What Could Be Addressed in an **Evidence-Informed State Workplace Health Promotion Law?**

National Center for Chronic Disease Prevention and Health Promotion
Division for Heart Disease and Stroke Prevention

Acknowledgments

Disclaimer

The findings and conclusions of this document are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention

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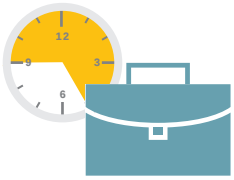
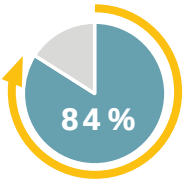
Workplace Health Promotion (WHP) is a coordinated set of activities and strategies at the workplace to encourage the health and safety of all employees.



In 2016, there were more than 150 million working adults in the US.

In 2012, about half of all US adults (117 million) had at least one chronic health condition, and 1 in 4 had at least two.



As of 2013, 41 states had enacted some type of law to encourage and support WHP.

To date, no research has tested the impact of state WHP laws on health. **In 2016, CDC assessed best available evidence, including worksite health intervention studies and expert opinion, for 21 types of WHP interventions that could be scaled for statewide adoption with a state law.** Each type of intervention is shown below by evidence level: "best, "promising," and "emerging." State laws that address the 13 types of WHP interventions with "best" evidence are expected to have the greatest potential for a positive health and associated economic impact.

Types of interventions aligning with"Best" evidence

- Workplace Obesity Interventions*
- Workplace Health Risk Assessment with Education*
- Workplace Integration of WHP and Safety Programs
- Workplace Diabetes Interventions
- Workplace Provides Flexible Scheduling for WHP
- Workplace On-site Vaccinations*
- Workplace Incentives for Employee WHP Participation*
- Workplace Blood Pressure Interventions
- Workplace Depression and Stress Interventions
- Workplace Tobacco Interventions*
- Workplace Skin Cancer Prevention*
- Workplace Cholesterol Interventions
- Workplace Includes Family in WHP

*Recommended by the Community Guide to Preventive Services

Types of interventions aligning with "Promising" or "Emerging" evidence

"Promising"

- Workplace Lactation Support
- Workplace Public Access Defibrillation
- State Tax Credits for WHP
- State Grants for WHP

"Emerging"

- State Raises Awareness for WHP
- State WHP Evaluation
- State Certification of WHP Programs
- Workplace Education About Signs of Heart Attack/Stroke

The Big Picture

Workplace Health Promotion (WHP) is a coordinated set of activities and strategies for promoting and protecting health at the workplace. Evidence shows that well-designed and well-executed WHP programs, founded on evidence-based principles, can achieve positive health and financial outcomes.[a]

While most states have enacted laws to support WHP,[b] **no research has tested the impact of any state WHP law.** Therefore, to understand what types of WHP interventions could be addressed in an evidence-informed state WHP law, CDC DHDSP conducted an assessment of early (best available) evidence.

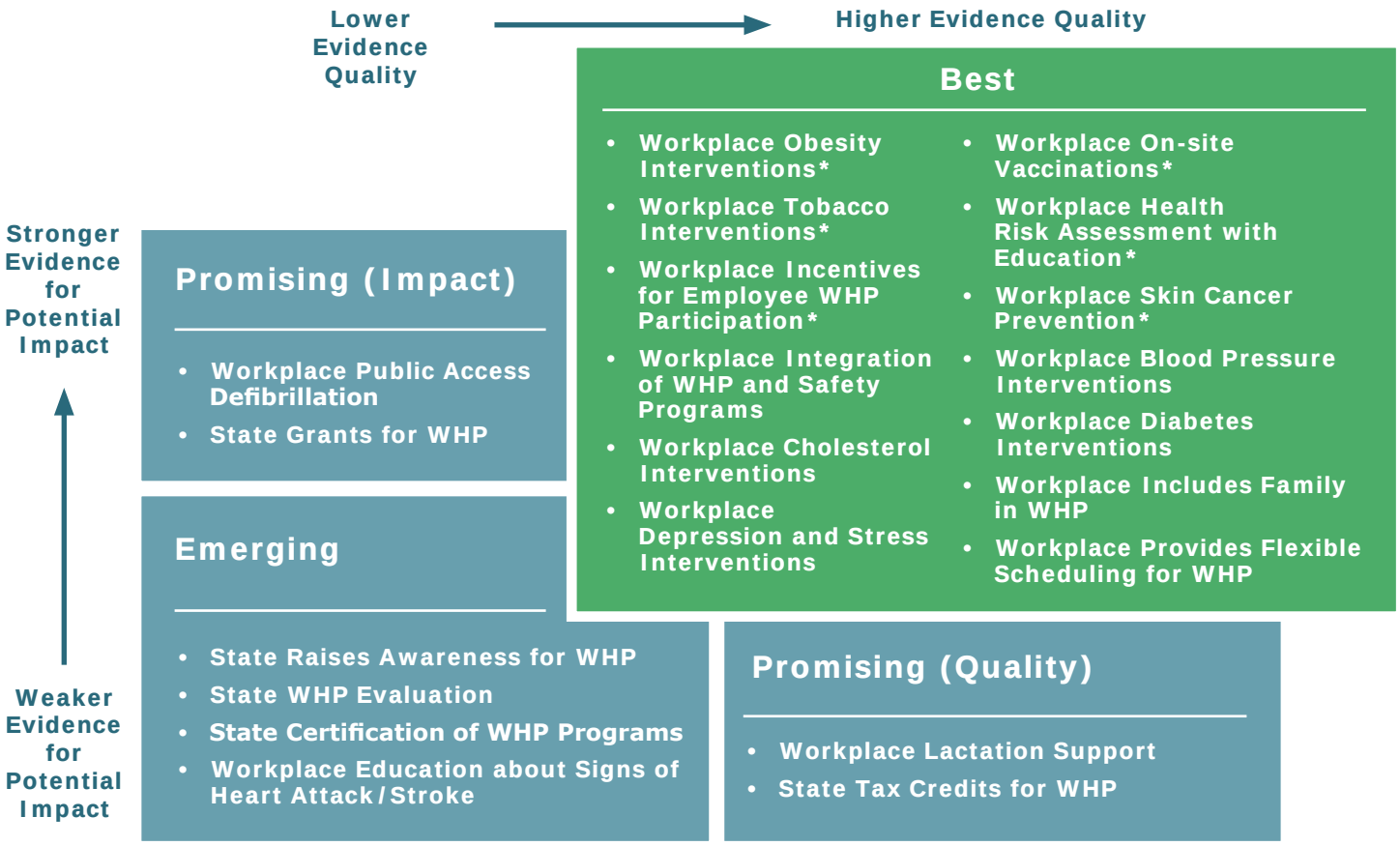
About This Report

This report assesses best available evidence for 21 types of WHP interventions that could be scaled up for statewide adoption with a state law.[c] These interventions were all a) recommended by experts on WHP and b) addressed by at least one state's law as of July 31, 2016. Evidence associated with each type of WHP intervention is assessed here for strength and quality. For more on the method used, see the Appendix.

Results of this evidence assessment offer public decision makers real-world options for supporting WHP that are grounded in best available evidence. The figure below provides 21 types of interventions addressed in state WHP laws, prioritized by evidence level.

There are 13 types of WHP interventions found to have "best" evidence; 6 of these are recommended by The Community Guide to Preventive Services. **State laws that address the 13 types of WHP interventions with "best" evidence are expected to have the greatest potential for a positive health and associated economic impact.** State laws addressing the 8 types of WHP interventions with "promising" or "emerging" evidence (Figure) could also have positive impacts, but there is less evidence to support them at this time.

Figure. 21 types of WHP interventions that could be scaled up for statewide adoption through state law[d]
Use the links in this figure to navigate to an evidence summary for each type of intervention.
*Recommended by the Community Guide to Preventive Services: https://www.thecommunityguide.org/



How To Use this Report

Consider presenting this report, along with facts about your state's employment, employee health, and insurance coverage, to your state public health department, business and employee organizations, health care providers and payers, and others interested in WHP.

Consider planning for a state WHP policy that addresses several types of evidence-based WHP interventions. Many states already have laws addressing WHP interventions with "best" evidence.[a] One example, from Massachusetts, is provided below. See a companion product, the State WHP Law Fact Sheet, for more examples of state laws addressing the evidence-based WHP interventions in this report.

Massachusetts's policy approach to support WHP.

In 2013, Massachusetts law contained more WHP interventions than most other states, and it was one of the few states offering tax incentives and funding for some costs associated with WHP programs. Massachusetts directed its Public Health Department to establish mandatory components of WHP programs based on specific risk factors (including stress; poor nutrition, diet, or exercise; and smoking) and diseases (including heart disease, lung disease, cancer, and stroke). Certified Group Purchasing Cooperatives were also required to address these same risk factors in their WHP programs.[b]

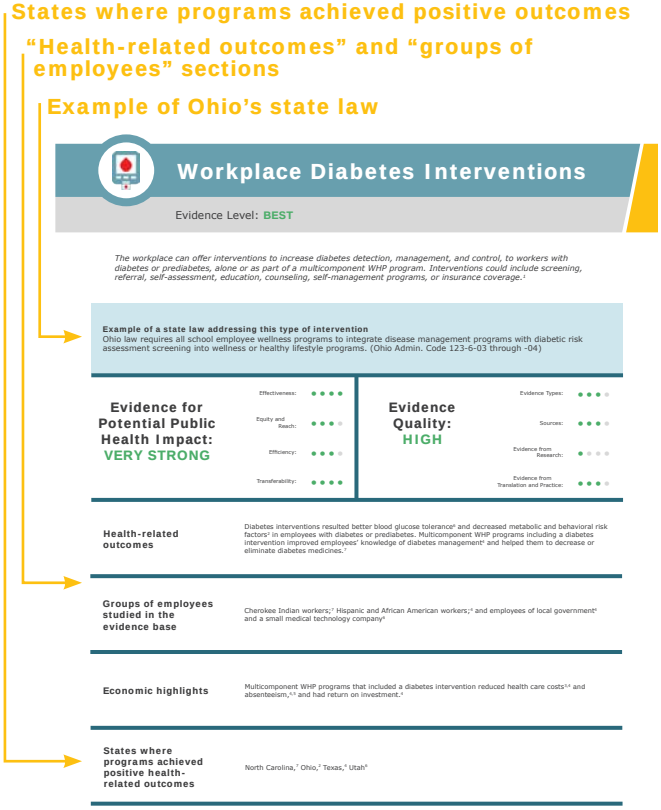
Evidence Summaries

The evidence summaries in this guide could help you consider relevance of the evidence to your state context. The links in the figure on the previous page can be used to navigate to the evidence summary for each type of intervention.

How to use an evidence summary.

Evidence summaries will help you better understand the evidence base as it relates to your individual state. Before reviewing the evidence summaries, it is helpful to research the health problems in your state. CDC offers many state health facts on its website, for example, statistics about chronic diseases like heart disease, stroke, and diabetes.

