
Chapter 5

Approaches Directed to the Social Environment

CONTENTS

Public Opinion and Tobacco Use	203
Intervention Channels.	205
Mass Media	205
Health Care Providers	210
Worksites	213
Schools.	215
Community Mobilization	218
Community Analysis	221
Planning	223
Implementation	223
Maintenance	224
Restrictive Legislation.	225
Federal Actions	226
State Legislation	227
Local Legislation.	228
Public Opinion.	229
Effects of Restrictions on Smoking Prevalence	229
Employee Attitudes	230
Impact of Worksite Restrictions	230
Impact of Smoking Bans	231
Effect on Continuing Smokers	232
Elements Needed for Worksite Restrictions	232
Preventing Tobacco Sales to Minors	233
Minors' Access to Tobacco	234
Action at the Community Level.	237
A Public Policy Agenda	238
Economic Incentives	239
Excise Taxes on Tobacco Products	240
Preferential Hiring and Promotion.	245
Differential Insurance Premiums	249
An Overview of Economic Incentives	251
Conclusions	253
References	254

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Chapter 5

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PUBLIC OPINION AND TOBACCO USE

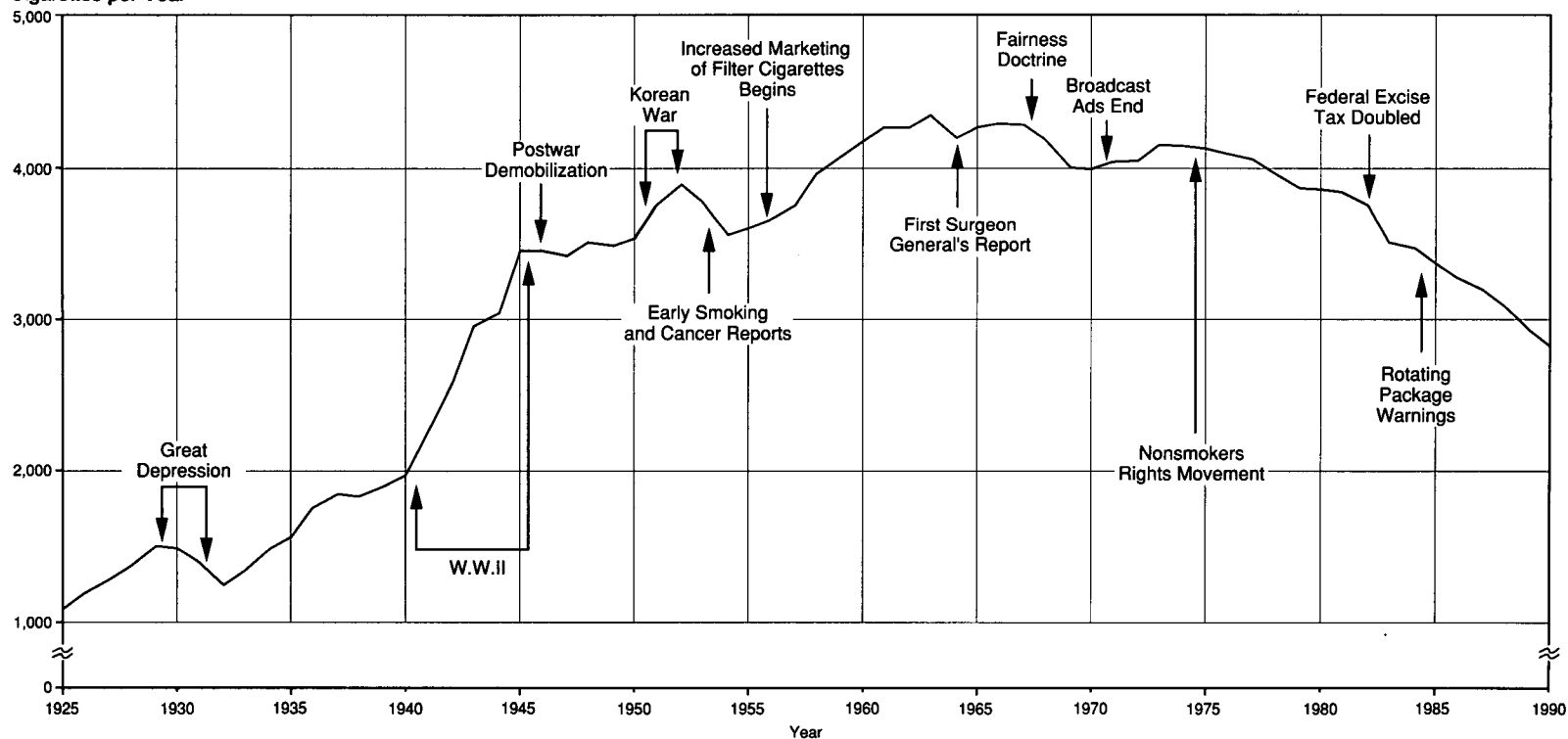
The addictive nature of tobacco notwithstanding, tobacco use appears to be largely a socially mediated practice that is susceptible to change in the social environment. Changes in cigarette consumption in the United States seem to mirror shifts in public attitudes and opinions about smoking (Warner, 1986a). Figure 1 demonstrates a correspondence between the per capita cigarette consumption of adults and the timing of major public events related to smoking and health. Increasing consumption between 1900 and 1950 can be related to application of newly developed marketing and advertising techniques by the tobacco industry and the impact of World Wars I and II, when millions of men were introduced to cigarettes in the armed forces (Warner, 1986a; Whelan, 1984).

Most studies of seminal events that affected public awareness and knowledge about smoking, such as publication of the first Surgeon General's Report in 1964, have shown significant decreases in cigarette consumption in the year of the event (Hamilton, 1972; Warner, 1977 and 1989). Several studies have found the events to have a cumulative downward influence on demand for cigarettes. Warner, projecting from prevalence rates and trends of the mid-1960's, found that 1985 smoking rates for every age and sex cohort were significantly lower than expected, with the greatest decreases from the projected rates in the younger cohorts (Warner, 1989). He estimated that in 1985 there were 35 million fewer smokers than expected, a 38 percent decline in anticipated prevalence. Warner attributes this difference to changes in the social environment spawned by scientific and social interest in the hazards of smoking (Warner, 1986a and 1989).

As social beings, humans are subject to a desire to conform, to adopt the social conventions, customs, and norms 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. The history of tobacco use traced in Figure 1 can be seen in these terms, initially reflecting increasing social sanction of smoking (first by men and then by women), then growing disapproval of smoking as a practice dangerous to the smoker and, later, to others.

Figure 1
Per capita consumption of cigarettes (18 years and older), 1925 to 1990

Cigarettes per Year



Perception and internalization of social norms arise from a process in which the individual observes the distribution of opinion and behavior in the environment. The environment consists of both primary and secondary social networks (e.g., family, friends, and workplace) and impressions of society at large, derived largely from the mass media (Noelle-Neuman, 1974). In this light, an important function of tobacco advertising and promotion is to fill the environment with messages reinforcing the perception of smoking as a socially approved, accepted, and even desirable behavior (Davis, 1987; Tye et al., 1987; Warner, 1986a).

Efforts to control tobacco use, then, should focus on creating a social environment that provides persistent and inescapable cues to smokers to stop smoking and to nonsmokers not to start. Such an approach assumes that the best way to change individual behavior is to intervene through the social structures in a community that help shape an individual's opinions and attitudes (Warner et al., 1986).

INTERVENTION CHANNELS

The primary targets for tobacco control interventions are not individuals but the social networks that shape the attitudes of individuals (both smokers and nonsmokers) toward tobacco. For smoking control, the most relevant networks are the media, health care providers, worksites, and schools. Additional efforts to alter the environment in which the smoker smokes and the adolescent begins to smoke have been made through legislation, restriction on where smoking is allowed, restriction of access to cigarettes by adolescents, and increases in the economic costs of tobacco use. The following paragraphs review the nature of these intervention channels and provide suggestions about how each may be employed in a population-wide smoking control program.

Mass Media

The mass media play a critical role in influencing what society knows, believes, and does with respect to tobacco use (Tye et al., 1987; Warner, 1986a). In 1988, U.S. cigarette manufacturers spent \$3.27 billion on advertising and promotion (Centers for Disease Control, 1990a). Few popular models rival the "Marlboro man" for familiarity; this and other images from cigarette advertisements are seen daily by virtually every American. Moreover, the presence of tobacco advertisements reinforces the perception that "smoking must be acceptable, otherwise the Government would ban it" (Warner, 1986).

Although the tobacco industry has used them to encourage tobacco consumption, the mass media have played and will continue to play an important role in tobacco control efforts (Flay, 1987; US DHHS, 1989a; Warner, 1986a). Media coverage of the tobacco and health issue over the past quarter-century is credited with improving public awareness of

smoking's hazards, shifting attitudes about smoking, and lowering the percentage of smokers in the population (US DHHS, 1989a). However, the public's understanding of tobacco's hazards is still remarkably superficial, particularly among those segments of the population at greatest risk of smoking—the poorly educated, minorities, and teenagers (Warner, 1986a).

In a comprehensive tobacco control effort, the mass media serve a number of important functions, including (1) providing information to the public about facts and issues relating to tobacco use; (2) alerting citizens and policymakers to injurious public policies that promote tobacco use; (3) motivating people to stop or not start using tobacco; (4) recruiting smokers into treatment programs; and (5) conducting smoking cessation programs.

Those who control the media do not necessarily view any of these tasks as their responsibility. To the contrary, a substantial body of evidence indicates that, because they depend on tobacco advertising revenue, the media often evade the topic of tobacco and health (Dagnoli, 1990; Warner, 1985).

Tactics

Tobacco control activities directed at the media should seek to accomplish two goals: (1) increase the public's exposure to prohealth, antitobacco messages; and (2) limit the public's exposure to protobacco messages. The following sections briefly discuss tactics for accomplishing these goals.

Counteradvertising. Perhaps the most visible use of the mass media for tobacco control has been antitobacco campaigns sponsored by the major voluntary health organizations and Government agencies (Flay, 1987; US DHHS, 1989a; Warner, 1988 and 1989). For the most part, these campaigns have relied on donated air time and advertising space.

One of the most significant periods of antismoking advertising occurred between 1967 and 1970, when the Federal Trade Commission ruled that, under the Fairness Doctrine, television and radio broadcasters were required to donate air time to antismoking messages as a balance to cigarette commercials (O'Keefe, 1971; US DHHS, 1989b; Warner 1977, 1986a, and 1989). At their peak, antismoking messages were given about 1 minute of air time (much of it in prime time) for every 3 minutes of cigarette advertisements (Whiteside, 1971). Several studies support the conclusion that the antismoking messages aired during the Fairness Doctrine era markedly discouraged smoking (O'Keefe, 1971; Warner, 1989). Cigarette consumption declined each year during the campaign (Figure 1) and rose again after removal of cigarette advertising and the antismoking advertisements from the broadcast media in 1970.

This experience supports the idea that a public service announcement campaign can be effective in certain circumstances (Flay, 1987). After reviewing 56 evaluated antitobacco campaigns, Flay concluded that the key element in the success or failure of an antismoking campaign is its intensity. The more intensive the campaign—that is, the greater its reach, frequency, and duration—the greater the impact on behavior. The disappointing results of many health promotion campaigns delivered through the mass media can be traced directly to inadequate exposure of campaign messages (Bettinghaus, 1986; Flay, 1987; McGuire, 1984; Wallack, 1981).

Reliance on public service announcements most often results in campaign messages being seen infrequently (Flay, 1987; Wallack, 1981). In an evaluation of a 6-month anti-smoking television campaign conducted in media markets in New York and Pennsylvania, Cummings and colleagues reported that half of donated advertisements were aired between 12 midnight and 7 a.m. Airing of the same messages in purchased time significantly improved response, as measured in calls to a hotline (K.M. Cummings et al., 1989).

