

Paper 175-2013

Employee Wellness Programming Using SAS® Enterprise Guide®

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ABSTRACT

More businesses are utilizing employee wellness programs to improve the health of their employees (improve productivity levels, reduce absenteeism and reduce disability claims) while reducing health care costs. The success of any wellness program depends on three main rudiments: 1) identifying factors that driving up the healthcare cost within the organization such as: smoking, diabetes, back pain, or other chronic conditions. 2) Engagement level of employees in the wellness programs 3) Barriers to achieving expected engagement level. The real challenge for any wellness program is to incorporate data from different e.g. Health Risk Assessment (HRA), demographics, medical claims data, and qualitative input to build a comprehensive wellness program which incorporates the needs of the business population. Promoting health and wellness is a process, so it requires ongoing evaluation and monitoring to ensure employee satisfaction, and to ensure it is meeting the needs of employer along with supporting positive health behavior among employees. SAS® Enterprise Guide® is a comprehensive tool for reporting and analyses which aids wellness program development and adaptation. We describe the use of the Enterprise Guide to identify trends in medical conditions and predict future needs of the program.

INTRODUCTION

Seventy five percent of the healthcare costs are spent on treatment of chronic conditions such as heart disease, stroke, diabetes and arthritis. These conditions are rooted in poor behavioral or lifestyle adoptions such as tobacco use, physical inactivity, and diets low in fruits and vegetables. Tobacco usage is one of the biggest threats for public health, more than \$200 billion dollars are spent on smoking related disease (Healthcare cost and lost productivity and wages). [1] For employers that subsidize health insurance for their employees, the economic costs of chronic disease includes both direct cost such as treatment expenses and the indirect cost associated such as missing workdays and loss of productivity “presenteeism”; which is generally greater than cost of treatment. Those preventable chronic conditions are major contributor to the growth in mortality, morbidity rates and limiting the daily living for 25 million Americans.

According to a 2005 CDC report, 133 million people or 50% Americans had at least one chronic condition. Eighty percent of American workers have at least one chronic disease. It is estimated by 2030, 171 million people will have a chronic disease, representing a three- fold increase in healthcare costs. [2] Individuals in the community, worksite, schools, etc. need help to achieve healthier lifestyle: an environment that supports healthy choices, navigation to resources, education and support.[3]

Employee wellness programs are very effective mechanisms that benefit both the employees and employer. Healthier employees work harder, more efficiently with less sick days away from work or presenteeism, reduction of healthcare cost and work related injuries. As for employees, they become healthier, save money on prescriptions, avoid preventable chronic conditions; simply improve employee’s quality of life.

The main challenge for any employer is how to establish a successful wellness program!

An Effective Employees Wellness Program: Development and Execution

The Affordable Care Act defines a wellness program as a program offered by the employer designed to promote health or prevent disease. Disease prevention can be classified as primary or secondary. Primary prevention aims to prevent the onset of diseases (primary prevention) or early diagnose and treatment. Secondary prevention aims to improve disease control and avoid/delay complications. [4] The 2012 Kaiser Family Foundation and Health Research and Educational Trust annual survey of employer health benefits reported that 63% of companies with three or more employees offers wellness programs and 60% of these companies extended the program converges to include spouse and dependent. [5]

Creating a successful wellness programs require developing an outcome operational plan, in which both the company vision and the employee vision are incorporated with a timeline. For every \$1 invested in the wellness programs returns a \$4 in saving through decrees the healthcare cost by 26%, reduced presenteeism and sick days by 28% medical expenditures as an overall. [6]

A recent study conducted by Baicker et.al aimed to review the existing employer-based wellness initiatives, illustrated that by far the characteristics of wellness programs can be represented in two dimensions: the method of delivery

such as Health Risk Assessment and the focus of intervention such as smoke cessation.[7] A typical wellness programs include Health risk assessments, Clinical/biometric screenings within intervention focuses in tobacco cessation, obese, health education workshops, and develop a supporting work environment.

