large **waist circumference** can be indicative of excess abdominal fat, which places individuals at greater risk for developing obesity-related conditions, such as Type 2 Diabetes, high blood cholesterol, high triglycerides, high blood pressure, and coronary artery disease. The following waist measurements are high risk indicators for obesity-related conditions: more than 40 inches ***(males)*** and more than 35 inches (non-pregnant ***females***).

Proportion with High Risk Waist Circumference By Gender



ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Age Group
All

Gender
All

Relationship
All

Filter Field One
All

Filter Field Two

Filter Field Three
All

Filter Field Four
All

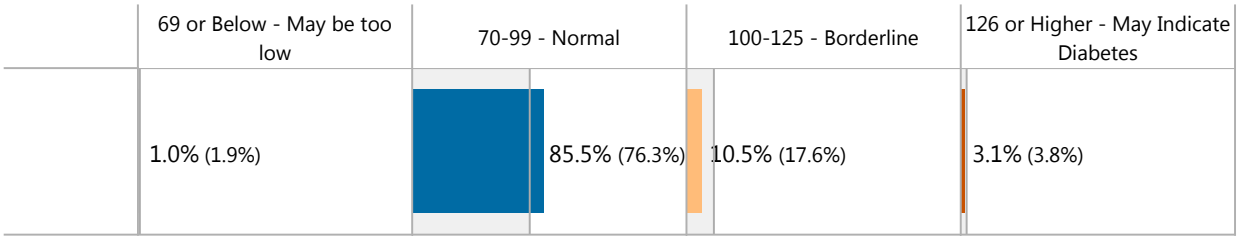
Prepared On:
08/16/2013

Biometric Measures - 3

The **fasting glucose test** is conducted after the individual has not eaten for at least 8 hours and measures the amount of glucose in the blood. The **random** (non-fasting) **glucose test** evalutes levels of blood sugar in non-fasting subjects.

Diabetes is a health condition in which a person's blood sugar (glucose) is too high. Uncontrolled diabetes can result in problems with other body functions, such as the kidneys, nerves, feet, eyes and places an individual at a higher risk for heart disease and bone and joint disorders.

Fasting Glucose



Participants of Fasting Glucose

983

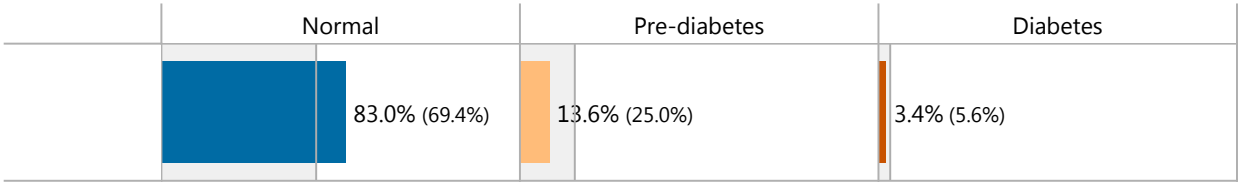
Random Glucose

Participants of Random Glucose

Percent of Participants that are Tobacco Users

HbA1c (Glycohemoglobin) is a lab test that shows the average level of glucose over the previous 3 months. The test can be used to screen for diabetes or gauge your management of diabetes. A higher Glycohemoglobin, the higher the risk that you will develop problems such as eye, heart, or kidney disease.

HbA1c (Glycohemoglobin) Glucose Test



Participants of HbA1c Glucose

88

ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Age Group
All

Gender
All

Relationship
All

Filter Field One
All

Filter Field Two

Filter Field Three
All

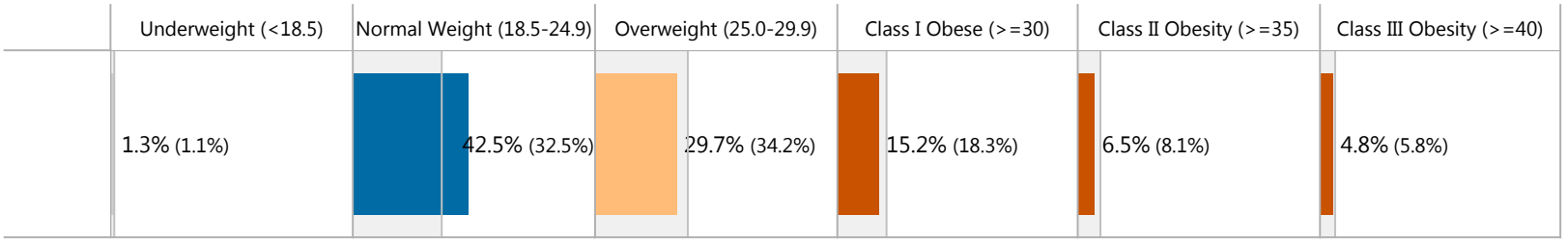
Filter Field Four
All

Prepared On:
08/16/2013

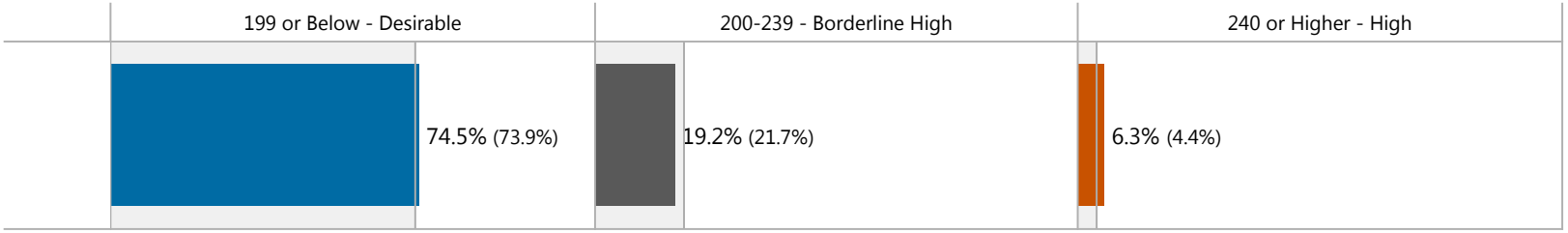
Self-Reported Biometrics

These are self-reported biometric values and were not collected during a biometric screening event.