Several states, including Minnesota, Michigan, and California, have funded antitobacco media campaigns with revenue earmarked from cigarette excise taxes (Johnson, 1990; US DHHS, 1989a). In California, excise taxes are funding a \$28.6 million, 18-month advertisement campaign against smoking (Johnson, 1990). The campaign, launched in April 1990, includes paid advertisements in newspapers and magazines, on billboards, and in prime time on television and radio.

Public relations events. Creating events that will be of interest to large segments of the population is an effective and economical way to gain media coverage for tobacco control issues (US DHHS, 1989b). The best known national public relations event for smoking cessation is the American Cancer Society's Great American Smokeout, which has been held annually since 1977 (Flay, 1987; US DHHS, 1989a). The Smokeout is a multimedia event carried out each November throughout the United States. In most communities, it constitutes an 8-day media blitz leading up to Smokeout Day, when smokers are urged to give up cigarettes for at least 24 hours. Public awareness and participation in the Smokeout has been high for years (Flay, 1987; US DHHS, 1989a). A Gallup poll of adult smokers taken after the 1989 Smokeout showed that 85 percent of smokers were aware of the event and 10.5 percent abstained from smoking on Smokeout Day.

In 1987, the American Lung Association began sponsoring Non-Dependence Day, the 5th of July, as a way to bring attention to the problem of nicotine addiction and to offer assistance

to smokers trying to stop. National events such as the Smoke-out and Non-Dependence Day can be used to spin off media events such as television and radio cessation clinics (Flay, 1987), newspaper stories profiling former smokers (Cummings et al., 1987), and communitywide stop-smoking contests (Cummings et al., 1990; King et al., 1987; Pechacek et al., 1985).

Government agencies frequently designate specific times of the year to highlight specific prevention and disease control initiatives (e.g., high blood pressure control week). The State of New York designated the first week of January 1990 as "Tobacco Awareness Week" and granted \$5,000 to county health departments to create local tobacco control events. Those events varied across the state and included poster contests for schoolchildren, stop-smoking contests, smoking policy workshops for businesses, and training programs for health care providers. Local media coverage of events was heightened by the fact that local events were conducted as part of a statewide initiative.

Presentation of research findings is another way to gain access to the media (American Cancer Society, 1987; Davis, 1988a; US DHHS, 1989b). The media's desire for health stories is so strong that even familiar health information can be recycled or repackaged in such a way as to be of interest to media gatekeepers. The best example of such an event is the annual release of the U.S. Surgeon General's Reports on smoking and health. These reports usually contain little new scientific information, but their presentation by the Surgeon General in a high-profile news conference generates extensive media coverage (US DHHS, 1989a). Having a highly visible and credible spokesperson or group deliver the information will often generate media coverage, even when the message is familiar.

Tailoring information for local news media can be an effective way to extend the life of a national news story or create a new media event (American Cancer Society, 1987; US DHHS, 1989b). After a news release on the medical costs associated with treating smoking-related diseases in the United States, several state health departments issued cost information specific to their individual states, which resulted in a new wave of media coverage on the burden of smoking.

Advocacy. Media advocacy is the strategic use of the mass media to promote public policy initiatives (US DHHS, 1989b; Wallack, 1990). Media advocacy does not attempt to directly change individual smoking behavior but uses the media to promote public debate about the tobacco issue. It shifts attention from smoking as solely an individual problem to the role of public policy in shaping individual health choices. Media

advocacy stimulates community involvement in defining public policy initiatives that influence the social environment in which consumers make choices about tobacco use.

In contrast to a planned information campaign or public relations effort, a media advocacy campaign is more like a political campaign in which competing forces continually react to unexpected events, breaking news, and opportunities (US DHHS, 1989b; Wallack, 1990). When tons of imported Chilean fruit were banned after the discovery of a small amount of cyanide in two grapes, smoking control advocates alerted the media to the fact that there is more cyanide in one cigarette than was found in the grapes. The Chilean grapes incident was thus used as a vehicle to raise the issue of Government's failure to regulate the tobacco industry.

Specific kinds of knowledge are essential for effective media advocacy: knowing the media, knowing the relevant tobacco policy issues, and knowing how to frame an issue for public debate (US DHHS, 1989b). Tobacco control advocates need to understand how the different media work, that is, what types of stories are deemed newsworthy, how editors decide what stories get covered, and what deadlines and logistical issues might influence coverage. There are several excellent guides available that illustrate media advocacy skills specifically for tobacco control (American Cancer Society, 1987; US DHHS, 1989b).

Providing media advocacy training to interested persons is one way to encourage and enhance the use of news media for control of tobacco use. A communication network among advocates sharing information on local and national activities will promote media advocacy efforts. As noted earlier, local news coverage of smoking control issues is enhanced when local stories spin off from current issues in the national news media (American Cancer Society, 1987; US DHHS, 1989b). Newsletters and computer bulletin board systems provide ways to facilitate timely communications among national, state, and local advocates. The Smoking Control Advocacy Resource Center sponsors an electronic communications network (SCARCNET, 1990).

Regulations on Advertising

Because tobacco advertising is nearly ubiquitous, several medical and public health groups have argued that stronger regulatory actions are needed to curb the influence of pro-tobacco messages delivered through the media (American Medical Association Board of Trustees, 1986; Warner, 1986a). Currently, the Federal Government bans tobacco advertising in the broadcast media and regulates the content of tobacco advertisements by Federal Trade Commission action (US DHHS, 1989a).

A number of proposals to further restrict tobacco advertising and promotion are now under consideration by public health groups, state and local governments, and Congress (Colford, 1990; Myers et al., 1989). One such proposal would limit the imagery and graphics of tobacco advertisements to permit only "tombstone ads," with no models, slogans, scenes, or colors. Other proposals that would restrict tobacco advertising and promotion range from a total ban on all tobacco advertising, to limited restrictions, such as disallowing certain types of promotion (e.g., tobacco company sponsorship of sporting and cultural events, brand advertising in movies, and distribution of free samples).

Most of the proposed legislation to regulate tobacco advertising is designated for action at the Federal level because of laws that preempt states and localities from regulating cigarette advertising (Myers et al., 1989; US DHHS, 1989a). However, state and local communities do have jurisdiction in regulating the location of tobacco advertising when the medium is not national in scope. For example, several metropolitan areas (Denver, San Francisco Bay Area, and Amherst, Massachusetts) have prohibited tobacco advertisements on their mass transit systems (US DHHS, 1989a). In Minnesota, the state's Sports Commission banned tobacco advertising in the Hubert H. Humphrey Metrodome (US DHHS, 1989a). The City of Detroit banned tobacco advertisements on billboards (McMahon and Taylor, 1990). The City of New York passed an ordinance prohibiting tobacco advertisements on city-owned property. Numerous cities and two states (Minnesota and Utah) have passed laws prohibiting the distribution of free tobacco product samples (US DHHS, 1989a).

Health Care Providers

Tobacco control efforts directed at the health care sector should seek to accomplish the following goals: (1) establish routine counseling on tobacco as a minimum standard of practice for all health care settings (i.e., physicians' offices, hospitals, public health clinics); (2) make all health care facilities smoke-free; (3) increase the number of pharmacies and other health care facilities that will not sell tobacco products; (4) increase the number of health insurance companies that offer financial incentives that discourage tobacco use (e.g., lower premiums for nonsmokers, payment for cessation services); and (5) increase the number of health care providers actively involved in promoting tobacco control initiatives in other sectors of the community, such as in schools, through the media, and in worksites. Intervention activities to achieve these goals fall into three categories: education, economic incentives, and regulation.

Education

Antitobacco counseling efforts by health professionals appear to have great potential in encouraging patients to stop or reduce their tobacco use (Glynn et al., 1990). The strength of this approach lies in the large number of smokers who can be reached by credible sources in environments where health is a salient topic. Estimates show that if "stop smoking" messages were routinely delivered to patients by physicians, 38 million smokers could be reached and the number who stop smoking each year could be doubled. Despite the fact that most physicians believe it is their responsibility to encourage their patients to abstain from using tobacco, many fail to do so routinely with all patients (Anda et al., 1987).

A number of barriers to more active involvement in tobacco cessation counseling have been cited. Among them are insufficient time, training, and backup materials to provide effective help (Orlandi, 1987; Orleans et al., 1985). In an effort to address these barriers, several health provider groups have developed training materials and programs to assist health care providers in becoming more proficient in providing tobacco cessation assistance (Davis, 1988b). In 1989, the National Cancer Institute and the American Cancer Society initiated a national program to recruit and train physicians from around the United States who will in turn provide training in tobacco counseling to health providers on a statewide or regional basis. The establishment of a core group of health care providers who are capable of training other providers will in time result in more training opportunities and, presumably, more effective tobacco counseling by all health care providers.

Insufficient time is an important barrier that affects attendance at training programs. Too often those who voluntarily attend training programs are already predisposed and knowledgeable about counseling their patients to abstain from tobacco. To recruit other providers, some groups have advocated visiting health care offices to provide on-site training, much like the pharmacy company sales representatives who make regular visits to health care providers (Kottke et al., 1988). Such an approach has the advantage of involving the provider's office staff in training and provides the opportunity to disseminate relevant tobacco control materials (e.g., self-help guides, labels for patients' charts, list of community cessation services).

Because influential health care providers in a community are often asked to comment on the tobacco issue, providing them with training on effective use of the media is important to ensure that the prohealth message is heard (American Cancer Society, 1987; US DHHS, 1989b). The tobacco control movement has demonstrated that concerned community

leaders, in spite of limited media experience, can be effective media advocates. Experience has also demonstrated that such community-based advocacy can be greatly enhanced if tobacco control advocates are introduced to some basic lessons of media advocacy (US DHHS, 1989b). In the United States, Doctors Ought to Care, a concerned group of physicians and other health professionals, has created satirical media events to publicize the problem of tobacco use and promotion, a prominent example being its sponsorship of the Emphysema Slims tennis tournament as a counterpoint to the Philip Morris-sponsored Virginia Slims tournament (Doctors Ought to Care, 1989).

Economic Incentives

Convincing pharmacists to stop selling a profitable product like cigarettes is not easy (Richards and Blum, 1985). However, the number of tobacco-free pharmacies is increasing, and the American Pharmaceutical Association has endorsed the position that pharmacists should not sell tobacco products (US DHHS, 1989a). In Nevada, a local pharmacist made national news when he built a tobacco "bonfire" to publicize the fact that his store would no longer sell tobacco products. In Erie County, New York, the American Cancer Society urged community pharmacies to stop selling tobacco during the Great American Smokeout. In New Jersey, one advocacy group compiles and publicizes a list of tobacco-free pharmacies (New Jersey Group Against Smoking Pollution, 1988). Pharmacists have been encouraged also to be more involved in counseling their clients on ways to stop using tobacco. In 1982, the National Cancer Institute in collaboration with the American Pharmaceutical Association produced and distributed over 25,000 copies of the "Pharmacist's Helping Smokers Quit Kit" (NCI, 1982).

Regulation

Two-thirds of the states now require hospitals to restrict smoking to designated areas (Pertschuk and Shopland, 1989; US DHHS, 1989a). Minnesota was the first state to pass a law that requires all hospitals to be smoke-free.

There are many compelling reasons for health care facilities, especially hospitals, to adopt strong smoking restrictions (Knapp et al., 1986). Permitting smoking in the facility may undermine physicians' advice to stop smoking. Nonsmoking patients in the facility may be adversely affected by exposure to environmental tobacco smoke. The majority of hospital fires are caused by smoking in bed. Finally, other sectors of the community look to actions in the health care sector to model their response to the tobacco issue.

