

Wellness Programs: What Can Be Learned from US Company Experience

Howard J. Bolnick



Howard Bolnick is a Fellow of the Society of Actuaries, for which he served as President in 1999, and is an honorary member of both the Institute of Actuaries and the Actuarial Society of South Africa. Most of his 40-year actuarial career has been spent working in US and other health insurance markets, including 15 years as President of a US health insurer. Mr Bolnick is engaged in consulting work, with a current major commitment to Destiny Health (South Africa) and its US subsidiary, The Vitality Group, for which he is involved in developing an innovative worksite wellness programme. He is also a trainer who holds intensive seminars on health-care financing and health insurance in Latin American, Asian, African and central and east European countries that are developing their insurance industries. Until recently, Mr Bolnick was an Adjunct Professor of Finance at the Kellogg Graduate School of Management.

How a person chooses to live affects his or her health and life expectancy: Eat (too much), drink (too much), and be merry (also too much) and you can expect negative health consequences. With medical care costs continuing their unrelenting, decades-old rise, businesses and public health officials are increasingly looking to promote healthy lifestyles as a cost containment tool that has yet to be thoroughly tested. As experienced in the development process for many of our now well-tested healthcare management tools, a simple and truthful macro-level observation – lifestyle affects health – becomes more complex when trying to develop employee benefit programs that actually make a difference.

Worksite wellness programs are a work in progress. We currently know enough to say with a good degree of comfort that they have a place in employee benefits; though, as I will discuss in this article, we are not yet able to point with certainty to effective program attributes and what results can reasonably be expected. This article explores these issues. Its focus is on controlling healthcare costs, with some references to how these programs positively affect absenteeism (employee absences) and presenteeism (resulting in loss of on-the-job productivity).

LEADING HEALTHY LIFESTYLES

There is no generally accepted definition of a “healthy lifestyle”. However, the term typically is applied to a person who engages in health promotion and disease prevention activities. The former comprises:

- undertaking regular physical activities;
- practicing a healthy diet; and
- managing the common stresses of daily life.

The latter comprises:

- not being obese or even overweight;
- not smoking or indulging in excessive alcohol use;
- knowing one’s vital biometric measures, and effectively controlling any high blood pressure, high cholesterol, and/or high blood sugar; and

- regularly obtaining age and sex appropriate preventive care examinations.

The large number of competitors in the United States offering worksite wellness programs use a wide variety of business models to manage one, several, or a broad array of lifestyle health risk factors*. Comprehensive wellness programs are designed to help members manage all (or almost all) of their health promotion and disease prevention needs, while non-comprehensive programs focus on a single or restricted group of risk factors. US competitors also choose from a wide variety of tools to help their program participants. These include:

- health risk assessment (HRA),
- biometric testing,
- health education,
- financial incentives and disincentives,
- telephonic health coaching,
- web-based behavioral change programs, and
- vendor-bought, risk-factor-specific behavioral change programs.

There is no dominant wellness business or lifestyle management model, which suggests an industry still in its infancy and searching for a successful formula.

A successful business model must be able to demonstrate a causal pathway, which can be described for businesses’ employee benefit plans as follows:

By successfully engaging employees and their dependants in an *effective wellness program*, a sponsoring business will see improvements in its *population lifestyle health risk factors*, which will lower the *burden of common chronic diseases*, and, in turn, result in lower *per employee healthcare expenses*.

* For a more comprehensive view of the variety of content in worksite wellness programs in the USA and other areas of the world see Reference 6 on page 13.

As this multi-step pathway implies, there are a number of crucial steps in the process – all of which need to be playing their part to produce a positive program return on investment (ROI).

IMPROVING HEALTH AND LOWERING COSTS

At the core of the evidence that I can point to in building this causal pathway are robust results demonstrating that leading healthy lifestyles significantly delays the onset of costly chronic diseases. Just as importantly, moving from unhealthy lifestyles to healthy ones, even later in life, results in improved health and lower healthcare costs.