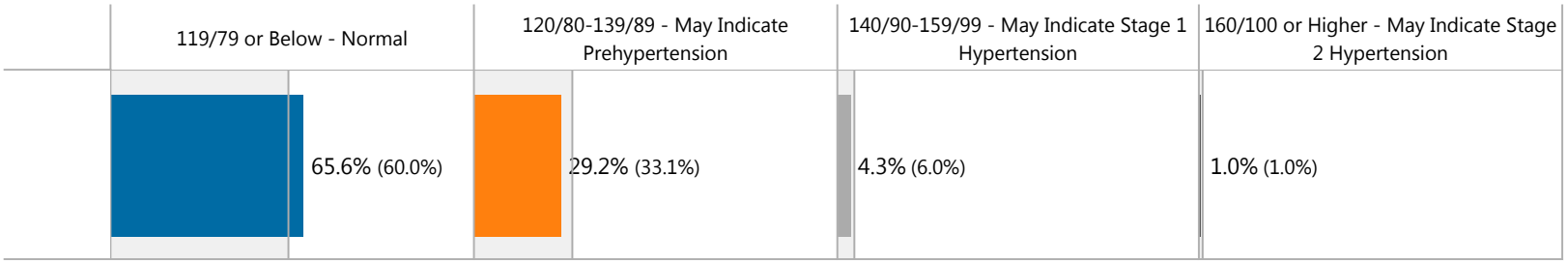
Body Mass Index



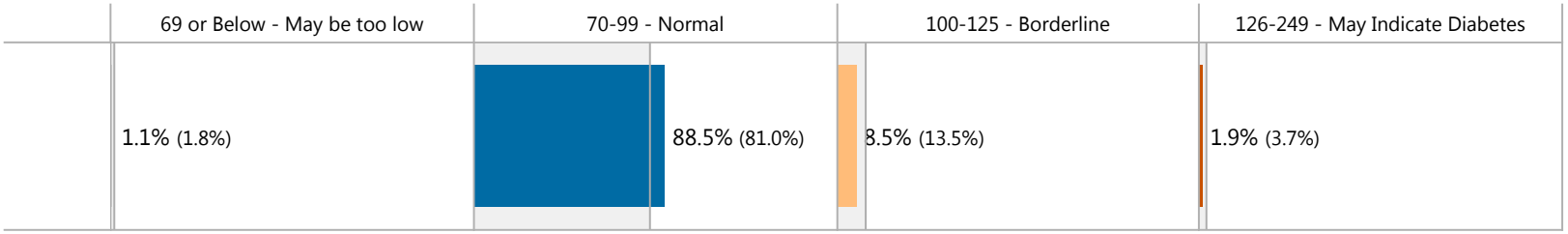
Total Cholesterol



Blood Pressure



Fasting Glucose



ReportType
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Occupation
All

Relationship
All

Filter Field One
All

Filter Field Two
All

Filter Field Three
All

Filter Field Four
All

Prepared On:
08/16/2013

Tables of Lifestyle Risks

Percent of Respondents with High Lifestyle Risks

Sedentary	Book - Sedentary	Poor Diet	Book - Poor Diet	High Stress	Book - High Stress	Tobacco User	Book - Tobacco User
27.2%	28.7%	42.4%	50.7%	26.1%	33.9%	5.9%	11.2%

Number of Respondents with High Lifestyle Risks

Sedentary	Poor Diet	High Stress	Tobacco User
340	530	327	74

Report Type
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Relationship
All

Filter Field One
All

Filter Field Two
All

Filter Field Three
All

Filter Field Four
All

Prepared On:
08/16/2013

Tables of Biometric Risks

Percent of Participants with High Biometric Risks

Obesity	Book - Obesity	High Blood Pressure	Book - High Blood Pressure	High Cholesterol	Book - High Cholesterol	High Fasting Glucose	Book - High Fasting Glucose
0.0%	30.3%	6.9%	14.5%	7.1%	8.4%	3.1%	3.8%

Number of Participants with High Biometric Risks

Obesity	High Blood Pressure	High Cholesterol	High Fasting Glucose
0.00	69.00	71.00	30.00

Report Type
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Relationship
All

Filter Field One
All

Filter Field Two

Filter Field Three
All

Filter Field Four
All

Prepared On:
08/16/2013

Tables of Lifestyle and Self-Reported Biometric Risks

Report Type
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Relationship
All

Filter Field One
All

Filter Field Two
All

Filter Field Three
All

Filter Field Four
All

Percent of Respondents with High Lifestyle Risks

Sedentary	Book - Sedentary	Poor Diet	Book - Poor Diet	High Stress	Book - High Stress	Tobacco User	Book - Tobacco User
27.2%	28.7%	42.4%	50.7%	26.1%	33.9%	5.9%	11.2%

Number of Respondents with High Lifestyle Risks

Sedentary	Poor Diet	High Stress	Tobacco User
340	530	327	74

Percent of Respondents with High **Self-Reported** Biometric Risks

Obesity	Book - Obesity	High Blood Pressure	Book - High Blood Pressure	High Cholesterol	Book - High Cholesterol	High Fasting Glucose	Book - High Fasting Glucose
26.5%	32.2%	5.3%	7.0%	6.3%	4.4%	1.9%	3.7%

Number of Respondents with High **Self-Reported** Biometric Risks

Obesity	High Blood Pressure	High Cholesterol	High Fasting Glucose
331	55	58	15

Prepared On:
08/16/2013

Lifestyle Risk Summary Scores

The figure below presents the lifestyle scores of your population. The total lifestyle score is shown as well as a score for each lifestyle category. Lifestyle scores range from 0 to 100, with 100 representing 100% compliance with public health recommendations. Simply, a higher score suggests a healthier sample. Vertical lines on each bar represent the book of business scores for comparison.

Report Type
Baseline

Begin Date
Jan 2012

End Date
Dec 2013

Gender
All

Age Group
All

Occupation
All

Relationship
All

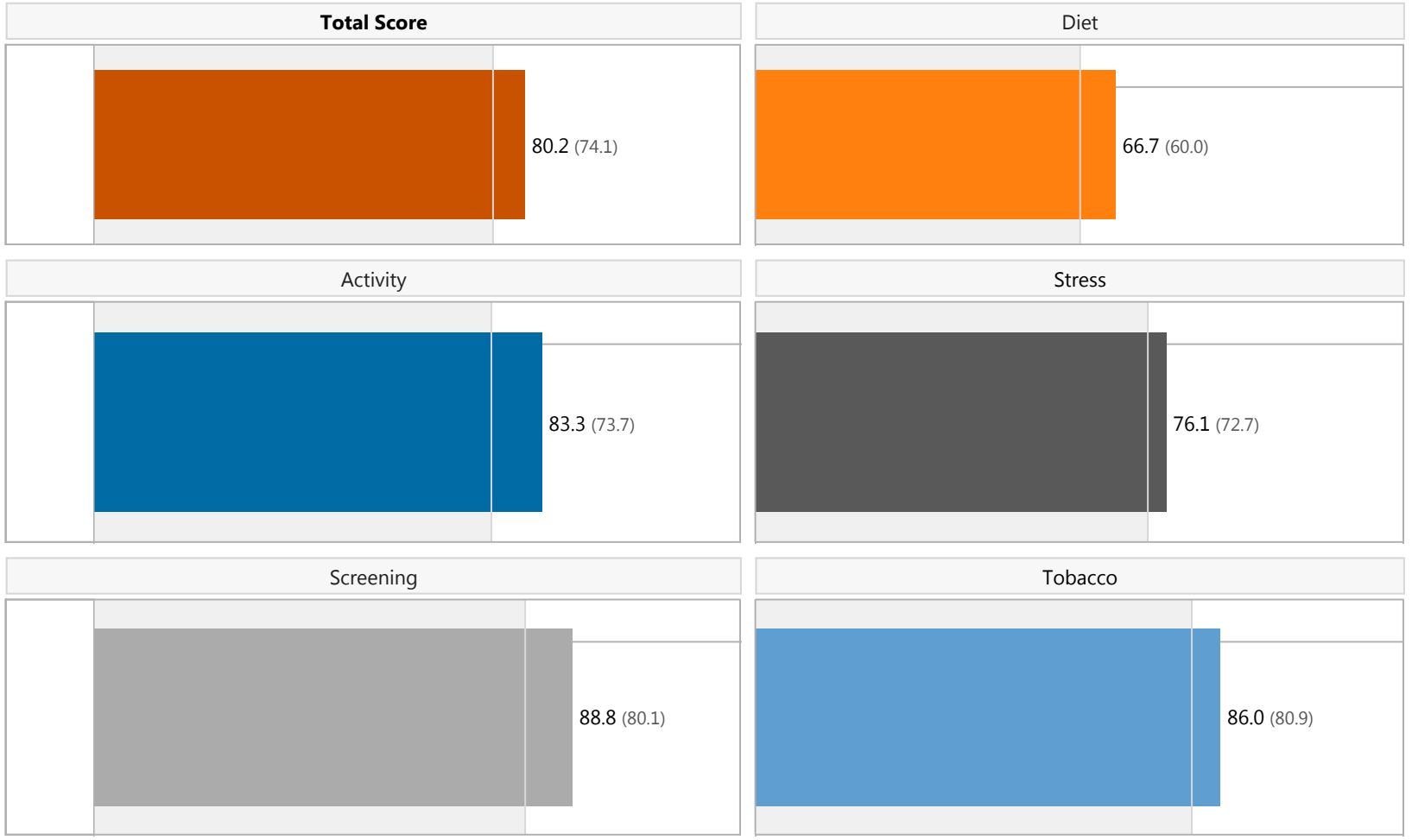
Filter Field One
All

Filter Field Two
All

Filter Field Three
All

Filter Field Four
All

Average Score by Risk



Prepared On:
08/16/2013

Appendix I

Appendix I: Lifestyle Risk Definitions

Respondents are categorized as HIGH risk based on lifestyle behaviors.