One strategy that has been used effectively to help promote the establishment of stronger smoking policies is to survey patients and staff about their attitudes about restricting

smoking (Kottke et al., 1988). Population surveys have demonstrated strong public support for tough smoking restrictions in health care facilities (US DHHS, 1989a). Getting local medical and public health organizations to endorse smoking restrictions can pressure administrators to institute stronger smoking restrictions (American Cancer Society, 1988; Knapp et al., 1986). Finally, publicly acknowledging health care facilities that have strong antismoking policies may help pressure others to adopt similar restrictions (Kottke et al., 1985). There are several comprehensive guides available that describe strategies for implementing voluntary no-smoking policies (American Hospital Association, 1988; Burtaine and Slade, 1988; Hurt et al., 1989; Knapp et al., 1986).

Licensure requirements for health care facilities could be changed to mandate that tobacco prevention and cessation services be offered. The New York State Health Department is currently considering a regulation that would require hospitals to include plans for cardiovascular disease prevention programs (including prevention of tobacco use) in their application for a "certificate of need" to build a coronary care unit. Similarly, funding for state and local health departments could be made contingent on their providing certain types of tobacco control services.

Worksites

Worksites are an important channel for tobacco control because they constitute a setting in which large numbers of smokers can be reached with programs to encourage and support cessation efforts (Fielding, 1984; US DHHS, 1985). Worksites are also an important channel for involving non-smokers in tobacco control efforts, particularly through the promotion of no-smoking policies (American Cancer Society, 1988).

Tobacco control activities for worksites should seek to accomplish the following goals: (1) increase the number of worksites that provide tobacco control programs for their employees and (2) increase the number of worksites that adopt policies that discourage tobacco use (e.g., no smoking indoors, lower health insurance premiums for nonsmokers, hiring of nonsmokers only). Intervention activities to accomplish these goals fall into the same above-mentioned categories: education, economic incentives, and regulation.

Stimulated by both public and private initiatives, an increasing number of businesses are adopting policies that limit smoking at work. A 1987 national survey conducted by the Bureau of National Affairs found that 54 percent of the businesses responding to the survey had policies limiting smoking at work (Bureau of National Affairs, 1987). The 1986 Adult Use

of Tobacco Survey showed that 45 percent of employed adults in the survey reported having some smoking restrictions at their workplace (Centers for Disease Control, 1988).

Education

Policies limiting smoking at work have resulted in an increased demand for worksite tobacco education and cessation programs (Martin et al., 1986; Newsweek, 1988). Community organizations such as the American Lung Association, the American Heart Association, and the American Cancer Society have all developed educational programs and materials to assist worksites in providing tobacco education for their employees (LaRosa and Haines, 1986). A number of commercial stop-smoking programs have created programs and marketing strategies specifically for worksites (Newsweek, 1988; US DHHS, 1989a).

In addition to offering educational programs, some businesses offer their smoking employees incentives to stop smoking (Schwartz, 1987; US DHHS, 1985). A common type of incentive is the offer to pay part or all of the cost to attend a cessation program. General Motors absorbs 75 percent of the fee for a smoking cessation program offered to its employees (Schwartz, 1987). Some employers have offered a cash bonus to employees who abstain from smoking (Rosen and Lichtenstein, 1977). Recently, a company in Houston began charging smokers an extra \$10 a month to pay for higher health care benefit costs associated with smoking (Winslow, 1990).

A strong policy against smoking is the cornerstone of a successful workplace tobacco control effort (Emont and Cummings, in press; Fielding, 1986). The most common barrier to adopting a restrictive smoking policy is a perceived absence of employee demand (Bureau of National Affairs, 1987; Emont and Cummings, 1989). In a 1987 survey, two-thirds of companies without policies cited insufficient employee demand as the reason for not adopting a policy (Bureau of National Affairs, 1987). In addition, many employers fear a negative reaction from smoking employees, including possible legal action and grievances (Bureau of National Affairs, 1987). However, surveys of smokers and nonsmokers consistently show support for smoking restrictions at work (US DHHS, 1986 and 1989a).

Conducting workshops to educate employers about the rationale and tactics for implementing smoking restrictions is one approach to encouraging worksites to implement no-smoking policies. Publicizing surveys that demonstrate support for worksite smoking restrictions can be an effective way to make employers aware of employee demand for such policies. In the same vein, actively marketing tobacco control services to worksites, rather than just reacting to requests for such assistance, can substantially increase the number of worksites

voluntarily implementing tobacco control policies and programs for their employees.

Economic Incentives

A growing body of evidence shows that health care costs are greater for smokers than for nonsmokers (Kristein, 1983; Winslow, 1990). This information is particularly relevant to employers, because a large share of health insurance is purchased by employers as a benefit for employees. The issues related to insurance as an economic incentive are covered later in this chapter.

The courts have established that it is the employer's common law duty to provide a safe workplace. In several cases employers have been held legally and financially responsible for smoking-related illnesses and disability caused by exposure to environmental tobacco smoke at work (Myers and Arnold, 1987). As evidence about the health hazards posed by environmental tobacco smoke continues to mount, the concern about liability for allowing unrestricted smoking at work will probably stimulate more employers to institute restrictive smoking policies (US DHHS, 1986).

Regulation

Government efforts to regulate smoking restrictions for private and public worksites have increased markedly in the past decade (Pertschuk and Shopland, 1989; US DHHS, 1986 and 1989a). As of 1990, 14 states and nearly 300 cities and counties had mandated the adoption of workplace smoking policies (Pertschuk and Shopland, 1989). There has been little evaluation of the adequacy of implementation or level of compliance with smoking laws. The available evidence does not support the tobacco industry claim that smoking laws in workplaces are expensive and unenforceable (US DHHS, 1989a).

Schools

Most smokers begin using tobacco before the age of 18; only a small percentage take up smoking after age 21 (US DHHS, 1989a). Most health professionals agree that the reduction of tobacco-caused disease can best be achieved through preventing children from initiating tobacco use (American Academy of Pediatrics, 1987; American Medical Association, 1987; Blum, 1986; Colorado Department of Health, 1986; Coye, 1988; Maine Department of Human Services, 1983; Minnesota Department of Health, 1984; Pennsylvania Plan for Tobacco or Health, 1986; Warner et al., 1986). Schools are important for tobacco control efforts also because they are significant community institutions.

School activities to control tobacco use should seek to accomplish the following two goals: (1) increase the number of schools that implement state-of-the-art tobacco prevention curricula and (2) increase the number of schools that are tobacco-free. Intervention activities to accomplish these goals

fall into two broad categories: information dissemination, which includes activities to encourage voluntary actions by schools, and regulation, which mandates that schools take specific actions. Examples of each of these intervention strategies are given below.

Information Dissemination

Since the mid-1960's, tobacco education has been a common element of school health programs. However, the nature of tobacco education efforts and their designated targets have changed over time (US DHHS, 1989a). There has been a shift away from information-oriented programs to psychosocial curricula designed not only to address youth's motivations to smoke but also to impart skills for resisting influences to smoke (Flay, 1985; US DHHS, 1989a). There has also been a shift in the target group from high school and college students to middle school and elementary schoolchildren (US DHHS, 1989a). Although evaluations of school-based tobacco prevention programs indicate that no single program can be relied on to deter adolescents' tobacco use across the board, evidence does point to certain key features of school-based programs that have been consistently associated with positive preventive effects. These include multiple sessions over many grades; information about the social consequences and short-term physiological effects of tobacco use; information about social influences on tobacco use, especially peer, parent, and media influences; and training in refusal skills (Glynn, 1989).

The extent to which state-of-the-art curricula for prevention of tobacco use have been adopted and are used by schools has not been systematically documented, although anecdotal evidence suggests that few school systems provide truly substantial curricula (Best et al., 1988; Cleary et al., 1988; US DHHS, 1989a). Barriers to widespread adoption of tobacco prevention programs within schools include demands on teacher time, cost of materials for specific programs and teacher training, and competing educational and health priorities (Best et al., 1988; Cleary et al., 1988). Packaging program materials so that they are easy for teachers to use will facilitate their adoption. Recruiting and training influential representatives from school systems to serve as local smoking control resources will help ensure that teachers stay current with program materials and will develop advocates for tobacco prevention within school systems (Glynn, 1989).

School-based no-smoking policies are important because the school environment should be free of tobacco smoke, and teachers and school staff are influential role models for children. Evidence suggests that the rules about smoking at school influence the efficacy of tobacco prevention programs. Tobacco education programs implemented in schools that

prohibit smoking appear to be more effective than identical programs in schools with less restrictive policies (Best et al., 1988).

Conducting workshops to educate school administrators and board members about the rationale and tactics for implementing no-smoking policies is one approach to encourage schools to implement such policies. Conducting and publicizing surveys that demonstrate support for tobacco-free schools can be used to pressure school boards to consider implementing stronger tobacco use policies (National School Boards Association, 1987).

Regulation

School education about the health consequences of tobacco use is mandated by law in 20 states (US DHHS, 1989a). Several states also require teacher training about the effects of tobacco use. In Connecticut, to be certified to teach in public school, a person must pass an exam on the effects of nicotine and tobacco use (US DHHS, 1989a).

Little is known about the level of compliance with state regulations. As noted previously, the nature and scope of tobacco education efforts appear to vary widely across school districts. Regulatory actions that fail to stipulate the nature and scope of tobacco curricula will likely be ineffective. Moreover, standards should be established to guide implementation and evaluation of curricula. Standards should address the curricula that should be used, teacher training, and minimum number of hours devoted to tobacco education at each grade level.

By 1990, 15 states had prohibited smoking by secondary school students, and another 17 states had laws that restrict students' smoking to designated areas (US DHHS, 1989a). Most secondary schools have written policies that prohibit or restrict smoking by students (National School Boards Association, 1987; US DHHS, 1989a). Smoking by school faculty and staff members is generally permitted, but only in areas away from students. Three states, New Jersey, Wisconsin, and Utah, have passed laws that prohibit smoking by anyone on school property. Although most schools have policies regulating smoking, fewer than 5 percent are totally smoke-free (National School Boards Association, 1987). An important barrier to adoption of a tobacco-free policy is concern about opposition from the teacher's union. Union contracts often negotiate smoking areas for teachers, even though the vast majority of teachers do not smoke. Thus, legislation that mandates schools to be tobacco-free is probably necessary. In general, public support is greater for laws restricting smoking in schools than for other locations such as private worksites and restaurants (US DHHS, 1989a). If additional evidence can be produced to demonstrate

a link between school smoking policies and smoking initiation, it is probable that measures to prohibit tobacco use on school grounds will become more common.

Table 1 summarizes the tobacco control activities discussed in this section and identifies groups and organizations that may assume responsibility for each. These interventions may have a greater synergistic effect when combined, compared to the sum of individual effects. The key to a community-based approach lies in assuring that the intervention is broad-based and permeates the social networks.

COMMUNITY MOBILIZATION

Although national and statewide initiatives are critical components of a comprehensive smoking control plan, many of the most effective interventions will be individually applied in thousands of cities and towns across the United States. To achieve behavior change in a community, the target population must be involved in identifying the problem, planning and undertaking steps to correct the problem, and creating structures in the community that assure the change is maintained. An underlying assumption is that the community must be empowered to control the intervention and must accept "ownership" of it. This approach has been tested in several community health promotion initiatives, including the Stanford Five-City Project (Farquhar, 1978; Farquhar et al., 1985), the Minnesota Heart Health Program (Blackburn and Pechacek, 1984), and COMMIT—the Community Intervention Trial for Smoking Cessation (Pechacek, 1987). There are two practical ways to implement tobacco control interventions that provide community ownership. These may be described as "social action" and "locality development" (Rothman, 1979).

Social action implies grassroots organizing of disadvantaged and disaffected groups who demand change in the social structure. An excellent example of social action in the tobacco control field is in the formation of local groups (e.g., Group Against Smoking Pollution) to lobby for restrictions on public smoking. Such groups often can be strong advocates for rapid change. The strength of the social action approach is also its weakness: because they are confrontational, grassroots groups provoke conflict and may sometimes inhibit the adoption of consensus.

Locality development maximizes local participation in the intervention by including more than only the most committed groups in the change process. Essentially everyone is invited to join in identifying and solving the problem. An important advantage of this approach is that it expedites participation by established community organizations and increases participation by community leaders.