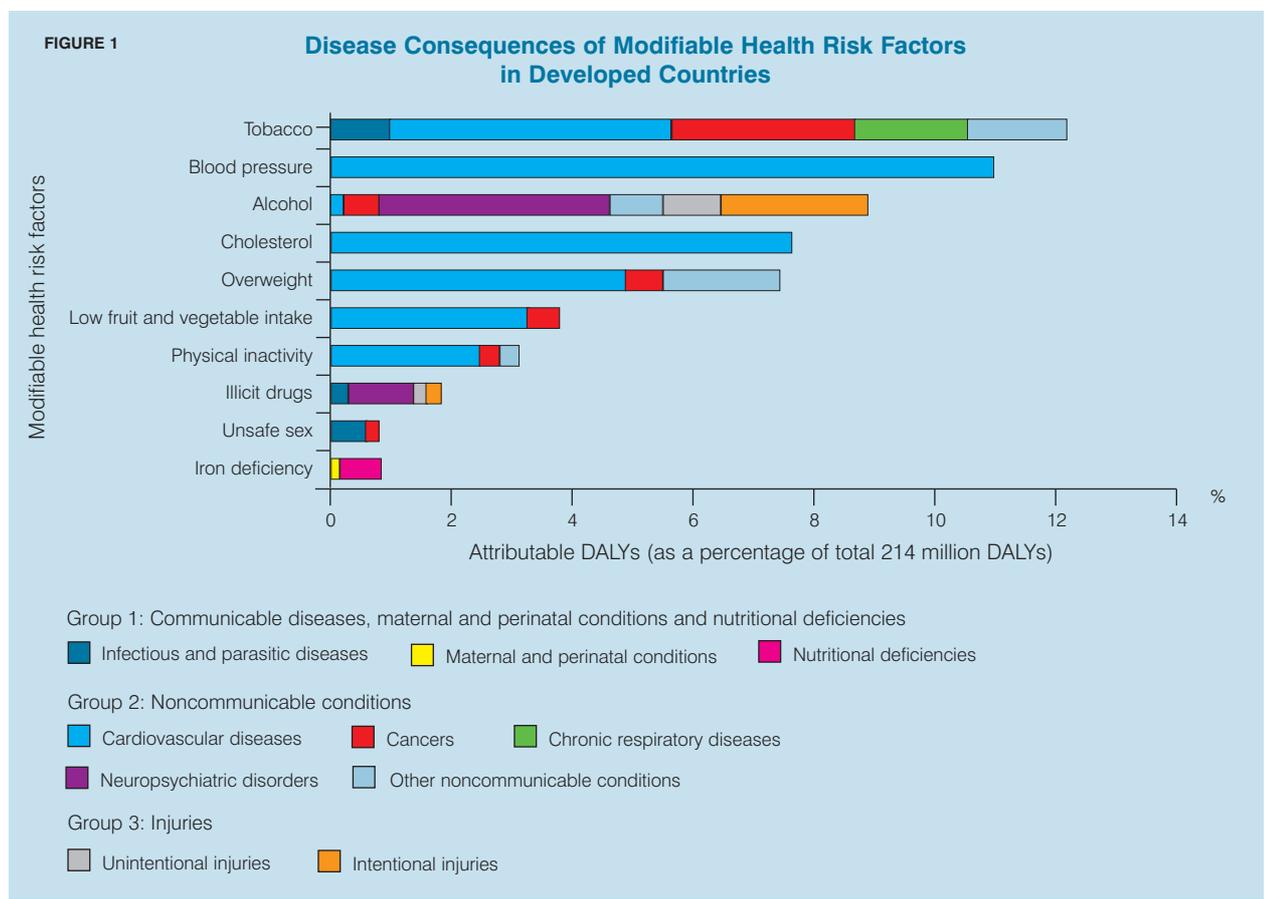
The medical and epidemiological literature contains a large number of studies of relationships between modifiable health risk factors, disease, healthcare utilization, and healthcare costs. Perhaps the most comprehensive single study is the Global Burden of Disease – Comparative Risk Assessment, which is a large-scale population-based international research project sponsored by the World Bank and the WHO¹. An important module of the study investigates the relationship between modifiable health risk factors and the burden of disease.