Once you know what health problems exist in your state, think about what populations experience these problems. Say your state is home to Hispanic employees experiencing high rates of diabetes. When you review the evidence summary for Workplace Diabetes Interventions, in the "health-related outcomes" and "groups of employees" sections, you find a study about a WHP program that improved diabetes self-management knowledge in Hispanic employees. At the top of the evidence summary for Workplace Diabetes Interventions, you find the example of Ohio's state law, which offers school employees disease management and lifestyle programs targeting diabetes. As another example, say you are a policymaker from Texas, and you see in the same evidence summary that a WHP program targeting diabetes was effective for an employer in your state or for an employer in a state that you feel is very similar to your state.



a. Goetzel RZ, et al. Do Workplace Health Promotion Programs Work? Journal of Occupational and Environmental Medicine. 2014;56(9): 927-34.
b. VanderVeur J, Gilchrist S, Matson-Koffman D. An Overview of State Policies Supporting Worksite Health Promotion Programs. American Journal of Health Promotion. 2016. [Epub ahead of print]
c. Organizational WHP policies can be informed by the CDC Worksite Health ScoreCard: http://www.cdc.gov/workplacehealthpromotion/initiatives/healthscorecard/index.html
d. Based on assessment of evidence published between January 1, 2006 and December 31, 2015 and laws enacted as of July 31, 2016.

Evidence Summaries

Workplace Obesity Interventions

Evidence Level: **BEST**

To address obesity, the workplace can offer programs and activities and can change policies and environments to promote physical activity, nutrition, and weight management. These may include exercise facilities; signs to encourage stair use; group activities; education, screening for health conditions; counseling; or access to places to buy, make, and store low-cost healthy foods and beverages.[1]

Example of a state law addressing this type of intervention

Maryland law authorizes private and public insurers to offer a benefit for wellness programs that include programs and activities for weight reduction and nutrition education, among other goals. (Md. Code Ann., Ins. § 15-1201)

Evidence for Potential Public Health Impact: VERY STRONG

Lower = •••• → •••• = Higher

- Effectiveness: ● ● ● ●
- Equity and Reach: ● ● ● ●
- Efficiency: ● ● ● ●
- Transferability: ● ● ● ●

Evidence Quality: VERY HIGH

- Evidence Types: ● ● ● ●
- Sources: ● ● ● ●
- Evidence from Research: ● ● ● ●
- Evidence from Translation and Practice: ● ● ● ●

Health-related outcomes	The Community Preventive Services Task Force recommends worksite programs to improve diet and physical activity based on strong evidence that they reduce weight,[2] point-of-decision prompts to encourage stair use,[3] and creation of or enhanced access to places for physical activity.[4]
Groups of employees studied in the evidence base	White-collar workers,[2] male and female workers,[3-4] younger and older workers,[3] obese and non-obese workers,[3] various racial/ethnic subgroups,[3] workers in industrial plants, universities, and federal agencies[4]
Economic highlights	The Community Guide suggests that obesity prevention programs and creating or improving places for physical activity at worksites have the potential to increase employee productivity and reduce medical care and disability costs. For example, The Guide found cost-effectiveness estimates for two weight-loss competitions and a physical fitness program varied from $1.44 to $4.16 per pound lost.[2]
States where programs achieved positive health-related outcomes	California,[5,7,13,20] Colorado,[5,7,10] Georgia,[6] Illinois,[5-7,9] Maryland,[6] Massachusetts,[5,22] Michigan,[5,7,16,23,28] Minnesota,[5,6,17,19] Missouri,[7] New York,[5,11,12] Ohio,[5,24] Pennsylvania,[6] Rhode Island,[5,8] South Carolina,[5,27] Texas[5,6,18,21,25,29]

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Systematic reviews

2. The Community Guide to Preventive Services Task Force. Obesity Prevention and Control: Worksite Programs. Centers for Disease Control and Prevention. http://www.thecommunityguide.org/obesity/workprograms.html. Published February 2007. Updated August 2015. Accessed July 2016.
3. The Community Guide to Preventive Services Task Force. Environmental and Policy Approaches to Increase Physical Activity: Point-of-Decision Prompts to Encourage Use of Stairs. Centers for Disease Control and Prevention. http://www.thecommunityguide.org/pa/environmental-policy/podp.html. Published February 2005. Updated December 2014. Accessed July 2016.
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Research-based studies

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Practice-based studies

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Workplace On-site Vaccinations

Evidence Level: **BEST**

The workplace can make vaccinations, such as pneumococcal or tetanus vaccines, available to workers and promote their use on-site.[1] To date, the best evidence is for influenza (flu) vaccinations. Future systematic reviews could look at the outcomes of other types of vaccinations.

Example of a state law addressing this type of intervention

Georgia law encourages health care providers to offer workplace influenza vaccinations for employees. (Ga. Code Ann., § 31-7-19)

Evidence for Potential Public Health Impact: VERY STRONG		Evidence Quality: VERY HIGH	
	Effectiveness: ●●●●		Evidence Types: ●●●●
	Equity and Reach: ●●●●		Sources: ●●●●
	Efficiency: ●●●●		Evidence from Research: ●●●●
	Transferability: ●●●●		Evidence from Translation and Practice: ●●●●

Lower = ●●●● → ●●●● = Higher

Health-related outcomes	The Community Preventive Services Task Force recommends interventions with on-site, free, and actively promoted flu vaccinations implemented alone or as part of a multicomponent intervention, based on strong evidence of their effectiveness in increasing flu vaccination coverage.[2,3]
Groups of employees studied in the evidence base	Health care[2] and non-health-care workers;[3] employees in medium and large hospitals, long-term care facilities,[2] and in large worksites (more than 500 workers)[3]
Economic highlights	The Community Guide found three economic evaluations suggesting that interventions with actively promoted vaccinations for health care workers can be cost-effective, but a firm conclusion about economic effectiveness could not be reached.[2] The Guide also identified a cost-benefit analysis of a 4-week campaign to increase accessibility and improve flu vaccination coverage at a non-healthcare worksite, for which the combined direct and indirect annual cost savings were $129.41 per vaccinated person.[3]
States where programs achieved positive health-related outcomes	Alabama,[4,10] California,[4,7,14] Colorado,[6] Connecticut,[4,22] Georgia,[4] Kentucky,[4,15] Maryland,[4,17] Massachusetts,[4,27] Michigan,[4] Minnesota,[4,23] Missouri,[4,12] Nebraska,[4,11] New Jersey,[4,16] New York,[4,13,30] North Carolina,[4,28] Ohio,[4,8] Pennsylvania,[4,5,19] South Dakota,[4,9] Tennesee,[4,18] Texas,[4,20] Virgina,[4,24,29] Washington,[4] West Virgina,[4,25] Wyoming[4,21]

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Systematic reviews

2. The Community Guide to Preventive Services Task Force. Interventions to Promote Seasonal Influenza Vaccinations among Healthcare Workers. Centers for Disease Control and Prevention. http://www.thecommunityguide.org/worksite/flu-hcw.html. Published June 2008. Updated May 2016. Accessed July 2016.
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Research-based studies

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Practice-based studies

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Workplace Tobacco Interventions

Evidence Level: **BEST**

The workplace can offer incentives and competitions along with programs and activities to increase tobacco cessation, such as referring tobacco users to telephone quitlines, providing insurance coverage for tobacco cessation medicines, and offering counseling and education.[1]

Example of a state law addressing this type of intervention

Texas law authorizes coverage of tobacco cessation programs and prescription drugs that increase cessation of tobacco for state employees. (Tex. Ins. Code § 1551.226)

Evidence for Potential Public Health Impact: STRONG

Lower = ···· → ···· = Higher

Effectiveness:	●●●○
Equity and Reach:	●●●○
Efficiency:	●●●○
Transferability:	●●●○

Evidence Quality: VERY HIGH

Evidence Types:	●●●●
Sources:	●●●●
Evidence from Research:	●●●●
Evidence from Translation and Practice:	●●●●

Health-related outcomes

The Community Preventive Services Task Force recommends worksite-based incentives and competitions combined with additional interventions to support tobacco cessation, based on strong evidence of effectiveness at reducing tobacco use.[2]

Groups of employees studied in the evidence base

Employees in manufacturing plants, health care facilities, government offices, a university, chemical plants, and an ambulance service; workers at companies or worksites with more than 100 employees; workers in urban and suburban settings[2]

Economic highlights

A concurrent review identified two studies that found cost savings, although the Task Force did not substantiate strong conclusions about savings.[2]

States where programs achieved positive health-related outcomes

Alabama,[4,13] California,[4,5,16] Illinois,[4,8,11] Minnesota,[4,7,9] North Dakota,[4,10] Oregon,[4,6,10] Texas[4,14,17]

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Systematic reviews

2. The Community Guide to Preventive Services Task Force. Tobacco Use and Secondhand Smoke Exposure: Incentives and Competitions to Increase Smoking Cessation Among Workers – When Combined With Additional Interventions. Centers for Disease Control and Prevention. https://www.thecommunityguide.org/findings/tobacco-use-and-secondhand-smoke-exposure-incentives-and-competitions-increase-smoking-1. Published June 2005. Updated December 2015. Accessed July 2016.
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Research-based studies

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12. Volpp K, Troxel A, Pauly M, et al. A randomized, controlled trial of financial incentives for smoking cessation. N Engl J Med 2009;360(7):699–709.
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Practice-based studies

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16. Koffman DM, Lee JW, Hopp JW, Emont SL. The impact of including incentives and competition in a workplace smoking cessation program on quit rates. Am J Health Promot 1998;13(2):105-11.
17. Olsen GW, Lacy SE, Sprafka JM, et al. A 5-year evaluation of a smoking cessation incentive program for chemical employees. Prev Med 1991;20(6):774-84.

Workplace Health Risk Assessment with Education

Evidence Level: **BEST**

The workplace can provide an assessment of health habits and risk factors or an assessment of potential health outcomes along with feedback, such as educational messages and counseling.[1]

Example of a state law addressing this type of intervention

New York law makes grants available for employers to implement health promotion and disease prevention initiatives that may include compilation of individual employee health profiles on a voluntary basis with recommendations and incentives for health activities. (N.Y. Public Health Law § 2799-o)

Evidence for Potential Public Health Impact: STRONG

Lower = ●○○○ → ●●●● = Higher

- Effectiveness: ●●●○
- Equity and Reach: ●●●○
- Efficiency: ●●●○
- Transferability: ●●●○

Evidence Quality: VERY HIGH

- Evidence Types: ●●●●
- Sources: ●●●●
- Evidence from Research: ●●●●
- Evidence from Translation and Practice: ●●●●

Health-related outcomes	The Community Preventive Services Task Force recommends health risk assessments with feedback, combined with health education, based on strong evidence of effectiveness, in the following areas: tobacco use, excessive alcohol use, seat belt use, fat intake, blood pressure, cholesterol, and health risks.[2]
Groups of employees studied in the evidence base	Employees of manufacturing plants, health care facilities, health insurance companies, government offices, banks, and schools; workers at companies or worksites with more than 500 employees; workers in urban and suburban workplaces with predominately white employees, though African Americans were well-represented[2]
Economic highlights	The Community Guide found that the benefit-to-cost ratio—defined as averted medical costs, productivity losses due to the program as both, divided by program costs—ranged from 1.4:1 to 4.6:1. This means that every dollar invested into the intervention yielded an annual gain between $1.40 and $4.60.[2]
States where programs achieved positive health-related outcomes	Arizona,[3,38,39,43] California,[14,15,19] Colorado,[3,4] Florida,[3,19] Georgia,[3,19,61] Illinois,[3,18,22,25] Indiana,[3,20,21] Maryland,[3,5] Massachusetts,[3,6,16,17,57] Michigan,[3,8,9,10,11,12,20,21,33,45,51,64] New Jersey,[3,26,55,60] New York,[3,8,20,21,36,52] North Carolina,[3,34,41,53,54] Ohio,[3,8,20,21,31,37] Pennsylvania,[3,8,18,20,21,26,37,55] South Carolina,[3,42,59] Texas,[3,19,30] Utah,[3,50]

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Systematic reviews

2. The Community Guide to Preventive Services Task Force. Assessment of Health Risks with Feedback to Change Employees' Health. Centers for Disease Control and Prevention. http://www.thecommunityguide.org/worksite/ahrf.html. Published February 2007. Updated May 2014. Accessed July 2016.
3. The Community Guide to Preventive Services Task Force. Assessment of Health Risks with Feedback to Change Employees' Health: Evidence Summary Table: AHRF with feedback plus health education with or without other interventions. Centers for Disease Control and Prevention. http://www.thecommunityguide.org/worksite/supportingmaterials/SET-AHRFPlus31109.pdf. Published February 2007. Updated May 2014. Accessed July 2016.