Table 1
Examples of tobacco control activities, by channel and group responsible for performance

Channel	Tobacco Control Activities	Groups Responsible*
Media	• Sponsor antitobacco informational campaigns	A, B, C, D
	• Sponsor smokeout days and/or communitywide cessation events (e.g., TV clinics, contests)	A, B, D, G
	• Advertise cessation services	A, B, C, D
	• Hold press conferences to release relevant tobacco research findings to the media	A, B, C, D, E, H
	• Create events to dramatize the problem of tobacco use in the community (e.g., satirize tobacco promotions)	B, C, G, H
	• Conduct and publicize surveys to document support for tobacco control policies	A, B, C, D, E, G, H
	• Conduct advocacy training for community leaders	B, H
	• Establish a communications network among tobacco control advocates	A, B, H
	• Lobby politicians to earmark government funds for counter-advertising and to regulate tobacco ads and promotions	All groups
	Health Care Sector	• Disseminate materials to assist health care providers in counseling patients who smoke
• Sponsor seminars to train health care providers on ways to counsel patients to stop smoking		A, B, C, D, E
• Recruit and train influential health care providers in media advocacy		B, C, H
• Sponsor a program to encourage community pharmacies to become tobacco-free		B, C, E, H
• Conduct surveys of patients, staff, and visitors to document support for tobacco-free health care facilities		A, B, C, D, E, H
• Sponsor seminars to promote tobacco-free health care facilities		B, C, D, E
• Include tobacco education in medical/health professional school curricula		C, E
• Reimburse providers for treating tobacco addiction		I
• Gather data to support health insurance premium discounts for nonsmokers		A, C, E, I
• Lobby politicians to mandate smoke-free health care facilities; mandate insurance coverage for cessation services, and premium discounts for nonsmokers; and mandate performance of tobacco control services by health departments, hospitals, and other health care facilities		All groups

Table 1 (continued)

Channel	Tobacco Control Activities	Groups Responsible*
Worksite	• Disseminate information to support establishment of smoke-free workplace	A, B, C, H, I, J
	• Sponsor seminars to promote no-smoking policies in the workplace	A, B, C, H, I, J
	• Conduct surveys of employees to document support for no-smoking policies and cessation services	A, B, E, H, I, J
	• Gather data to support health insurance coverage of tobacco cessation services	A, E, I, J
	• Gather data to support health insurance premium discounts for nonsmokers	A, E, I, J
	• Lobby politicians to mandate smoking restrictions in worksites	All groups
	• Lobby politicians to mandate insurance coverage for cessation services and premium discounts for nonsmokers and to provide tax incentives to worksites that offer cessation assistance to their employees	All groups
	• Support employee litigation against employers who fail to implement meaningful smoking policies	B, C, H, I
Schools	• Disseminate state-of-the-art curricula to schools	A, B, E
	• Sponsor workshops to train teachers to implement tobacco education curricula	A, B, E, F
	• Make presentations on tobacco-free schools to school boards, PTAs	B, C, H
	• Conduct student surveys to document the need for tobacco education	A, B, F
	• Conduct surveys of students, faculty, and school staff to document support for tobacco-free schools	A, B, F
	• Mandate that all teachers receive tobacco education training	A, B, E
	• Lobby politicians to mandate tobacco-free schools	All groups

* Key

- A Government health agencies
- B Health voluntaries
- C Health professional associations (e.g., medical societies)
- D Hospitals and other health care facilities
- E Universities, including medical schools
- F Elementary/secondary schools
- G Community organizations (e.g., youth groups, service clubs)
- H Activist groups (e.g., Group Against Smoking Pollution, Doctors Ought to Care)
- I Insurance industry
- J Business organizations (e.g., Chamber of Commerce)

Coalition building is a form of locality development. Coalitions encourage local organizations and groups to adopt tobacco control as their own project. Networking among coalition members fosters sharing of resources and reduces conflict. It lends instant credibility to the program because it involves recognized community leaders and tends to isolate opponents.

Involving organizations encourages them to divert their resources to tobacco control, in itself a change in norms. Because community organizations network with each other, this change diffuses throughout the community and affects the membership of every organization. Seen from a systems perspective, change in organizations leads to change in the entire community.

The role of the tobacco control interventionist in a locality development approach is to catalyze and coordinate action by the wide cross-section of organizations and individuals recruited to the effort. Under a broad, communitywide strategy, small task-oriented groups within the coalition pursue specific, manageable goals. Maintaining communication among organizations and promptly resolving disputes is an important function of leadership, and a democratic structure of coalition governance is critical to building a true sense of ownership by all the members.

There are four major steps in the coalition-building process: community analysis, planning, implementation, and maintenance. Each is critical to the development of a lasting tobacco control intervention that will permanently change community structures and norms.

Community Analysis

Community analysis provides an accurate, in-depth understanding of the community's needs, resources, social structures, and values. At the same time, it provides an opportunity to begin involving the community in the problem-solving process.

The first task is to define the community geographically. A community may be as small as a neighborhood or as large as a major metropolitan area. The important factors in defining a community are interdependence among important social groups and a sense of shared values and norms that lead to individual identification with the community. Because of the importance of major media in determining such identity and in changing norms, consideration should be given to defining the scope of the community as widely as the area of dominant influence of the local broadcast and daily print media. In any case, such a definition should be undertaken in consultation with the leadership of important community sectors, including health, education, business, labor, and government.

Once the community is defined, the next step is to identify the community resources and structures that are potentially available to focus on the tobacco control effort. A large body of quantitative and interpretive data is collected from both secondary sources (e.g., census data, economic reports, histories) and primary sources (leaders and members of the various community sectors). Information should be gathered on the demographic makeup of the population, smoking patterns, and the levels of illness and disability in the community. It should assess the economic structure and well-being of the community, identify business leaders, and tabulate major employers. Political activity and the level of citizen participation should be appraised.

The analysts should carefully assess the level of health promotion and treatment programs available. What resources and skills already exist, and what is the level of service being provided? How ready are providers to join in a tobacco control effort?

The important public and private educational systems should be identified, and the content of the health curriculum appraised. In addition, an effort should be made to identify important social, fraternal, and community improvement organizations and to characterize their memberships. Important religious denominations and major and minor media outlets also must be identified and analyzed. A calendar of major community events should be compiled.

The community leadership structure, because it is likely to affect the intervention, is as important as a list of community resources. What organizations and groups are currently involved in tobacco control? Who are the groups and individuals likely to help or hinder the project? Who are the important leaders who could make a significant contribution? What are competing community priorities, and who are their advocates? How do people want to participate?

This information should be gathered in interviews with community leaders, beginning with those most likely to be interested in the intervention, such as the leadership of major volunteer health organizations and those in charge of health promotion at the local health department and hospitals. From these interviews, influential community leaders will be identified. These leaders in turn should be interviewed to identify additional community leaders and important organizations. This process should be pursued as long as profitable.

The point of the analytic exercise is to determine how the community makes decisions and to begin involving the community in the task of solving the tobacco problem. At the end of the process, the analysts should be able to determine the

community's readiness for change. Are the various elements of the community able to work together to identify and solve common problems? Can they achieve consensus on goals and priorities? Who are the key players who must be part of that consensus? Is there a history of collaboration to build on or must trust-building and conflict resolution be an early component of the tobacco control intervention? To what extent is tobacco control a community priority?

Planning

At this point the process of planning the intervention begins. A small group of influential individuals willing to commit the time and energy needed to plan and begin implementing the project should be selected. An important consideration in choosing members for this initial group is that major stakeholders be included, that is, those with a preexisting commitment to tobacco control. In many communities this will include representatives of the major voluntary health agencies and other health promotion organizations. Other important community sectors, such as education and business, should be represented if possible.

This planning group will determine the structure and initial membership of the coalition and will begin recruiting members. It will set overall goals for the program and will determine staffing structure, office location, and similar needs. If resources are available to pay a staff, the program director should be hired at this point, and the planning group should have a significant role in writing the job description and screening candidates. Staff support is vital to the success of the intervention. If funds are not available to pay for a staff, individuals employed by health agencies may be reassigned from current activities. In either case, clear role definitions are important.

Implementation

The program director should be someone familiar with the target community (preferably a member of it) and should be acquainted with local resources, values, and decision-making processes. The most important skill is the ability to "network," preferably on a communitywide level.

The coalition should be as broad as possible and divided into task forces according to members' interests. Obvious choices for task forces would be media, public policy, health care, worksites, youth and education, and cessation services, though there may be others. A scheme for coalition governance should be devised early. Some type of board or executive group is needed to make important management decisions, but care should be taken to ensure that interventions are planned and implemented by the task forces. An important board function may be allocating resources among the task forces, so it is important that the board be responsive to the coalition's membership, possibly through election to fixed terms.

Training and education of board and task force members are important and continuing aspects of the community mobilization process. Most members will not be experts in tobacco control and may approach the problem with strategies that are ineffective or incomplete. They will benefit from further education on the smoking problem, nationally and as it exists in their community, and they should be exposed to strategies established as effective in previous interventions. Many will bring important skills to the program that can be enhanced by training in other areas, but some will benefit from learning new skills. For example, physicians trained in media advocacy can be a powerful addition to the project's efforts.

A strategic tobacco control plan presents the coalition's overall goals and a series of specific objectives toward meeting those goals. It is important both in guiding rational, sequential implementation of the intervention and as a tool for mobilizing the community to recognize tobacco use as an important public health problem. The plan should be a product of the task forces, which will set priorities, identify resources, and plan activities. In developing the plan, the community begins to assume ownership of the project.

Above all, the tobacco control plan should represent a comprehensive, communitywide approach employing multiple, integrated interventions. Coordination among task forces and intervention activities is vital and is the primary responsibility of the program staff. Rather than providing interventions themselves, the staff will identify others in the community to undertake the intervention activities and to coordinate those efforts. A number of state and local tobacco control plans have been produced and are available for guidance (Colorado Department of Health 1986; Coye, 1988; Minnesota Department of Health, 1984).

Maintenance

Maintenance of the intervention is necessary to its success. Smoking will not disappear from a community in months or in a few years, and changes in community norms will probably occur over the course of a generation. Any outside financial support for a community intervention will be restricted in amount and duration. More fundamentally, ownership of the intervention will not be complete until the community redirects its resources to smoking control. This action will, in itself, constitute a significant normative change.

Planning for transfer to the community should be an integral part of the intervention. Activities should be structured to elicit the greatest possible participation from community organizations and structures. The strategic use of seed money grants and contracts can build a constituency for tobacco control within organizations and ensure a continuing interest in addressing the problem.

In addition to broadening the group of stakeholders who believe in the importance of tobacco control and have actively worked at it, this approach gives individuals and organizations the experience of successfully implementing programs they might otherwise not have attempted. Selecting low-cost activities, or at least demonstrably cost-effective activities, will increase the sense of self-sufficiency.

Only by letting the members of the community implement the tobacco control program can it continue after outside funding is exhausted. Staff members must not become service providers. Rather, they are facilitators, coordinators, and trainers. It is recognized that the community will make mistakes, but it will learn from these mistakes and, given time, will institutionalize an effective tobacco control program.

RESTRICTIVE LEGISLATION

Restrictions on smoking for fire and safety reasons have existed for much of this century, but restrictions based on health and annoyance have been implemented largely over the last two decades (US DHHS, 1986). The major motivations for this new wave of restrictions have been the irritation and annoyance of the nonsmoker caused by environmental tobacco smoke and the evolving understanding of the disease risks associated with exposure to environmental tobacco smoke. Now these motivations are blending to produce a social climate in which cigarette smoking is increasingly unacceptable.