Tobacco Use

Current tobacco users are considered high risk.

Activity

Those who report less than 10 minutes of moderate exercise per week, and no vigorous activity are considered high risk.

Diet

Respondents whose daily servings of fruits and vegetables are less than or equal to 1 serving and grain servings are less than or equal to 1 serving are considered high risk.

Stress

Respondents reporting a stress score of 8 or higher for home, health, or work are considered high risk.

Prepared On:

08/16/2013

Appendix II

Appendix II: The Impact of Health Risks on Medical Claims Experience

Ten Modifiable Health Risk Factors Are Linked to More Than One-Fifth of Employer-Employee Health Care Spending

An underlying premise of the Affordable Care Act provisions that encourage employers to adopt health promotion programs is an association between workers' modifiable health risks and increased health care costs. Employers, consultants, and vendors have cited risk-cost estimates developed in the 1990s and wondered whether they still hold true.

Examining ten of these common health risk factors in a working population, we found that similar relationships between such risks and total medical costs documented in a widely cited study published in 1998 still hold. Based on our sample of 92,486 employees at seven organizations over an average of three years, $82,072,456, or 22.4 percent, of the $366,373,301 spent annually by the seven employers and their employees in the study was attributed to the ten risk factors studied. This amount was similar to almost a quarter of spending linked to risk factors (24.9 percent) in the 1998 study. High risk for depression remained most strongly associated with increased per capita annual medical spending (48 percent, or $2,184, higher). High blood glucose, high blood pressure, and obesity were strongly related to increased health care costs (31.8 percent, 31.6 percent, and 27.4 percent higher, respectively), as were tobacco use, physical inactivity, and high stress. These findings indicate ongoing opportunities for well-designed and properly targeted employer-sponsored health promotion programs to produce substantial savings.

Goetzel, Pei, Tabrizi, et al. **Ten Modifiable Health Risk Factors Are Linked to More Than One-Fifth of Employer-Employee Health Care Spending**. *Health Affairs*. 2012; 11: 2474-2484

Prepared On:

08/16/2013

Healthyroads

Healthyroads™

Sample Size

PHA Respondents	Biometric Participants	Both
5,606	5,473	4,990

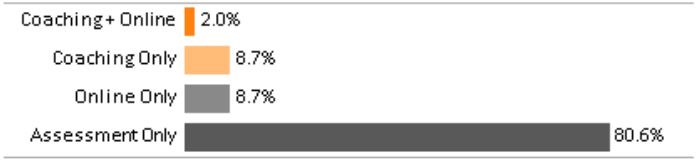
Lifestyle Score

The scores presented here are the overall lifestyle scores for Time 1, Time 2 and they show the change in the scores for both the client's experience and the book of business. An increase in the score demonstrates that the population, in general, is achieving improved lifestyle risks.

Lifestyle Score	Change - Client	Change - Book
74.7 / 73.3	1.9%	1.8%

Engagement

This graph shows the proportion of the cohort who engaged in either telephone coaching, on-line activities, or chose to not engage beyond completing a Personal Health Assessment in both periods.



Change in Risks

This set of high lifestyle and biometric risks summarizes if the population is showing improvement in reducing high lifestyle and biometric risks. A **green down arrow** indicates reduction in that high risk factor and **red up arrow** implies the risk has increased. These high lifestyle and biometric risks have been..

Financial Impact

This figure shows the additional medical costs associated with high risks in Time 1 and Time 2. This analysis is based on models developed using the research findings of the HERO that related medical costs to specific high risk lifestyle and biometric factors. Cost savings, if any, imply that high risks are being reduced in the population. A cost increase implies that risks are not improving.

Medical Costs - Savings/Increase **$218,845**

Report Type
Cohort

Reference Lines
Client Only

Assessment Begin Date
2010

Gender
All

Relationship
All

Job Type
All

Demographics

Demographic characteristics have been strongly correlated with specific risk factors and health behaviors. For example, age and gender distributions are key indicators of potential risk factors and are useful to guide wellness interventions. The data below shows key demographic metrics of the population. Significant differences in age distributions can help explain why some health risks are more prevalent than others. Further, employee tenure and job type can also inform workplace culture.

Report Type
Cohort

Stratify by
None

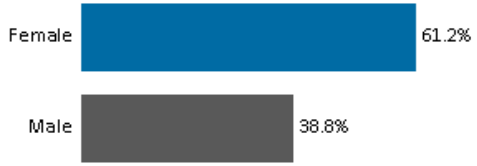
Assessment Begin Date
2010

Gender
All

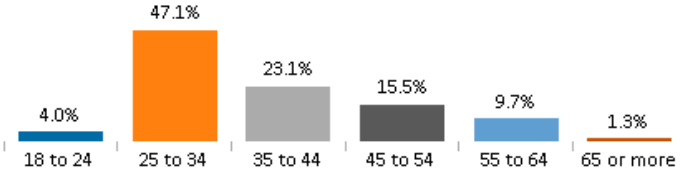
Relationship
All

Job Type
All

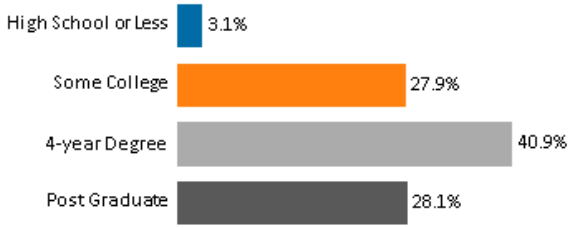
Gender



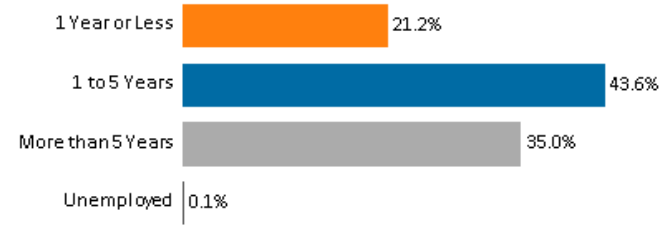
Age Group



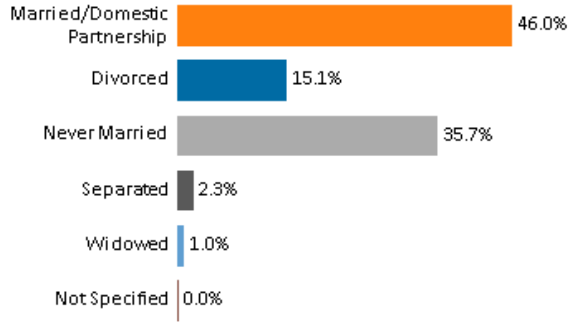
Education



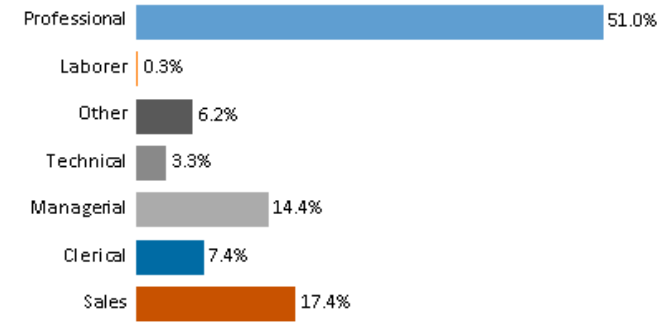
Tenure



Marital Status



Job Type



Lifestyle Risk Summary

The following table describes the risk profile of the population at Time 1 and Time 2. The total lifestyle score is shown as well as a detailed breakdown by lifestyle category. Scores range from 0 - 100, with 100 representing 100% compliance with all public health recommendations. The table below translates the score data into risk categories (high, moderate, and low). High risk is defined by the prevalence of a combination of elevated modifiable risk factors the individual may have. Risk status for Time 1, and Time 2 are shown for both the client and the book.