Research-based studies

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Practice-based studies

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Workplace Incentives for Employee WHP Participation

Evidence Level: **BEST**

The workplace can offer incentives or rewards for participation in WHP programs, such as money or lottery tickets.[1] To date, the best evidence is for incentives that encourage tobacco cessation. Future systematic reviews could look at other types of incentives for employees.

Example of a state law addressing this type of intervention

Texas designates a statewide wellness coordinator to administer certain aspects of employer worksite health promotion programs. The wellness coordinator is authorized to encourage participation in wellness programs through methods such as offering financial benefits to the employees and/or providing discounts to employees at fitness facilities throughout the state. (Tex. Govt. Code § 664.051 to .061)

Evidence for Potential Public Health Impact: STRONG

Lower = ●●●● → ●●●● = Higher

- Effectiveness: ●●●●
- Equity and Reach: ●●●●
- Efficiency: ●●●●
- Transferability: ●●●●

Evidence Quality: VERY HIGH

- Evidence Types: ●●●●
- Sources: ●●●●
- Evidence from Research: ●●●●
- Evidence from Translation and Practice: ●●●●

Health-related outcomes	The Community Preventive Services Task Force recommends worksite-based incentives and competitions combined with additional interventions to support tobacco cessation, based on strong evidence of effectiveness at reducing tobacco use.[2]
Groups of employees studied in the evidence base	Employees in manufacturing plants, health care facilities, government offices, a university, chemical plants, and an ambulance service; workers at companies or worksites with more than 100 employees; workers in urban and suburban settings[2]
Economic highlights	A concurrent review found two studies that reported cost savings, although strong conclusions about cost savings could not be substantiated by the Task Force.[2]
States where programs achieved positive health-related outcomes	Alabama,[4,13] California,[4,5,16] Illinois,[4,8,11] Minnesota,[4,7,9] North Dakota,[4,10] Oregon,[4,6,10] Texas[4,14,17]

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Systematic reviews

2. The Community Guide to Preventive Services Task Force. Reducing Tobacco Use and Secondhand Smoke Exposure: Worksite-based Incentives and Competitions When Combined with Additional Interventions. Centers for Disease Control and Prevention. https://www.thecommunityguide.org/findings/tobacco-use-and-secondhand-smoke-exposure-incentives-and-competitions-increase-smoking-1. Published June 2005. Updated June 2014. Accessed October 2016.
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4. Reducing Tobacco Use and Secondhand Smoke Exposure: Worksite-based Incentives and Competitions When Combined with Additional Interventions: Evidence Summary Table: Reducing Tobacco Use and Secondhand Smoke Exposure: Incentives and Competitions to Increase Smoking Cessation Among Workers. Centers for Disease Control and Prevention. https://www.thecommunityguide.org/sites/default/files/assets/SET_Tobacco_%20Incentives_Competitions_with_additional.pdf. Published June 2005. Updated June 2015. Accessed October 2016.

Research-based studies

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11. Salina D, Jason LA, Hedeker D, et al. A follow-up of a media-based, worksite smoking cessation program. Am J Community Psychol 1994;22(2):257-71.
12. Volpp K, Troxel A, Pauly M, et al. A randomized, controlled trial of financial incentives for smoking cessation. N Engl J Med 2009;360(7):699–709.
13. Windsor RA, Lowe JB. Behavioral impact and cost analysis of a worksite self-help smoking cessation program. Prog Clin Biol Res 1989;293:231-42.

Practice-based studies

14. Gottlieb NH, Nelson A. A systematic effort to reduce smoking at the worksite. Health Educ Q 1990;17(1):99–118.
15. Jason LA, Jayaraj S, Blitz CC, Michaels MH, Klett LE. Incentives and competition in a worksite smoking cessation intervention. Am J Public Health 1990;80(2):205-6.
16. Koffman DM, Lee JW, Hopp JW, Emont SL. The impact of including incentives and competition in a workplace smoking cessation program on quit rates. Am J Health Promot 1998;13(2):105-11.
17. Olsen GW, Lacy SE, Sprafka JM, et al. A 5-year evaluation of a smoking cessation incentive program for chemical employees. Prev Med 1991;20(6):774-84.

Workplace Skin Cancer Prevention

Evidence Level: **BEST**

To address skin cancer, the workplace can promote ways for workers to protect themselves from the sun through education, behavioral, and environmental approaches (e.g., providing sunscreen or shade), and policies to support sun protection practices.[1]

Example of a state law addressing this type of intervention

New York law requires employers to provide employees who spend some work hours outdoors with information on preventing harm from sun exposure. (N.Y. Labor Law § 218-a)

Evidence for Potential Public Health Impact: STRONG

Lower = ●○○○ → ●●●● = Higher

- Effectiveness: ●●●●
- Equity and Reach: ●●●●
- Efficiency: ○○○○
- Transferability: ●●●●

Evidence Quality: VERY HIGH

- Evidence Types: ●●●●
- Sources: ●●●●
- Evidence from Research: ●●●●
- Evidence from Translation and Practice: ●●●●

Health-related outcomes	The Community Preventive Services Task Force recommends interventions for people who work outdoors to prevent skin cancer based on strong evidence of effectiveness in increasing workers' sun protective behaviors and reducing sunburns.[2]
Groups of employees studied in the evidence base	Workers of all ages, white workers (whether findings apply to other groups is unclear), full-time and seasonal workers[2]
Economic highlights	The Task Force did not conduct an economic review of this intervention.[2]
States where programs achieved positive health-related outcomes[e]	California,[3,8,9] Georgia,[3,6] Hawaii,[3,5] Iowa,[3,10] Kansas,[3,6] Massachusetts,[3,5] Nevada[3,6]

For more on the scoring and summary methods assee the Appendix

[e] As of 2016, none of the states studied in the evidence base were found to have a law authorizing skin cancer interventions.

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Systematic reviews

2. The Community Guide to Preventive Services Task Force. Preventing Skin Cancer: Interventions in Outdoor Occupational Settings. . Centers for Disease Control and Prevention. http://www.thecommunityguide.org/cancer/skin/education-policy/outdooroccupations.html. Published August 2013. Updated May 2016. Accessed July 2016.
3. Reducing Tobacco Use and Secondhand Smoke Exposure Preventing Skin Cancer: Interventions in Outdoor Occupational Settings: Evidence Summary Table. Centers for Disease Control and Prevention. http://www.thecommunityguide.org/cancer/skin/education-policy/supportingmaterials/SET-outdooroccupations-2013.pdf. Published August 2013. Updated May 2016. Accessed July 2016.

Research-based studies

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5. Glanz A, Geller AC, Shigaki D, Maddock JE, Isnec MR. A randomized trial of skin cancer prevention in aquatics settings: the Pool Cool program. Health Psychology 2002; 21:579–87.
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Workplace Integration of WHP and Safety Programs

Evidence Level: **BEST**

The workplace can integrate health and safety promotion programs and activities.[1]

Example of a state law addressing this type of intervention

Louisiana law encourages the utilization of worksites to implement preventive programs including occupational health and safety information. (La. Admin. Code tit. 48, pt. I, § 11527)

Evidence for Potential Public Health Impact: VERY STRONG

Lower = ●●●● → ●●●● = Higher

Effectiveness:	●●●●
Equity and Reach:	●●●●
Efficiency:	●●●●
Transferability:	●●●●

Evidence Quality: HIGH

Evidence Types:	●●●○
Sources:	●●●●
Evidence from Research:	●○○○
Evidence from Translation and Practice:	●●●○

Health-related outcomes	Companies with integrated health and safety programs reported reduced health risks and work injuries, and improved chronic conditions.[3]
Groups of employees studied in the evidence base	Employees of large companies (Smithsonian and Dow Chemical) and small businesses (Lincoln Industries and San Isabel Electric Association)[3]
Economic highlights	Companies with integrated health and safety programs reduced sick leave costs, improved absenteeism, and worker productivity.[3]
States where programs achieved positive health-related outcomes[f]	Colorado, Nebraska[3]

[f] As of 2016, none of the states studied in the evidence base were found to have a law authorizing the integration of occupational safety and health and WHP programs.

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Research-based studies

2. Hunt MK, Barbeau EM, Lederman R, Stoddard AM, Chetkovich C, Goldman R, Wallace L, Sorensen G. Process evaluation results from the Healthy Directions–Small Business Study. Health Edu Behav. 2007; 34(1): 90-107.

Practice-based studies

3. Institute of Medicine. Promising and Best Practices in Total Worker Health: Workshop Summary. Washington, D.C., National Academies Press (US); 2014.
4. Erck L, Wall HK, Davis L, D'Amore, K. Creating a Culture of Health: Organizational Approaches to Promoting and Protecting Employee Health. Boston, MA: Massachusetts Department of Health;2009.
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Narratives and commentaries

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Workplace Blood Pressure Interventions

Evidence Level: **BEST**

The workplace can provide interventions to workers with high blood pressure to improve management and control alone, or as part of a multicomponent WHP program. These may include screening, referral, education, counseling, self-management programs, or providing monitoring devices or insurance coverage for medicines.[1]

Example of a state law addressing this type of intervention

Maine law requires the development of community programs that provide blood pressure screening with referral and follow-up to workforce populations. (Me. Rev. Stat. Ann. tit. 22, § 1699)

Evidence for Potential Public Health Impact: VERY STRONG

Lower = ●●●● → ●●●● = Higher

Effectiveness:	●●●●
Equity and Reach:	●●●●
Efficiency:	●●●○
Transferability:	●●●●

Evidence Quality: HIGH

Evidence Types:	●●●○
Sources:	●●●○
Evidence from Research:	●○○○
Evidence from Translation and Practice:	●●●●

Health-related outcomes

WHP interventions targeted at cardiac disease risk factors including screening,[2] telephone counseling,[3] and health education[3,4,5] resulted in lower blood pressure among employees. Multicomponent WHP programs including a blood pressure intervention reduced risk for high blood pressure,[8] decreased overall blood pressure levels,[6,11,15] and increased management of high blood pressure.[14]

Groups of employees studied in the evidence base

Low-income Hispanics[5,6] and African Americans;[6] employees of a large medical center,[2] the Kennedy Space Center,[3] Merrill Lynch Company,[4] DIRECTV,[14] Johnson & Johnson,[8] Blue Cross Blue Shield,[11] and a small business[15]

Economic highlights

Multicomponent WHP programs that included a blood pressure intervention reduced health care costs,[6,7,9,10] resulted in cost savings,[7,8,10] and return on investment.[6,7,8]

States where programs achieved positive health-related outcomes

Florida,[3] Idaho,[14] Missouri,[2,11] Texas[5]

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Research-based studies

2. Racette SB, Deusinger SS, Inman CL, Burlis TL, Highstein GR, Buskirk TD, Steger-May K, Peterson LR. Worksite Opportunities for Wellness (WOW): effects on cardiovascular disease risk factors after 1 year. Prev Med. 2009; 49(2–3): 108-114.

