Web-based nutrition program reduces health care costs for employees with cardiac risk factors

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Researchers from Boston University School of Medicine (BUSM) and Boston University School of Public Health (BUSPH) have shown that an employer-sponsored, internet-based diet and exercise program shows promise as a low-cost benefit to lower healthcare costs for those at higher risk for above-average costs and healthcare utilization such as cardiac, hyperlipidemia, hypertension or diabetes patients. These findings appear in the current issue of the *Journal of Medical Internet Research*.

Health insurance premiums have risen faster than inflation for the past 10 years, placing an increasing burden on employer-sponsors of health insurance and their employees. Some employers have become proactive in managing healthcare costs and improving healthcare quality by providing tools that engage employees and their dependents in their healthcare. One example is DASH for Health, an internet-based nutrition and exercise behavior modification program offered by a team of health scientists at BUSM. The program is currently offered as a free, voluntary benefit to US-based employees of the EMC Corporation, as well as Boston Medical Center, CVS/Caremark, and a subset of employees at Partners Healthcare.

Program participants can login and get weekly information about how to improve their nutrition and exercise habits. Employees enter detailed information about their diet, blood pressure and weight and the website

provides nutrition and exercise information tailored to their needs. The program also provides personalized progress reports to document the participant's development.

As part of the DASH for Health Study, the BUSM/BUSPH researchers focused on employees at EMC to determine whether an internet-based behavior modification program like DASH for Health had any effect on healthcare costs. They analyzed the costs on the aggregate for EMC employees and their spouses during the 12 months preceding the initial launch of the DASH for Health program and costs during the 12 months following the launch. The researchers also analyzed the relationship between how often a subject visited the DASH website and healthcare costs. These relationships were examined among all study subjects and among a subgroup of 735 subjects with cardiovascular conditions (diabetes, hypertension, hyperlipidemia). Multiple linear regression analysis examined the relationship of program use to healthcare costs, comparing study year costs among DASH participants and non-participants and then examining the effects of increased website use on healthcare costs. Analyses were repeated among the cardiovascular condition subgroup.

Among all employees, program use was not associated with changes in healthcare costs. However, among the cardiovascular risk study subjects, healthcare costs were $827 lower, on average, during the study year. "We analyzed costs for all study subjects and then performed a more focused analysis on employees and spouses with medical conditions (hypertension, hyperlipidemia, and/or diabetes) targeted by the DASH program," explained senior author Thomas Moore, MD, director of the Office of Clinical Research and an Associate Provost for Research at Boston University School of Medicine. "In an earlier study we found that people who enroll in the DASH for Health program lose weight, lower their blood pressure and improve their eating habits. This study adds the important finding that this internet-based program can also reduce

healthcare costs as early as the first year of enrollment in persons with high blood pressure, high cholesterol or diabetes. To our knowledge, this is the first program of its kind to provide evidence of cost savings," he added.

In addition, the researchers found evidence suggestive of a dose-response relationship. Among DASH participants who visited the website at least 9 times during the study year, each additional visit was associated with lower study year costs overall and in the DASH cardiovascular risk group. "Evidence of this dose-response was strongest among the DASH participants in the Cardiovascular risk group, where each additional website visit was associated with a $55 study year healthcare cost decrease," said lead author Naomi Sacks, MA, a PhD student in Health Services Research in the Department of Health Policy and Management at BUSPH.

"Our focus on the effects of an employer-sponsored, web-based diet and exercise program on healthcare costs also expands our understanding of the effects of employer benefits that encourage employees to better manage their health status and contain healthcare costs," added Sacks. "Regular use of the DASH for Health program may encourage health behavior changes that result in cost savings among persons with chronic conditions in a relatively short time frame. The benefits of DASH participation among healthier, younger enrollees may be evident over a longer time period than the year evaluated for this study. Employers, particularly those who are self-insured, may be interested in both short- and long-term employee costs and health status and choose to invest in health status improvements that will show benefits over the long term."

According to Delia Vetter, Senior Director of Benefits and Programs for EMC Corporation, the company is committed to helping its employees balance their work and personal lives and prioritize their health. "We are pleased to offer DASH as a part of our overall strategy to partner in

health with our employees through highly targeted, value-based benefits and programs. Over 7,000 EMC employees have participated in DASH, signaling a swell of interest in programs lie this that drive good health management."

Source: Boston University Medical Center