Report Type
Cohort

Reference Lines
Client Only

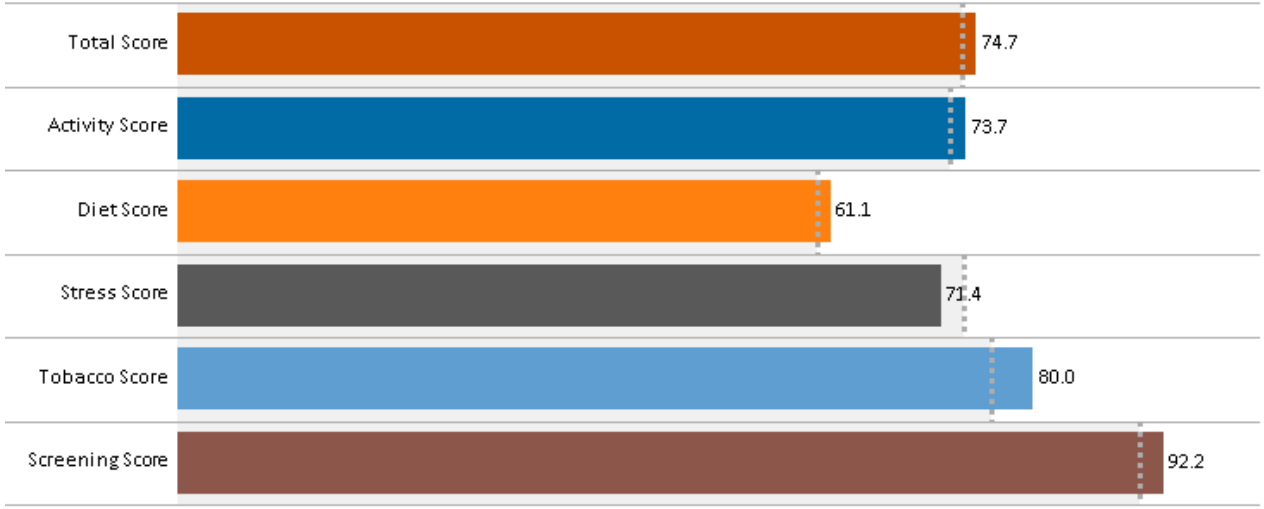
Assessment Begin Date
2010

Gender
All

Relationship
All

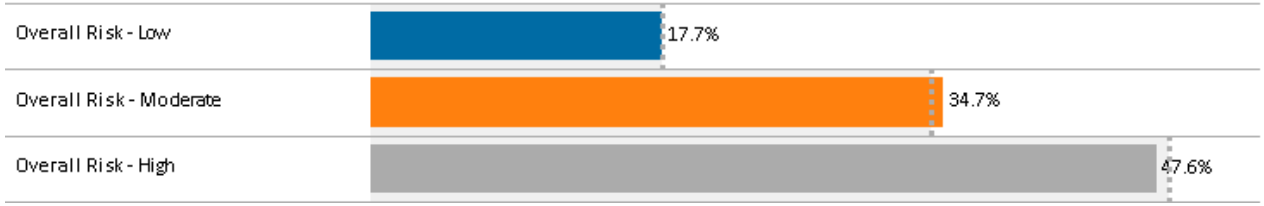
Job Type
All

Average Score by Risk



Lifestyle Risk Status of Responders

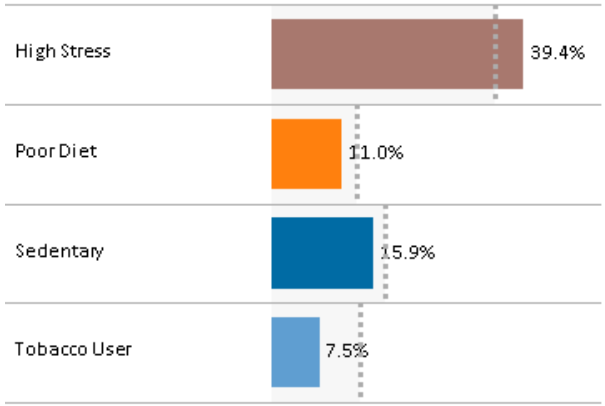
Overal Risk Stratification (high, moderate, and low) is based on individual responses to the key lifestyle risk questions concerning activity, diet, stress, tobacco use and body mass index (>= 30). Those who have a high risk in any of these lifestyle risk categories are considered high risk. Moderate risk individuals are those whose lifestyle risks are not of high risk, but are not near recommendations. Low risk are those individuals whose lifestyle risks meet or are very near recommended public health standards. Detailed risk definitions are in the Appendix I.



Lifestyle Risks

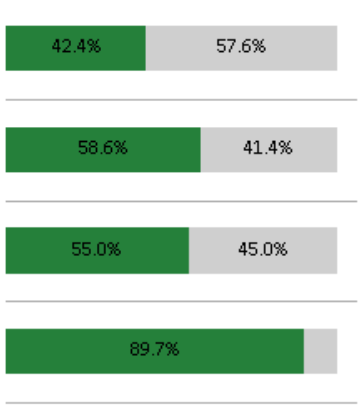
The data below summarizes the incidence of high lifestyle risks at Time 1 and Time 2. Typically obesity is the number one lifestyle risk followed by stress. The risk change shows the proportion of the population that is no longer at high risk. This proportion is compared against the book of business experience. Reduction in risk is key in improving the health of the population as wellas reducing claims trend as these measures, along with some biometric risks, have been shown to correlate with medical expenditures. Typically, obesity and stress have the highest occurance in the population. The greatest change in risk is generally seen in exercise and diet. Obesity is the most difficult measure to move as it often requires significant weight loss. In most cases, obesity increases unless a large poportion of this population is engaged in telephone coaching. Coaching engagement has the greatest impact on reducing obesity.

Percent of the Population with High Lifestyle Risks



Maintain / Change Risk	
Not at Risk	2,675
Still at Risk	1,229
Change in Risk	1,702
Not at Risk	4,535
Still at Risk	291
Change in Risk	780
Not at Risk	4,178
Still at Risk	456
Change in Risk	972
Not at Risk	4,785
Still at Risk	373
Change in Risk	448

Type of Risk Change



The data below shows the number of people with 0 risks followed by the average number of risks for people with at least 1 risk. It is typical to see about 40% of the population with no high lifestyle risks. Over time, based on meaningful engagement in lifestyle programs, the percent of population with NO risks should increase and the number with multiple risks should decline.

Percent of Population with No Lifestyle Risks

Average Number of Lifestyle Risks - With At Least One at Time 1

Type of Risk Change

High Lifestyle Risk Definitions

Sedentary: *Less than 10 minutes of moderate exercise per week, and no vigorous activity*
Poor Diet: *Daily servings of fruits and vegetables are less than or equal to 1 serving and grain servings are less than or equal to 1 serving*
High Stress: *Score 7 or higher on stress related to home, health, or work and manage stress 'poorly'*
Tobacco User: *Currently use tobacco products*

Report Type
Cohort

Reference Lines
Client Only

Worse
Improvement

Assessment Begin Date
2010

Less Risks
More Risks
Same

Gender
All

Relationship
All

Job Type
All

Examine by Engagement
No

Lifestyle Engagement

The data below summarizes the engagement pattern of the population between measurement periods and shows the proportion who engaged in less intensive on-line activities or those who chose to engage in lifestyle coaching .