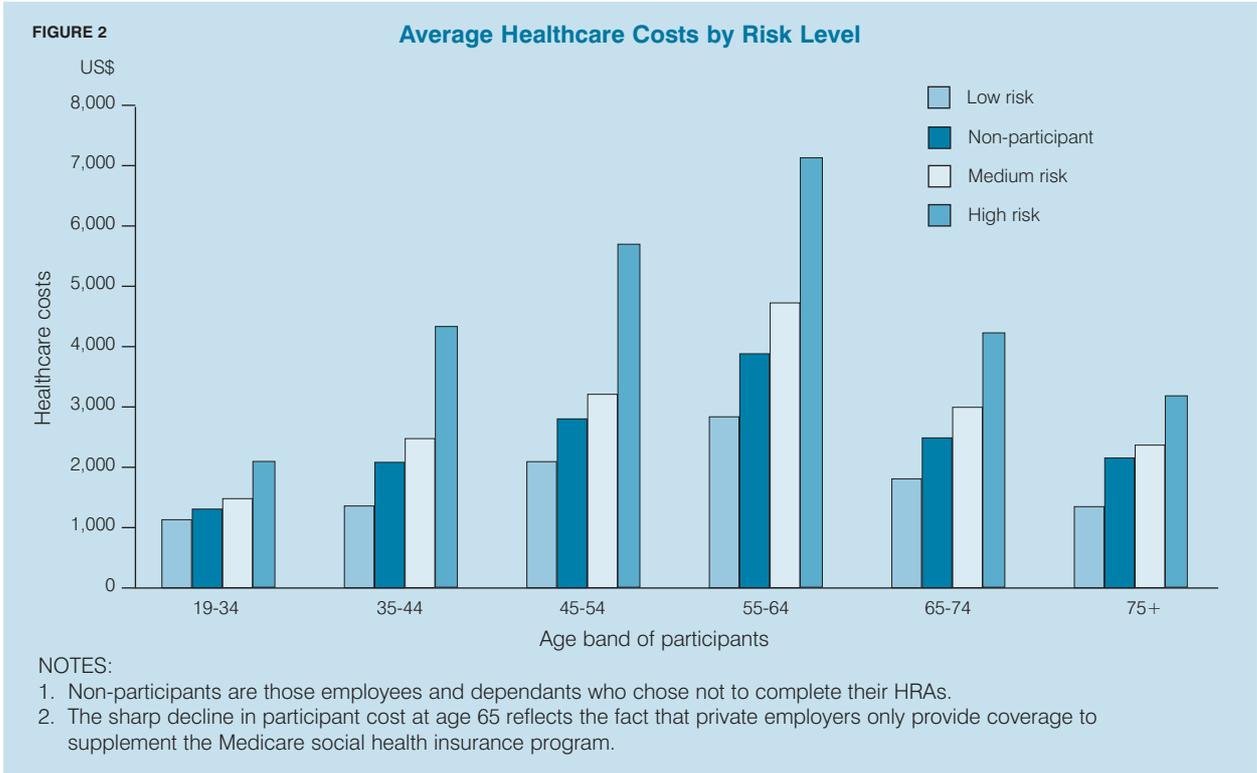
The following data demonstrate the contribution of the most important risk factors to disease in developed countries during 2001. The reported outcome measure is an estimated reduction in disability adjusted life years (DALY^{*}) resulting from a decrease in each risk factor to its theoretical minimum risk level. FIGURE 1 below summarizes the significant overall decrease in DALY by modifiable risk factor and the reductions in specific diseases that accompany lower DALYs, cardiovascular conditions being the

diseases most affected. The most striking fact demonstrated by these data is that modifiable risk factors clearly play important causal roles in common chronic diseases.

