

Results Based Wellness Revealed Through Analytics

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The prevalence of outcomes-based wellness programs in combination with incentives and disincentives are becoming increasingly common within employer-sponsored wellness programs. The Patient Protection and Affordable Care Act is encouraging employers to embrace these types of strategies for population health management. Within the architecture of these types of programs are standard biometric criteria that are suggested by the U.S. Department of Labor. These biometric standards usually include weight, cholesterol, blood pressure and tobacco cessation. Traditional risk factors are used for results-based wellness programs, in combination with reasonable alternatives. These include:

Blood Pressure	<140/90 mm/Hg, or take hypertension medication
Total Cholesterol	<200 mg/dl, or take a lipid management medication
HDL Cholesterol	>50 mg/dl, or take a lipid management medication
Triglycerides	<150 mg/dl, or take a lipid management medication
BMI	<31, or have 10% weight loss
Tobacco use	No Tobacco Use
Glucose	<110 mg/dl, or take pre-diabetes medication

Without a doubt, the aforementioned risk factors are precursors to more serious diseases and conditions. However, if a given employer population is allowed to penalize individuals that do not attain proper biometric standards, what outcomes expectations should an employer have with these types of programs? I think it is fair to say that most employers believe that a results-based wellness program will yield the following benefits:

The program will save the employer money through a reduction in risk.

The program will finance itself by shifting the cost to the unhealthy (i.e., individuals who do not achieve the health standards will pay more through increased premium differentials, which will be 30% more in 2014).

The program will reduce major chronic conditions by managing the precursory risk factors associated with these major chronic conditions, (e.g., elevated blood pressure + elevated triglycerides + elevated glucose + elevated waist circumference = Metabolic Syndrome, which can then evolve into heart disease or diabetes).

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Morbidity, or the state of disease, is a very complex evolution within humans. Healthcare expenditures are comprised of a complex etiology of risk components. The risk factors suggested by the Department of Labor for inclusion into a results-based wellness program are all precursors to more serious and costly conditions. However, these basic risk factors are compiled into multiple combinations within any given population. The outcomes associated with controlling these risk factors are time-sensitive and risk combination-sensitive. In other words, an individual could have blood pressure that is 140/90 or greater and be placed on medication, which would meet the DOL risk criteria. However, this individual could also have a diagnosis of Type-2 diabetes in combination with disease-specific complications, such as a neuropathy and retinopathy. In reality, the main variables controlling this individual's present and future spending would be the primary illness of diabetes and its associated complications.

For the purpose of this article, we will review a case study of a results-based wellness program, which was evaluated with a relational database after it had been in place for three years. This research project matched and followed participants and non-participants over a three-year period of time with a quasi-experimental design. This particular population utilized the following criteria for their results-based wellness program:

1. Glucose <100mg/dl, or receive a pre-diabetes physician consult
2. Triglycerides <150 mg/dl, or be on lipid management medication
3. HDL Cholesterol 40 or > for men, 50 or > for women
4. Waistline <40 inches for men, <35 inches for women
5. Blood Pressure <130/85 mm/Hg, or be on anti-hypertension medication

The results-based wellness program awarded a 20% reduction in insurance premiums to the group that completed or complied with at least four out of five of the biometric standards. The group that completed a health risk appraisal and completed biometrics, but did not achieve four out five standards, received a 10% reduction in their health premiums. Individuals that did not participate in any component of the results-based wellness program were penalized with a 20% increase in their individual health insurance contributions.

The fundamental research questions that were addressed:

Is the program saving money?

What is the relationship to future spending of the risk factors used within the results-based criteria?

A review of case study findings

Did the program save money? Participants and non-participants were separated into three distinct groups:

Bronze Group – This group did not participate in the results-based wellness program.

Silver Group – This group completed a health risk appraisal and biometrics, but did not comply with at least four out of five biometric standards.

Gold Group – This group completed a health risk appraisal and biometrics and complied with at least four out of the five biometric standards.

A mean expenditure was calculated for each group (i.e., Gold, Silver, and Bronze). The Gold group that passed four out of five standards was actually the most expensive group with a mean expenditure of \$1,314.43. The Silver group had a mean expenditure of \$1,309.19, and the Bronze group (non-participants) had a mean expenditure of \$216.96, (see Figure 1). Many people would assume that the Gold group that actually passed four out of five health standards would have been the least expensive group. In order to explain how this phenomenon occurred, another analysis was performed to ascertain the level of risk within each group. This analysis discovered that more than 37% of the participants within the Gold group had four or more ICD-9 codes attached to each individual (see Figure 2). Essentially, this meant that more than one third of this group had multiple disease states, and the way that they passed the health standards was by being previously medicated for existing chronic disease treatment. The Gold group was comprised of many people that had complex patterns of chronic disease. Targeting individual risk factors within this group did not impact the overall spending of the group. Complex patterns of risk were inherent to this population from start to finish during the results-based wellness program. In reality, this group would have had greater benefit if the goals within the results-based program were more targeted at reducing gaps-in-care associated with chronic illness.

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A statistical analysis was performed to measure the relationship of the various performance standards to future spending. This analysis used the opposite of the performance standard to see if these individual risk factors actually explained future spending for an individual. In other words, if the standard required a blood pressure less than 130/85, within our model we used the opposite (i.e., >130/85) to see if it predicted greater future expenditures. The results of this analysis using multiple regression statistics revealed that people who had these negative risk factors accounted for only 1% of future spending (see Figure 3). Based on this analysis and other statistical procedures run, future spending was actually controlled by multiple confounding variables. Another model was run that explains approximately 8% of future spending (see Figure 4). This statistical exercise demonstrates the complexity of all of the variables that predict and explain a population's overall health care expense.

Things to consider before implementing results-based wellness programming

This particular case study examined a population of 844 unique individuals. The statistical investigation that was implemented for this case study could not be shared in its entirety. As with all research, the findings within this case study can only be defined as relevant to this test population. However, this investigation does indicate the need for further research within the practice of results-based wellness programs. Reasonable and logical expectations should be clearly defined for employers that are considering the use of results-based wellness programs within their employee populations. The following are considerations that should be addressed before implementing results-based wellness programs:

It is unrealistic to have expectations that a results-based wellness program will save an organization money in the short term, utilizing traditional risk criteria.

Consider including evidence-based medicine measures within the results-based wellness criteria (i.e., annual physical, adherence to evidence-based rules for individuals with diabetes, compliance with age/gender-specific preventative screenings, etc.).

Be aware of the cultural impact that a results-based wellness program can potentially have on your corporate population. If not introduced in a graduated implementation effort, negative impact can be experienced with regard to employee/employer morale.

Results-based wellness programs have demonstrated the ability to increase medication compliance within a population. Increased medication cost associated with this rise in medication compliance can be reduced by preparing your medication formulary to give incentives for prescribing therapeutic equivalent medications versus brand-name medications.

Gain consultation from a physician prior to setting medication compliance as a reasonable alternative for non-compliance with a specific health standard (e.g., specific contraindications exist with regard to placing individuals on statin drugs for lipid management, etc.).

Prior to implementing a results-based wellness program, consider a baseline analysis of your organization's healthcare utilization and pharmacy data to establish specific goals of risk reduction for your organization.