Report Type
Cohort

Assessment Begin Date
2010

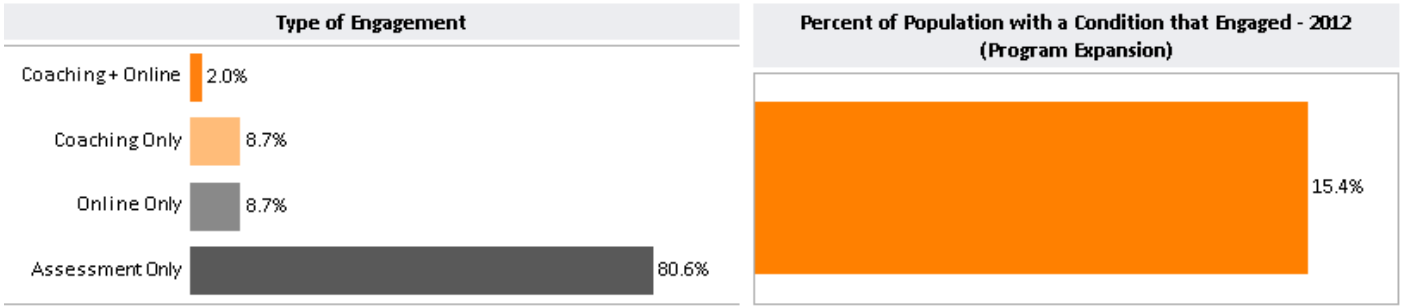
Gender
All

Relationship
All

Job Type
All

Type of Engagement
- Coaching + Online
- Coaching Only
- Online Only
- Assessment Only

Engagement Type and Intensity



Engagement Pattern by Risk

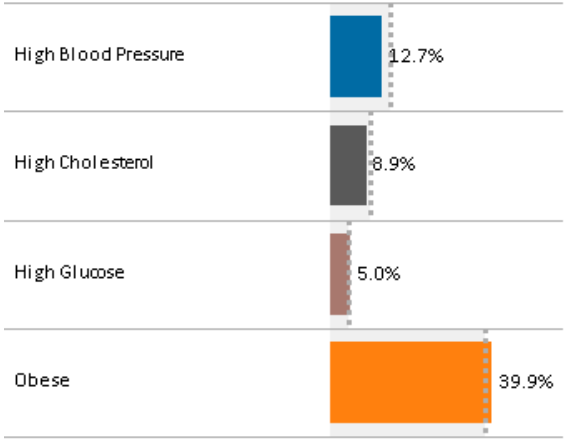
The engagement patterns is examined across risk status. The expected pattern is for those with greater risk to engage in a more intense intervention (i.e. telephone coaching).

Online only includes: The number of web classes, nutrition planners, exercise planners accessed, and the number of challenge interactions.

Validated Biometric Risks

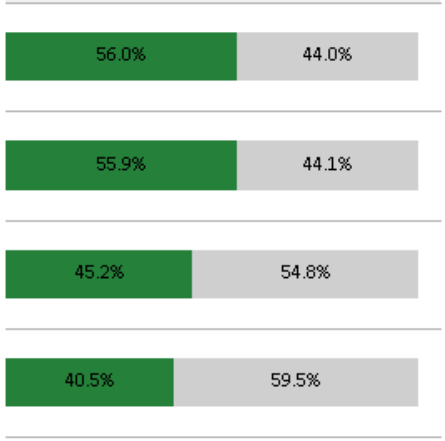
The data below summarizes the prevalence of the population with high biometric risks at Time 1 and Time 2. The change in risk is the proportion of the population that are no longer at high risk. This proportion is compared against the book of business experience. It is important to note that these are biometric measurements and not a diagnosis of a condtion. It is typical to see reductions in the proportion of the population with high blood pressure as it is easily controlled once the respondent is aware. Book of business trends tend to show an increase in the proportion of those with high glucose as diabetes continues to increase in incidence in the United States population. Lifestyle programs and medical management are key in reducing these risks.

Percent of the Population with High Biometric Risks



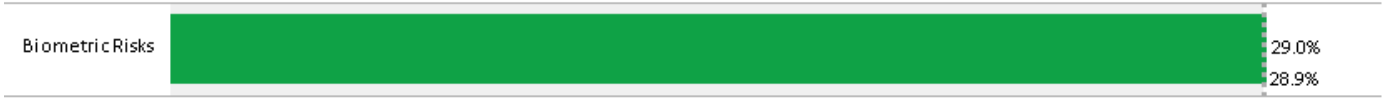
Maintain / Change	
Not at Risk	4,209
Still at Risk	274
Change in Risk	945
Not at Risk	4,673
Still at Risk	255
Change in Risk	519
Not at Risk	5,017
Still at Risk	168
Change in Risk	186
Not at Risk	3,066
Still at Risk	1,870
Change in Risk	496

Type of Risk Change

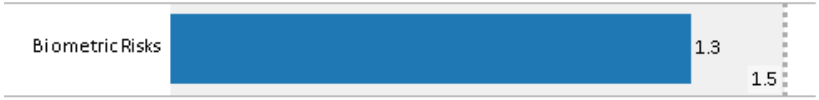


The data below shows the percent of population with 0 risks and the average number of risks for those with at least 1 risk. Over time, based on meaningful engagement in lifestyle programs, the number with NO risks should increase and the average number of risks should decline.

Percent of Population with No Biometric Risks



Average Number of Biometric Risks - With At Least One at Time 1



Type of Risk Change

High Biometric Risk Definitions

Obesity: BMI greater than or equal to 30.
Fasting Glucose: Measure of at least 126 mg/dL
High Blood Pressure: Measure of at least 140/90 mm Hg
Total Cholesterol: Measure of at least 240 mg/dL