Practice-based studies

3. Calderon KS, Smallwood C, Tipton DA. Kennedy space center cardiovascular disease risk reduction program evaluation. Vasc Health and Risk Manag. 2008; 4(2): 421-426.
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7. Dement JM, Epling C, Joyner J, Cavanaugh K. Impacts of workplace health promotion and wellness programs on health care utilization and costs: results from an academic workplace. J Occup Environ Med. 2015; 57(11):1159-1169.
8. Henke RM1, Goetzel RZ, McHugh J, Isaac F. Recent experience in health promotion At Johnson & Johnson: lower health spending, strong return on investment. Health Aff (Millwood). 2011; 30(3): 490-499.
9. Hunnicutt D, Wanetka M, Castillo C, Wilson R, Stohl B. A WELCOA Case Study: First Of Its Kind: The State of Nebraska's Integrated Plan For Health. Omaha, Nebraska: The Wellness Council of America;2010.
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11. Hochart C, Lang M. Impact of a comprehensive worksite wellness program on health risk, utilization, and health care costs. Popul Health Manag. 2011;14(3).
12. Neville BH, Merrill RM, Kumpfer KL. Longitudinal outcomes of a comprehensive, incentivized worksite wellness program. Eval Health Prof. 2011; 34(1): 103-123.[h]
13. John EJ, Vavra T, Farris K, Currie J, Doucette W, Button-Neumann B, Osterhaus M, Kumbera P, Halterman T, Bullock T. Workplace-based cardiovascular risk management by community pharmacists: impact on blood pressure, lipid levels, and weight. Pharmacotherapy. 2006; 26(10): 1511-1517.[i]
14. Loeppke, R., et al. (2008). "The Impact of an Integrated Population Health Enhancement and Disease Management Program on Employee Health Risk, Health Conditions, and Productivity." Population Health Management 11(6).
15. Merrill RM, Aldana SG, Vyhlidal TP, Howe G, Anderson DR, Whitmer RW. The impact of worksite wellness in a small business setting. J Occup Environ Med. 2011; 53(2): 127-131.

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16. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: Scoring Methodology: Evidence and Impact Ratings and Supporting Citations. Atlanta, GA: Centers for Disease Control and Prevention;2010.
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18. Carnethon M, Whitsel LP, Franklin BA, Kris-Etherton P, Milani R, Pratt CA, Wagner GR. Worksite wellness programs for cardiovascular disease prevention: a policy statement from the American Heart Association. Circulation. 2009; 120(17): 1725-1741.
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[g] No health outcome – Participants' average blood pressure decreased by 4 mm Hg, but because of the fluctuating nature of blood pressure, the authors could not necessarily consider this to be a significant decrease.
[h] Mixed health outcome – "Many participants showed blood pressure increases over the study period, and some increase in blood pressure is expected with older age."
[i] Mixed health outcome – "19 patients without diabetes showed a statistically significant improvement in diastolic blood pressure (p=0.039), but the 37 patients with diabetes did not show a significant difference."

Workplace Cholesterol Interventions

Evidence Level: **BEST**

The workplace can provide interventions to workers with high cholesterol to improve management and control alone, or as part of a multicomponent WHP program. Interventions could include screening, referral, self-assessment, education, counseling, self-management programs, or insurance coverage.[1]

Example of a state law addressing this type of intervention

Wisconsin law authorizes WHP programs to incorporate health screenings that include cholesterol measurements. (Wis. Stat. Ann. § 250.21)

Evidence for Potential Public Health Impact: VERY STRONG

- Effectiveness: ●●●●
- Equity and Reach: ●●●○
- Efficiency: ●●●○
- Transferability: ●●●●

Lower= ○○○○ → ●●●● *=Higher*

Evidence Quality: HIGH

- Evidence Types: ●●●○
- Sources: ●●●○
- Evidence from Research: ●○○○
- Evidence from Translation and Practice: ●●●●

Health-related outcomes	Telephone counseling and education[3] or counseling by community pharmacists[5] reduced cholesterol levels. Multicomponent WHP programs that included a cholesterol intervention lowered risk for high cholesterol[7] and improved cholesterol levels.[2,8]
Groups of employees studied in the evidence base	Employees of Kennedy Space Center,[3] Johnson & Johnson,[7] and DIRECTV[8]
Economic highlights	Multicomponent WHP programs that included a cholesterol intervention reduced health care costs[2,4,6] and absenteeism[4,8] and had cost savings[7] and return on investment.[2,4,7]
States where programs achieved positive health-related outcomes	Florida,[3] Idaho,[8] Louisiana[2]

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Research-based studies

2. Milani RV, Lavie CJ. Impact of worksite wellness intervention on cardiac risk factors and one-year health care costs. Am J Cardiol. 2009; 104(10): 1389-1392.

Research-based studies

3. Calderon KS, Smallwood C, Tipton DA. Kennedy space center cardiovascular disease risk reduction program evaluation. Vasc Health and Risk Manag. 2008; 4(2): 421-426.
4. Davis L, Loyo K, Glowka A, Schwertfeger R, Danielson L, Brea C, Easton A, Griffin-Blake S. Community case study: a comprehensive worksite wellness program in Austin, Texas: partnership between Steps to a Healthier Austin and Capital Metropolitan Transportation Authority. Prev Chronic Dis. 2009;6(2):A60.
5. John EJ, Vavra T, Farris K, Currie J, Doucette W, Button-Neumann B, Osterhaus M, Kumbera P, Halterman T, Bullock T. Workplace-based cardiovascular risk management by community pharmacists: impact on blood pressure, lipid levels, and weight. Pharmacotherapy. 2006; 26(10): 1511-1517.
6. Hunnicutt D, Wanetka M, Castillo C, Wilson R, Stohl B. A WELCOA Case Study: First Of Its Kind: The State of Nebraska's Integrated Plan For Health. Omaha, Nebraska: The Wellness Council of America;2010.
7. Henke RM1, Goetzel RZ, McHugh J, Isaac F. Recent experience in health promotion at Johnson & Johnson: lower health spending, strong return on investment. Health Aff (Millwood). 2011; 30(3): 490-499.
8. Loeppke R, Nicholson S, Taitel M, Sweeney M, Haufle V, Kessler RC. The impact of an integrated population health enhancement and disease management program on employee health risk, health conditions, and productivity. Population Health Management. 2008; 11(6).
9. Neville BH, Merrill RM, Kumpfer KL. Longitudinal outcomes of a comprehensive, incentivized worksite wellness program. Eval Health Prof. 2011; 34(1), 103-123.[j]
10. Dement JM, Epling C, Joyner J, Cavanaugh K. Impacts of workplace health promotion and wellness programs on health care utilization and costs: results from an academic workplace. J Occup Environ Med. 2015; 57(11):1159-1169.

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11. Carnethon M, Whitsel LP, Franklin BA, Kris-Etherton P, Milani R, Pratt CA, Wagner GR. Worksite wellness programs for cardiovascular disease prevention: a policy statement from the American Heart Association. Circulation. 2009; 120(17): 1725-1741.
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14. Arena R, Guazzi M, Briggs PD, Cahalin LP, Myers J, Kaminsky LA, Forman DE, Cipriano G, Borghi-Silva A, Babu AS, Lavie CJ. Promoting health and wellness in the workplace: a unique opportunity to establish primary and extended secondary cardiovascular risk reduction programs. Mayo Clinic Proceedings. 2013; 88(6): 605-617.

[j] Mixed health outcome - Mean cholesterol increases were 14.1 mg/dl over the study period for those with normal cholesterol levels at baseline, but for those with elevated cholesterol at baseline, their cholesterol decreased.

Workplace Diabetes Interventions

Evidence Level: **BEST**

The workplace can offer interventions to increase diabetes detection, management, and control, to workers with diabetes or prediabetes, alone or as part of a multicomponent WHP program. Interventions could include screening, referral, self-assessment, education, counseling, self-management programs, or insurance coverage.[1]

Example of a state law addressing this type of intervention

Ohio law requires all school employee wellness programs to integrate disease management programs with diabetic risk assessment screening into wellness or healthy lifestyle programs. (Ohio Admin. Code 123-6-03 through -04)

Evidence for Potential Public Health Impact: VERY STRONG

Lower = ●●●● → ●●●● = Higher

Effectiveness:	●●●●
Equity and Reach:	●●●○
Efficiency:	●●●○
Transferability:	●●●●

Evidence Quality: HIGH

Evidence Types:	●●●○
Sources:	●●●○
Evidence from Research:	●○○○
Evidence from Translation and Practice:	●●●○

Health-related outcomes	Diabetes interventions resulted in better blood glucose tolerance[6] and decreased metabolic and behavioral risk factors[2] in employees with diabetes or prediabetes. Multicomponent WHP programs including a diabetes intervention improved employees' knowledge of diabetes management[4] and helped them to decrease or eliminate diabetes medicines.[7]
Groups of employees studied in the evidence base	Cherokee Indian workers;[7] Hispanic and African American workers;[4] and employees of local government[4] and a small medical technology company[6]
Economic highlights	Multicomponent WHP programs that included a diabetes intervention reduced health care costs[3,4] and absenteeism,[4,5] and had a positive return on investment.[4]
States where programs achieved positive health-related outcomes	North Carolina,[7] Ohio,[2] Texas,[4] Utah[6]

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Research-based studies

2. Weinhold KR, Miller CK, Marrero DG, Nagaraja HN, Focht BC, Gascon GM. Randomized controlled trial translating the Diabetes Prevention Program to a university worksite, Ohio, 2012–2014. Prev Chronic Dis. 2015;12:150301

Practice-based studies

3. Hunnicutt D, Wanetka M, Castillo C, Wilson R, Stohl B. A WELCOA Case Study: First Of Its Kind: The State of Nebraska's Integrated Plan For Health. Omaha, Nebraska: The Wellness Council of America;2010.
4. Davis L, Loyo K, Glowka A, Schwertfeger R, Danielson L, Brea C, Easton A, Griffin-Blake S. Community case study: a comprehensive worksite wellness program in Austin, Texas: partnership between Steps to a Healthier Austin and Capital Metropolitan Transportation Authority. Prev Chronic Dis. 2009;6(2):A60.
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7. Bachar JJ, Lefler LJ, Reed L, McCoy T, Bailey R, Bell R. Community voices: Cherokee choices: a diabetes prevention program for American Indians. Prev Chronic Dis. 2006;3(3).

Narratives and commentaries

8. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: Scoring Methodology: Evidence and Impact Ratings and Supporting Citations. Atlanta, GA: Centers for Disease Control and Prevention;2010.
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10. Partnership for Prevention. Healthy Workforce: 2010 and Beyond: An Essential Health Promotion Sourcebook for both Large and Small Employers. Washington, D.C.: U.S. Chamber of Commerce;2010.
11. Harris JR, Lichiello PA, Hannon PA. Workplace health promotion in Washington State. Prev Chronic Dis. 2009;6(1).