Major studies exist using data from large US employers extending the link between modifiable health risk factors and chronic disease to strong relationships between lifestyle and healthcare costs. One large database is maintained by the University of Michigan Health Management Research Center². This center has a long-standing focus on worksite wellness and does research on its database of more than two million employees provided by a consortium of over 20 large employers. Analysis of these data (see FIGURE 2 overleaf) demonstrates that healthcare costs are strongly related to multiple risks from a range of 15 risk factors[†]. Low-risk participants are defined as having any 0-2 of the 15 risk factors; medium-risk participants have any 3-4

* DALY is a measure of the burden of disease. It measures life-years lost to disease based upon population disease prevalence and indicators of illness severity. A full year of good health causes no loss, while a full year of total disability is the equivalent of losing a year.
 † Risk factors used in the University of Michigan studies are: alcohol use, blood pressure, BMI, total and HDL cholesterol levels, existing medical problems, illness days, job and life satisfaction, perception of health, physical activity, safety belt usage, smoking, stress, and use of drugs for relaxation.





factors; and high-risk participants have any 5+ factors. This approach to data analysis reflects the research center's assumption that healthcare costs are more strongly related to the number of risk factors than to specific risk factors.

Using these same data, University of Michigan researchers demonstrated that a participant's healthcare costs vary as the number of risk factors changes with time. This analysis clearly demonstrates that modifiable health risk factors play a significant role in causing higher healthcare costs and that changing one's risk profile changes one's health and healthcare costs.

Based on this line of research, which is supported by many other studies³, we can comfortably conclude that effectively encouraging people to lead healthy lifestyles improves health, which, in turn, lowers healthcare costs.

The question I now turn to is: Can it be demonstrated that worksite wellness programs effectively encourage healthier lifestyles?

MODERATING RISK FACTORS AND SAVING MONEY

Worksite wellness programs in the United States have been around since at least the 1980s, the first published report having been a blood pressure screening program at Gimbel's department store in New York. The 2008 annual Kaiser/HRET Survey of Employer-Sponsored Health Benefits reports that 88% of companies with 200 or more employees offer wellness programs that address at least one modifiable health risk factor⁴. Larger companies are believers in the health value of wellness programs; but they are not as strong believers in their cost savings. Among larger companies offering wellness programs, 79% believe that they improve participants' health, while only 68% believe that their

programs are effective in reducing healthcare costs⁵. The need for concern about the ability of wellness programs to actually save costs is confirmed in a 2008 global survey from Buck Consultants⁶ in which only 16% of surveyed US companies attribute actual reductions in healthcare cost increases to their wellness programs (68% of these companies reporting reductions in trend of 2% to 5%) and 17% found no healthcare cost savings. Among the 83% of companies not attributing reductions, the major reason cited was that their programs were new and needed time to produce trend reductions.

The medical, health psychology, and wellness literature is full of studies on programs designed to modify lifestyle health behaviors, many of them in employer-sponsored settings. Fortunately for us, a number of researchers have periodically undertaken literature reviews and meta-analyses that summarize studies on financial and clinical outcomes of US worksite wellness programs. Various reviews cover studies published from the early 1980s through 2004. They paint a mixed picture of the cost effectiveness of worksite wellness programs. As I will explore further, this is in large part due to the difficulties inherent in appropriately measuring outcomes.

A series of six literature reviews of health and cost-effectiveness studies of comprehensive employer wellness programs has been published by researcher Kenneth Pelletier from 1991 through 2005⁷. Pelletier's studies include outcomes from 122 comprehensive programs, which among them manage a variety of health promotion and disease prevention activities. Outcomes include clinical factors (e.g., blood pressure), healthcare costs, absenteeism, presenteeism, and short and long-term disability. Literature reviews also have been carried out by other well-known researchers⁸. Major conclusions from all these

studies were summarized in a 2003 editorial in the *Journal of Occupational and Environmental Medicine*, as follows:

“[M]ulticomponent or comprehensive interventions rank higher in both clinical effectiveness and cost-effectiveness compared with single-factor programs, such as periodic smoking cessation efforts.

Providing individualized risk reduction for all employees within the context of comprehensive programming is the critical element for successful worksite health enhancement.

Despite limitations in methodologies [emphasis added], the vast majority of the research indicates positive clinical and cost-effectiveness outcomes.”⁹

“Despite limitations in methodologies” is a key issue that demands our attention. Pelletier warns in his more nuanced evaluation:

“... results of comprehensive, multi-factorial health promotion and disease management interventions in worksites ... provide guarded cautious optimism about the clinical and/or cost-effectiveness of these worksite programs.”

What he is referring to are vexing problems of actually measuring clinical outcomes and healthcare cost savings.

