The Future of Health Promotion/Disease Prevention Programs: The Incentives and Barriers Faced by Stakeholders

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According to Healthy People 2010, 95% of employers with more than 50 employees reported that they offered at least one health promotion activity by 1999. Employment-based health promotion/disease prevention (hp/dp) programs have significantly increased in frequency and scope since 1985. Yet, 20 years later, the reported results for employee health lag behind the literature documenting the impact of lifestyle-related health risks on morbidity, healthcare utilization, and costs. In this article, we consider the key stakeholders involved—employers, health plans, and employees—and explore their legitimate and feasible roles in employment-based hp/dp programs, including the incentives and barriers they face to program participation. We argue for the integration of hp/dp programs into the traditional health protection mission of occupational health and safety professionals. (J Occup Environ Med. *2006;48:541–548*)

Although there are many reasons that employee health outcomes lag behind the literature, some of the more intractable issues are the very nature of the programs, the structure of the American labor force, and the modest support from the government for these initiatives (Table 1). Many health promotion/disease prevention (hp/dp) programs are not comprehensive, that is, they address only a particular risk factor (eg, high blood pressure or cholesterol), and therefore, their potential to have a substantial impact on employee health is limited to a single risk factor and/or behavior. In addition, many programs are time-limited in duration, and thus any health behavior changes are short-term. Hp/dp programs, in general, have low participation rates and are criticized for failing to market programs to the employees that need them the most. Participants in hp/dp programs tend to be salaried employees who are in better general health and not those employees working in administrative support, service, crafts, and trades. These clerical and blue collar workers often have greater health risks and higher rates of illness and injury than professional workers due to differences in socioeconomic status, nature of work, and access to and extent of health insurance coverage.[1] However, there are employers who have collaborated successfully with organized labor, for example, General Motors worked with the United Auto Workers (UAW) union to create a jointly financed health promotion

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TABLE 1
Incentives and Barriers for Provision/Participation in Health Promotion/Disease Prevention Program

	Employers	Health Plans	Employees	Occupational Health
Incentives	Containing healthcare costs; gains in worker performance and productivity	National Committee on Quality Assurance Accreditation; contain healthcare utilization and costs of enrollees	Improved health and quality of life and increased productivity; potential for lowered financial liability	Broader funding opportunities to address a wider range of services for employees; improved integration of employee health services for occupational and nonoccupational conditions; potential for a reduced demand for health services
Barriers	Limited purchasing power and resource constraints particularly from small and midsized firms; employee turnover	Failure by employers to recognize potential for partnerships; partnerships limited by enrollment in multiple plans	Unwillingness to change behaviors; difficulty maintaining behavior changes over time; lack of formal incentives; organizational factors	Lack of resources to address a more comprehensive occupational health and hp/dp program; lack of occupational healthcare providers' knowledge or time to devote to hp/dp programmatic needs

Hp/dp indicates health promotion/disease prevention.

program, "LifeSteps."[3] Since its inception, the program has attracted 43% of households and 34% of individuals. Union support has been achieved, in part, because the LifeSteps program is aimed at improving health and not just cutting healthcare costs.

Participation in hp/dp programs, or lack thereof, may also be due to features of the labor force itself that make progress difficult. According to Chapman, approximately 56% of the U.S. labor force is employed by organizations with fewer than 100 employees, whereas approximately 8% are self-employed. In the private sector, more than 80% of employees work in organizations with fewer than 50 people.[1] Limited purchasing power and resource constraints can make the provision of hp/dp programs challenging for small organizations making attention to cost-effectiveness paramount. Even if resources are available, most health promotion programs have been developed for use in very large organizations and may not address adequately the needs of smaller worksites.[2] Additionally, many of the healthcare costs incurred by employers may be for spouses, dependents, and retirees, as well as active employees. As one example, consider the population profile of General Motors, in which active employees constitute only 16% of the population, whereas retirees constitute 33% and dependents the remaining 51%.[3]