[k] Mixed outcome - Diabetes became more prevalent, but authors suggest this may represent a positive effect of increased diagnosis.

Workplace Depression and Stress Interventions

Evidence Level: **BEST**

The workplace can offer interventions for depression and stress, alone or as part of a multicomponent WHP program. Interventions could include screening, referral, self-assessment, education, counseling, or insurance coverage.[1]

Example of a state law addressing this type of intervention

Louisiana law authorizes wellness programs that address prevention of behavioral problems. (La. Admin. Code tit. 48, pt. I, § 11527)

Evidence for Potential Public Health Impact: VERY STRONG

Lower = ●○○○ → ●●●● = Higher

- Effectiveness: ●●●●
- Equity and Reach: ●●○○
- Efficiency: ●●●●
- Transferability: ●●●○

Evidence Quality: HIGH

- Evidence Types: ●●●○
- Sources: ●●●○
- Evidence from Research: ●○○○
- Evidence from Translation and Practice: ●●●○

Health-related outcomes	A depression screening and therapeutic management program improved depression and quality of life.[5] Multicomponent WHP programs including a stress intervention improved stress management[7] and cardiovascular risk,[2] improved health habits,[2] and increased knowledge about stress and heart disease.[6]
Groups of employees studied in the evidence base	DIRECTV employees;[7] workers with a history of diabetes, hypertension, or hyperlipidemia;[5] and sedentary female municipal workers with heart disease risk factors[6]
Economic highlights	Multicomponent WHP programs that included stress interventions decreased health care costs,[2,7] improved absenteeism,[7] and had cost savings[3,4] and return on investment.[2,3,8]
States where programs achieved positive health-related outcomes	Alabama,[6] Idaho,[7] Louisiana,[2] South Carolina[5]

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Research-based studies

2. Milani RV, Lavie CJ. Impact of worksite wellness intervention on cardiac risk factors and one-year health care costs. Am J Cardiol. 2009; 104(10): 1389-1392.

Practice-based studies

3. Dement JM, Epling C, Joyner J, Cavanaugh K. Impacts of workplace health promotion and wellness programs on health care utilization and costs: results from an academic workplace. J Occup Environ Med. 2015; 57(11):1159-1169.
4. Light EMW, Kline AS, Drosky MA, Chapman LS. Economic analysis of the return-on-investment of a worksite wellness program for a large multistate retail grocery organization. J Occup Environ Med. 2015; 57(8): 882-892.
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6. Jones DE, Weaver MT, Friedmann E. Promoting heart health in women: a workplace intervention to improve knowledge and perceptions of susceptibility to heart disease. AAOHN Journal. 2007; 55(7): 271-276.
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9. Phillips JF. Using an ounce of prevention: does it reduce health care expenditures and reap pounds of profits? A study of the financial impact of wellness and health risk screening programs. J Health Care Finance. 2009; 36(2): 12.

Narratives and commentaries

10. Carnethon M, Whitsel LP, Franklin BA, Kris-Etherton P, Milani R, Pratt CA, Wagner GR. Worksite wellness programs for cardiovascular disease prevention: a policy statement from the American Heart Association. Circulation. 2009; 120(17): 1725-1741.
11. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: Scoring Methodology: Evidence and Impact Ratings and Supporting Citations. Atlanta, GA: Centers for Disease Control and Prevention; 2010.
12. Arena R, Guazzi M, Briggs PD, Cahalin LP, Myers J, Kaminsky LA, Forman DE, Cipriano G, Borghi-Silva A, Babu AS, Lavie CJ. Promoting health and wellness in the workplace: a unique opportunity to establish primary and extended secondary cardiovascular risk reduction programs. Mayo Clinic Proceedings. 2013; 88(6): 605-617

Workplace Includes Family in WHP

Evidence Level: **BEST**

The workplace can make WHP programs available to family members of employees, specifically spouses, partners, and dependents.[1]

Example of a state law addressing this type of intervention

Michigan law provides grants for employee wellness programs to reduce the prevalence of high risk factors for employees. Funded programs may also provide services to dependents. (Mich. Comp. Laws § 333.5925)

Evidence for Potential Public Health Impact: STRONG

Lower = ●○○○ → ●●●●=Higher

- Effectiveness: ●●●○
- Equity and Reach: ●●●○
- Efficiency: ●●●○
- Transferability: ●●●○

Evidence Quality: HIGH

- Evidence Types: ●●●○
- Sources: ●●●○
- Evidence from Research: ●○○○
- Evidence from Translation and Practice: ●●●●

Health-related outcomes	Multicomponent WHP programs that offered program benefits to employee family members reduced health risks,[2,3] improved stress and energy levels,[10] and decreased levels of depression.[11]
Groups of employees studied in the evidence base	Workers with history of diabetes, hypertension, or hyperlipidemia;[11] school district employees[3]
Economic highlights	Multicomponent WHP programs that offered program benefits to employee family members improved quality of life,[10,11] reduced health care costs,[5,2] and had return on investment.[2]
States where programs achieved positive health-related outcomes[I]	Louisiana,[2] South Carolina,[11] Utah[3]

[I] As of 2016, none of the states studied in the evidence base were found to have a law authorizing family inclusion in WHP programs.

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Research-based studies

2. Milani RV, Lavie CJ. Impact of worksite wellness intervention on cardiac risk factors and one-year health care costs. Am J Cardiol. 2009; 104(10): 1389-1392.

Practice-based studies

3. Merrill RM, Sloan A. Effectiveness of a health promotion program among employees in a western United States school district. J Occup Environ Med. 2014; 56(6), 639-644.
4. Aldana SG1, Anderson DR, Adams TB, Whitmer RW, Merrill RM, George V, Noyce J. A review of the knowledge base on healthy worksite culture. J Occup Environ Med. 2012; 54(4), 414-419.
5. Hunnicutt D, Wanetka M, Castillo C, Wilson R, Stohl B. A WELCOA Case Study: First Of Its Kind: The State of Nebraska's Integrated Plan For Health. Omaha, Nebraska: The Wellness Council of America;2010.
6. Erck L, Wall HK, Davis L, D'Amore, K. Creating a Culture of Health: Organizational Approaches to Promoting and Protecting Employee Health. Boston, MA: Massachusetts Department of Health;2009.
7. Terry PE, Seaverson EL, Grossmeier J, Anderson DR. Association between nine quality components and superior worksite health management program results. J Occup Environ Med. 2008; 50(6), 633-641.
8. Gowrisankaran G, Norberg K, Kymes S, Chernew ME, Stwalley D, Kemper L, Peck W. A hospital system's wellness program linked to health plan enrollment cut hospitalizations but not overall costs. Health Aff (Millwood). 2013; 32(3), 477-485.[m]
9. Umland B, Goetzel RZ, Serxner S, Flynn J, Kelly RK, Grossmeier, J. HERO Employee Health Management Best Practices Scorecard in Collaboration with Mercer: Annual Report. Atlanta, GA: HERO; 2014.
10. Steffen MW, Hazelton AC, Moore WR, Jenkins SM, Clark MM, Hagen PT. Improving sleep: outcomes from a worksite healthy sleep program. J Occup Environ Med. 2015; 57(1), 1-5.
11. Jensen E, Dumas BP, Edlund BJ. Depression screening in chronic disease management: a worksite health promotion initiative. Workplace Health Saf. 2016; 64(3): 89-94.

Narratives and commentaries

12. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: Scoring Methodology: Evidence and Impact Ratings and Supporting Citations. Atlanta, GA: Centers for Disease Control and Prevention;2010.
13. Partnership for Prevention. Healthy Workforce: 2010 and Beyond: An Essential Health Promotion Sourcebook for both Large and Small Employers. Washington, D.C.: U.S. Chamber of Commerce;2010.
14. Heinen L, Darling H. Addressing obesity in the workplace: the role of employers. The Milbank Quarterly. 2009; 87(1), 101-122.
15. Sparling PB. Worksite health promotion: principles, resources, and challenges. Prev Chronic Dis. 2010; 7(1).
16. Towers Watson. Employer Survey on Purchasing Value in Health Care; 2012.

[m] Mixed economic outcome – Although the program did cut some hospitalizations, it did not save money for the employer in the short term.

Workplace Provides Flexible Scheduling for WHP

Evidence Level: **BEST**

The workplace can provide flexible work scheduling to employees, including flex-time and time off to attend WHP program activities.[1]

Example of a state law addressing this type of intervention

Texas law allows state agencies to give employees time for exercise during working hours. (Tex. Govt. Code Ann. § 664.051 to .061)

Evidence for Potential Public Health Impact: STRONG

Lower = ●○○○ → ●●●●=Higher

Effectiveness:	●●●●
Equity and Reach:	●●●●
Efficiency:	●●○○
Transferability:	●○○○

Evidence Quality: HIGH

Evidence Types:	●●●○
Sources:	●●●○
Evidence from Research:	○○○○
Evidence from Translation and Practice:	●●●●

Health-related outcomes

Sleep, physical activity, resilience techniques, and lifestyle improved when employers offered flexible schedules to employees.[2] Work schedule flexibility positively influences health prevention behaviors and employee well-being.[3]

Groups of employees studied in the evidence base

Employees of a large pharmaceutical company[2] and Best Buy[3]

Economic highlights

No economic studies as of December 31, 2015

States where programs achieved positive health-related outcomes[n]

Minnesota[3]

[n] As of 2016, none of the states studied in the evidence base were found to have a law authorizing family inclusion in WHP programs.

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Research-based studies

None as of December 31, 2015

Practice-based studies

2. Grzywacz JG1, Casey PR, Jones FA. The effects of workplace flexibility on health behaviors: a cross-sectional and longitudinal analysis. J Occup Environ Med. 2007; 49(12), 1302-1309.
3. Moen P, Kelly EL, Tranby E, Huang Q. Changing work, changing health: can real work-time flexibility promote health behaviors and well-being? J Health Soc Behav. 2011; 52(4), 404-429.
4. Aldana SG1, Anderson DR, Adams TB, Whitmer RW, Merrill RM, George V, Noyce J. A review of the knowledge base on healthy worksite culture. J Occup Environ Med. 2012; 54(4), 414-419.
5. Escoffery C, Kegler MC, Alcantara I, Wilson M, Glanz K. A qualitative examination of the role of small, rural worksites in obesity prevention. Prev Chronic Dis. 2011; 8(4).
6. Erck L, Wall HK, Davis L, D'Amore, K. Creating a Culture of Health: Organizational Approaches to Promoting and Protecting Employee Health. Boston, MA: Massachusetts Department of Health;2009.
7. Strickland JR, Eyler AA, Purnell JQ, Kinghorn AM, Herrick C, Evanoff BA. Enhancing workplace wellness efforts to reduce obesity: a qualitative study of low-wage workers in St Louis, Missouri, 2013–2014. Prev Chronic Dis. 2015; 12.