Much of the credit for changes in the social acceptability of smoking has focused on recent events such as the call for a smoke-free society by the year 2000 as well as reports on the scientific evidence by the Surgeon General (US DHHS, 1986), the National Academy of Sciences (1986), and most recently the U.S. Environmental Protection Agency (in press). However, this kind of social shift occurs slowly, gathering momentum with time. The understanding of the risks associated with environmental tobacco smoke began in 1970 when the Surgeon General at that time, Jesse L. Steinfeld, M.D., recognized the clear biological plausibility of a significant public health risk from environmental tobacco smoke. Addressing the National Interagency Council on Smoking and Health, he stated, "Evidence is accumulating that the nonsmoker may have untoward effects from the pollution his smoking neighbor forces upon him." Dr. Steinfeld called for a bill of rights for the nonsmoker (Steinfeld, 1972), and he directed the National Clearinghouse for Smoking and Health to conduct a complete assessment of scientific evidence on the topic for inclusion in the next Surgeon General's Report (US DHEW, 1972).

Those documented concerns, coupled with nonsmokers' annoyance at being exposed to tobacco smoke, ignited the nonsmokers' rights movement. By the mid-1970's, the change in social acceptability of smoking was well under way and has been credited with the downturn in per capita cigarette consumption that began in 1974 (Warner, 1981).

Federal Actions

Federal Government efforts to restrict smoking have not been as extensive as those of state and local governments. Outside the tobacco belt, state and local governments are less subject to lobbying efforts by the tobacco industry and therefore have passed more laws restricting smoking.

The only area in which Congress has acted to restrict smoking has been aboard commercial airline flights. Until recently, most of the regulation of smoking on airlines was the responsibility of the Civil Aeronautics Board (CAB). In 1971, the CAB mandated that all commercial airline flights provide nonsmoking sections large enough to accommodate every passenger who desired to sit in them, and in 1983 it issued new regulations that banned smoking on flights of 2 hours or less. However, within hours of its announcement, the ban was reversed at the insistence of lobbyists and powerful members of Congress (Walsh and Gordon, 1986).

Nevertheless, public pressure for a smoking ban continued to mount, and as a result, Congress passed legislation in 1987 doing exactly what the CAB had tried to do in 1983—ban smoking on all commercial airline flights of 2 hours or less. This included about 80 percent of all flights within the continental United States (US DHHS, 1989a). In spite of concerns to the contrary, the airlines have found the law to be an easy one to enforce. Flight crews found it necessary to initiate enforcement actions against only 1 out of approximately every 4 million airline passengers in 1988 (Hensley, 1989).

In 1989, Congress again considered the issue of smoking on commercial air flights because the law dictating the 2-hour smoking ban was about to expire. The Senate wanted a total ban on all flights, whereas the House voted only to continue the 2-hour ban. A compromise was reached, whereby the ban on smoking was increased to 6 hours, effectively eliminating smoking on all flights except those to Alaska, Hawaii, and foreign locales, as well as on charter flights (Phillips, 1990).

Most other Federal action regulating smoking has been by agencies restricting smoking at Government worksites. The General Services Administration, which is responsible for one-third of all Federal buildings, prohibits smoking except in designated areas. The Department of Health and Human Services completely bans all smoking in its buildings. In 1986,

the Department of Defense established a new policy to curtail smoking among Armed Forces personnel. As part of the policy, smoking is permitted only in designated areas (US DHHS, 1989a).

State Legislation

In 1973, Arizona became the first state to restrict smoking in a number of public places because environmental tobacco smoke is a public health hazard. This was done in response to the 1972 Surgeon General's Report, which for the first time identified involuntary smoking as a health risk. The passage of the Arizona law marked a shift in the content of laws regulating smoking. Instead of restricting smoking because it is a fire hazard, likely to contaminate food, or morally wrong, legislatures started restricting smoking because it endangers the health of nonsmokers (US DHHS, 1989a).

Throughout the 1970's, the regulation of smoking in public places became a major issue for state legislatures. In 1974, Connecticut became the first state to pass a law restricting smoking in restaurants, and in 1975, Minnesota passed its Clean Indoor Air Act. This was the first law to use the approach that smoking would be prohibited everywhere except where specifically permitted, thereby making nonsmoking the norm. It was also the first law to extend smoking restrictions to worksites, both public and private. Continuing until today, this law has served as a model for other state legislatures seeking to pass comprehensive smoking legislation (US DHHS, 1989a; Kahn, 1983).

The growth of state smoking legislation was rapid throughout the 1970's and 1980's. Two years that particularly stand out are 1975, in which 13 states enacted smoking laws, and 1987, in which a record 20 states passed such laws. The flurry of activity in 1987 reflected the 1986 publication of reports from the Surgeon General and the National Academy of Sciences, both of which documented the health risks of involuntary smoking (Rigotti, 1989; US DHHS, 1989a). As of August 1, 1990, 45 states and the District of Columbia had passed laws restricting smoking in public places in some manner (Tobacco-Free America, 1990).

The laws that were passed were also more restrictive. Previously, laws restricted smoking only in public places such as elevators or buses, but the new laws began increasingly to regulate smoking in restaurants and private worksites (Rigotti, 1989; US DHHS, 1989a; Warner, 1981). As of August 1, 1990, 27 states regulated smoking in restaurants and 18 states restricted smoking at private worksites (Tobacco-Free America, 1990).

The restrictiveness of state smoking laws varies in different regions of the country. In particular, southern states have fewer smoking laws, and they are less comprehensive. Of the five states that have no laws whatsoever to restrict smoking in public places, two—Tennessee and North Carolina—are major tobacco producers (Rigotti, 1989; Tobacco-Free America, 1990; US DHHS, 1989a).

No-smoking laws passed by the states are generally implemented by the state health departments with minimal burden (US DHHS, 1989a). For example, for the 3 years after the passage of the Minnesota Clean Indoor Air Act, the cost to the Minnesota Department of Health was only about \$4,600 per year (Kahn, 1983).

Local Legislation

During the 1980's, efforts to control cigarette use spread to the local level—towns, cities, and counties (US DHHS, 1989a). During the period between 1986 and 1990, a more than fourfold increase occurred in the number of communities with smoking ordinances, from 89 in 1986 (US DHHS, 1989a) to 468 in 1990 (Tobacco-Free America, 1990).

Although state smoking laws are generally called clean indoor air acts, smoking laws at the local level are usually referred to as smoking ordinances (Pertschuk and Shopland, 1989). With few exceptions, these local ordinances are stronger and more comprehensive than corresponding state laws and are often enacted because of difficulties in passing stronger state laws (Rigotti, 1989). A legislative response by the tobacco industry has been to promote state legislation that preempts the right of local communities to pass laws restricting tobacco use. As a result, seven states have passed laws preventing the passage of more stringent ordinances at the local level. In Florida, the law not only prevents the passage of future local smoking ordinances but also preempts all existing ones (Tobacco-Free America, 1990).

The most complete records on local smoking ordinances have been kept for California, which has been a leader in the passage of these laws. The first were passed in 1979, and in 1982, San Diego became the first large California city to enact an ordinance regulating smoking in the workplace (US DHHS, 1989a). In 1983, the San Francisco Board of Supervisors passed an ordinance regulating smoking in private worksites, which later was brought before the voters in the form of a proposition. In spite of heavy opposition from tobacco interests, it passed, and the publicity generated by the campaign stimulated other communities around the country to pass similar ordinances (Martin and Silverman, 1986).

Laws restricting smoking are often called "self-enforcing" because few complaints of violations are filed, and so it is

assumed that most people are obeying the law (Rigotti, 1989). In San Francisco, only 1 out of approximately 60 Department of Public Health inspectors was assigned to enforce that city's Smoking Pollution Control Ordinance. The percentage of time he spent doing that job declined during the first year until, during the last 4 months, only 21 percent of his time was spent on the program. No additional funds were needed to enforce the law (Martin and Silverman, 1986). Similarly, New York's Health Department reported receiving only a few complaints after that the city's no-smoking law restricted smoking in restaurants (US DHHS, 1989a).

An effort to actively measure compliance with laws restricting smoking, rather than just counting the number of complaints received by a health department, was made in Cambridge, Massachusetts. Researchers asked city residents whether they had recently noticed smoking in places where it was not permitted 3 months after the passage of a city smoking ordinance. One-third, it turned out, had noticed illegal smoking. Asked what their response was, most people said that they had ignored the violation (US DHHS, 1989a).

Public Opinion

Rigotti (1989) makes the point that public support for smoking restrictions was present long before either the passage of no-smoking laws or the publication of most of the evidence that passive smoke could be damaging to one's health. As early as 1964, most nonsmokers felt that smoking should be allowed in fewer places, and by 1975, a majority of both nonsmokers and smokers felt that way. In 1987, a Gallup poll found, for the first time, that a majority of all adults (55 percent) favored a complete ban on smoking in all public places (US DHHS, 1989a).

Effects of Restrictions On Smoking Prevalence

In 1982, the government of Hong Kong began making a concerted effort to reduce smoking in that city. Smoking was restricted in public places, a fourfold increase in the duty paid on tobacco was instituted, public health education was increased, and an antismoking publicity campaign launched. As a result, 16 percent of the population quit smoking between 1982 and 1984, and the number of regular smokers between the ages of 15 and 19 was cut in half. When ex-smokers were asked in surveys which factors were influential in causing them to quit, respondents identified two main ones—cost and health concerns (Mackay and Barnes, 1986).

A similar effort to decrease smoking was instituted by the U.S. Department of Defense starting in 1986. Between 1985 and 1987, smoking prevalence decreased in all branches of the Armed Forces, particularly in the Army, which was the branch most active in getting its personnel to eliminate smoking (Hagey, 1989; Rigotti, 1989; US DHHS, 1989a).

Data collected by the Wisconsin Department of Health and Social Services show the effects of the antismoking campaign in that state. Per capita sales of cigarettes in Wisconsin started dropping off sharply from a peak in 1981. Coincident with this dropoff were two cigarette tax increases, one state and one Federal, and the 1983 passage of Wisconsin's Clean Indoor Air Act (Centers for Disease Control, 1989).

Employee Attitudes

Worksite smoking restrictions are gaining acceptance among workers, including smokers (Becker et al., 1989; Biener et al., 1989a; Sorensen and Pechacek, 1989). Sorensen and Pechacek found support for no-smoking policies among smokers who were interested in quitting, those who were concerned about the health effects of smoking, those who indicated a high level of support from coworkers for previous quit attempts, and those who had a high number of nonsmoking coworkers. This may help to allay the fears of employers who believe that smoking restrictions will lead to dissension or low morale among employees. In most situations, smoking restrictions can be implemented without significant conflict.

A study that included a survey of smokers outside office buildings in Pasadena showed similar support from smokers for smoking restrictions. Pasadena citywide smoking regulations require restrictions in all indoor places, including worksites. In the study by Sussman et al. (in press), a majority of smokers interviewed thought it was important to stop smoking and had positive feelings about the nonsmokers' rights movement. In addition, about three-quarters of the smokers had made at least one quit attempt, with those subject to no-smoking policy reportedly putting more effort into quitting smoking. The researchers caution that "little is known about attitude-behavior relationships and smoking policy effects" (Sussman et al., in press).

Impact of Worksite Restrictions

Millar (1988), in a government work setting, found a continuous quit rate of 3.5 percent at 1 year after smoking restrictions went into effect. Two hundred registrants for a smoking cessation course were surveyed at 6 weeks, 6 months, and 1 year after smoking restrictions began. The overall smoking prevalence in the year after restrictions declined from 29 to 24 percent.

A recent study analyzed the impact of a strict smoking policy at the Texas Department of Human Services (Gottlieb et al., 1990). The policy limited smoking to break rooms or lounges and cafeteria smoking sections. Regional administrators were given the authority to declare a worksite smoke-free if no appropriate room was available, and smoking was banned outright in 4 of the 12 regions. Again, most of the departments studied had some restrictive policy in effect prior to implementation of the new policy and before the study began.