An organization’s population consists of three groups:

- low-risk members who already lead healthy lifestyles,
- medium-risk members who are at-risk for one or more modifiable health risk factors, and
- high-risk members who are likely to already have diagnosed disease(s).

Participants can be classified using a Health Risk Assessment questionnaire and biometric testing, which are standard tools used to initiate participation in a worksite wellness program. To be effective, wellness programs need to keep participants initially classified as low-risk at low-risk, while causing a net movement of medium-risk and high-risk participants to lower-risk categories. With no interventions at all, there is natural up-and-down movement among the three groups that, over time, might cause a company’s population risk profile to become worse, to stay roughly the same, or to improve. The key to demonstrating program effectiveness is to adopt a study design that recognizes these naturally pre-existing risk categories and movements between them, and to make certain that they are properly handled in analyses in order to distinguish between the natural consequences of choice made by program participants (biased selection) and the real effects of the wellness program. Doing this with a reasonable degree of scientific rigor, however, is not easy.

Measuring outcomes in employment settings is greatly complicated by choices made by program participants and by a general lack of comprehensive information

on the company’s total population¹⁰. A number of common measurement problems can be explained using a simplified, but typical, example. Here, a researcher measuring outcomes is provided with a company’s historical, pre-wellness program health claims, which are available for the entire population, and post-program-implementation claims identified separately for wellness program participants and non-participants. The researcher also has at-program-implementation data from HRAs and biometric testing about lifestyle health risk characteristics, but only for program participants, and subsequent HRA and biometric testing data from those who are persistent in their program participation.

Using these data, the researcher determines that post-implementation program participants have lower average claims than the entire pre-implementation population. Based on this pre/post analysis, the researcher concludes that the wellness program was effective in reducing health risk factors and lowering healthcare costs. This conclusion *may* be true; however, it may also be the simple result of a disproportionate number of low-risk participants joining the wellness program (biased selection), which, depending on program structure, may well be likely, and can easily account for the observed results. The researcher cannot see this selection bias because of a lack of information (HRAs and biometric testing) on program non-participants that is needed to determine if differences in risk profiles between participants and non-participants can account for the observed outcome. It is more likely that program participants’ lower healthcare costs are the result of biased selection rather than caused by the wellness program.

To try to compensate for this problem, the researcher decides to look more closely at program participants to determine if there is a group of participants that actually reduced their risk factors over the time between their at-enrollment HRA and subsequent HRAs. Exploring participants’ HRAs, the researcher finds a sub-group that, in fact, did reduce its risk factors, and determines that the participants also moved from higher claims levels to lower claims levels. Based on these observations, the researcher now concludes that the wellness program does, indeed, improve lifestyles and lowers claims. Once again, this conclusion *may* be true; however, the study population may simply have captured a group of participants who naturally moved to lower risk and lower claims with no incentive from the wellness program.

As these simple examples demonstrate, there are myriad problems measuring outcomes when we do not have all the needed data, which is typical in a workplace setting, and program participation (including HRAs and biometric testing) is voluntary.

Researchers’ “gold-standard” for a scientifically valid outcome study requires complete data for both participants and non-participants, and the population being randomly assigned either to become wellness program participants or to be non-participants. These scientific procedures assure that any differences in post-implementation results between the two randomized groups are caused by the only variable that they do not have in common – the wellness program and its interventions. Without a true experimental design, which is very difficult to set up in the workplace, there



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will be vexing questions about biased selection making the interpretation of results difficult. Unfortunately, very few studies have been conducted using true experimental design.

In addition to these outcome measurement problems, worksite wellness programs come in a variety of flavors: They manage different risk factors, and they have very different strategies for changing lifestyle health behaviors. This creates another important limitation to literature review studies: They lump together all programs, some of which work, and others of which do not. Literature reviews also only cover studies published in peer-reviewed journals, and not the large number of private studies prepared by wellness organizations for their own internal use or marketing programs. In my experience, most of these private studies are not made available either to researchers or to the public.