In general, Return on Investment (ROI) is the most quantitative methods to evaluate the success of wellness programs and with the minimum resources it became more important to utilize the company resources; for example should the wellness program focus on healthy employees to keep them healthy or work with employee with chronic condition to avoid future complications? The most successful programs should provide a comprehensive program with multi services so no employee feel left out.

On review of best practices for wellness programs, key elements for any successful program, are:[7][8]

- 1- Gain the support of the organization leaders.
- 2- Design a year-round strategy that incorporates a variety of activities.
- 3- Develop an effective, well-executed communication plan.
- 4- Provide meaningful incentives that drive employee engagement.
- 5- Measure the Effectiveness of the program
- 6- Calculate ROI

Building a successful program requires understanding of the organization needs and employee characteristics. Yet, most the data analysis work is focused on return on investment ROI. The next section will demonstrate how data analysis play significant role in each stage of developing a successful wellness program.

Employees Wellness Program Analytics

A major transformation in the field of health promotion is the shift from Activity-Centered to Results-Oriented programs. This shift requires more research, analysis and efficient programs which highlight the need for in depth data analysis to support the efficient implantation of wellness program.

Challenges facing analysis of wellness programs:

- 1- Employees' Concerns about data privacy and usage.

By law, the person information and screening data of employees are protected. The wellness team is required to maintain the confidentiality of personal health information along with any individual identifying information. The wellness team cannot share any individual data with other entity within the organization. Data privacy issue could lead to a drop in participation rates and negative feedback types.

- 2- Available data sources available

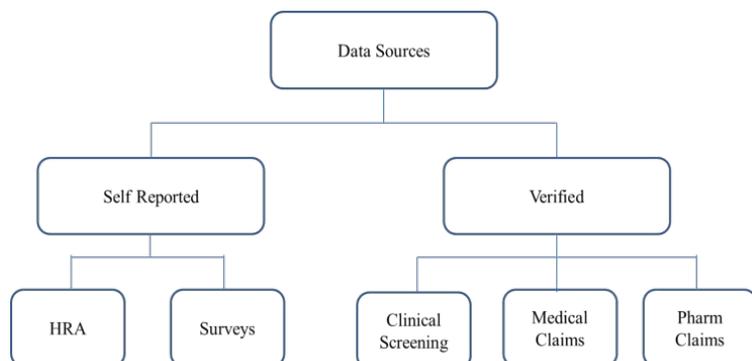
The following figure (Figure 1) represents the types of data and resources available for analysis. The main two sources of data are: health risk assessment data and clinical screening data. Although medical and pharmaceutical claims data are very important and provide global information and trends, a recent study sponsored by the U.S. Department of Labor and the U.S. Department of health and Human Services that only 55 percent of wellness programs state their current wellness provider has the capability to analyze medical and pharmaceutical claims data. [9]

- 3- Baseline Data and Evaluation

The data points collected as baseline are critical for the evaluation of trends in the effectiveness of the intervention programs or the wellness program ROI. Examples of types of evaluation include: surveys, or change percentage on the risk factors such as BMI, weight, or cholesterol.

For the ROI calculations, which approach will be used reduce the rate of increase in health plan costs or reduce costs in absolute terms.

Figure 1: Data Sources Examples



The following section discusses the case study for Norton Healthcare Employee Wellness “N Good Health” analytics develop and maintain a best in class, customized Wellness program designed to improve employee life quality and reduce the healthcare costs.

N Good Health Analytics

Norton Healthcare is a private, nonprofit corporation and the largest healthcare provider in Kentucky, providing care to nearly one in every two people in Greater Louisville – approximately 1.5 million patients each year. Norton Healthcare consists of four adult hospitals; the state’s only freestanding pediatric hospital; 14 outpatient and diagnostic centers, and more than 90 physicians practice locations. Norton Healthcare is a self-insured organization with total number of employees around 10,000 employees.

