

Community-Wide Interventions for Tobacco Control

K. Michael Cummings

INTRODUCTION There are two unique features of community-wide interventions that distinguish them from other types of tobacco control strategies. First, community interventions attempt to change tobacco use in populations, not just in individuals or select target groups (NCI, 1991). Community-wide interventions for tobacco control operate on the premise that tobacco use is driven by societal attitudes that accept tobacco use and that efforts to reduce tobacco use require changing these attitudes. The second unique feature of community-wide interventions is that they are comprehensive in nature, involving attempts to intervene through multiple social structures in a community (NCI, 1991). This feature of community-wide interventions acknowledges the fact that attitudes about tobacco use are shaped by many different sources, including one's family, workplace, educational and health care institutions, and the media, just to name a few.

ARE THESE ASSUMPTIONS CORRECT? What evidence is available to support the premise that tobacco use is a socially mediated practice that can be altered by changing social customs that support the behavior? First, it is a well accepted tenet of social psychology that humans are subject to a need to conform to the social conventions of the majority (Wrightman, 1977). To the extent that individuals perceive their actions as deviant, there will be pressure to conform to the dominant public opinion.

Second, the history of tobacco use in United States seems to mirror shifts in public attitudes about smoking, reflecting increasing social sanctions on smoking in the early part of the century and then growing disapproval of smoking as a practice dangerous to the smoker and later to others (Warner, 1986).

Third, even the tobacco industry recognizes that besides nicotine delivery, smoking behavior is mediated by social influences, as evidenced by the following explanation offered by a Philip Morris scientist on changing trends in teenage smoking prevalence:

“There is no question but that peer pressure is important in influencing the young not to begin smoking. A decade or more ago it was a major reason why teenagers began to smoke. Now it is a major reason for their not beginning to smoke?” (Philip Morris, Inc, 1981)

Because the norms of society are in large part prescribed through public sources, such as the media, they are subject to the influences of special interest groups. Viewed in this light, tobacco advertising can be thought of as an effort to create demand for tobacco products by influencing the pub-

lic's perceptions about the benefits of tobacco use. As marketing professor Richard Pollay points out: "...to smokers advertising is a reminder and reinforcer, while to the non-smoker it is a temptation and a teacher" (Pollay, 1995).

While the mass media has been used to increase the demand for tobacco, it has also been used to discourage the use of tobacco, as evidenced during the Fairness Doctrine period when anti-smoking television commercials were aired on a regular basis during prime time and cigarette consumption dropped sharply (U.S.DHHS, 1989). Thus, it appears that despite the addictive qualities of tobacco, tobacco use behavior is strongly influenced by the social conventions, customs, and norms of society and is subject to changes in the social environment.

DO COMMUNITY-WIDE INTERVENTIONS WORK? The scientific literature clearly demonstrates the limited effect of individually focused, single-channel interventions in terms of influencing tobacco use throughout populations (U.S.DHHS, 1989; Klausner, 1997). Perhaps with the exception of nicotine replacement products, those programs with substantial efficacy, particularly clinic-based cessation programs, have not been widely accepted by smokers. By offering a comprehensive intervention that operates through multiple channels in a community, it is hoped that a synergy will be produced whereby the social norms undercutting tobacco will spread throughout the population at a faster pace than would otherwise be the case. Community-wide tobacco control interventions often have little to do with providing direct services to individual tobacco users, but instead focus attention on employers, health providers, politicians, and community leaders who are in positions to implement policies that help define the social norms about tobacco use in the population at large (NCI, 1991).

What evidence is there that community-wide tobacco control interventions work? In recent years, we have seen a number of well-conducted, large-scale evaluations of community-wide interventions to reduce tobacco use. Although a few of these showed a degree of success, for most, the effects have been small and certainly less than predicted given the effort expended. For example, the Stanford Five-City Project reported a small treatment effect on quitting behavior, but no effect on smoking prevalence (Fortmann *et al.*, 1993). The Minnesota Heart Health Program reported a modest beneficial effect for women in their cross-sectional analysis, but no effect in their cohort sample (Leupker *et al.*, 1994). The Pawtucket Heart Health Program failed to demonstrate a significant intervention effect for smoking in any of their analyses (Carlton *et al.*, 1994). The NCI's Community Intervention Trial for Smoking Cessation (COMMIT) failed to affect quit rates among heavy smokers, but did boost quit rates by about 3 percent among light-to-moderate smokers (COMMIT Research Group, 1995a & b). Although COMMIT did not achieve the kind of success that had been hoped for, the modest increase in quitting observed among light-to-moderate smokers, if achieved nationally, would translate into 1.2 million additional adults stopping smoking (Klausner, 1997). A recent analysis of the cost-effectiveness of the COMMIT shows that the intervention com-

pares favorably with a number of other common preventive practices and many therapeutic interventions as well (Lewit *et al.*, 1998). The finding that COMMIT was relatively cost-effective, given its limited effectiveness, appears to rest largely on the estimate of its incremental social cost—\$167 per smoker for the 4 years of the trial (\$42 per smoker per year) as compared with the costs of other health and medical interventions.