Finally, government financing on health promotion, and more broadly on public health and prevention efforts, is sorely lacking. As a nation, we spend approximately 15% of our gross domestic product (GDP) on health care each year. Of this trillion dollar figure, only 5% is allocated to population-wide approaches to health improvement, whereas 95% goes to direct medical care services.[4–6] This continues to be the case even though we know that 40% of deaths are caused by health risk factors and behaviors that could be modified by preventive interventions. Improvements in the quality or use of medical care have had only a relatively limited ability to reduce deaths among Americans. According to McGinnis and associates, a 30-year increase in life expectancy occurred over the course of the 20th century and of this, only a 5-year increase is attributable to better medical care.[4]

There are several factors contributing to the lack of financial support from the government for prevention efforts and research. Ideally, comprehensive prevention efforts require very complex interventions because multiple causes of disease should be targeted. As a result, research is often difficult to replicate and limited in generalizability due to reliance on intensive, highly structured, and expensive interventions delivered by highly trained research staff.[7] These features, along with the fact that the cost-effectiveness of various prevention interventions has not been established, lead to difficulty in garnering support in terms of public investments. In addition, prevention efforts, as opposed to various medical treatments, are dependent on action across a broad spectrum of political and policy arenas, and the health interest groups with the strongest lobbying forces are those focused on research and treatment of very specific chronic conditions (eg, heart disease or cancer), not general health promotion and primary prevention.[4]

Given the challenges described here, are there compelling reasons in the marketplace, population, and evidence in the literature for pushing forward with hp/dp programs? Most would argue that the answer is "yes." Currently, the most important trend in the marketplace driving the need for hp/dp programs is the multiyear double-digit increases in healthcare costs faced by employers and employees.[2,5] Faced with these financial pressures, employers and employees

are looking for ways to reduce expenses related to health care by managing the health of their population.

There are also important shifts occurring in the health risk profiles of the population, including the dramatic increase in the rate of people who are overweight or obese. Since 1980, the prevalence of obesity has doubled to 30% of the adult population in the United States.[8] Obese people are at increased risk for developing a number of common chronic diseases, including diabetes, gallstones, hypertension, heart disease, hyperlipidemia, stroke, and some forms of cancer.[9,10] Coincident with the rise in obesity in this country, the number of patients diagnosed with diabetes over the past two decades has more than doubled.[5]

Finally, there is a growing body of evidence documenting that modifiable health risk factors such as obesity, physical fitness, and smoking lead to adverse health outcomes, increased health services utilization and healthcare costs, as well as evidence that worksite programs designed to change these factors work, leading to better health and decreased healthcare costs. It is estimated that a poor diet and low levels of physical activity contribute from 300,000 to more than 500,000 deaths annually in the United States. Tobacco, estimated to contribute to more than 400,000 deaths annually, is the leading single contributor to mortality.[11] Physical activity, overweight and obesity, and tobacco use are the first three leading health indicators in Healthy People 2010, which are reflective of the major public health concerns in the United States at this time. Numerous studies have led to these conclusions and inclusion of these health risk factors as leading health indicators.[12–17] In addition, a number of studies document increased health services utilization and healthcare costs associated with these modifiable health risk factors.[18–25] For example, Goetzel and colleagues assembled one of the largest databases of its kind analyzing individual-level employee data and documented the relationship between 10 modifiable health risks and healthcare expenditures controlling for demographics and other risk factors.[21] Retrospective two-stage multivariate analyses, including logistic and linear regression models, were used to follow up on 46,026 employees from six large healthcare purchasers for a maximum of 3 years. These participants contributed 11,963 person-years of experience. Employees at high risk for poor health outcomes were found to have had significantly higher expenditures than subjects at lower risk in several of 10 risk categories: those who reported themselves as depressed (70% higher expenditures), at high stress (46%), with high blood glucose levels (35%), at extremely high or low body weight (21%), former (20%) and current (14%) tobacco users with high blood pressure (12%), and with sedentary lifestyle (10%). In another example, Riedel et al summarized the results from nearly 150 articles on hp/dp programs in 2001. They concluded that the evidence regarding the positive effect of behavior change programs on health benefits is strong with benefits being realized in the mid to long term. They also concluded that the positive effect of behavior change on medical cost shows positive cost-effectiveness, and general exercise programs and smoking cessation programs show positive return on investment as well.[26]