Healthyroads

Report Type
Cohort

Reference Lines
Client Only

Worse
Improvement

Assessment Begin Date
2010

Less Risks
More Risks
Same

Gender
All

Relationship
All

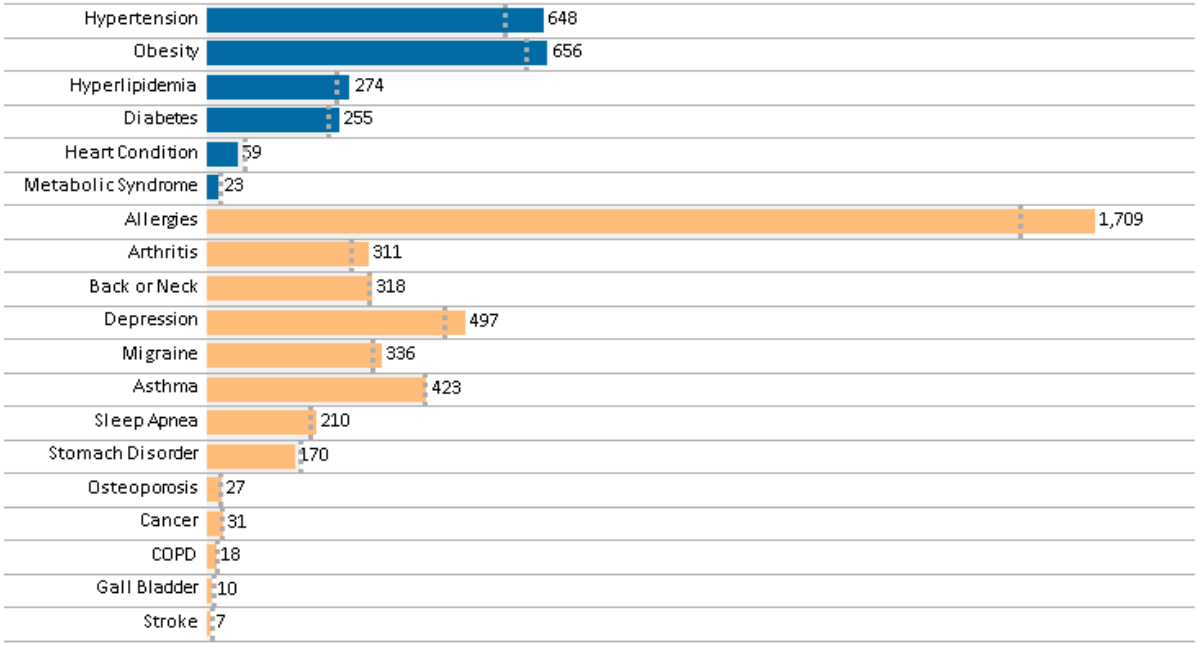
Job Type
All

Examine by Engagement
No

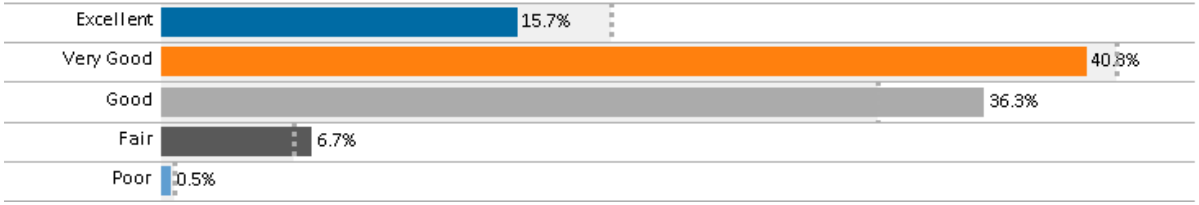
Medical Conditions and Self-Rated Health

The figure below shows the number of people reporting a medical condtion in Time 1, Time 2, and the change in the proportion of the responding population with the risk. Hypertension, Obesity, Arthritis, Back and Neck Disorders generally represent the largest proportion of medical conditons reported. Clients with formal biometric screening programs will often see a rise in diagnosed diabetes, hypertension, and hyperlipidemia generally in the first few years of a wellness program as responders act on lab results. Reductions in these rates also may indicate a combination of medical management and lifestyle interventions improving the management of the conditon.

Number of Individuals Reporting these Current Medical Conditions



Self-Rated Health



Report Type
Cohort

Reference Lines
Client Only

Assessment Begin Date
2010

Gender
All

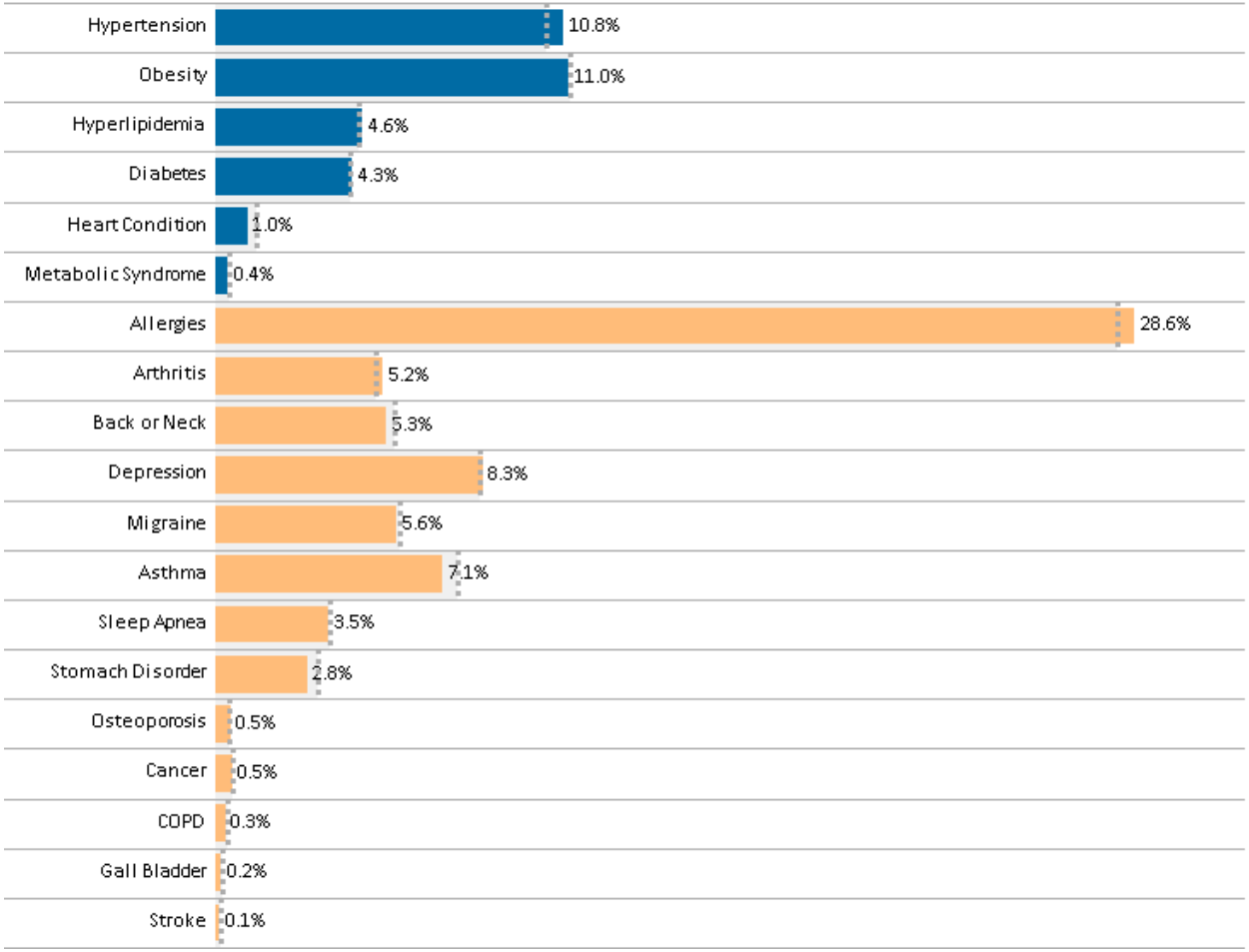
Relationship
All

Job Type
All

Medical Conditions and Self-Rated Health

The figure below shows the number of people reporting a medical condtion in Time 1, Time 2, of the responding population with the condition. Hypertension, Obesity, Arthritis, Back and Neck Disorders generally represent the largest proportion of medical conditons reported. Clients with formal biometric screening programs will often see a rise in diagnosed diabetes, hypertension, and hyperlipidemia generally in the first few years of a wellness program as responders act on lab results. Reductions in these rates also may indicate a combination of medical management and lifestyle interventions improving the management of the conditon.

Incidence Rate of Individuals Reporting these Current Medical Conditions



Report Type
Cohort

Reference Lines
Client Only

Assessment Begin Date
2010

Gender
All

Relationship
All

Job Type
All

Additional Medical Costs Associated with Lifestyle Risks

Report Type
Cohort

Assessment Begin Date
2010

Gender
All

Relationship
All

Job Type
All

Financial Costs

Landmark research conducted by the Health Enhancement Research Organization (HERO) measured the association between modifiable risk factors and medical claims costs. Over 45,000 employees were included in the study that used HRA data and claims costs. The results of the study showed that a significantly higher level of medical expenses were associated with 7 out of 10 health risk factors. The study results suggest that significant health care savings may be realized by designing and encouraging participation in programs that successfully modify poor health habits. See Appendix II for abstract of the published paper...