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8. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: Scoring Methodology: Evidence and Impact Ratings and Supporting Citations. Atlanta, GA: Centers for Disease Control and Prevention;2010.
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11. Consensus Statement of the Health Enhancement Research Organization; American College of Occupational and Environmental Medicine; American Cancer Society and American Cancer Society Cancer Action Network; American Diabetes Association; American Heart Association Organization. Guidance for a reasonably designed, employer-sponsored wellness program using outcomes-based incentives. J Occup Environ Med. 2012; 54(7), 889-896.
12. Arena R, Guazzi M, Briggs PD, Cahalin LP, Myers J, Kaminsky LA, Forman DE, Cipriano G, Borghi-Silva A, Babu AS, Lavie CJ. Promoting health and wellness in the workplace: a unique opportunity to establish primary and extended secondary cardiovascular risk reduction programs. Mayo Clinic Proceedings. 2013; 88(6): 605-617.
13. Edington DW. Who are the intended beneficiaries (targets) of employee health promotion and wellness programs? North Carolina Medical Journal. 2006; 67(6).
14. Chenoweth DH. Workplace health promotion: A North Carolina assessment of progress. North Carolina Medical Journal. 2006; 67(6).
15. Stokes GC, Henley NS, Herget, C. Creating a culture of wellness in workplaces. North Carolina Medical Journal. 2006; 67(6).

Workplace Lactation Support

Evidence Level: **PROMISING (EVIDENCE QUALITY)**

The workplace can provide lactation support to employees by offering private spaces to pump breast milk, providing access to breast pumps, flexible break times, or breastfeeding support or education.[1]

Example of a state law addressing this type of intervention

California requires workplaces to provide time and reasonable accommodations for breastfeeding. (Cal. Labor Code § 1030 and 1031)

Evidence for Potential Public Health Impact: MODERATE

Lower = ●○○○ → ●●●● = Higher

- Effectiveness: ●●●●
- Equity and Reach: ●○○○
- Efficiency: ●●○○
- Transferability: ●○○○

Evidence Quality: HIGH

- Evidence Types: ●●○○
- Sources: ●●●●
- Evidence from Research: ○○○○
- Evidence from Translation and Practice: ●●●○

Health-related outcomes	A workplace lactation support program including telephone support and return-to-work consultation services increased duration of breastfeeding.[2] The Surgeon General recommends that workplaces offer comprehensive, high-quality lactation support programs.[5]
Groups of employees studied in the evidence base	Primarily older (ages 25–46), white, married, well-educated, high-income, women at a large public-sector employer[2]
Economic highlights	*No economic studies as of December 31, 2015*
States where programs achieved positive health-related outcomes	*Study of lactation program[2] did not provide state setting*

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Research-based studies

None as of December 31, 2015

Practice-based studies

2. Balkam JA, Cadwell K, Fein SB. Effect of components of a workplace lactation program on breastfeeding duration among employees of a public-sector employer. Matern Child Health J. 2011;15(5): 677-683.
3. Erck L, Wall HK, Davis L, D'Amore, K. Creating a Culture of Health: Organizational Approaches to Promoting and Protecting Employee Health. Boston, MA: Massachusetts Department of Health;2009.
4. Lovely T, Watkins C. Kentucky Worksite Wellness Tax Credit: A Health Impact Assessment. Frankfort, JY: Kentucky Department for Public

Narratives and commentaries

5. United States Department of Health and Human Services. The Surgeon General's call to action to support breastfeeding. Breastfeed Med. 2011; 6(1).
6. Partnership for Prevention. Healthy Workforce: 2010 and Beyond: An Essential Health Promotion Sourcebook for both Large and Small employers. Washington, D.C.: U.S. Chamber of Commerce;2010.
7. Campbell KP. A Purchaser's Guide to Clinical Preventive Services: Moving Science into Coverage. Washington, D.C., National Business Group on Health; 2006.
8. Mills SP. Workplace lactation programs: a critical element for breastfeeding mothers' success." AAOHN J. 2009; 57(6): 227-231.

State Tax Credits for WHP

Evidence Level: **PROMISING (EVIDENCE QUALITY)**

The state could offer a tax credit to employers for WHP program expenditures.[1]

Example of a state law addressing this type of intervention

Massachusetts law offers a wellness tax credit for small businesses. (Mass. Gen. Laws Ann. ch. 62, § 6N and ch. 63, § 38FF)

Evidence for Potential Public Health Impact: MODERATE

Lower = ●●●● → ●●●● = Higher

Effectiveness:	●●●●
Equity and Reach:	●●●●
Efficiency:	●●●●
Transferability:	●●●●

Evidence Quality: HIGH

Evidence Types:	●●●●
Sources:	●●●●
Evidence from Research:	●●●●
Evidence from Translation and Practice:	●●●●

Rationale

Experts recommend tax credits to incentivize WHP programs, especially at small businesses.[3-10] The Kentucky Department of Health expects that a state wellness tax credit will positively impact physical and social health and the economy.[2]

Groups of employees studied in the evidence base

No health-related outcome studies as of December 31, 2015

Economic highlights

No economic studies as of December 31, 2015

States where programs achieved positive health-related outcomes

No health-related outcome studies as of December 31, 2015

For more on the scoring and summary methods see the Appendix

Evidence base

1. VanderVeur J, Gilchrist S, Matson-Koffman D. An Overview of State Policies Supporting Worksite Health Promotion Programs. American Journal of Health Promotion. 2016 Jan 5. [Epub ahead of print]

Research-based studies

None as of December 31, 2015

Practice-based studies

2. Lovely T, Watkins C. Kentucky Worksite Wellness Tax Credit: A Health Impact Assessment. Kentucky Department for Public Health; 2011.

Narratives and commentaries

3. Goetzel RZ, Roemer EC, Liss-Levinson RC, Samoly DK. Workplace Health Promotion: Policy Recommendations that Encourage Employers to Support Health Improvement Programs for their Employees. Washington D.C.; Partnership for Prevention; 2008.
4. Linnan LA, Birken BE. Small businesses, worksite wellness, and public health: a time for action. North Carolina Medical Journal. 2006; 67(6): 433.
5. Carnethon M, Whitsel LP, Franklin BA, Kris-Etherton P, Milani R, Pratt CA, Wagner GR. Worksite wellness programs for cardiovascular disease prevention: a policy statement from the American Heart Association. Circulation. 2009; 120(17): 1725-1741.
6. Goetzel, RZ, Ozminkowski RJ. The health and cost benefits of work site health-promotion programs. Annu Rev Public Health. 2008; 29(1): 303-323.
7. Linnan LA. The business case for workplace health promotion: what we need to do. North Carolina Medical Journal. 2010; 1: 69-74.
8. Baicker K, Cutler D, Song Z. Workplace wellness programs can generate savings. Health Aff (Millwood). 2010; 29 (2): 304-311.
9. Chapman LS. Regulatory and tax issues for worksite wellness programs. Am J Health Promot. 2007; 21(5): 1-8.
10. Heinen L, Darling H. Addressing obesity in the workplace: the role of employers. The Milbank Quarterly. 2009; 87(1), 101-122.

Workplace Public Access Defibrillation

Evidence Level: **PROMISING (EVIDENCE FOR POTENTIAL IMPACT)**

The workplace can provide a public access defibrillation program to respond to sudden cardiac arrest. Components of a program could include: an emergency response plan, team, and policy for cardiac arrest; access to cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) training; enough functioning and visible AEDs; or coordination with local emergency medical services.[1]

Example of a state law addressing this type of intervention

North Carolina law requires state facilities to have and maintain AED devices. (N.C. Gen. Stat. § 143B-370)

Evidence for Potential Public Health Impact: VERY STRONG

Lower = ●○○○ → ●●●● = Higher

- Effectiveness: ●●●●
- Equity and Reach: ●●●●
- Efficiency: ●○○○
- Transferability: ●●●●

Evidence Quality: MODERATE

- Evidence Types: ●●○○
- Sources: ●●●○
- Evidence from Research: ○○○○
- Evidence from Translation and Practice: ●●○○

Health-related outcomes

Federal workplaces and high schools with AEDs had sudden cardiac arrest survival rates of 39% and 64%.[2,3]

Groups of employees studied in the evidence base

Employees and visitors in federal buildings,[3] student athletes, and older non-students[2]

Economic highlights

No economic studies as of December 31, 2015

States where programs achieved positive health-related outcomes

All 50 states[2]

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Research-based studies

None as of December 31, 2015

Practice-based studies

2. Drezner JA, Rao AL, Heistand J, Bloomingdale MK, Harmon KG. Effectiveness of emergency response planning for sudden cardiac arrest in United States high schools with automated external defibrillators. Circulation. 2009; 120(6): 518-525.
3. Kilaru AS, Leffer M, Perkner J, Sawyer KF, Jolley CE, Nadkarni LD, Shofer FS, Merchant RM. Kilaru, A. S., et al. Use of automated external defibrillators in US federal buildings: implementation of the Federal Occupational Health Public Access Defibrillation Program. J Occup Environ Med. 2014; 56(1): 86-91.
4. Erck L, Wall HK, Davis L, D'Amore, K. Creating a Culture of Health: Organizational Approaches to Promoting and Protecting Employee Health. Boston, MA: Massachusetts Department of Health;2009.
5. Rothmier JD, Drezner JA, Harmon KG. Automated external defibrillators in Washington State high schools. Br J Sports Med. 2007; 41(5): 301-305.

Narratives and commentaries

6. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: Scoring Methodology: Evidence and Impact Ratings and Supporting Citations. Atlanta, GA: Centers for Disease Control and Prevention;2010.
7. Carnethon M, Whitsel LP, Franklin BA, Kris-Etherton P, Milani R, Pratt CA, Wagner GR. Worksite wellness programs for cardiovascular disease prevention: a policy statement from the American Heart Association. Circulation. 2009; 120(17): 1725-1741.

State Grants for WHP

Evidence Level: **PROMISING (EVIDENCE FOR POTENTIAL IMPACT)**

The state can offer funding to employers to establish or maintain WHP programs.[1]

Example of a state law addressing this type of intervention

North Carolina law authorizes the state treasurer to offer incentives to public employers to offer wellness programs. (N.C. Gen. Stat. § 135-48.30 (2013))

Evidence for Potential Public Health Impact: STRONG

Lower = ●○○○ → ●●●●=Higher

Effectiveness:	●●●○
Equity and Reach:	●●●○
Efficiency:	●●●○
Transferability:	○○○○

Evidence Quality: MODERATE

Evidence Types:	●●○○
Sources:	●●●○
Evidence from Research:	○○○○
Evidence from Translation and Practice:	●○○○

Health-related outcomes	A provision of North Carolina's worksite wellness policy allowed the use of administrative funds to subsidize wellness activities. This provision was credited as contributing to the success and expansion of a sustainable weight-loss program.[2]
Groups of employees studied in the evidence base	State and federal employees[2]
Economic highlights	*No economic studies as of December 31, 2015*
States where programs achieved positive health-related outcomes	North Carolina[2]

For more on the scoring and summary methods see the Appendix

Evidence base

1. VanderVeur J, Gilchrist S, Matson-Koffman D. An Overview of State Policies Supporting Worksite Health Promotion Programs. American Journal of Health Promotion. 2016 Jan 5. [Epub ahead of print]

Research-based studies

None as of December 31, 2015

Practice-based studies

2. Young S, Halladay J, Plescia M, Herget C, Dunn C. Establishing worksite wellness programs for North Carolina government employees. Prev Chronic Dis. 2011;8(2):A48.