The Texas study showed that the reduction in smoking prevalence at 6 months after policy implementation was greater in the work areas with smoking bans than in those with smoking restrictions. Consumption of cigarettes at work decreased in work areas with both types of policies. However, the authors concluded that although daily consumption of cigarettes at work decreased significantly, "no significant change was detected in smoking prevalence."

The authors of the Texas study summed up in this way: the "failure to find changes in smoking rates may also have been due to an insufficient follow-up period. Quitting smoking has been conceptualized as a process of change, with smokers moving through the stages of precontemplation, contemplation, action, and maintenance. It is possible that the smokers had increased their readiness to quit but not yet taken action" (Gottlieb et al., 1990).

Impact of Smoking Bans

The Australian Public Service used a sample of 2,113 employees who were surveyed 2 to 4 weeks before a complete workplace smoking ban was implemented and again 5 to 6 months later (Borland et al., 1990). Fifty-seven employees who were smoking at the time of the initial survey were not smoking at the time of the followup surveys. However, 36 previous nonsmokers reported starting smoking; it was not noted whether the 36 were relapsing ex-smokers or new smokers. Including the 36 employees who took up smoking brought the reduction findings to a 1 percent reduction in prevalence over the 6-month period, which was not considered significant by the study authors. However, because it is unlikely that these employees took up smoking as a result of the workplace smoking ban, including them in the equation reduced the drop of prevalence that might have been found.

An additional indicator that the reported drop in prevalence might be low is that the work settings in which this study was conducted had various levels of restrictions on smoking prior to the mandated ban. It is therefore possible that some smokers had already quit as a result of a smoking control policy prior to the ban and that this reduction in prevalence was not captured in the study.

The study reached its conclusions on smoking prevalence by conducting pre- and postpolicy surveys on workplace smoking consumption. The smokers were asked to estimate the number of cigarettes they usually smoked on both workdays and nonworkdays and to recall the number of cigarettes they smoked in the previous 24 hours, divided into seven time periods. The study showed that moderate and heavy smokers

had fewer cigarettes during the day, with the greatest change among heavy smokers. Small increases in smoking rates outside the work environment did not compensate for the enforced reduction at work.

In a more recent study at the Johns Hopkins University, however, a significant reduction in smoking prevalence was found to result from implementation of a total ban on smoking (Stillman et al., 1990). As of July 1, 1988, smoking was banned in all areas of the Johns Hopkins Hospital complex involving 24 buildings in an area covering 12 square blocks. The previous policy had allowed smoking in designated areas of cafeterias, waiting areas, and lounges. The new policy was announced on January 1, 1988, and the announcement was followed by an extensive internal media campaign. A health-oriented campaign that emphasized the effects of passive smoking and included free screening for exhaled carbon monoxide was launched. Educational programs to ensure policy enforcement were offered to the staff, and four smoking cessation options were offered free to all employees. In addition to these efforts, discreet observations of visitor and employee smoking were performed monthly beginning 8 months prior to the ban and at 1 month and 6 months after the ban started.

The initial survey of 8,742 full- and part-time employees was distributed 6 months prior to the ban, thereby allowing for inclusion of smokers who ceased in anticipation of the ban. One year after the initial survey and 6 months after the ban, respondents who were still actively employed (4,480) were mailed a followup survey. A significant decrease in employee smoking prevalence was found (21.7 percent before the ban to 16.2 percent after the ban).

Effect on Continuing Smokers

There is no consensus whether smoking restrictions encourage smokers to quit or the extent to which restrictions alter behavior. Some researchers have suggested that, over time, smokers may adapt smoking behavior to smoking restrictions, rather than using the restrictions as an incentive to quit (Biener et al., 1989b). Others suggest that worksite no-smoking policies encourage smokers to put more effort into quitting (Sussman et al., in press). Although restricting the areas in which smoking may occur might reduce the cues that encourage smoking, it is also suggested that the smoking area itself could become a cue to smoke (Glasgow, 1989). Additional research may provide more insight about this area.

Elements Needed For Worksite Restrictions

A number of investigators have made suggestions for the important elements to successfully introduce worksite smoking restrictions and make them as effective as possible. Announcing the restriction or ban well in advance is essential. This will

allow time for smokers to prepare for quitting or to make adjustments. Rosenstock and colleagues (1986) recommended introducing new policies gradually, offering smokers an opportunity to express their dissatisfaction, and making clear the limitations of employee influence over the new policy. Millar (1988) suggested that, in designated smoking areas, smokers be separated from nonsmokers and that smoke be vented to the outside and not through the building's ventilation system. Finally, smokers' efforts to quit should be aided by available cessation classes, coworker support, publicity regarding adverse health effects, and ex-smoker support groups.

In conclusion, there is some evidence that worksites that eliminate smoking completely, offer cessation clinics and other incentives to encourage smoke-free lifestyles, and implement comprehensive health promotion measures will experience a measurable drop in smoking prevalence.

PREVENTING TOBACCO SALES TO MINORS

In the United States today, more than 3 million children under the age of 18 regularly smoke cigarettes or use smokeless tobacco. More than 2 million others are actively experimenting with tobacco use and are at high risk for becoming regular users. Tobacco companies collect more than \$1.25 billion annually from the sale of their products to minors (DiFranza, 1989).

More than half of all smokers begin before the age of 14, and 90 percent begin by the age of 19. Tobacco use by young people is a problem easily understandable in terms of economic demand and supply. A major factor in creating demand for tobacco within young age groups is tobacco industry advertising and promotion. Inadequate and unenforced laws assure that this demand is met with a readily available supply. In the 6 years following the introduction of Virginia Slims and other "feminine" cigarettes in 1968, the number of teenage girls who regularly smoke more than doubled. During the late 1970's, the rate of smoking among teenage boys decreased, whereas female smoking remained high.

Although 45 states and the District of Columbia prohibit the sale of tobacco to minors, most often defined as anyone under the age of 18, youngsters who want to obtain cigarettes find it easy to do so. An estimated 1 billion packs of cigarettes are sold to minors under the age of 18 every year, usually in violation of the law (DiFranza and Tye, 1990). The National Adolescent Student Health Survey of 12,000 students found that 86 percent of respondents believed it would be easy for them to obtain cigarettes (American School Health Association, 1989).

There are many reasons to prevent minors from obtaining tobacco products. First, easy availability conveys a message that the substance is not really very harmful. Second, illegal tobacco sales to minors foster disrespect for the law and may help young people toward illegal purchases of alcohol or use of illicit drugs. Third and most obvious, the harder it is for young people to obtain tobacco, the fewer will use the substance.

Minors' Access To Tobacco

By 1990, 45 states had some legislation preventing minors' access to tobacco products. Only three, however (Indiana, Utah, and Idaho), are considered to meet the standards for even "basic" coverage, based on criteria established by the U.S. Office on Smoking and Health, meaning that in addition to establishing a minimum age for sale, there are penalties for merchants selling tobacco to minors and some restrictions on the placement of cigarette vending machines. Six states have no minimum age law whatsoever (Montana, Wyoming, New Mexico, Missouri, Louisiana, and Kentucky). No state law is considered to be "comprehensive," which in addition to the basic category's requirements would include a requirement for warning signs at the point of purchase, provision to revoke merchant licenses for violation, and a ban on the distribution of free tobacco products (Centers for Disease Control, 1990b).

A DHHS study of enforcement of laws prohibiting the sale of tobacco to minors was able to document only 32 instances of those laws having been enforced outside of Utah, which has a relatively good record (Office of the Inspector General, 1990). In his 1989 report, the Surgeon General stated:

In marked contrast to the trends in virtually all other areas of smoking control policy, the number of legal restrictions on children's access to tobacco products has decreased over the past quarter-century. Studies indicate that compliance with minimum-age-of-purchase laws is the exception rather than the rule (US DHHS, 1989a).

Sales by Retail Stores

In studies across the country, it has been shown that, on average, 75 percent of retail stores sell tobacco to minors as young as age 12. In one Massachusetts community, an 11-year-old girl was successful in purchasing cigarettes at 75 out of 100 attempts (DiFranza et al., 1987). In the largest trial of this type, in Santa Clara County, California, 18 minors aged 14 to 16 visited 412 stores and 30 vending machines with the intent of purchasing cigarettes. They were successful at 74 percent of the stores and 100 percent of the vending machines (Altman et al., 1989). In Erie County, New York, minors purchased cigarettes in 77 percent of stores that had received a special mailing about the law prohibiting tobacco sales to minors, and in 88 percent of stores that did not receive the mailing (Skretny et al., 1990).

Table 2
Survey of Minnesota 10th graders

Location	Percentage of Yes Responses*
Drug Store	42
Grocery Store	53
Convenience Store	68
Vending Machine	71
Gas Station	80

*Question: Have you purchased tobacco at these places?

Attempts to purchase tobacco products in at least 18 different communities have yielded similar results: On average, three of four retail stores will sell tobacco to minors, in violation of the laws of their state (Tobacco and Youth Reporter, 1989a).

Researchers asked 10th graders in two Minnesota communities "Have you ever purchased cigarettes from any of these places?," with the results shown in Table 2. Most teens thought it would be "very easy" (55 percent) or "fairly easy" (31 percent) to obtain cigarettes. Among teenage smokers, 90 percent thought it was "very easy" to obtain cigarettes (Forster et al., 1989).

Vending Machine Sales

As mentioned above, when minors aged 14 to 16 attempted to purchase cigarettes from 30 vending machines in Santa Clara County, California, they were successful in all 30 attempts. Even after a massive community education program had reduced illegal over-the-counter cigarette sales to minors by 50 percent, followup tests showed vending machine sales allowed minors to purchase cigarettes 100 percent of the time.

In a major study covering the three-state area surrounding Washington, D.C., Davis and colleagues escorted minors to 120 cigarette vending machines (twice each, for a total of 240 attempts). The children were successful in 100 percent of attempts to buy cigarettes (Davis et al., 1989). Davis concluded that "teenagers have easy access to cigarette vending machines in three different jurisdictions in the Washington, D.C., area. There is every reason to believe that this reflects the situation across the country" (Tobacco and Youth Reporter, 1989b). Identical results were obtained when minors were escorted to cigarette vending machines in New York, Colorado, and New Jersey.

A study by the National Automatic Merchandising Association, the trade association for the cigarette vending machine business, confirms the impression that vending machines are the source of cigarette supply for many very young teenagers when they first begin to experiment with smoking. The study found that, while only 16 percent of teens regularly obtained their cigarettes from vending machines (which still represents more than half a million teenagers), vending machines are a key source of supply for young teens. Among the study's conclusions were:

- Thirteen-year-olds are 11 times as likely as 17-year-olds to buy cigarettes from vending machines (22 percent vs. 2 percent).
- Most teens (56 percent) say they use vending machines "because no one will stop me from buying cigarettes this way."
- Whereas virtually all teenage smokers (96 percent) had been stopped from buying cigarettes over the counter, only about 1 in 10 had ever been stopped from buying cigarettes from a vending machine.
- A growing trend is to sell cigarettes and candy from the same vending machines, which is likely to further encourage and facilitate cigarette sales to minors.

Free Cigarette Samples

Tobacco companies spent \$265 million giving away cigarette samples through direct distribution or coupons during 1988, the most recent year for which data are available (Centers for Disease Control, 1990). One of the key functions of tobacco company giveaways is to provide young people with their first experimental packs of cigarettes or smokeless tobacco products at no cost and little risk of being caught. That young people are the target for many free cigarette distribution campaigns was made clear by a recent Camel advertisement that included a coupon with the encouragement to get a friend or a "kind-looking stranger" to redeem the pack for you if you are uncomfortable, an obvious come-on to underage youth.

Sean Marsee, the Oklahoma youth who died at age 18 of mouth cancer caused by using smokeless tobacco, got started when a tobacco company representative gave him a free pack of snuff at a rodeo. Indeed, giving free samples to young nonusers has been a foundation of the growth strategy of the U.S. Tobacco Company (makers of Skoal, Copenhagen, Happy Days, and other smokeless tobacco products). The company has run advertisements in youth-oriented magazines offering free samples, complete with instructions for use, and gives free samples to young people at music, sports, and other events.

