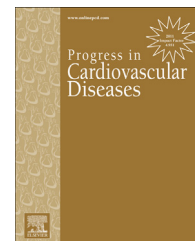


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## Current Trends in Reducing Cardiovascular Risk Factors in the United States: Focus on Worksite Health and Wellness

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### ABSTRACT

Health care in the United States (US) is changing with a broad provision of health care services to every American due to the Affordable Care Act (ACA) slated to begin in January of 2014. An important aspect of the ACA is that US companies may begin to offer health insurance incentives to employees for participating in health and wellness initiatives. Moreover, since US employers directly absorb many of the financial costs associated with the high degree of cardiovascular (CV) risk factors present in their personnel, employers may be financially vested in improving employee health. However, employers must also consider the costs of developing and maintaining programs to improve employee health and their return on investment (ROI). This review will identify key risk factors to address in a worksite health and wellness program and to examine the performance of such programs in improving CV risk factors and their ROI.

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Health care in the United States (US) is changing with a broad provision of health care services to every American due to the Affordable Care Act (ACA) slated to begin in January of 2014. Both challenges and opportunities will arise as a result of this change with one important opportunity being the provision of wellness-based incentives of up to 30–50% of the health insurance premiums for US companies.<sup>1,2</sup> Thus, US companies may begin to offer health insurance premium incentives to employees for participating in health and wellness initiatives. However, convincing US companies to offer such

incentives to employees may be challenging, but since US employers directly absorb many of the financial costs associated with the high degree of cardiovascular (CV) risk factors present in their personnel, employers may in reality be financially vested in improving their employee health. An additional challenge to employers is the cost of developing and maintaining programs to improve employees' health. Therefore, US employers must grapple with the available models of health and wellness programs, the performance of these programs on improving CV risk factors, their return on

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### Abbreviations and Acronyms

ACA = Affordable Care Act

CDC = Centers for Disease Control and Prevention

CV = cardiovascular

CVD = cardiovascular disease

BMI = body mass index

BRFSS = Behavioral Risk Factor Surveillance System

HDL = high density lipoprotein

HTN = hypertension

LDL = low density lipoprotein

METs = metabolic equivalents

NHIS = National Health Interview Survey

NHANES = National Health and Nutrition Examination Survey

PA = physical activity

ROI = return on investment

T2D = type 2 diabetes

US = United States

investment (ROI), and the development of programs that convey a sense of cooperation between employers and employees in seeking a mutually beneficial goal — employees' health.<sup>2</sup> The purposes of this paper are to provide an understanding of the above issues with the goal to identify methods to improve the health of US workers via worksite health and wellness programs.

### Prevalence of CV risk factors in the US

Although there have been major advances in the treatment of CV disease (CVD) in recent decades, includ-

ing extensive public educational efforts from organizations such as the American Heart Association and the Centers for Disease Control and Prevention (CDC), a majority of the US population possess CVD risk factors. In the recently-published CV Lifetime Risk Pooling Project, an analysis of 50 years of data from 18 studies and more than 250,000 individuals, approximately two-thirds of adults in the US had at least one major risk factor for CVD.<sup>3</sup> Importantly, only about 5% of adults in the US had optimal risk factor profiles. A high percentage of employees are unaware that they have risk factors for CVD, and even among those who are aware, risks are frequently inadequately treated (particularly hypertension, lipid abnormalities and physical inactivity).<sup>4,5</sup> Because of the high prevalence of CVD risk factors among US workers, worksite health and wellness programs provide an important opportunity to identify and manage risk from both a primary and secondary prevention perspective. Major CVD risk factors and their prevalence in the US are discussed below.

is not generally recognized by the medical community.<sup>5,9</sup> Low fitness levels have also been associated with a higher prevalence of metabolic conditions (e.g. insulin resistance, obesity) and higher health care costs.<sup>10-14</sup> Even modest improvements in PA patterns or fitness among employees can have a major impact on health outcomes. Therefore, encouraging regular PA is one of the most important components of a worksite health and wellness program.

"Physical inactivity" has been defined by national and international health organizations as not meeting a minimum standard of activity. A consistent tenet in the various guidelines on PA and health is that all adults should participate in a minimum of 30 minutes of moderate activity on most, if not all days of the week. "Moderate" activities are those that are generally equivalent to a brisk walk, in the range of 3–5 metabolic equivalents (METs), but may include any aerobic activity such as cycling, swimming, an exercise class and the like. Although there are further health benefits associated with higher levels of exercise, these modest recommendations are thought to reflect a balance between what is achievable by most adults while achieving the majority of health benefits associated with PA.

Despite an abundance of evidence supporting the favorable health effects of PA, most adults in Western societies remain effectively sedentary.<sup>5,15,16</sup> There have been numerous national surveys describing the prevalence of physical inactivity in the US. The prevalence varies depending upon how it is defined, but clearly less than half of Americans meet the minimal standard for PA.<sup>17</sup> Three major surveillance systems have been widely cited to estimate the prevalence of physical inactivity in the US; these include the National Health Interview Survey (NHIS), the National Health and Nutrition Examination Survey (NHANES), and the Behavioral Risk Factor Surveillance System (BRFSS).<sup>17</sup> The NHIS and NHANES surveys reported that 30.2 and 33.5% of Americans met the minimal criteria for being physically active, respectively, while the BRFSS reported a higher proportion of 48.3%. Only 21% of Americans meet the federal guidelines for both aerobic and strengthening activity. The percentage of subjects reporting no PA ranges from 14 to 41%. Inactivity is higher among women than men, higher in minority groups, and higher with aging. Taken together, these data indicate that only one-third to one-half of US adults meet the minimal goals for PA, and a significant percentage of the US population is predominantly sedentary.<sup>17</sup>

The prevalence of physical inactivity is high in the US in part because PA is not currently integrated into the Western health care paradigm, and the majority of physicians fail to prescribe exercise to their patients.<sup>5</sup> Because of the strong relation between PA, fitness and health, a greater emphasis on promoting PA through worksite health and wellness programs would have an important impact on reducing risk for chronic disease.

### Smoking

Tobacco use (both direct and second-hand) is strongly associated with higher morbidity and mortality, higher healthcare utilization, and decreased productivity.<sup>18-20</sup> Cigarette smoking

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### Physical inactivity (PA)

While risk factors such as smoking, hypertension (HTN), and lipid abnormalities have traditionally received far more attention from both the lay public and health professionals, lack of PA and poor fitness are very powerful predictors of CVD and overall mortality. In fact, a growing number of studies over the last decade have shown that poor fitness is a more powerful predictor of risk for all-cause and CVD mortality than the more traditional risk factors,<sup>5-8</sup> a fact that

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