In evaluating the scientific literature on community interventions for tobacco control, one also has to recognize that not all interventions are equal. The focus and content of community-wide tobacco control interventions has evolved over the years from an approach a decade ago that was primarily designed to provide education and services to individual smokers to one that today actively attempts to bring about formal policy changes (Klausner, 1997). The focus of activity in most community tobacco programs today is on efforts to enact policies that have the potential to influence every smoker and potential smokers, including regulations on where smoking is permitted, taxation of tobacco products, limits on tobacco advertising and promotion, dedicated funding for mass-reaching public information campaigns, and mainstreaming of cessation advice and treatment by health care providers (Klausner, 1997). The success of a comprehensive, policy-focused approach to tobacco control is seen in the recent evaluations of the Massachusetts Tobacco Control program and the NCI's American Stop Smoking Intervention Trial for Cancer Prevention (ASSIST), both of which found significant reductions in cigarette consumption associated with program efforts (Harris *et al.*, 1997; Manley *et al.*, 1997). Indeed, as Glantz has pointed out, the 7 percent reduction in per-capita cigarette consumption attributable to the ASSIST program means that if ASSIST were a cigarette brand, it would exceed the market share for all other brands of cigarettes sold except Marlboro (Glantz, 1997).

WHAT LESSONS HAVE WE LEARNED?

The history of the tobacco control movement provides some useful lessons to ponder as we consider whether community interventions are a good investment (Susser, 1995). First, to bring about large-scale changes in tobacco consumption, the social norms related to tobacco use need to change, and this change takes time. Two decades ago, who would have envisioned a smoke-free workplace as the accepted norm? The campaign to enact smoke-free policies began with a few public health advocates standing alongside those harmed by smoke pollution and gradually grew to include health care institutions, private employers, and government regulators. The usual time frame for evaluations of community tobacco control interventions is years when the time required to bring about social change may be decades. For example, significant reductions in smoking associated with the North Karelia intervention did not become evident for nearly 10 years (Puska *et al.*, 1973 & 1983).

Second, the measured effects of community-wide interventions is likely to be small, but as demonstrated by COMMIT, even a modest percentage effect on smoking behavior can translate into a large public health impact (Carlton *et al.*, 1994; Lewit *et al.*, 1998; Glantz, 1997).

Third, community-wide interventions like COMMIT do not seem to have much impact on changing the smoking habits of heavy smokers. For those who are highly dependent on nicotine, more intensive clinical interventions and/or substitution of less lethal forms of nicotine ingestion may be necessary (Warner *et al.*, 1997).

Fourth, community tobacco control activities change over time, to reflect both the current state of scientific knowledge and shifting public attitudes about tobacco. Three decades ago, the primary focus of community interventions was educating consumers about the hazards of tobacco. Today, the emphasis is on dictating the policies that govern the way that tobacco products are designed, used, and marketed (Klausner, 1997).

Finally, the conventional experimental research paradigm typically used to evaluate medical interventions may not be ideally suited to assessing the impact of community tobacco control efforts that encompass entire populations and change over time (Klausner, 1997; Susser, 1995). In the COMMIT study, over half of the \$42.5 million devoted to that project was used for evaluation purposes (Lewit *et al.*, 1998). A simpler, more efficient use of resources would be to design a surveillance system that would encompass the entire population and allow evaluators to compare differences in tobacco use trends over time and between communities.

SUMMARY Although national and statewide initiatives have important roles to play in a comprehensive program to reduce tobacco use, local community intervention is where the action is, and represents the heart of the tobacco control movement. We would all be smart to live by the old adage, "Think global, act local." Local community intervention, tailored to the unique concerns and needs of a community, represents the best hope of speeding up the pace of change in the social norms that govern tobacco use.

It would be a big mistake to abandon community tobacco control efforts on the basis of a few disappointing studies. We have much to learn about how to bring about population-wide changes in tobacco use. Research is now just beginning to help us elucidate the factors that are important (Kaufman, 1997). For example, a recent secondary analysis of data collected as part of the COMMIT study has shown that community variation in tobacco use trends can be accounted for in part by differences in cigarette pricing and marketing practices, policies that influence workplace smoking, and policies that influence the cost and accessibility of stop smoking therapies (Lewit *et al.*, 1997; Cummings *et al.*, 1997a & 1997b; Glasgow *et al.*, 1997). We need to use this knowledge and invest more time and energy into learning how to apply this information to the practice of community tobacco control.