Davis and colleagues asked a large number of young people if they had personally been given free tobacco samples;

14 percent of the total and 20 percent of the high school students responded in the affirmative. Approximately half reported having seen other teenagers being given free cigarette samples (Davis and Jason, 1988).

DiFranza organized a group of young people to send coupons in response to tobacco company solicitations for free tobacco samples being sent through the mail. Fifteen of twenty were mailed free tobacco samples at home, in violation of Massachusetts state law (DiFranza, 1989).

Action at the Community Level

Over the past several years, there has been a flurry of activity to prevent the sale of tobacco to minors. Much of this action has been at the community level. For example, in Santa Clara County, California, a major communitywide education campaign resulted in a 50 percent reduction in the number of stores selling tobacco to minors (from 74 percent to 38 percent), although there was no impact on the rate of sale by vending machines, which remained at 100 percent (US DHHS, 1989a).

In Woodridge, Illinois, police officer Bruce Talbott successfully pushed for enactment of a local ordinance requiring tobacco merchants to obtain a license and providing for fines and licensure revocation for violation of the law prohibiting sale of tobacco to minors under age 18. Compliance is monitored by means of "sting" operations in which a minor is escorted to stores. If cigarettes are sold to the minor, the store owner must pay a fine. Since enactment and enforcement of the law, the proportion of stores in Woodridge selling tobacco to minors has declined from 92 percent to 0.

In Minnesota, the town of White Bear Lake outlawed cigarette vending machines in 1989. Since that time, 8 other communities have followed suit, 11 have imposed more limited restrictions, and 10 others are considering restrictions. A tobacco company effort to enact state legislation that would preempt these local ordinances failed (Jean Forster, Ph.D., personal correspondence). The State of Utah, using evidence that lockout devices on cigarette vending machines in that state failed to prevent access by minors, outlawed cigarette vending machines from all areas accessible to minors. The law was upheld by the Supreme Judicial Court of Utah against a challenge from the vending machine industry.

A number of jurisdictions have outlawed the distribution of free tobacco samples. They are totally prohibited in Minnesota and Utah; it is illegal to distribute smokeless tobacco samples in Nebraska. Eight communities in Massachusetts prohibit giveaways of tobacco samples.

Another step that is being taken by an increasing number of jurisdictions is to post signs that warn against tobacco sales to minors. This may be effective not only at warning would-be underage tobacco purchasers but also at reminding store personnel of the law.

A growing number of activists, impatient with the sometimes slow progress of enacting controls over the sale of tobacco to minors—often in the face of determined tobacco industry resistance—have taken to direct action against cigarette vending machines. For example, one antismoking organization published instructions for disabling cigarette vending machines, including the use of bent paperclips and coins dipped in Superglue. Another produces “out of order” stickers that can be placed over the coin slot of cigarette vending machines.

Stop Teenage Addiction to Tobacco (STAT) is a nonprofit educational organization that was founded in 1985 to eliminate tobacco addiction of adolescents by raising public awareness of how tobacco companies use sophisticated marketing campaigns to attract young people and how ready access increases tobacco consumption among young people. STAT has prepared model legislation that has served as the basis for legislative efforts in a number of communities around the country. Its “Position Paper on Tobacco-Free Schools” has helped many jurisdictions eliminate school smoking. STAT is forming a national network of community organizers to implement strategies that will reduce the sale of tobacco to minors.

A Public Policy Agenda

Eliminating the sale of tobacco to minors is an essential step if we are to achieve the national public health goal of a smoke-free society. Based on research and review of what has been effective at the state and community levels, the following steps are probably necessary.

- All free distribution, “sampling” in tobacco industry parlance, must be outlawed. The offer of free cigarettes and smokeless tobacco products is reminiscent of the drug pusher who gives the first sample free to get his customer hooked.
- Legislation at either the state or local level should establish that any merchant must obtain a license prior to selling tobacco products. There must be a provision that repeated violation of the law prohibiting tobacco sales to minors will result in meaningful monetary fines and/or extended revocation of that license. There should be provision that enforcement will be ensured by means of sting operations conducted by either the police or health department of the jurisdiction (the Tennessee

state law explicitly provides that it is not entrapment for a youth under official supervision to attempt to purchase cigarettes to monitor compliance with the law).

- In light of their potential to start young people on the course of tobacco addiction, cigarette vending machines must be outlawed. The Nation's 374,000 cigarette vending machines are an open invitation to addiction for the Nation's young people. A vast majority are located in areas where they cannot be effectively supervised. With the proliferation of 24-hour convenience stores over the past several decades, cigarette vending machines can no longer be justified.
- Signs should be required providing notice of the minimum-age-of-purchase law and of the store's intent to abide by the law.
- The legal age for sale of tobacco should be raised to 21, making it consistent with the age for legal sale of alcohol. This will send an important message that tobacco is just as hazardous as alcohol. It will also make it simpler for merchants to monitor identification for sale of products that are legal for adults but not for minors by establishing a consistent age for both tobacco and alcohol. Perhaps most important, because relatively few high school students are friendly with 21-year-olds (though many know 18-year-olds), this would reduce access to tobacco products for high school students.
- Smoking by students should be prohibited in schools. In addition, smoking by adults should be prohibited on school campuses, establishing teachers as appropriate role models.
- Tobacco prices should be increased by means of taxation because young people are price sensitive in their demand for tobacco products. Ideally, revenue generated by increased taxes should be used for health education, as has been done with Proposition 99 tax revenues in California.

ECONOMIC INCENTIVES

This section describes environmental manipulations based on the application of economic incentives. Economic incentives serve to reduce consumption of tobacco products by increasing, either directly or indirectly, the costs of using these products. In this section, three economic incentive policies are examined: (1) higher excise taxes on cigarettes, (2) preferential hiring and promotion of nonsmokers, and (3) insurance premium differentials for smokers and nonsmokers. An attempt is made here to present some of the conceptual linkages between economic incentives and smoking and to describe the development and current status of each of the three strategies.

Excise Taxes on Tobacco Products
Past and Current Status

The excise tax is an administratively simple mechanism through which public policy can influence the price of tobacco products. The chief purpose of excise taxes has always been generation of revenues, although recently these taxes are receiving increased interest and support as a public health measure.

A Federal excise tax on cigarettes has existed since 1864 and was an especially important source of Federal revenues before the enactment of the Federal income tax in 1913. Since 1951, the tax rate has been raised twice. In 1982, it was doubled from 8 cents to 16 cents per pack; and in 1990, it was raised 8 cents to be implemented in two stages.

In 1921, Iowa became the first state to implement an excise tax on cigarettes. By 1960, all but four states had enacted cigarette excise tax policies, and in 1969 North Carolina was the last state in the Nation to do so. Currently, 396 city and county governments also impose an excise tax on cigarettes. These local governments are largely concentrated in just a few states, and in 1988 they were responsible for 2 percent of all excise taxes collected on cigarettes (Tobacco Institute, 1990).

One of the largest single-year increases ever in a state excise tax on cigarettes occurred recently in California. In January 1989, Proposition 99 raised the tax from 10 to 35 cents per pack, boosting the California tax to one of the highest in the Nation. There is now substantial variability in the excise tax rate among states.

An important historical perspective on cigarette excise taxes is gained by considering the relative contribution of the tax to the overall price of cigarettes. Table 3 shows the percentage of the average price of cigarettes accounted for by Federal and state taxes from 1954 to 1988. This table shows that the Federal tax is declining as a proportion of the total cost of cigarettes. Even with the 8-cent increase in 1983, the relative impact is quickly being eroded by inflation toward the pre-1983 level. The overall relative decline in Federal revenues also holds when compared with either the consumer price index or gross national product. As a percentage of the total Federal tax base, revenues from cigarette excise taxes have declined from 3 percent in 1950 to 0.5 percent in 1987. Since the early 1970's, state revenues as a percentage of the total price of cigarettes have also declined appreciably. Without constant re-adjustment of the rate, real revenues from excise taxes will continue to decline as long as a unit rate is used. Annual adjustments to the Federal tax based on a cost-of-living index have been proposed. Alternatively, an *ad valorem* tax would index the tax rate to the price of cigarettes. As of 1988, Hawaii was the only state to use this method.

Table 3
Excise taxes as percentage of cigarettes' total cost to consumers

Year ^b	Federal and State	Federal Taxes	State Taxes
	Taxes ^a		
1955	48.7%	36.7%	12.0%
1956	47.4	34.9	12.5
1957	48.8	35.4	13.4
1958	48.0	36.1	11.9
1959	46.6	32.9	13.7
1960	48.9	32.2	16.7
1961	48.6	31.6	17.0
1962	48.3	30.6	17.7
1963	49.4	31.1	18.3
1964	49.3	30.1	19.2
1965	49.8	29.9	19.9
1966	51.4	28.4	23.0
1967	50.8	27.7	23.1
1968	49.2	25.2	24.0
1969	48.9	24.0	24.9
1970	47.7	21.7	26.0
1971	46.8	20.9	25.9
1972	47.7	20.0	27.7
1973	48.4	19.9	28.5
1974	47.6	19.9	27.7
1975	44.5	17.9	26.6
1976	41.4	16.9	24.5
1977	40.5	15.8	24.7
1978	37.1	14.4	22.7
1979	35.5	13.8	21.7
1980	34.5	14.0	20.5
1981	33.1	12.8	20.3
1982	29.9	11.4	18.5
1983	26.8	12.0	14.8
1984	33.2	17.3	15.9
1985	32.3	16.2	16.1
1986	30.8	15.2	15.6
1987	29.9	15.1	14.8
1988	28.8	13.7	15.1
1989	26.5	12.0	14.5
1990	26.4	11.2	15.2

^aSource: Tobacco Institute (1990).

^bFiscal year ending June 30.

Anticipated Effects Of a Tax Increase

How much reduction in smoking might we expect in response to increasing the price of cigarettes? The quantitative relationship between price and demand is described by economists as price elasticity, which is defined as the change in demand for a product relative to the change in price. For example, a price elasticity of -0.5 implies that a 10 percent increase in the price of a product will result in a 5 percent decrease in the quantity demanded. Note that a given tax increase must first be translated into the percentage increase in the retail price before its effect can be estimated.

Studies on the price elasticity for cigarettes in the United States were summarized in the 1989 Surgeon General's Report (US DHHS, 1989a). Thirteen studies conducted since 1980 were identified. Overall price elasticity estimates varied from -0.14 to -1.23 . However, there was a clustering of short-term elasticity estimates in the -0.4 to -0.5 range, and the mean estimate was -0.43 . These estimates are similar to those obtained in European studies, as summarized by Pekurinen and Valtonen (1987) and Godfrey and Maynard (1988). Considering the differences in cultural attitudes toward smoking, varying levels of government involvement in antismoking health education, and substantial variations in the real price of cigarettes, the overall level of agreement between the American and European studies adds a degree of confidence to the general findings of these studies.

Overall price elasticities convey no information regarding which groups and types of smokers are more sensitive to price changes. However, by analyzing survey-based data rather than aggregate consumption data, Lewit and colleagues have attempted to answer several critical questions about differential impacts. Using a sample of nearly 20,000 adults surveyed in the 1976 National Health Interview Survey, Lewit and Coate (1982) found that the consumption response to a price increase occurs primarily through reduction of smoking prevalence, rather than reduction of the average number of cigarettes smoked per smoker. The elasticity for participation, that is, the number of smokers, was found to be -0.26 . The elasticity for the number of cigarettes per smoker was only -0.10 . Thus, it would appear that the primary impact of an increase in the cigarette excise tax would be to encourage some smokers to quit, but the majority of smokers would continue to smoke about the same amount.