The N Good Health (NGH) program is designed to support employees in making healthy choices while maintaining a balanced approach to life at work and with family. One of the N Good Health goals is to make the personal health and well-being to be a fundamental pillar of the wellness culture at Norton Healthcare.

N Good Health Data warehouse

This section describes the data element used for analysis:

1- Health Risk Assessment (HRA)

A NCQA Certified online based Health Assessment (HA) that help the employee and the N Good Health team in understanding their needs, risks and overall health.

2- Primary Care Physicians wellness visit results

Studies show that people who receive regular primary care are healthier compared to those who don’t. N Good Health encourages employees to visit the primary care physicians annually and submit the wellness visit result to the N Good Health. The NGH wellness form was designed to cover the basic screening elements such BMI, Waist circumference, and capture the physician recommendation.

3- Medical and pharmaceutical claims

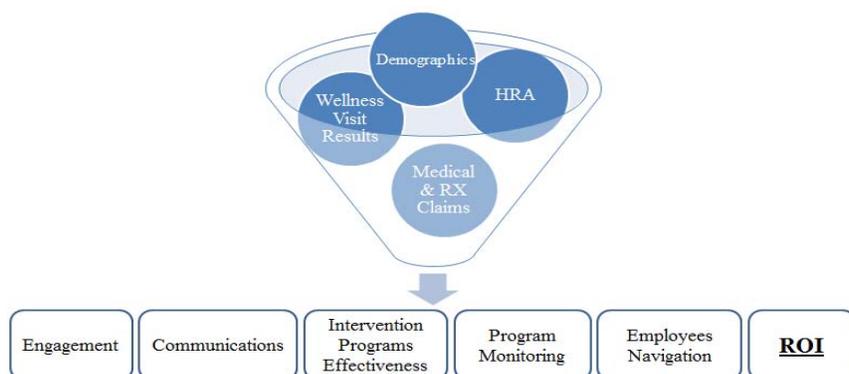
A third party vendor provide an aggregate level for medical and pharmaceutical claims analysis for all employees, in addition more in depth analysis is done to capture certain measure which are related to the employee risk factors such as no. of emergency room visit average and it its relation to employees compliance level or controlling their chronic condition.

4- Employees Demographics data

As a part of the Health Risk Assessment employees provide information such: age, gender, working facility locations, etc.

All the above data sets were utilized to support the NGH wellness program objectives and stages during the wellness journey as shown on the following figure- Figure 2.

Figure 2: Data Sources and NGH Objective and stages



SAS® Enterprise Guide® was used for analysis and reporting purpose, the Enterprise Guide® is a powerful tool that provides a flexible way to analyze the data and implement what- if scenarios.

N Good Health Engagement

Employees' participation is significant for the success of any in the wellness program; however employees might not participate as expected. To identify root causes for low participation rates program several data points were examined:

- 1- Which Departments has a very low participation rates
- 2- How many employees joined the wellness portal
 - a. How many completed the Health Risk Assessment?
 - b. How many did not complete the health Risk Assessment?
 - i. Which questions of the HRA driving the drop rate?

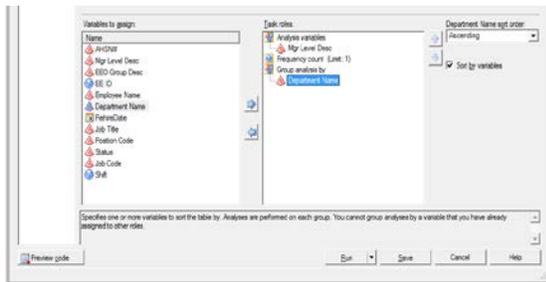
Answering those questions helps to identify causes for low participations and adjust your plans accordingly, for example certain questions of the HRA – related to mental or emotional health- could be driving the drop rates. In this case more educational material could be provided to the employees about the importance of those question or adjust the HRA. Another case could be the education level associated with specific department and access to resources.