In addition, there is an emerging body of knowledge that describes the relationship between modifiable health risk factors and productivity. Factors related to worker well-being and their relationships to workplace performance underscore the value of hp/dp programs. For example, Goetzel and colleagues estimated the total cost of health, absence, short-term disability, and productivity losses for 10 prevalent health conditions, including allergy, arthritis, asthma, any cancer, depression/sadness, diabetes, heart disease, hypertension, migraine/headache, and respiratory infections using the combined findings from several productivity surveys.[27] Based on average impairment and prevalence estimates, the overall economic burden of illness was highest for hypertension ($392 per employee per year), heart disease ($368), depression and other mental illnesses ($348), and arthritis ($327). Presenteeism costs were higher than medical costs in most cases and represented 18% to 60% of all costs for the 10 conditions. In another example, Pronk and colleagues reported an association between work performance and physical activity, cardiorespiratory fitness, and obesity.[28] Moderate physical activity was associated with an enhanced quality of work performed and overall job performance. Higher levels of cardiorespiratory fitness were associated with enhanced work performance. Obesity was associated with more work loss days. The study findings support an association between modifiable health risk factors and employee productivity.

Employers

Employers have a legitimate role in hp/dp programs because they have access to a large segment of the population and remain largely responsible for providing health benefit coverage. According to Chapman, there are currently 142 million Americans in the U.S. labor force, and these individuals along with their family members, those looking for employment, and retirees make up 82% of the U.S. population.[2] Employers provide health benefit coverage to approximately 70% of employees as well as workers' compensation, disability coverage, and sick leave absenteeism to a very large percentage of employees.[2] As employees are faced with an increasing financial accountability for healthcare expenses, it is assumed they will take action to lower their financial liability. If true, then access to health promotion, disease prevention, and disease self-management tools become a much needed integral com-

ponent of employment-based covered benefits. Employers also have a feasible role in hp/dp programs because working adults spend significant amounts of time in worksite settings, and large numbers of adults who would not otherwise seek out risk reduction services through traditional health care can be reached repeatedly and at relatively low cost in worksite settings.[2,7]

The incentives for employers to provide hp/dp programs include, but are no longer limited to, containing direct healthcare costs. Although this has been the focus for the past 20 years and continues to be of great importance, employers are also beginning to have a shift in perception of the value of workforce health investment from a cost-cutting approach to a human capital approach.[29] Riedel et al suggests that containing direct healthcare costs is only the tip of the iceberg and that greater gains in corporate performance may be experienced through the direct influence of positive worker health on productivity, improved quality of goods and services, greater creativity and innovation, enhanced resilience, and increased intellectual capacity. Currently, the data linking worker health with performance and productivity is limited, but it is a very active area of research.[26]

Some of the barriers for employers in terms of providing hp/dp programs were already described. That is, many employers are small business owners, and limited purchasing power and resource constraints can make the provision of hp/dp programs difficult. In addition, the benefits that people receive from health promotion interventions often are not tangible or obvious and may not be realized for many years. Employers have to weigh these considerations against other factors such as employee turnover rates. High turnover rates within an organization can make the provision of hp/dp programs a less compelling investment for some employers. The U.S. Bureau of Labor Statistics reports the turnover rate for employees in all industries for 2004 through 2005 at 3.2% to 3.4% of total employment; this rate includes both voluntary and involuntary separations. Variation exists by industry with relatively higher rates in leisure and hospitality (5.9–5.6%) and construction (5.6–5.8%) and lower rates in government (1.2–1.3%), education and health services (2.3–2.5%), and manufacturing (2.6%).[30] Thus, selected industries with less employee turnover appear to have a greater economic incentive to invest in hp/dp programs for their workforce. Finally, the Health Insurance Portability and Accountability Act (HIPAA) has complicated the picture for employers wanting to provide formal incentives for health promotion. Because the regulations of HIPAA restrict employers from using health status as a basis for incentive or disincentive qualification,[31] employers are no longer able to reward selected high-risk employees for achieving positive changes on physiological measures (eg, blood pressure or cholesterol levels) as was done by some companies in the past. Alternatively, some employers now use these same physiological measures to qualify individual employees and/or their spouses for an hp/dp incentive while simultaneously providing a participation option for those who do not qualify on their laboratory results.

