

# Reducing Secondhand Smoke Exposure: Smoking Bans and Restrictions (2000 Archived Review)

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## Review Summary

### Intervention Definition

Smoking bans and restrictions are policies, regulations, and laws that limit smoking in workplaces and other public areas. Smoking bans entirely prohibit smoking in geographically defined areas; smoking restrictions limit smoking to designated areas.

### Summary of Task Force Finding

The Community Preventive Services Task Force recommends smoking bans and restrictions whether used alone or as part of a multicomponent community or workplace intervention based on strong evidence of effectiveness in reducing exposure to secondhand smoke.

The findings of this review should be considered in conjunction with Task Force recommendations for smoke-free policies to reduce tobacco use among workers based on sufficient evidence of effectiveness of these policies in reducing tobacco use among workers.

### Results from the Systematic Reviews

Ten studies qualified for the review.

- Environmental measurements of secondhand smoke components (e.g., nicotine vapor) decreased by a median of 72% (range, -44% to -97%) in assessments conducted between 6 months and 12 months after implementation of the ban or restriction (4 studies).
- Self-reported exposure to secondhand smoke between 4 and 18 months following implementation decreased by a median of 60% (range 4% to -94%; 6 studies).
- Reductions in secondhand smoke exposure were greater in workplaces that had smoking bans than in those with only smoking restrictions (10 studies).
- Smoking bans were effective in a wide variety of public and private workplaces and healthcare settings. Their effectiveness should extend to most indoor workplaces in the United States.
- Studies evaluating smoking bans or restrictions also observed reductions in the amount smoked.

These findings were based on a systematic review of all available studies, conducted on behalf of the Task Force by a team of specialists in systematic review methods, and in research, practice and policy related to tobacco use and secondhand smoke exposure.

### Publications

Hopkins DP, Briss PA, Ricard CJ. [Reviews of evidence regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke](http://www.thecommunityguide.org/tobacco/tobac-AJPM-evrev.pdf) [www.thecommunityguide.org/tobacco/tobac-AJPM-evrev.pdf]. *Am J Prev Med* 2001;20(2S):16–66.

Task Force on Community Preventive Services. [Recommendations regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke](http://www.thecommunityguide.org/tobacco/tobac-AJPM-recs.pdf) [www.thecommunityguide.org/tobacco/tobac-AJPM-recs.pdf]. *Am J Prev Med* 2001;20(2S):10–5.

Task Force on Community Preventive Services. [Tobacco](http://www.thecommunityguide.org/tobacco/Tobacco.pdf) [www.thecommunityguide.org/tobacco/Tobacco.pdf]. In: Zaza S, Briss PA, Harris KW, eds. *The Guide to Community Preventive Services: What Works to Promote Health?* Atlanta (GA): Oxford University Press;2005:3-79 (Out of Print).

## Task Force Finding

### Intervention Definition

Smoking bans and restrictions are policies and regulations that ban or limit the consumption of tobacco products in designated areas. These include private business and employer policies, organization regulations, and government laws and ordinances. Laws and ordinances can establish minimum standards to protect workers in private-sector workplaces, as well as ban or restrict smoking in public areas and workplaces.

### Task Force Finding (February 2000)\*

Smoking bans and restrictions are strongly recommended on the basis of strong scientific evidence that they reduce exposure to ETS (1) in a wide range of workplace settings and adult populations; (2) when applied at different levels of scale, from individual businesses to entire communities; and (3) whether used alone or as part of a multicomponent community or workplace intervention. A detailed description of the evidence is provided in Hopkins et al.

In addition to evidence of effectiveness in reducing workplace exposure to ETS, several qualifying studies observed a significant reduction in daily consumption of cigarettes by workers subject to a smoking ban or restriction. Some of the qualifying studies that evaluated smoking bans observed increases in tobacco use cessation and/or reductions in tobacco use prevalence in their study populations.

