

Recommendations for Worksite-Based Interventions to Improve Workers' Health

Task Force on Community Preventive Services

Introduction

Over the past 25 years, the number of organizations and companies offering a health promotion program for their employees at the worksite has increased dramatically; by 1990, 81% of worksites and by 2000, nearly 90% of all workplaces with at least 50 employees offered their employees some type of health promotion program.^{1,2} There are several reasons why health promotion in U.S. work settings has become increasingly common. The top five health conditions (heart disease, cancers, cerebrovascular disease, chronic lower respiratory disease, and unintentional injuries) are responsive to intervention; American adults spend increasing hours at work; and poor employee health results in substantial financial and productivity costs to employers.

In comparison to nonworksite environments, the worksite provides a number of advantages for health promotion: (1) the potential for intervention exposure because of a large and rather stable population; (2) the potential for adequate or enhanced promotion of, recruitment for, and participation in programs; and (3) the potential for social support networks and peer influences among coworkers as reinforcement of efforts.³

Because of the potential advantages worksites offer as a setting for health promotion efforts, and the potential value of guidance regarding effective workplace health promotion interventions for employers, insurance companies, HMOs, and others, the Task Force on Community Preventive Services placed a high priority on evaluating the effectiveness of such interventions. A comprehensive review of interventions addressing all potential health conditions would be costly and difficult; therefore, the review team chose to take a multipronged approach. The team addressed one intervention approach that is expected to affect multiple health outcomes

(workplace health risk assessment programs) and addressed a few other intervention approaches that are used frequently by employers to attempt to influence specific outcomes (smokefree polices to reduce tobacco use, incentives and competitions to reduce tobacco use, and increasing participation in influenza vaccination programs). From analysis of the evidence culled from these reviews, findings emerged on the effectiveness of each intervention. Based on these findings, the Task Force made recommendations: in those interventions found to be effective, for increased use; in those for which there was insufficient evidence to determine effectiveness, for further research.

The recommendations in this report represent the work of the independent, nonfederal Task Force on Community Preventive Services (the Task Force). With the support of the USDHHS and in collaboration with public and private partners, the Task Force is developing the *Guide to Community Preventive Services (Community Guide)*. In support of the Task Force in developing the *Community Guide*, staff is provided by the CDC.

The Task Force recommendations are based primarily on the effectiveness of each intervention as determined by the systematic literature review process (described in the accompanying articles).⁴⁻⁶ In making its recommendations, the Task Force balances information about effectiveness with that of other potential benefits and harms of the intervention itself. The Task Force also considers the applicability of the intervention to various settings and populations in determining the scope of the recommendation. Finally, the Task Force reviews economic analyses of effective interventions, where available. Economic information is provided to assist the reader with decision making, but generally does not affect Task Force recommendations.

Accompanying articles provide the specific methods for and results of the reviews of evidence on which these recommendations were based.⁴⁻⁶ General methods employed in evidence reviews for the *Community Guide* have elsewhere been previously published.⁷⁻⁹

Recommended interventions can be used to achieve *Healthy People 2010* objectives.¹⁰ *Healthy People 2010* includes two specific worksite-related objectives (7.5 and

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7.6), which state, respectively: (1) at least three quarters of U.S. employers will offer a comprehensive employee health promotion program; and (2) at least three quarters of U.S. employees will participate in employer-sponsored health promotion activities. In the accompanying evidence review articles, *Healthy People 2010* objectives and findings from other advisory groups relevant to the individual reviews are specified.

Intervention Recommendations

The Task Force evaluated the evidence on effectiveness of five selected workplace preventive health interventions. These include two reviews of assessments of health risks with feedback—one for this intervention when used alone, the other for this intervention when used with health education and with or without additional intervention components. In addition, the Task Force reviewed three interventions to assess their effectiveness in reducing tobacco use among workers: smokefree policies; incentives and competitions when implemented without additional interventions to reduce tobacco use; and incentives and competitions when combined with additional interventions to reduce tobacco use. A review of interventions designed to increase uptake of influenza vaccinations among workers is complete, and the Task Force findings for these reviews and other reviews that may be applicable to the worksite are available at www.thecommunityguide.org/worksite.