N Good Health Communications

Communications can be categorized into three main areas: Promotion/Educational/Informative, call of actions or inquiring support. To match those objective employees were clustered into several group as needed. For example: as shown in the following figure.

- Promotion/Educational/Informative: All population
- Asking to do certain task:
 - Employee joined the portal but did not complete HRA
 - Employee did not provide wellness visit form
- Inquiring support:
 - To mangers and above to support their departments engagement.
 - Identify other departments within the organization to cooperate in building a healthier worksite.

Figure 3: Snapshot of using simple FREQ function to identify communication contact points by Department

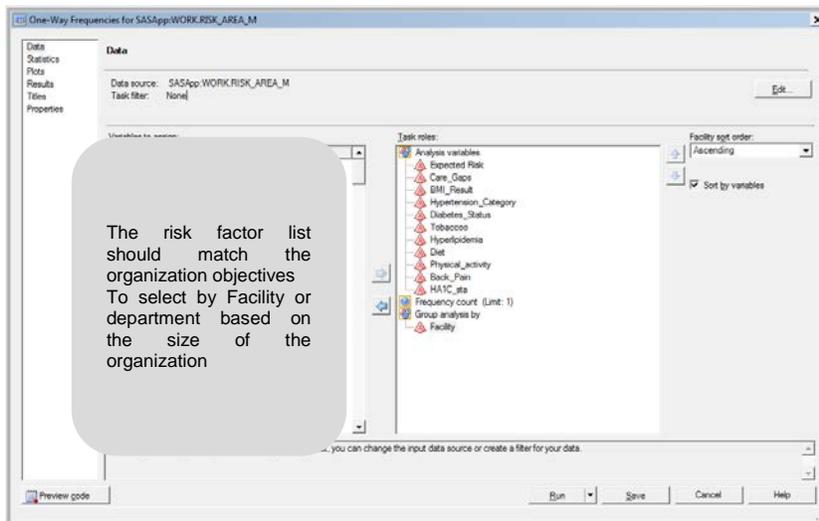


Intervention Programs Effectiveness

Although all employee wellness programs share the same goals such as to increase employee: physically activity, eat healthier, yet by analyzing the HRA, Wellness visit results, claim data certain departments or facilities can benefit more of specific intervention programs either because their job requirement or the prevalence of medical condition.

For example: jobs associated with longer deskbound will benefit more fitness program, while employee with chronic condition can benefit from diseases management program. Also for On-Site programs it more effective to identify larger pockets within the organization with common conditions to make the program efficient. As shown on the following figure, the distribution of risk factors such High blood pressure, high Cholesterol can be analysis by apartments or facility.

Figure 4: Health risk factors distribution by Facility or Department



Evaluating intervention programs is mandatory to ensure positive ROI. Different data sources could be utilized such as: employee satisfaction surveys, pre and post program biometrics data, enrollments rate and withdrawn rates. For planning purpose this information is used to decide on which programs need to be extended, terminate or adjust and cost-effective analysis.

N Good Health Program Monitoring

The wellness path is extended and there is no straight line between starting point and reaching the wellness program goals, so it is important to report the progress of the program periodically to evaluate the status of the program participation rates, intervention programs enrollment and other elements as needed. . For example, the low participating rate per facility, then this facility participation rate can be examined in details to see if a certain department or certain category of employees leading the low participation rates.