\*From the following publication:

Task Force on Community Preventive Services. [Recommendations regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke](http://www.thecommunityguide.org/tobacco/tobac-AJPM-recs.pdf) [www.thecommunityguide.org/tobacco/tobac-AJPM-recs.pdf]. *Am J Prev Med* 2001;20(2S):10–5.

## Supporting Materials

### Evidence Gaps

#### What are Evidence Gaps?

Each Community Preventive Services Task Force (Task Force) review identifies critical evidence gaps—areas where information is lacking. Evidence gaps can exist whether or not a recommendation is made. In cases when the Task Force finds insufficient evidence to determine whether an intervention strategy works, evidence gaps encourage researchers and program evaluators to conduct more effectiveness studies. When the Task Force recommends an intervention, evidence gaps highlight missing information that would help users determine if the intervention could meet their particular needs. For example, evidence may be needed to determine where the intervention will work, with which populations, how much it will cost to implement, whether it will provide adequate return on investment, or how users should structure or deliver the intervention to ensure effectiveness. Finally, evidence may be missing for outcomes different from those on which the Task Force recommendation is based.

#### Identified Evidence Gaps

##### *Effectiveness*

The effectiveness of smoking bans and restrictions in reducing secondhand smoke exposure in the workplace is established. Research issues, which have been identified by others (Burns et al., 1992), overlap with questions generated as a result of this review.

- What are the relative effects of smoking bans and restrictions on tobacco use behaviors? What is the full range of effects on tobacco use behaviors that occurs in response to smoking bans and to smoking restrictions? In addition to reducing secondhand smoke exposure, what are the effects on tobacco use cessation and tobacco use prevalence?
- What are the extended effects (beyond 1 to 2 years after implementation) of smoking bans and restrictions on the tobacco use behaviors of workers? Do these effects increase over time?
- What is the full range of effects that occurs in communities in response to different types of local ordinances?
- How does the effectiveness of smoking policies vary by the specific requirements of the legislation and vigorousness of enforcement?
- How is the effect of workplace smoking policies affected by the size and composition of the workforce?
- What is the full range of health benefits that results from reducing or eliminating secondhand smoke exposure in workers and customers currently exposed to secondhand smoke on a regular basis (e.g., in restaurants, bars, and casinos)?
- How do cultural characteristics of businesses and workers contribute to increased or decreased effectiveness of smoking bans and restrictions?

The effectiveness of community education interventions in reducing secondhand smoke exposure in the home has not been established. Basic research questions proposed by others (Ashley & Ferrence, 1998; Hovell et al., 2009) overlap the questions generated from this review.

- How effective are educational methods in reducing secondhand smoke exposure in the home?

- What are the relative contributions to reducing secondhand smoke exposure of (1) adherence to policies that ban or restrict smoking in the home and (2) smoking cessation?
- Do policies in the home that ban or restrict smoking reduce exposure to secondhand smoke? In adults? In children? Are households with children more likely to adopt policies that ban or restrict smoking in the home?
- Are home smoking bans more effective than smoking restrictions?
- What information or message is effective in prompting and maintaining practices in the home?
- What channels are effective for dissemination of information to reduce secondhand smoke exposure in the home?

### *Applicability*

Workplace smoking bans and restrictions should be applicable in most workplace settings and populations. However, possible differences in the effectiveness of each intervention for specific subgroups of the population could not be determined. Several questions regarding applicability of these interventions in settings and populations other than those studied remain.

- Are smoking bans effective in high schools in reducing secondhand smoke exposure and/or tobacco use?
- Are smoking bans and restrictions effective in universities in reducing secondhand smoke exposure and/or tobacco use?
- Are smoking bans effective in child-care settings in reducing secondhand smoke exposure?
- Do meaningful differences exist in effectiveness of smoking bans and restrictions relative to the level or scale of implementation (private, local, state, national)?