Assessments of Health Risks with Feedback: Insufficient Evidence

Assessment of Health Risks with Feedback (AHRF) refers to a process that includes three elements: (1) the collection of information about at least two personal health behaviors or indicators; (2) translation of the information collected into one or more individual risk scores or categorical descriptions of risk status; and (3) provision to the participants of feedback regarding their risk status, either overall or with respect to specific risk behaviors.

The Task Force found insufficient evidence to determine the effectiveness of AHRF when implemented by itself as a primary intervention.

The Task Force finding of insufficient evidence to determine effectiveness is based on concerns with recurring combinations of flaws in individual studies across the body of evidence. The most important concern was the paucity of comparative studies in which the intervention was offered to one defined population and outcomes compared to another defined population that received a lesser (or no) intervention. Many of the studies identified in this review provided the intervention of interest

(AHRF alone) to the “control” arm of a trial that was primarily intended to evaluate the effectiveness of a more comprehensive intervention that included AHRF as a single component. The absence of measurements from a relevant concurrent comparison group in these studies raised the potential for bias in the estimated intervention effects, particularly for self-reported changes in behavior. Most studies analyzed only a small subset of participants for whom there were complete follow-up data, which may have favored the inclusion of results from individuals who had changed their health behaviors in the interval.

Assessment of Health Risks with Feedback plus health education, with or without additional interventions: recommended. Although AHRF can be offered as an independent intervention, it is often applied to a broader worksite health promotion program as a gateway intervention. When used as a gateway intervention, the assessment is typically conducted one or more times, and the feedback is offered to the participant along with additional intervention components to address the identified health risks. These may include: detailed information about health risks; information about programs directed toward the prevention or treatment of the risks; or referrals to programs or providers addressing the risks. In addition to providing intervention components targeted at risks that were specifically identified in the assessment, other interventions may also be offered. These include health education; enhanced access to physical activity; nutritious food alternatives; or policy interventions such as smoking bans or restrictions. When AHRF was implemented with additional health-related interventions, these programs were collectively referred to as AHRF Plus.

The Task Force recommends the use of assessments of health risks with feedback when combined with health education programs, with or without additional interventions, on the basis of strong evidence of effectiveness in improving one or more health behaviors or conditions in populations of workers. Additionally, the Task Force recommends the use of assessments of health risks with feedback when combined with health education programs to improve among program participants the following specific outcomes:

- Reducing tobacco use (cessation) on the basis of strong evidence of effectiveness
- Reducing at-risk alcohol use on the basis of sufficient evidence of effectiveness
- Improving measurements of physical activity on the basis of sufficient evidence of effectiveness
- Increasing seat belt use on the basis of sufficient evidence of effectiveness

- Reducing dietary intake of fat on the basis of strong evidence of effectiveness as measured by self-report
- Reducing overall (median) measurements of blood pressure among participants, and the proportion of participants at risk because of elevated blood pressure on the basis of strong evidence of effectiveness
- Reducing overall (median) measurements of total cholesterol, and the proportion of participants with elevated cholesterol measurements on the basis of strong evidence of effectiveness
- Improving the summary health risk estimates of at-risk participants and reducing the proportion of participants with high-risk estimates on the basis of sufficient evidence of effectiveness
- Reducing the number of days lost from work due to illness or disability on the basis of strong evidence of effectiveness
- Improving a range of different measures of health-care service use on the basis of sufficient evidence of effectiveness

The Task Force found insufficient evidence to determine the effectiveness of assessments of health risks with feedback when combined with health education programs, with or without additional interventions, in improving the following outcomes among participating workers:

- Dietary intake of fruits and vegetables: because of concerns about the small magnitude of effect (median change was an increase of only 0.16 servings per day) across the body of evidence.
- Body composition: because of small and inconsistent effects across the body of evidence for three basic measures: BMI, body weight, and percentage body fat. Although the body of evidence suggested consistent decreases in BMI (median change 0.5 points), findings for weight (median decrease of 0.56 pounds) and body fat (median decrease of 2.2%) were small, and results for weight were inconsistent internally and with the BMI results.
- Fitness: because outcome effects were small in magnitude and the measures reported varied in content and quality.