REFERENCES

- Carlton, R.A., Lasater, T.M., Assaf, A.R., Feldman, H.A., McKinlay, S.M. The Pawtucket Heart Health Program: cross-sectional results from a community intervention trial. In: *Abstracts of the 34th Annual Conference on Cardiovascular Disease Epidemiology and Prevention*; Sponsored by the Council on Epidemiology and Prevention of the American Heart Association and the National Heart, Lung, and Blood Institute. Tampa, Florida, March 18, 1994.
- COMMIT Research Group. Community Intervention Trial for Smoking Cessation (COMMIT): I. Cohort results from a four-year community intervention. *American Journal of Public Health* 85:183-192, 1995a.
- COMMIT Research Group. Community Intervention Trial for Smoking Cessation (COMMIT): II. Changes in adult cigarette smoking prevalence. *American Journal of Public Health* 85:193-200, 1995b.
- Cummings, K.M., Hyland, A., Lewit, E.M., Shopland, D. Use of discount cigarettes by smokers in 20 communities in the United States, 1988-1993. *Tobacco Control* 6(suppl 2):S25-S30, 1997a.
- Cummings, K.M., Hyland, A., Ockene, J.K., Hymowitz, N., Manley, M. Use of the nicotine skin patch by smokers in 20 communities in the United States, 1992-1993. *Tobacco Control* 6(suppl 2):S63-S70, 1997b.
- Fortmann, S.P., Taylor, C.B., Flora, J.A., Jatulis, D.E. Changes in adult cigarette smoking prevalence after 5 years of community health education, the Stanford Five-City Project. *American Journal of Epidemiology* 137:82-96, 1993.
- Glantz, S.A. After ASSIST, what next? Science. *Tobacco Control* 6:337-339, 1997.
- Glasgow, R.E., Cummings, K.M., Hyland, A. Relationship of worksite smoking policy to changes in employee tobacco use: findings from COMMIT. *Tobacco Control* 6(suppl 2):S44-S48, 1997.
- Harris, J.E., Connolly, G.N., Davis, B. Cigarette smoking before and after an excise-tax increase and anti-smoking campaign, Massachusetts 1990-1996. *Morbidity and Mortality Weekly Report* 45(44):960-970, 1997.
- Kaufman, N. From tobacco mythology to science: will policy research ever guide practice? *Tobacco Control* 6(suppl 2):S3-S4, 1997.
- Klausner, R. Evolution of tobacco control studies at the National Cancer Institute. *Tobacco Control* 6(suppl 2):S1-S2, 1997.
- Leupker, R.V., Murray, D.M., Jacobs, D.R. Jr., et al. Community education for cardiovascular disease prevention: risk factor changes in the Minnesota Heart Health Program. *American Journal of Public Health* 84:1383-1393, 1994.
- Lewit, E.M., Hyland, A., Kerrebrock, N., Cummings, K.M. Price, public policy, and smoking in young people. *Tobacco Control* 6(suppl 2):S17-24, 1997.
- Lewit, E.M., Kerrebrock, N., Piland, N., Topper, M., et al. *Economic evaluation of the Community Intervention Trial for Smoking Cessation (COMMIT)*. Unpublished manuscript, 1998.
- Manley, M., Pierce, J.P., Gilpin, E.A., Rosbrook, B., Berry, C., Wun, L.M. Impact of the American Stop Smoking Intervention Study on cigarette consumption. *Tobacco Control* 6(suppl 2):S12-S16, 1997.
- National Cancer Institute. *Monograph 1: Strategies to Control Tobacco Use in the United States: A Blueprint for Public Health Action in the 1990's*. U.S. Department of Health and Human Service, Public Health Service, National Institutes of Health. NIH Publication No. 92-3316, October, 1991.
- Philip Morris. *Special Research Report: Young Smokers—Prevalence, Trends, Implications, and Related Demographics Trends*. Richmond, Virginia: Philip Morris Research Center, March 31, 1981.
- Pollay, R.W. The functions and management of cigarette advertising. Chapter 34 of: *Tobacco on Trial*, Leiss, W. (editor). Montreal: McGill-Queens University Press, 1995.
- Puska, P., Salonen, J.T., Nissinen, A., Tuomilehto, J., Vartiainen, E., Korhonen, H., Tanskanen, A., Ronnqvist, P., Koskela, K., Huttunen, J. Changes in coronary risk factors during 10 years of a community intervention programme (North Karelia project). *British Medical Journal* 287(6408):1840-1844, 1983.
- Puska, P., Tuomilehto, J., Salonen, J., Neittaanmaki, L., Maki, J., Virtamo, J., Nissinen, A., Koskela, K., Takalo, T. Changes in coronary risk factors during comprehensive five-year community programme to control cardiovascular disease (North Karelia project). *British Medical Journal* 2(6199):1173-1178, 1973.
- Susser, M. Editorial: The tribulations of trials—Interventions in communities. *American Journal of Public Health* 85:156-158, 1995.
- U.S. Department of Health and Human Services. *Reducing the Health Consequences of Smoking: 25 Years of Progress—A Report of the Surgeon General*. Washington, DC: U.S. Department of Health and Human Service, Centers for Disease Control, Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, DHHS Publication No. (CDC) 89-8411, 1989.
- Warner, K.E. *Selling Smoke: Cigarette Advertising and Public Health*. Washington, DC: American Public Health Association, 1986.
- Warner, K.E., Slade, J., Sweanor, D.T. The emerging market for long-term nicotine maintenance. *Journal of American Medical Association* 278:1087-1092, 1997.
- Wrightman, L.S. *Social Psychology* (2nd edition). Monterey, California: Brooks/Cole Publishing, 1977.