### *Other Positive or Negative Effects*

Smoking bans and restrictions may have important effects on such tobacco use behaviors as consumption, cessation attempts, and cessation. Assessing the full range of effects of smoking bans and restrictions is important and was addressed in the section on Effectiveness. In addition, research on the following issues would be useful:

- How effective are workplace smoking bans and restrictions in reducing relapses?
- Do smoking bans and restrictions divert tobacco consumption from cigarettes to smokeless tobacco?
- To what extent, if any, do workplace smoking bans and restrictions increase consumption and secondhand smoke exposures in the home?
- What effects do workplace smoking bans and restrictions have on productivity?

### *Economic Evaluations*

The available economic information consisted of a single evaluation. Considerable research is, therefore, warranted regarding the following questions:

- What are the costs of these interventions?
- What is the cost-effectiveness, net cost, or net benefit of smoking bans and restrictions when the cost-effectiveness analysis includes cost of illness averted?

### *Barriers*

Research issues important to communities and local governments identified in this evaluation include the following:

- What aspects of efforts to prevent or to overturn state pre-emption laws are effective?

- What aspects of efforts to pass local smoking bans are effective in addressing local concerns and industry-organized opposition? What arguments for smoking bans are most persuasive to voters? To local legislative bodies?

## Summary Evidence Table

See Appendix B on pages 58-63 of Hopkins DP, Briss PA, Ricard CJ. [Reviews of evidence regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke](#) [www.thecommunityguide.org/tobacco/tobac-AJPM-evrev.pdf]. *Am J Prev Med* 2001;20(2S):16-66.

## Included Studies

Becker DM, Conner HF, Waranch HR, et al. The impact of a total ban on smoking in the Johns Hopkins Children's Center. *JAMA* 1989;262:799-802.

Borland R, Pierce JP, Burns DM, Gilpin E, Johnson M, Bal D. Protection from environmental tobacco smoke in California: the case for a smoke-free workplace. *JAMA* 1992;268:749-52.

Broder I, Pilger C, Corey P. Environment and well-being before and following smoking ban in office building. *Can J Public Health* 1993;84:254-8.

Brownson RC, Davis J, Jackson-Thompson J, Wilkerson J. Environmental tobacco smoke awareness and exposure: impact of a statewide clean indoor air law and the report of the U.S. Environmental Protection Agency. *Tob Control* 1995;4:132-8.

Etter J, Ronchi A, Perneger TV. Short-term impact of a university based smoke free campaign. *J Epidemiol Community Health* 1999;53:710-5.

Gottlieb NH, Eriksen MP, Lovato CY, Weinstein RP, Green LW. Impact of a restrictive work site smoking policy on smoking behavior, attitudes, and norms. *J Occup Med* 1990;32:16-23.

Millar WJ. Evaluation of the impact of smoking restrictions in a government work setting. *Can J Public Health* 1988;79:379-82.

Mullooly JP, Schuman KL, Stevens VJ, Glasgow RE, Vogt TM. Smoking behavior and attitudes of employees of a large HMO before and after a work site ban on cigarette smoking. *Public Health Rep* 1990;105:623-8.

Patten CA, Pierce JP, Cavin SW, Berry C, Kaplan R. Progress in protecting non-smokers from environmental tobacco smoke in California workplaces. *Tob Control* 1995;4:139-44.

Stillman FA, Becker DM, Swank RT, et al. Ending smoking at the Johns Hopkins Medical Institutions. An evaluation of smoking prevalence and indoor air pollution. *JAMA* 1990;264:1565-9.

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## Disclaimer

The findings and conclusions on this page are those of the Community Preventive Services Task Force and do not necessarily represent those of CDC. Task Force evidence-based recommendations are not mandates for compliance or spending. Instead, they

provide information and options for decision makers and stakeholders to consider when determining which programs, services, and policies best meet the needs, preferences, available resources, and constraints of their constituents.

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