Cost of Each Risk in 2009 Dollars

Depression	High Stress	High Glucose	Obese	Tobacco User	High Blood Pressure	Sedentary
$1,887.33	$1,163.88	$931.74	$559.68	$361.00	$314.82	$273.48

	Time 1	Time 2	Change in Costs
Depression	$996,510	$1,034,257	$37,747
High Stress	$2,269,566	$2,572,175	$302,609
High Glucose	$234,798	$251,570	$16,771
Obese	$1,159,097	$1,211,707	$52,610
Tobacco User	$279,775	$151,259	($128,516)
High Blood Pressure	$252,800	$217,226	($35,575)
Sedentary	$271,019	$244,218	($26,801)
Grand Total	$5,463,566	$5,682,411	$218,845

Time 1

Depression	High Stress	High Glucose	Obese	Tobacco User	High Blood Pressure	Sedentary
528	1,950	252	2,071	775	803	991

Time 2

548	2,210	270	2,165	419	690	893

Goetzel, Anderson, Whitmer, et al. ***The Association Between Ten Modifiable Risk Factors and Health Care Expenditures***. Journal of Occupational and Environmental Medicine 1998; 40(10): 1-12.

Presenteeism and Absenteeism

Worker productivity is a critical factor in the strength and profitability of a company's overall business performance. Absenteeism - the classic drain on individual and total workforce productivity - can be measured through readily available data on short-term disability, continuance days and family medical leave. Beyond the physical presence of employees, however, is their daily performance as compared to their normal level of productivity and work quality.

To address the need for a reliable, research-based measure of presenteeism, Dr. Kenneth Pelletier led a team of researchers at the Stanford University School of Medicine in a study funded by Merck & Co., Inc. The result of that research was the Stanford Presenteeism Scale-6, or SPS-6, which is a survey tool that assesses the relationship between presenteeism, health problems, and productivity for working populations.

As defined by the tool, heightened job performance is increased presenteeism, while diminished presenteeism occurs when employees work less productively or at a poorer quality than usual due to a health or medical problem. SPS-6 measures a worker's perception of his or her ability to overcome the distraction of current physical and/or psychological problems in order to handle job stress, complete tasks, achieve goals and maintain sufficient focus and energy levels. The scale ranges from 6 - 30, with 30 being optimal Presenteeism.

The table below depicts a summary of the SPS-6 average score for Time 1 and Time 2 for the client compared to the book of business. In addition, the proportion of the population with scores below 18 (Low Presenteeism) are shown. These individuals are said to benefit from interventions to improve their ability to deal with the health problems that impact their productivity.

Report Type
Cohort

Reference Lines
Client Only

Assessment Begin Date
2010

Gender
All

Relationship
All

Job Type
All

Presenteeism

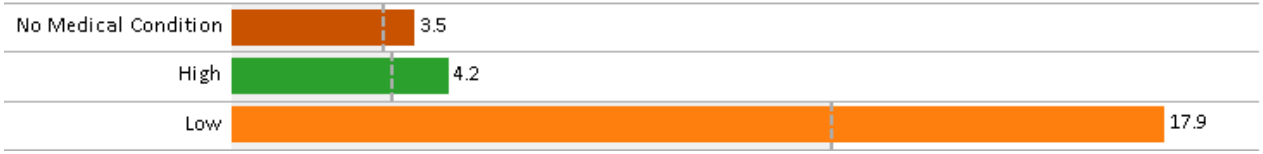
Average Presenteeism Score

Percent of Population - Low Presenteeism

Relationship between Absenteeism and Presenteeism, Average Workdays Missed by Presenteeism Level

In fact, individuals with high presenteeism, and those with no medical condition are compared with the number of days they missed work for an illness (absenteeism). The data generally suggests that those with low presenteeism also miss more work than those who manage their condition.

Level of Presenteeism



Behavioral Health Measures

Report Type
Cohort

Reference Lines
Client Only

Assessment Begin Date
2010

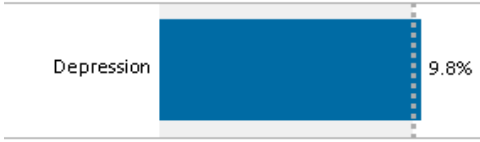
Gender
All

Relationship
All

Job Type
All

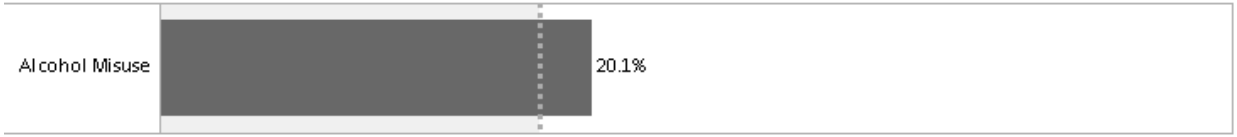
Percent of Population Reporting Depression

Depression may be described as feeling sad, blue, unhappy, miserable, or down in the dumps. True clinical depression is a mood disorder in which feelings of sadness, loss, anger, or frustration interfere with everyday life for weeks or longer. The proportion of respondents reporting depressive symptoms in shown for Time 1 and for Time 2. People who are depressed are more likely to use alcohol or illegal substances. Complications of depression also include Increased risk of physical health problems and suicide.



Percent of Population Reporting Alcohol Misuse

Alcohol intoxication may impair brain and motor skill function and possibly deteriorate someone's ability to work. Habitual use can elevate an individuals risk for certain cancers, liver disease, and stroke. We defined alcohol misuse as reporting at least 1 day in a typical week where an individual consumed 5 or more alcoholic beverages.



Percent of Population Reporting Optimal Sleep

Getting enough sleep is important for our health and wellbeing. Adults sleep about seven hours a night. Sleep problems are common: it is thought that about 20% of people are affected. Things that can interfere with sleep include: alcohol, drugs and medication, physical and mental illness, pauses in breathing at night (sleep apnoea), shift work, and stress. The proportion of respondents that sleep at least 7 hours is shown for Time 1 and for Time 2.

Stress: Health, Home, and Work

Stress is common in all aspects of life. High levels of stress have shown to have a major impact on employee health, morale, and productivity. In fact, according to a recent study those with high stress were more likely to be absent 5+ days per year than those with low stress. Work, finances, and family were the highest stress sources. Health, legal, social, and financial stress were predictors of absenteeism. Data for those experiencing sources of stress are shown for Time 1 and Time 2.