Narratives and commentaries

None as of December 31, 2015

State Raises Awareness for WHP

Evidence Level: **EMERGING**

The state could conduct efforts to increase employer awareness of WHP programs.[1]

Example of a state law addressing this type of intervention

Vermont law encourages WHP through state and local health improvement plans. (Vt. Stat. Ann. tit. 18, § 5 and 11)

Evidence for Potential Public Health Impact: MODERATE

Lower = ●○○○ → ●●●● = Higher

- Effectiveness: ●●○○
- Equity and Reach: ●●○○
- Efficiency: ●○○○
- Transferability: ○○○○

Evidence Quality: MODERATE

- Evidence Types: ●○○○
- Sources: ●●●○
- Evidence from Research: ○○○○
- Evidence from Translation and Practice: ●●○○

Rationale

Experts recommend that states raise awareness of WHP programs through education and dissemination efforts.[3-5] The New York Department of Health raised awareness for WHP programs to increase their adoption.[2]

Groups of employees studied in the evidence base

No health-related outcome studies as of December 31, 2015

Economic highlights

No economic studies as of December 31, 2015

States where programs achieved positive health-related outcomes[m]

No health-related outcome studies as of December 31, 2015

For more on the scoring and summary methods see the Appendix

Evidence base

1. VanderVeur J, Gilchrist S, Matson-Koffman D. An Overview of State Policies Supporting Worksite Health Promotion Programs. American Journal of Health Promotion. 2016 Jan 5. [Epub ahead of print]

Research-based studies

None as of December 31, 2015

Practice-based studies

None as of December 31, 2015

Narratives and commentaries

2. Goetzel RZ, Liss-levinsom RC, Goodman N, Kennedy JX. Development of a community-wide cardiovascular risk reduction assessment tool for small rural employers in upstate New York. Prev Chronic Dis. 2009;6(2).
3. Goetzel RZ, Roemer EC, Liss-Levinson RC, Samoly DK. Workplace Health Promotion: Policy Recommendations that Encourage Employers to Support Health Improvement Programs for their Employees. Washington D.C.; Partnership for Prevention; 2008.
4. National Governors Association Center for Best Practices. Creating Healthy States: Building Healthy Worksites. Washington, D.C.: National Governors Association; 2006.
5. Goetzel, RZ, Ozminkowski RJ. The health and cost benefits of work site health-promotion programs. Annu Rev Public Health. 2008; 29(1): 303-323.

State WHP Evaluation

Evidence Level: **EMERGING**

The state or an associated organization could plan to analyze or evaluate WHP programs for gathering data, maintaining uniform guidelines, or other reasons deemed by the state.[1]

Example of a state law addressing this type of intervention

North Carolina law requires that the state's wellness leader create a worksite wellness infrastructure by providing ongoing assessment/monitoring of programs' effectiveness. (25 N.C. Admin. Code 1N.0501 to .0504)

Evidence for Potential Public Health Impact: WEAK

Lower = ●○○○ → ●●●●=Higher

- Effectiveness: ●○○○
- Equity and Reach: ●●○○
- Efficiency: ●○○○
- Transferability: ○○○○

Evidence Quality: MODERATE

- Evidence Types: ●●○○
- Sources: ●●●○
- Evidence from Research: ○○○○
- Evidence from Translation and Practice: ●○○○

Rationale

Experts recommend that government agencies supplement private investment in large, objective, long-term studies of WHP programs.[4] The North Carolina worksite wellness policy authorized evaluation to help support WHP program expansion.[3] The New York Department of Health assessed WHP programs to increase their adoption.[3]

Groups of employees studied in the evidence base

No health-related outcome studies as of December 31, 2015

Economic highlights

No economic studies as of December 31, 2015

States where programs achieved positive health-related outcomes[m]

No health-related outcome studies as of December 31, 2015

For more on the scoring and summary methods see the Appendix

Evidence base

1. VanderVeur J, Gilchrist S, Matson-Koffman D. An Overview of State Policies Supporting Worksite Health Promotion Programs. American Journal of Health Promotion. 2016 Jan 5. [Epub ahead of print]

Research-based studies

None as of December 31, 2015

Practice-based studies

2. Young S, Halladay J, Plescia M, Herget C, Dunn C. Establishing worksite wellness programs for North Carolina government employees. Prev Chronic Dis. 2011;8(2):A48.

Narratives and commentaries

3. Goetzel RZ, Liss-levinsom RC, Goodman N, Kennedy JX. Development of a community-wide cardiovascular risk reduction assessment tool for small rural employers in upstate New York. Prev Chronic Dis. 2009;6(2).
4. Carnethon M, Whitsel LP, Franklin BA, Kris-Etherton P, Milani R, Pratt CA, Wagner GR. Worksite wellness programs for cardiovascular disease prevention: a policy statement from the American Heart Association. Circulation. 2009; 120(17): 1725-1741.

State Certification of WHP Programs

Evidence Level: **EMERGING**

The state could require certification for employers based on specified, uniform standards before the employer is allowed to do certain activities, such as advertise that the business offers a WHP program, or receives other benefits from the state.[1]

Example of a state law addressing this type of intervention

Indiana law offers a certification program for workplaces interested in tax credits. (312)

Evidence for Potential Public Health Impact: MODERATE

Lower = ●○○○ → ●●●● = Higher

- Effectiveness: ●○○○
- Equity and Reach: ●●○○
- Efficiency: ●●○○
- Transferability: ○○○○

Evidence Quality: MODERATE

- Evidence Types: ●●○○
- Sources: ●●○○
- Evidence from Research: ○○○○
- Evidence from Translation and Practice: ●○○○

Rationale	Experts recommend WHP program certification to establish minimum standards for quality and performance.[3] The Kentucky Department of Health expects that a wellness tax credit preceded by program certification will improve physical and social health and the economy.[2]
Groups of employees studied in the evidence base	*No health-related outcome studies as of December 31, 2015*
Economic highlights	*No economic studies as of December 31, 2015*
States where programs achieved positive health-related outcomes	*No health-related outcome studies as of December 31, 2015*

For more on the scoring and summary methods see the Appendix

Evidence base

1. VanderVeur J, Gilchrist S, Matson-Koffman D. An Overview of State Policies Supporting Worksite Health Promotion Programs. American Journal of Health Promotion. 2016 Jan 5. [Epub ahead of print]

Research-based studies

None as of December 31, 2015

Practice-based studies

2. Lovely T, Watkins C. Kentucky Worksite Wellness Tax Credit: A Health Impact Assessment. Frankfort, JY: Kentucky Department for Public Health; 2011

Narratives and commentaries

3. Goetzel RZ, Roemer EC, Liss-Levinson RC, Samoly DK. Workplace Health Promotion: Policy Recommendations that Encourage Employers to Support Health Improvement Programs for their Employees. Washington D.C.; Partnership for Prevention; 2008.

Workplace Education about Signs of Heart Attack / Stroke

Evidence Level: **EMERGING**

The workplace could provide education to employees about how to recognize and respond to a heart attack or stroke, for example, by posting communications at the worksite.[1]

Example of a state law addressing this type of intervention

Maine law encourages community programs that educate workers about heart attack and stroke.(Me. Rev. Stat. Ann. tit. 22, § 1699)

Evidence for Potential Public Health Impact: WEAK		**Evidence Quality: MODERATE**	
Effectiveness:	●●○○	Evidence Types:	●○○○
Equity and Reach:	○○○○	Sources:	●●●○
Efficiency:	●○○○	Evidence from Research:	○○○○
Transferability:	○○○○	Evidence from Translation and Practice:	●○○○

Lower= ○○○○ → ●●●● =Higher

Rationale	Experts recommend that workplaces educate employees about the signs and symptoms of heart attack and stroke.[2-4]
Groups of employees studied in the evidence base	*No health-related outcome studies as of December 31, 2015*
Economic highlights	*No economic studies as of December 31, 2015*
States where programs achieved positive health-related outcomes	*No health-related outcome studies as of December 31, 2015*

For more on the scoring and summary methods see the Appendix

Evidence base

1. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: An Assessment Tool for Employers to Prevent Heart Disease, Stroke, & Related Health Conditions. Atlanta, GA: Centers for Disease Control and Prevention; 2014.

Research-based studies

None as of December 31, 2015

Practice-based studies

None as of December 31, 2015

Narratives and commentaries

2. Carnethon M, Whitsel LP, Franklin BA, Kris-Etherton P, Milani R, Pratt CA, Wagner GR. Worksite wellness programs for cardiovascular disease prevention: a policy statement from the American Heart Association. Circulation. 2009; 120(17): 1725-1741.
3. Centers for Disease Control and Prevention. The CDC Worksite Health Scorecard: Scoring Methodology: Evidence and Impact Ratings and Supporting Citations. Atlanta, GA: Centers for Disease Control and Prevention; 2010.
4. Partnership for Prevention. Healthy Workforce: 2010 and Beyond: An Essential Health Promotion Sourcebook for both Large and Small employers. Washington, D.C.: U.S. Chamber of Commerce;2010.

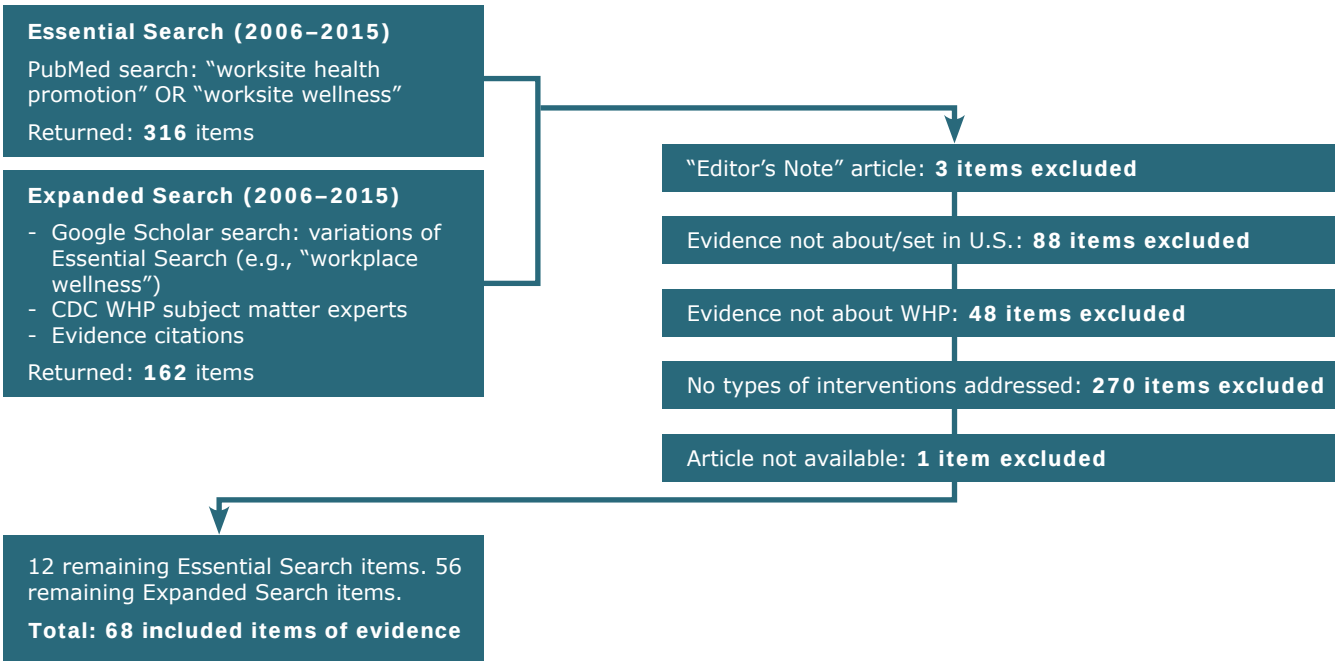
Appendix

A. Method

Public decision makers need to know which policies are feasible and most likely to achieve the desired impact. **Early evidence assessment** involves compiling and appraising all relevant, available evidence. **There are no studies of the impact of state WHP laws, so understanding what types of interventions could be addressed in an evidence-informed state WHP law requires assessment of early, i.e., best available, evidence.** This report uses a novel approach to complete an early evidence assessment called the Quality and Impact of Component Evidence Assessment, or QuIC. For more on the QuIC method, contact CDC DHDSP.