Health Plans

Health plans represent additional resources for employers wanting to provide hp/dp programs and tremendous opportunities for partnership. In general, health plans have unique capabilities that allow them to enhance hp/dp program outcomes and make the provision of programs easier for employers. Some of these capabilities include the ability to have programs available through the health plan as opposed to the worksite (thereby enhancing confidentiality of employee-specific data and not linking it to the employer), the potential for resource leverage in terms of staff and expertise, greater data management capabilities, the availability of specific data for populations of interest, including paid claims or claims incurred, and the availability of health (risk) assessment tools.[32] Health plans also have more direct relationships with healthcare providers and can use this in the provision of hp/dp programs. For example, in the Partners for Better Health Employer Initiative (PBHEI), a successful program in which a large health plan and employers collaborate on hp/dp programs, the results from health risk assessments employees complete are presented back to them with suggestions for reducing risk, as typically done with most health assessments. However, in addition, the data are also sent to the employee's physician, are documented in the medical record, and are used proactively by both clinical and health education staff to follow up on identified health risks.[33]

Health plans have an incentive to be involved in hp/dp programs due to the accreditation requirements of the National Committee on Quality Assurance (NCQA). This national accrediting organization of managed care organizations (MCOs) influences the nature of health benefits offered by MCOs. To receive accreditation, MCOs must show compliance with requirements in six areas, including preventive health services, which constitute 10% of the overall accreditation score. Many large employers require NCQA accreditation before considering the purchase of health care from a MCO and this is what is driving the integration of hp/dp programs within health plans.[26]

Some barriers to involvement by health plans in employment-based hp/dp programs are that companies often do not realize the potential for partnerships with health plans and their ability to enhance programming because they are not aware of the unique capabilities outlined here. In addition, such partnerships are somewhat limited to companies whose workforce is largely enrolled with a

single plan.[32] A final barrier for health plans is that employees are sensitive to changes in the out-of-pocket premiums they are responsible for. Research has shown that employees will switch plans, dropping a high-cost plan, when employers require greater cost-sharing, a current trend in today's marketplace.[34]

Employees

Ultimately, the success of hp/dp programs rests in the hands of individual employees. If the programs are voluntary, which HIPAA tries to ensure, then it is up to individuals to take the initiative to participate in hp/dp programs. The argument has been made that with increased cost shifting from employers to employees, including increasing the relative contribution made by employees, decreasing the scope of benefits, and implementing consumer-driven health plans, that employees will take action to lower their financial liability. However, this argument has yet to be tested, and whether or not employees will participate in hp/dp programs to decrease their healthcare costs has yet to be determined as well.