Report Type
Cohort

Reference Lines
Client Only

Assessment Begin Date
2010

Gender
All

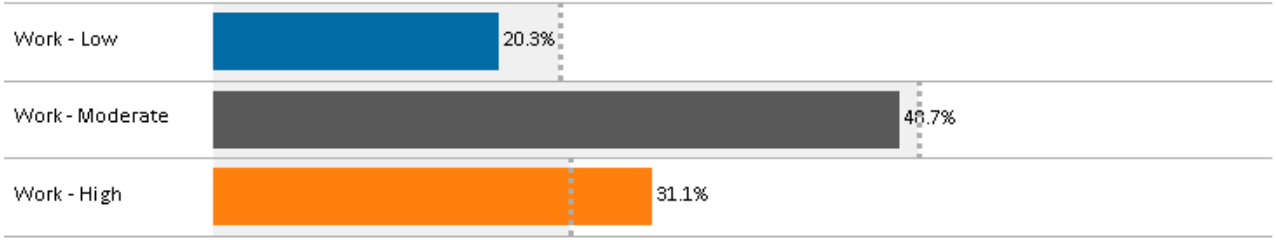
Relationship
All

Job Type
All

Levels of Stress - Health

Levels of Stress - Home

Levels of Stress - Work



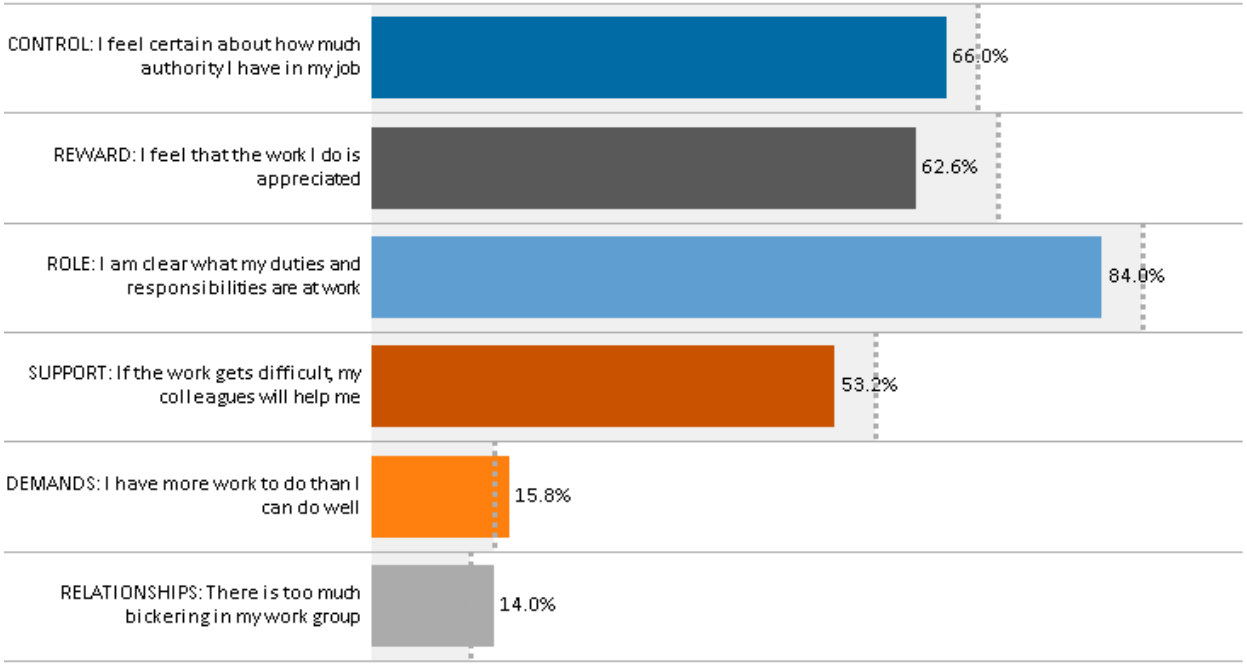
Jacobson BH, Aldana SG, Goetzel RZ, Vardell KD, et al. ***The relationship between perceived stress and self-reported illness-related absenteeism.*** American Journal of Health Promotion 1996; 11(1): 54-61.

Workplace Stressors

In the United States, the estimated cost to organizations from a highly stressed workforce ranges between $150 billion and $180 billion a year, resulting from reduced productivity, accidents, absenteeism, employee turnover, and health insurance and medical expenses. Findings from two nationwide surveys of American workers showed that 69% of those who were surveyed reported reduction in productivity attributed to high levels of stress, and 14% indicated that stress had caused them to quit or change jobs during the past two years.

Based on research conducted by Maysaa H. Mahmood, PhD, Stephen Joel Coons, PhD·, Mignonne C. Guy, PhD, and Kenneth R. Pelletier, PhD, MD(he), a Workplace Stressors Assessment Questionnaire was developed. Questions included in the PHA collect a series of key questions that provide insight on the employee's view of workplace *control, reward, role, demands, relationships and support*. Data below summarizes the findings and compare the results between those in management roles versus those in other job titles between Time 1 and Time 2

For the Last Six Months, What Are Your Feelings About: (Percent that agree with the statement)



Mahmood MH., Coons SJ., Guy MC., Pelletier KR. ***Development and testing of the Workplace Stressors Assessment Questionnaire.*** Journal of Occupational and Environmental Medicine 2010; 52(12): 1192-200.

Report Type
Cohort

Reference Lines
Client Only

Assessment Begin Date
2010

Gender
All

Relationship
All

Job Type
All

Preventive Health Screenings

One of the objectives of encouraging indivduals to complete personal health assessments is to monitor their compliance with recommended preventive health screenings that are appropriate for both their age group and gender. Generally, screening rates are lower in the first year of a wellness program but as the responder becomes more educated about the importance of the screenings, these rates should rise. Many key preventive health exams are also conducted using biometric screenings at the worksite. In these instances the client should see a large proportion of the population compliant with key preventive health exams such as annual blood pressure and cholesterol screenings. The data shown here are the proportion of the population that are completing screenings recommended for their gender and age groups, per guidelines established by the United States Preventive Health Task Force.

Report Type
Cohort

Reference Lines
Client Only

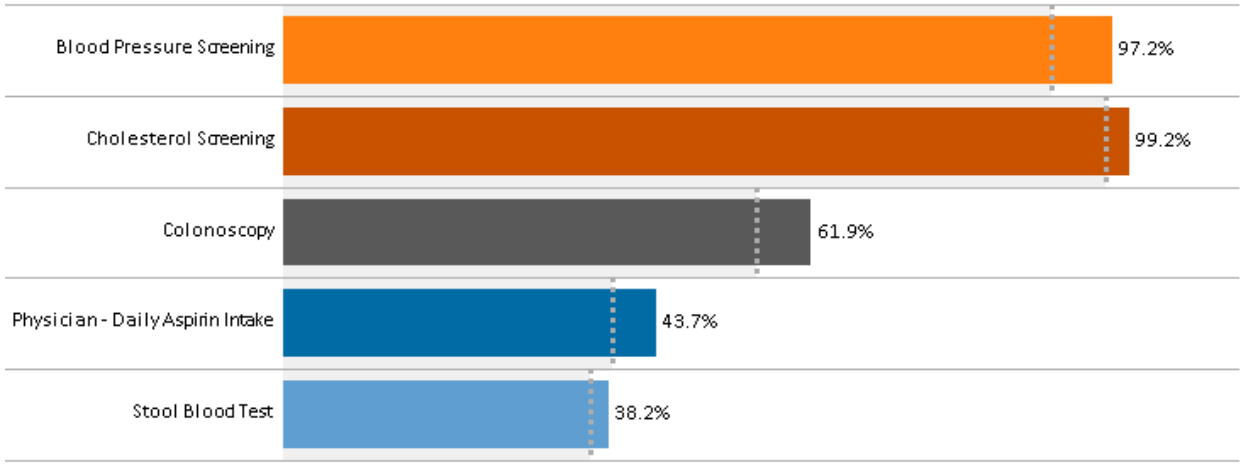
Assessment Begin Date
2010

Gender
All

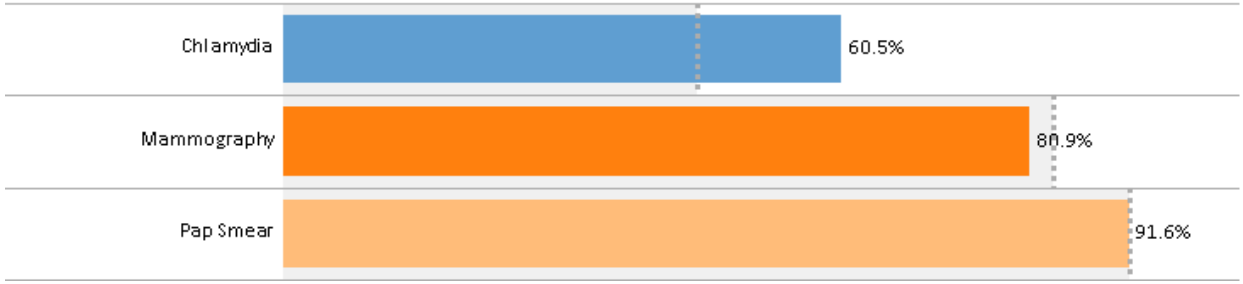
Relationship
All

Job Type
All

Percent of Population that Met Preventive Health Screening Guidelines



Preventive Health Screenings for Women



Healthyroads Online Reporting Tool