To select types of WHP interventions for evidence assessment, CDC DHDSP compared evidence-based recommendations by The Community Guide to Preventive Services Task Force,[o] the CDC Worksite Health ScoreCard,[p] and WHP subject matter experts[q] to the content of existing state laws. Only types of interventions that 1) were recommended and 2) had been enacted into law by at least one state by July 31, 2016 were chosen for the evidence assessment. In total, 21 types of interventions common to expert recommendations and laws were identified. More on how state laws were collected and assessed for content can be found in the CDC DHDSP's *State Law Factsheet: A Summary of Worksite Health Promotions Laws in effect as of July 31, 2016* and a recently published research article.[r]

As of January 1, 2016, there were 6 WHP interventions recommended by The Community Guide to Preventive Services Task Force and addressed in existing state laws; these were scored as having "best" evidence. To collect evidence for the remaining 15 types of interventions without this gold-standard evidence of effectiveness (i.e., comprehensive systematic review), the following search was completed in January of 2016 for **best available evidence** published between January 1, 2006 and December 31, 2015.



In total, 478 items of evidence were collected including studies of WHP programs as well as narratives and commentaries offering expert opinion about state and organizational WHP policies and programs.

o. The Community Guide. Worksite Health. https://www.thecommunityguide.org/topic/worksite-health
p. CDC. The Worksite Health Scorecard. http://www.cdc.gov/workplacehealthpromotion/initiatives/healthscorecard/index.html
q. Goetzel RZ, Roemer EC, Liss-Levinson RC, Samoly DK. Workplace Health Promotion: Policy Recommendations that Encourage Employers to Support Health Improvement Programs for Their Workers;2008. https://pdfs.semanticscholar.org/074a/04b0c1e33d954a9c6faee6652ff086a328e5.pdf
r. VanderVeur J, Gilchrist S, Matson-Koffman D. An Overview of State Policies Supporting Worksite Health Promotion Programs. American Journal of Health Promotion. 2016. [Epub ahead of print]

To determine the evidence level for a type of intervention addressed in a state policy, a QuIC Evidence Assessment appraises 1) evidence for potential public health impact and 2) evidence quality.[s] Three CDC policy staff assigned the WHP evidence base to the 15 types of WHP interventions. Next, each item of evidence was independently coded by 2 of the 3 coders for potential impact and quality.[t] Coding discrepancies were reconciled through 12 hours of discussion among all 3 coders. Consensus was reached on every code, for every item of evidence, for every type of intervention (896 codes in total).

Reconciled evidence coding for each type of intervention were input into the QuIC Evidence Assessment Tool (next page). Fifteen QuIC Tools were completed, one for each type of intervention. To calculate the **evidence for potential public health impact level** and the **evidence quality level** for a type of intervention, the 8 criteria from the QuIC Tool were each assigned a numeric score for the highest level reached (1-4 points; if none of its requirements were met, a criterion was assigned a score of 0 points). The 4 criteria scores for evidence for potential impact were summed, as were the 4 criteria scores for evidence quality. The numeric evidence for potential impact and quality scores were converted back into ordinal evidence levels.[u]

This procedure gave each of the 21 types of intervention a final **evidence for potential public health impact level** and a final **evidence quality level**, which together, were used to categorize each type of intervention as **"best," "promising (quality)," "promising (impact)," or "emerging"** (Table).

Lastly, the coders developed evidence summaries for the 21 types of interventions. See page 50 for more on how an evidence summary was written.

Table. Method for categorizing overall evidence level using evidence for potential public health impact and evidence quality levels

Evidence for Potential Public Health Impact Level	Evidence Quality Level	Evidence Level
Strong or Very Strong	High or Very High	**Best**
Weak or Moderate	High or Very High	**Promising Evidence Quality**
Strong or Very Strong	Low or Moderate	**Promising Evidence for Potential Public Health Impact**
Weak or Moderate	Low or Moderate	**Emerging**

s. Contact CDC DHDSP for the coding scheme as described in the QuIC Evidence Assessment Handbook
t. Percent agreement across the potential impact codes was 50.2%; across the evidence quality codes, it was 60.5%. The intra-class correlation coefficient for the impact section of the QuIC Tool was .90; for the quality section, it was .96.
u. The evidence for potential impact level was determined using the following conversion: 1-4 points= weak evidence; 5-8 points= moderate evidence; 9-12 points = strong evidence; and 13-16 points= very strong evidence. The evidence quality level was determined using the following conversion: 1-4 points= low quality evidence; 5-8 points= moderate quality evidence; 9-12 points = high quality evidence; and 13-16 points= very high quality evidence. For example, if the Effectiveness criterion scored "very strong" and the Equity and Reach criterion scored "very strong" and the Efficiency criterion scored "strong" and the Transferability criterion scored "strong," then 4+4+3+3=14="very strong" evidence for potential impact.

B. QuIC Evidence Assessment Tool

Section 1. Evidence for Potential Public Health Impact

Criterion and what it measures	**Weak Evidence** ● ○ ○ ○	**Moderate Evidence** ● ● ○ ○	**Strong Evidence** ● ● ● ○	**Very Strong Evidence** ● ● ● ●
Effectiveness *Does it work, i.e., improve outcomes relevant to health?*	Indirect evidence for a positive expected outcome relevant to health	Direct evidence for a positive expected outcome relevant to health	Indirect evidence of mostly positive actual outcomes relevant to health	Direct evidence of mostly positive actual outcomes relevant to health
Equity and Reach *Does it work for target population(s)?*	Indirect evidence for a positive expected outcome relevant to equity and reach	Direct evidence for a positive expected outcome relevant to equity and reach	Indirect evidence of mostly positive actual outcomes relevant to equity and reach	Direct evidence of mostly positive actual outcomes relevant to equity and reach
Efficiency *Is it a good use of resources?*	Indirect evidence for a positive expected outcome relevant to efficiency	Direct evidence for a positive expected outcome relevant to efficiency	Indirect evidence of mostly positive actual outcomes relevant to efficiency	Direct evidence of mostly positive actual outcomes relevant to efficiency
Transferability *Does it work across diverse settings?*	Indirect evidence for a positive expected outcome relevant to health in two or more regions of the United States	Direct evidence for a positive expected outcome relevant to health in two or more regions of the United States	Indirect evidence of mostly positive actual outcomes relevant to health in two or more regions of the United States	Direct evidence of mostly positive actual outcomes relevant to health in two or more regions of the United States

Note: if none of its requirements are met, a criterion is assigned a score of 0 points, ○ ○ ○ ○

Section 2. Evidence Quality

Criterion and what it measures	**Low Quality** ● ○ ○ ○	**Moderate Quality** ● ● ○ ○	**High Quality** ● ● ● ○	**Very High Quality** ● ● ● ●
Evidence Types *What is the most rigorous design?*	A narrative review or commentary suggests a positive outcome	A non-experimental study suggests a positive outcome	An experimental or quasi-experiment suggests a positive outcome	A systematic review suggests a positive outcome
Sources *What is the most credible source?*	A peer-reviewed journal or conference publication without conflict of interest disclosure suggests a positive outcome	A publication by a nonprofit or government organization suggests a positive outcome	A peer-reviewed journal or conference publication with conflict of interest disclosure suggests a positive outcome	A publication by a public health authority suggests a positive outcome
Evidence from Research *Relevance to controlled settings?*	A small amount of evidence from research suggests positive outcomes	A moderate amount of evidence from research suggests positive outcomes	A large amount of evidence from research suggests positive outcomes	A very large amount of evidence from research suggests positive outcomes
Evidence from Translation and Practice *Relevance to real world?*	A small amount of evidence from translation and practice suggests positive outcomes	A moderate amount of evidence from translation and practice suggests positive outcomes	A large amount of evidence from translation and practice suggests positive outcomes	A very large amount of evidence from translation and practice suggests positive outcomes

Note: if none of its requirements are met, a criterion is assigned a score of 0 points, ○ ○ ○ ○

C. Evidence Summary Template

Type of WHP Intervention

Evidence Level: **LEVEL** *This field provides this type of intervention's evidence level which can be used to determine its priority in policymaking. Evidence level can be "best", "promising (quality)", "promising (impact)", or "emerging".*

This field describes the specific interventions that have been grouped under this type of intervention.

Example of state law addressing this type of intervention

This field briefly describes a component of state law that aligns with this intervention.

Evidence for Potential Public Health Impact: LEVEL		**Evidence Quality: LEVEL**	
Evidence for impact level can be Weak, Moderate, Strong, or Very Strong	Effectiveness: • • • •	Evidence quality level can be Weak, Moderate, High, or Very High	Evidence Types: • • • •
	Equity and Reach: • • • •		Sources: • • • •
	Efficiency: • • • •		Evidence from Research: • • • •
	Transferability: • • • •		Evidence from Translation and Practice: • • • •
Lower= • • • • → • • • • =Higher			

Health-related outcomes/Rationale	If there are Community Guide to Preventive Services systematic reviews or if there are individual studies analyzing *health-related outcomes* in the evidence base, this field provides the positive outcomes found. Non-positive outcomes for individual studies are footnoted in the "Evidence base" list below. If there were no studies finding positive outcomes, this field provides the *rationale* for expected health impact established by narratives and commentaries. This field will also tell you if this type of intervention was applied and studied alone or as part of a multicomponent policy or program; in most studies, positive outcomes were not directly linked with individual components.
Groups of employees studied in the evidence base	If positive *health-related outcomes* were found, this field provides the groups who were studied across the evidence base finding positive outcomes, or the absence of information on groups is noted.
Economic highlights	If there are studies analyzing economic outcomes—such as cost-effectiveness, return on investment, or quality of life—positive findings are provided in this field. Otherwise, absence of economic outcomes is noted. Most positive economic findings in this assessment are for multicomponent WHP policies or programs, providing indirect evidence. This is contrasted with findings linked to individual components, which would have provided direct evidence.
States where programs achieved positive health-related outcomes	This field provides a list of states in which the studies finding positive *health-related outcomes* were set, or absence of information on state setting is noted. For example, if a WHP program including this type of intervention was found to improve health at a workplace in Des Moines, Iowa, "Iowa" would be listed here.

Evidence base

Research-based studies
Here you will find the studies that took place in a research context, in which researchers were able to allocate subjects into the intervention and the control groups.

Practice-based studies
Here you will find the studies that took place under real-world circumstances. In these studies, evaluators were not able to allocate subjects into the intervention and the control groups. For example, in practice, employees may choose whether or not to participate in a WHP program.

Narratives and commentaries
Here you will find the evidence that provides additional logic and theory (but not data), including opinions from subject matter experts and practitioners.