The Task Force assessed a combination of quantitative and qualitatively synthesized evidence across a variety of outcomes relevant to overall health and wellness including a range of health behaviors, physiologic measurements, and summary indicators linked to changes in health status. Although most of the qualifying studies reported a different set of outcome measurements, the Task Force evaluated data on effectiveness for each outcome across the body of evidence.

Worksite-Based Incentives and Competitions to Reduce Tobacco Use

Tobacco use is one of the largest causes of preventable premature death in the U.S. Reducing tobacco use in adults and reducing nonsmokers' exposure to environmental tobacco smoke are essential preventive measures to reduce morbidity and mortality associated with tobacco use. Interventions designed to assist with this effort are important options for health promotion in worksites. To reduce morbidity and mortality associated with tobacco use, in addition to preventing tobacco-use initiation and reducing exposure to environmental tobacco smoke, a comprehensive prevention effort should help the 70% of tobacco users who want to quit to do so.¹¹

Tobacco cessation incentives and competitions can be readily incorporated into an integrated strategy to increase and improve tobacco use cessation. Incentives can be provided for participation in tobacco cessation programs, for success in achieving abstinence from tobacco use, or both. Incentives can vary, and may include guaranteed financial payments or lottery chances for monetary awards.

To support an individual's efforts to quit using tobacco products, incentives and competitions are often offered in conjunction with additional programs or policies. These additional components of a comprehensive tobacco cessation program may include: smoking cessation groups; self-help cessation materials; telephone cessation support; workplace smoke-free policies; and social support networks, among others. These programs and policies, implemented in conjunction with incentives or competitions, can be effective by increasing or improving motivation to quit; increasing or improving action to quit; and increasing or improving maintenance of a quit effort.

Worksite-based incentives and competitions when implemented alone to reduce tobacco use: insufficient evidence. The Task Force found insufficient evidence to determine if worksite-based incentives and competitions alone are effective in reducing tobacco use among workers, because only one study of least suitable design qualified for this review.

Worksite-based incentives and competitions when combined with additional interventions to reduce tobacco use among workers: recommended. The Task Force recommends worksite-based incentives and competitions when combined with additional interventions to support individual cessation efforts, based on strong evidence that they are effective in reducing tobacco use among workers. The qualifying studies included a variety of intervention combinations. For the subset of studies consisting of multicomponent efforts combining incen-

Table 1. Summary of evidence for assessments of health risks with feedback when used alone

Size of the body of evidence:	Thirty studies of the assessment of health risks with feedback interventions, conducted in worksites, qualified for assessment of effectiveness. Six studies included an untreated or lesser treated comparison group, one study was a time series study, and 24 studies were included as before-and-after study designs.
Consistency of outcomes:	Results were considered inconsistent, with some in favor and some not in favor of the intervention.
Magnitude of effect:	The magnitude of effect for the 11 outcomes considered in this review was small.
Additional considerations:	Not applicable.

tives with worksite-based cessation groups and additional educational activities or materials, there is sufficient evidence of effectiveness.

Smokefree policies to reduce tobacco use: recommended. Smokefree policies offer another approach for reducing tobacco use. Comprising private-sector rules and public-sector regulations, smokefree policies prohibit smoking in indoor workspaces and designated public areas. Private-sector smokefree policies may establish a complete ban on tobacco use on worksite property or restrict smoking to designated outdoor locations; public

smokefree ordinances establish smokefree standards for all or for designated indoor workplaces and public areas.