A meta-analysis of 56 published studies reported in the literature between 1984 and 2004 was prepared by

researcher Larry Chapman in 2005¹¹. His paper contains the following summary of economic returns from underlying studies:

- the average reduction in sick leave / absenteeism (reported in 25 studies) was 26.8%;
- the average reduction in healthcare costs (28 studies) was 26.1%;
- the average reduction in workers' compensation and disease management costs (seven studies) was 32.0%; and
- the program benefit-to-cost ratio (22 studies) was 5.8:1.

These results appear to be very positive; however, we need to interpret them in light of the vexing measurement problems discussed. Given these issues, my sense is that the strongest conclusion we can make is that there exists at least some well designed worksite wellness programs that do cause health behavioral change and provide sponsoring companies with meaningful cost savings. However, it is best to remain skeptical about which programs actually work, how they work, and how much is saved.

STATE-OF-THE-ART WORKSITE WELLNESS PROGRAMS

Worksite wellness programs in the United States are works-in-progress: Some programs work and others probably do not. Michael P. O'Donnell, Editor-in-Chief of *American Journal of Health Promotion*, summarizes the current position on wellness and disease prevention in the workplace, as follows:

“The strong links between lifestyle, medical costs and productivity [have] led most large employers, a growing number of small employers, and their health plans to design and invest in workplace health promotion programs. The questions this raises are obvious: Do they improve health? Do programs save money? What works best? The short answers are ‘sometimes’ and ‘probably’ and ‘we don’t really know’.”¹²

This assessment is fully consistent with the rapidly evolving US market. There are as yet no dominant companies or agreed-upon approaches to effective health behavioral change. New companies regularly appear and old ones disappear. The market is rife with claims of successful behavioral change; however, very few claims have been thoroughly scrutinized for their accuracy. For these reasons, buyers appear to be somewhat skeptical about the value of comprehensive wellness programs and tend to purchase disease specific programs run or coordinated by their Human Resources staffs. Despite this skepticism it is very clear, and widely understood, that an effective wellness program will help companies control their healthcare costs increases, reduce absenteeism, and increase on-the-job productivity.

Based on my in-depth review of the wellness literature and my personal experiences in South Africa, the UK, and the USA, I have developed a sense of what business attributes an effective worksite wellness program should have and what outcomes could reasonably be expected.

An effective comprehensive wellness program will be a cleverly designed, highly integrated, and engaging internet-based program created using a combination of financial incentives and disincentives and health behavioral change psychology. Its keys to success are developing a supportive employer culture, together with effective internet-based health behavioral change*. Program attributes will include:

- an ability to engage sponsoring companies in the development of a supportive worksite wellness culture;
- a web site that participants find highly engaging and easy to use;
- a thorough HRA and biometric testing engaging a very high proportion of health plan participants, with individualized feedback on their modifiable health behaviors;
- access to meaningful health education materials;
- individualized, verifiable wellness goals and health behavioral change programs that help participants over extended time periods to modify their heightened at-risk health behaviors and then maintain their good health habits;
- the use of scientifically valid incentives and disincentives and health psychology findings to encourage participants' behavioral change efforts; and
- sponsoring companies being provided with appropriate aggregate data on their population health and, in conjunction with the company, the

continued use of these data to help focus the program and improve outcomes.

According to Dee Edington of the University of Michigan, a long-time researcher and well-regarded expert on employer wellness programs, a successful plan should set as its goal a 90% participation rate in risk assessments and 70% of participants reaching low-risk status¹³. Reaching these ambitious goals will almost certainly result in a meaningful ROI for sponsoring companies and improved health for many program participants.

WELLNESS PROGRAMS ON THE RIGHT TRACK

My sense is that currently only a minority of existing US wellness programs are designed for success, and even these programs generally have not yet had sufficient operating experience to prove that they can modify population health behaviors and save medical care costs sufficiently well to provide sponsoring companies with a solid ROI. I am, though, convinced that wellness programs are on track to accomplish what they need to do to become an important and effective part of employee benefits packages. Ω

* Many wellness programs make use of telephonic health coaching to help participants modify their unhealthy behaviors. This business model can be effective; however, the cost per participant is quite high, making it difficult to achieve an acceptable ROI. Telephonic coaching probably has a place in an effective business model as a carefully focused supplement to internet-based behavioral change.

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