The incentives for employees to participate in hp/dp programs seem obvious. If not just for financial reasons, should not individuals want to have more energy, greater mental alertness, feel better, and have all of the other benefits ascribed to adopting a healthier lifestyle? The answer is that not all do. Many people do not want to change their health-threatening behaviors (eg, smoking, overeating, leading sedentary lifestyles) even when they are aware of the risks they are taking.[4] The degree to which health risks are modifiable has been found to be directly related to the readiness of individuals to change underlying behaviors.[13] In addition, any behavior changes made can be difficult to maintain. In fact, getting high participation rates and maintaining behavior changes over time are considered to be the two major and universal challenges to the success of hp/dp programs.[26] The literature on economic incentives is relatively sparse, but a study by Wang and colleagues evaluated efforts to increase employee response rates on an expanded health risk appraisal in a sample of 2539 working adults.[35] The prevalence of chronic conditions and their associations with work impairments were compared across subsamples who responded after a single mailing, after two mailings, and in a telephone interview after the mailing either with or without a $20 incentive. The most intensive strategy, involving use of a telephone call and a $20 incentive, increased program participation from 26% to 68%. Sensitivity analyses revealed that the effectiveness of the incentives was not biased by employees' chronic health conditions or productivity problems. The study findings suggest that employee engagement in hp/dp programs must be linked to incentives.[36] Finally, there may be organizational factors that preclude employees from participating in hp/dp programs. For example, a manufacturing company may find it advantageous to offer hp/dp programs in corporate office settings, but it may be logistically more difficult to offer the same programs in the decentralized plant facilities. This represents a barrier for those employees not working in the corporate settings, but a barrier that is potentially offset by the increasing use of web-based wellness programs in the corporate sector.[37,38] Such programs have the advantage over traditional hp/dp programs of being accessible to employees regardless of physical location as long as employees have access to the Internet. Other advantages cited for employees include greater anonymity, which may be a more appealing alternative for at-risk employees, and greater customizability options offered by some programs.[37,38] Unique advantages of web-based programs also exist for employers, including cost savings that result from lower administrative, printing, and mailing costs.[37]

Although each of the stakeholders in the provision of employment-based hp/dp programs faces opportunities and challenges to successful program implementation, organizational culture may be a key ingredient necessary for ensuring that the stakeholders keep hp/dp programs a priority. Recent initiatives from federal agencies such as the National Institute for Occupational Safety and Health, and their "Steps to a Healthier U.S. Workforce Initiative," provide visibility on the key issues and encourage stakeholders to integrate hp/dp programs into more established and regulated employee health protection programs.

Organizational Culture

According to Lowe, transformational, as opposed to superficial, change is needed to create a healthy organization, which includes supporting employees to be healthy and productive.[39] Redefining workplace health in organizational terms transforms it from the status of a policy or program into a core characteristic of how a business operates. A healthy organization is one whose culture, climate, and practice create an environment that promotes employee health and safety as well as organizational effectiveness. Among the key attributes for healthy organizations are a commitment to company values; an organizational climate in which employees feel valued and are able to resolve group conflicts; and management practices such as rewarding workers for quality work, supportive supervisors, and strong leadership, which may lead to improved quality of work life and better economic performance.[39]

However, Murphy and Sauter report that the literature rarely provides examples of interventions at the organizational level.[40] There is an absence of compelling business cases or intervention–effectiveness on work organization interventions and a relatively poor understanding of the organizational decision-making processes that govern the adoption of

social technologies and organizational innovations by enterprises that could positively influence employee health and safety. To address these deficiencies in the literature, the National Institute for Occupational Safety and Health (NIOSH) recommends intervention research targeting organizational practices and policies that may influence worker health and safety.[40] Progress toward understanding and preventing the risks posed by organizational factors will require a stronger public health commitment to this field of study and strategic alliances among key stakeholders, including industry and labor coalitions, health professionals and health plans, and the many professional disciplines with interests in the organization of work (eg, occupational/public health, economics, organizational behavior, labor studies).

Supportive Government Action

Recently, NIOSH launched the "Steps to a Healthier U.S. Workforce Initiative" with the goal of integrating individual work health and healthy lifestyle promotion with the traditional mission of NIOSH of protecting and improving working conditions and the work environment.[41] This initiative supports the view that all illness and injury should be prevented when possible, controlled when necessary, and treated when appropriate.