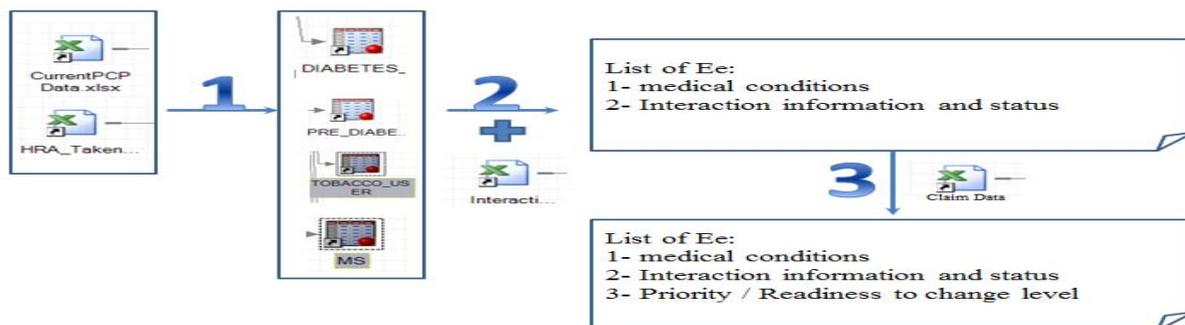
SAS® Enterprise Guide® provides any easy way to generate the Monthly/Quarterly Dashboard or reporting using Stored Process. In this dashboard, initial indicator is reported facilities and departments with low participation rates, area of the HRA with high volume of missing answers, risk factors prevalence.

In addition, for the group of employees participating on the wellness program but are not fully engaged a logistic regression analysis was performed to identify the leading factors for not being fully engaged. The leading factors would be different from organization to another based on the organization structure in terms of: Shifts, multiple locations or no, Gender distribution, etc.

Employee Navigation to the Wellness resources

A wellness program will have limited resource in terms of staff or funds to cover the cost of intervention programs, so It is recommended to develop a mechanism to identify groups of employees which can benefit more and improve the effectiveness of the program. The first step is to cluster the employees based on their medical conditions. The HRA data, Wellness visit results and quality measures will be utilized as shown in the following figure.

Figure 5: Employee navigation chart



As shown:

- 1- Based on the collect information from the HRA and Wellness visit employee will be clustered into several groups based on their medical conditions or risk factors.
- 2- Add the interaction information such as email information, how many time the employee was contacted, reason for interaction and date for last interactions
- 3- To identify employee who would benefit more, one of two indicators can be used
 - a. Readiness to change: calculated from HRA, it measures how the employee is ready to change his life style to healthier one.
 - b. Risk indexes: using medical claim data
 - i. Care Gap Index measure the employee compliance with the care quality measures. So employee with non-compliance status gets faster attentions
 - ii. High cost claims: employees can be classified into groups based on the total amount paid by plan for him during the previous year.

N Good Health ROI

ROI: Return On Investment is the main focus of any wellness program data analysis. The major challenge for calculating the ROI is the escalations of the healthcare cost. The second challenge is time; the impact of wellness program takes time to develop saving health plan cost.

The N Good Health team is looking for other elements or factors that can boost ROI in shorter time such as:

- 1- Resource utilization: reduce the avoidable and the unnecessary emergency room visits.
- 2- Improver the employee adherence and compliance level to minimize avoidable hospitalizations, readmissions, and medical complications.
- 3- Work related injures to reduce long and short term disabilities
- 4- Identify elements aggregate the high cost claims such as the medical compliance level or if there is a certain condition such as back Pain and target those group of employee with wellness programs.

- 5- Tied the instinctive to activities help employees to adopt a healthier life style and afterward move to outcome-based program.

CONCLUSION

The main objective of this paper is to illustrate how data analysis can empower employee wellness programs and improve the overall ROI by utilizing the available resources and targeting the employees who can benefit either the healthy or less healthy groups. As represented data analysis must be utilized during the several stages of the wellness program: planning, management, evaluating and ROI calculation. The SAS® Enterprise Guide® as a powerful tool made it easy to change the analysis goals and scenarios as needed during the different programming stages and utilization of the stored process reduce the overhead for the ongoing reporting.

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ACKNOWLEDGMENTS

Our thanks to NGood Health team who have made the success of Norton Healthcare wellness program possible.

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