A worksite may adopt a smokefree policy alone or in combination with additional interventions to support tobacco-using employees who seek assistance in quitting. These additional interventions may include components such as: tobacco cessation groups; client educational materials or activities; telephone-based cessation support; counseling or assistance from healthcare providers; and access to pharmacologic therapies.

In a 2001 review, based on strong evidence of effectiveness, the Task Force recommended smoking bans and restrictions for reducing exposure to environmental tobacco smoke.^{12,13} The current review measures the effectiveness of smokefree policies for reducing tobacco use. Unlike the 2001 review, the effects of smoking restrictions (i.e., policies that permit smoking only in a designated indoor area) were not assessed in this review, because tobacco consumption and cessation are more likely to be influenced by the prohibition of smoking in the workplace than by simply limiting smoking to designated areas.

The Task Force recommends smokefree policies based on sufficient evidence that they reduce tobacco use when implemented in worksites and communities.

Interpreting and Using the Recommendations

Recommendations from this review of worksite health interventions should be of interest to a broad range of stakeholders: employers; insurance companies; HMOs; employee groups; and policymakers. Particularly for those intervention areas in which there was insufficient

Table 2. Summary of evidence for AHRF plus health education when used with or without additional interventions

Size of the body of evidence:	Fifty-one studies of this intervention qualified for assessment of effectiveness. Nineteen studies included an untreated or lesser treated comparison group, eight studies were either retrospective cohort or time series designs, and 23 studies were included as before-and-after study designs.
Consistency of outcomes:	Across 11 outcome categories examined in this review, consistency varied. The Task Force found the following outcomes consistently in favor of the intervention: tobacco use, alcohol use, seat belt use, dietary fat intake, blood pressure cholesterol, summary health risk estimates, worker absenteeism, and healthcare service use. The Task Force found inconsistent evidence for intake of fruits and vegetables, body composition, and fitness.
Magnitude of effect:	This review considered a range of outcome measures for each outcome category. Conclusions for each of these outcomes are based on a review of both quantified and qualitatively described results. Refer to the full review for detailed findings.
Additional considerations:	The Task Force considered an examination of the added effect of additional interventions beyond the essential combination of the assessment of health risks with feedback and health education programs, but it decided not to draw a distinction among these intervention combinations because intervention content was not a fair proxy for intervention intensity or duration. Study authors provided inadequate information about variables to generate quantitative or qualitative summaries.

AHRF, Assessment of Health Risks with Feedback

evidence on effectiveness or in which research gaps remained, these findings should also be of interest to researchers.

The workplace shares many qualities with the community at large (e.g., numerous people frequently interacting with one another; close physical proximity of people). The workplace also offers some advantages for health promotion efforts (e.g., relative stability of population; some policies can be more easily mandated and enforced). In addition, the burden of illness is shared between employers (e.g., lost productivity) and employees (e.g., lost work time); this shared perception presents an opportunity for mutually recognized benefit.

There are many health interventions that can be implemented in or through the workplace. Based on objective evidence, these Task Force recommendations to increase use of effective worksite interventions offer decision makers guidance in choosing among options. For the 90% of mid-sized and larger companies in which health promotion programs already exist, this information can be used to broaden and improve the programs. In addition, it may encourage initiation of such programs in the remaining 10% of such worksites. Extending these mutual public health improvements to smaller companies may present special challenges; clearly, though, doing so would benefit both the sizable workforce employed in smaller companies and the community at large.

The scope of this report does not include providing advice about how to implement these programs. However, such advice is available elsewhere (www.prevent.org/content/view/29/39/, www.cdc.gov/nccdphp/dnpa/hwi/index.htm). Tables 1-2.

The names and affiliations of the Task Force members are listed in the front of this supplement, and at www.thecommunityguide.org.

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