According to NIOSH director, John Howard,[42] the purpose of the Occupational Safety and Health Act of 1970 was to "assure so far as possible every working man and woman in the Nation safe and healthful working conditions," but the Congress also said that the Act's purpose was to "preserve our [Nation's] human resources."[43] Howard interprets the mission of NIOSH as ". . . not only ensuring the health and safety of the worker, but also requires coordination of our worker protection efforts with efforts to promote safety on the highway, safety while recreating, safety in the home, and with efforts to educate workers about how to make health-enhancing lifestyle choices. . . . In the 21st century, we can ill afford to continue the separation of occupational safety and health protection from health promotion—continued fragmentation of effort must be converted to coordination of effort. . . . One also hopes that that holistic approaches to health will also contribute to create a sustainable future for the American medical care system as the current trend in benefit reductions, increased out of pocket costs will ultimately transform a covered worker from a fairly indifferent health care 'user' to a more health conscious 'consumer' and will create opportunities for a coordinated health protection and health promotion effort."[42] Is there a role for coordinated programs of health protection and health promotion in ensuring medical care cost sustainability? Howard says, "if we can transform our singular efforts into coordinated efforts, I believe that the answer is 'yes,' we can have a greater impact on the health and safety profile of the American worker."[42] It is time for occupational health and safety specialists—nurses, physicians, safety specialists, and industrial hygiene engineers—to collaborate more vigorously with their peers in health promotion and disease prevention programming to comprehensively address the well-being of the workforce.

Although the success of hp/dp programs is dependent on program participation by individual employees, the transformations necessary to have employees actively manage their personal health, and ultimately their use of healthcare services, need not be a solo journey. Indeed, there are many examples of innovators in the field, companies and organizations that are putting together all of the essential pieces to help their employees overcome the barriers that currently stand in the way of their success, and the success of hp/dp programs. Some promising work on the road to making employees better personal health managers and more effective health consumers is happening. Examples include disease management and shared decision-making programs such as those developed at 3M that provide personal education and consultation at the time of an immediate decision point—before surgery or diagnostic procedures.[44] The evidence suggests that there is a lot to gain from the success of employment-based hp/dp programs, and we believe success can be achieved by effectively engaging the key stakeholders and fostering stronger collaborations between them.

Occupational Health Providers

There are multiple incentives for occupational health providers to be involved in hp/dp programs, including an opportunity to access a broader base of funding, improved integration of services for employees, and if hp/dp programs successfully reduce or mitigate disease risk factors, reduced demand for health services.[18–25] In some companies, responsibility for health programs and services is under the umbrella of environmental health and safety, whereas in others, it is associated with the benefit function or human resources. Regardless of organizational structure, Comstock[45] recommends that health and safety initiatives be reframed as part of a risk reduction strategy because it provides the opportunity for occupational health providers to demonstrate their business value using language and methodologies familiar to corporate decision-makers. For example, hp/dp programs can be framed as risk control strategies that affect employee productivity and performance using the growing body of evidence, described earlier in this article.

Although some of these programs have not traditionally been thought of in the context of occupational health and safety, Comstock[45] argues that they legitimately belong in a spectrum of services that supports a healthy work environment and population health management, and the goal is to move the risk continuum toward prevention. In this context, employers want effective manage-

ment of occupational and nonoccupational problems from wherever the services are most effectively and efficiently provided. This may include an interdisciplinary team of providers such as nurses, health educators, exercise physiologists, and nutritionists as well as experts in employee assistance programs (EAPs) and human resources involving a partnership between employers, health plans, and occupational health providers using a combination of internal and vendored resources.

Barriers for occupational health providers may include a lack of resources, particularly for smaller employers, a lack of knowledge, or a traditional orientation to treatment rather than prevention. Although small employers lack the resources for internal hp/dp providers, some employers access tailored needs assessment and selected hp/dp products and services through occupational health clinics, health plans, or external vendors like in the example of The Partners for Better Health Employer Initiative (PBHEI) described earlier.[32]

Although some occupational and environmental health providers may focus more on treatment rather than prevention, the scope of practice in the field of occupational health and safety has undergone important changes. As noted in the Position Statement on the Scope of Occupational and Environmental Health Programs and Practice for the American College of Occupational and Environmental Medicine, "the role of the occupational and environmental physician has expanded to enhance the productivity of the workers with absence management and increased emphasis on the overall health and wellness of the worker—not just at the worksite, but also at home and in the community . . . (which includes) . . . the ability to interact with diverse stakeholders to prevent and manage injury and illness and to promote health, wellness and productivity of working populations."[46] The time is right for occupational and environmental physicians to vigorously collaborate with all the key stakeholders in hp/dp to create the integrated health protection and promotion programs of the 21st century.

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