Studies that have examined age-specific responses to the price of cigarettes are of particular interest to public health professionals because they assess the potential impact of price policy on teenage smoking. It is well known that most adult smokers started before the age of 20, and thus a high priority for smoking control efforts is the reduction of teenage smoking

Table 4
**Age-specific estimates of the price elasticity of demand
 for cigarettes**

Age Group	Elasticities		
	Overall	Participation	Quantity per Smoker
12-17 yr	-1.40	-1.20	-0.25
25	-0.89	-0.74	-0.20
26-35	-0.47	-0.44	-0.04
36-74	-0.45	-0.15	-0.15
All adults	-0.42	-0.26	-0.10
All ages	-0.47	-0.31	-0.11

Adapted from US DHHS (1989a, p. 537), and US GAO (1989, p.30).

rates (DiFranza et al., 1987). The first study (Lewit et al., 1981) found the price elasticity for youths aged 12 to 17 to be -1.40, a substantially higher figure than for adults. Similar to adults, adolescents also respond to price primarily through participation, rather than the quantity smoked per smoker. The price elasticity estimates for participation and quantity smoked were -1.20 and -0.25, respectively. A second study, by Grossman and colleagues (1983), used data from four smaller, more recent samples provided by the National Surveys on Drug Abuse. The estimated price elasticities for participation were all less than the figure obtained in the earlier study. To obtain their summary estimate of -0.76 for these studies, the authors excluded the highest and lowest figures and averaged the remaining two. The authors of a General Accounting Office report on teenage smoking suggest relying on this lower elasticity estimate, rather than the -1.20 figure, because of the recency of the data used in the second study (US GAO, 1989). A summary of the elasticity estimates provided by these studies is shown in Table 4.

The participation elasticity estimates provided in Table 4 may be used to project the decrease in smoking prevalence related to a given tax rate change. The current price of cigarettes is needed to convert the tax increase into the percentage change in the retail price of cigarettes. Also necessary are estimates of current prevalence of smoking. For example, Warner (1986b) projected the reduction in prevalence in adult cigarette smoking for three specific values of possible tax rate changes. In 1986, a 16-cent-per-pack increase in the excise tax would have raised prices 15.1 percent. Based on 1982 prevalence data, this would be expected to reduce the number of adult smokers by over 2.5 million (3.9 percent). More recently,

Cummings and Sciandra (1989) have used similar methods to estimate the response in overall smoking prevalence in New York State to a scheduled 12-cent increase in the state excise tax.

The US GAO report (1989) employed analogous procedures to estimate the effect of a tax increase on teenage smoking. Using the more conservative estimate for participation elasticity of -0.76 and the most recently available prevalence estimates, the GAO predicted that a 21-cent tax increase would result in a reduction of more than one-half million teenage smokers. Because deterrence in the teen years may result in lifelong abstinence from smoking, the health impact on this group is especially significant.

Projected responses to excise tax increases are subject to a number of potentially distorting influences, and estimates should be interpreted with caution. The level of uncertainty increases as we seek to generalize the results of previous studies to changing social and normative environments, varying levels of tax increases, and long-term impact on smoking. Recent empirical data on cigarette consumption trends may be helpful in validating short-term price response estimates. Several conceptual issues regarding the use of results from elasticity studies in forecasting price response are also summarized below.

Significant increases in the cigarette excise tax have occurred recently in the United States, Canada, and the State of California. From 1981 through 1984, the real price of cigarettes in the United States increased 27 percent, while per capita consumption declined 10 percent (Harris, 1987). In Canada, the real price of cigarettes rose 66 percent from 1982 to 1988, with an attendant 24 percent drop in per capita consumption (Canadian Council on Smoking and Health, 1990). Finally, preliminary data from California suggest that overall sales in California in the third quarter of 1989 dropped 10.5 percent from that in the third quarter of 1988 (James Howard, personal communication, 1990). The 25-cent-per-pack state tax increase implemented in January 1989 raised the price of cigarettes in California about 20 percent.

These declines in cigarette consumption reflect a substantially accelerated decline over the rate for previous years and are consistent with a price elasticity in the range of -0.36 to -0.50. However, the extent to which the declines may be attributed purely to the price increases cannot be precisely determined. The Canadian Council on Smoking and Health attributes only about half of the decline in consumption to the effect of the increase in cigarette prices.

Recent consumption trends, and how they have been interpreted, point to several of the difficulties involved in accurately measuring and predicting responses to price increases. There are many influences on smoking behavior that operate concurrently with changing levels of price, making it difficult to isolate specific effects. It is possible that more of the recent decline in smoking than is generally recognized is due to general societal trends. On the other hand, Harris (1987) suggests that the decline in smoking prevalence, particularly among lower income groups, might have been substantially greater if the real price of cigarettes had not declined during the 1970's.

Recent experience suggests that tax increases are not simply passed directly to consumers but may be accompanied by an additional percentage increase by the manufacturers, thus "multiplying" the impact of the tax increase (Harris, 1987). There has also been increased marketing and sales of low-cost generic and discount brand cigarettes (Adler and Freedman, 1990), a trend that may serve to partially offset the influence of a tax increase. The long-term impact of tax increases on consumption is less clear than the short-term response. It is also uncertain whether large increases in price have the proportionately equivalent effect of small increases.

**Preferential Hiring
And Promotion
Relationship to
Other Policies**

A range of worksite policies and programs may potentially influence smoking behaviors. Rigotti (1989) outlines a continuum of worksite smoking policies that includes (1) no explicit policy, (2) environmental alterations, (3) designated smoking and nonsmoking areas, (4) total smoking bans, and (5) preferential or exclusive hiring of nonsmokers. This section considers only the fifth and most restrictive category. This does not imply that less restrictive policies do not also generate economic incentives for reducing cigarette consumption. Job opportunities may be constrained for those who resist applying for positions where restrictions are imposed. Among the costs of noncompliance with established worksite smoking policies is the threat of losing one's job—certainly an economic incentive. Some worksites have also developed financial incentive programs as part of their overall effort to facilitate smoking cessation among employees. These incentives typically involve small monetary rewards to employees who successfully maintain abstinence from smoking (Orleans and Shipley, 1982). Variations of this approach include the use of contests, prizes, and lotteries to increase the program's visibility and appeal. A number of programmatic approaches to worksite incentives are described in a workbook published by the National Cancer Institute (US DHHS, 1989c).

Walsh and McDougall (1988) identify several motivational concerns that underlie company smoking policies. The reasons for preferential hiring and promotion of nonsmokers appear somewhat different and more situation-specific than those given for on-site restrictions. Protection of the health and rights of nonsmokers in the workplace is a key component of worksite restrictions (Rigotti, 1989). However, the extension of policies to personal behaviors away from the worksite may be motivated more by economic considerations (Walsh and McDougall, 1988). Employers defend the practice of preferentially hiring nonsmokers because smokers incur higher costs to both the business and society (Action on Smoking and Health, 1989). Some occupations involve environmental exposures where employees who smoke are at a much greater health risk and thus not hired for this reason. Hiring restrictions have been imposed also for jobs that require high levels of physical fitness, such as for firefighters and police officers. Additionally, for occupations where respiratory functional decline caused by tobacco use can be confused with compensable occupational injury, employers have hired only nonsmokers to limit disability costs.

Prevalence and Current Trends

Recent surveys of employers suggest that the practice of hiring only nonsmokers is uncommon, occurring in only 1 to 2 percent of the businesses surveyed (Bureau of National Affairs, 1987; Peterson and Massengill, 1986; Swart, 1988). The Bureau of National Affairs report found little evidence that exclusive hiring practices are becoming more prevalent, despite growing implementation and acceptance of worksite restrictions. However, a more recent report (Action on Smoking and Health, 1989) cited evidence to suggest that the frequency of these practices is increasing. Hiring preferences, as opposed to absolute hiring restrictions, are more common. The Bureau of National Affairs survey found that 5 percent of the organizations surveyed gave companywide preference to nonsmoking applicants, and another 10 percent allowed individual supervisors to preferentially hire nonsmokers. It is possible that informal preferential hiring practices are substantially more widespread than the policy survey suggests. A poll by a New York recruiting firm found that 46 percent of the executives of large firms would choose a nonsmoker over an equally qualified smoker (Bureau of National Affairs, 1987).

Such informal preferences may also apply to promotion and firing decisions. Although Peterson and Massengill (1986) found that none of the companies surveyed indicated that they preferentially promoted nonsmokers, anecdotal evidence suggests such practices exist, although discreetly (Freedman, 1987). A similar situation may exist with regard to demoting or firing employees who smoke, even though companies that

hire only nonsmokers do not as a rule dismiss smokers employed prior to implementation of the hiring policy (Action on Smoking and Health, 1989).

Any increase in the prevalence of nonsmoker hiring policies is expected to be gradual. When businesses were asked to project whether they would have such a policy in place in the future, 3.8 percent predicted they would by 1990, and 6.6 percent by 1995 (Swart, 1988). There are several reasons for reluctance on the part of employers to implement preferential hiring policies. There is a perception that less restrictive measures are working well and that hiring restrictions are intrusive and go beyond normal employment practices. Businesses may not want to restrict their pool of available employees. Also, verification of smoking status of current and potential employees and decisions on how to respond to infractions are problematic and potentially costly. Guidelines by Action on Smoking and Health (1989) suggest that employers clearly state their policy to all applicants and that consequences of infractions be stipulated. Some employers have implemented biochemical or physiological testing to verify smoking status.

**Influence of Hiring
And Promotion
Preferences**

Although several formal evaluations of the effect of worksite smoking policies on smoking have been conducted, none have specifically examined the impact of preferential or exclusive hiring practices. Clearly, one potentially important contribution that such policies make is the message they convey about the changing social acceptability of smoking. Formal policies against hiring smokers are still relatively uncommon but may be highly visible and attract considerable media attention. The more direct impact of such policies is expected to occur through the economic incentive to quit smoking provided by the policy. If employment is contingent on quitting smoking, some potential applicants might be motivated to quit smoking rather than settle for some other job. Whether or not this happens depends on a number of considerations, including the availability of other employment opportunities and the strength of the individual's propensity to smoke.

Legal Issues

The legal right of employers to preferentially or exclusively hire nonsmokers is generally recognized. Federal and state statutes prohibit discrimination on the basis of race, religion, national origin, and, in most circumstances, age and sex. In some situations, it is also unlawful to discriminate on the basis of sexual orientation, political affiliation, marital status, citizenship, and physical or mental handicap (Myers, 1990). Aside from these attributes, employers in most situations have the right to make hiring decisions on whatever basis they choose, including smoking status.

On the forefront of occupations experiencing establishment of nonsmoker hiring policies are emergency services. A firefighter in Oklahoma who was dismissed from his job when observed smoking off duty challenged his dismissal, but the employment policy of the fire department was upheld in Federal court in 1987. Another challenge to a nonsmokers-only hiring policy occurred when the application of a New York woman for employment in a jewelry store was rejected. In this case, the applicant claimed that she was discriminated against on the basis of a handicap, namely an addiction to smoking. Although New York state law classifies addicts of certain drugs as handicapped, no mention is made of tobacco. Even so, the case is proceeding after it was determined by a state board that there was probable cause to suspect that unlawful discrimination had occurred.

Additional legal challenges to preferential hiring policies are probable. The American Civil Liberties Union opposes such practices except where the smoking status of applicants or employees can be shown on a case-by-case basis to interfere with job performance. However, no actions by the American Civil Liberties Union to date have been initiated against employers who refuse to hire smokers. Additional challenges to nonsmoker hiring practices may be brought on the basis that they are discriminatory to blacks, because of a higher smoking prevalence among blacks. One other potential focus of legal debate on preferential hiring practices is the invasion of privacy issue, although this aspect of such policies has so far gone unchallenged.

Two additional caveats may apply to employment policies that favor nonsmokers. The first applies to any workplaces that are covered by collective bargaining agreements with labor unions. Most cases in which unions have confronted management on smoking policies have focused on workplace restrictions. However, collective bargaining agreements may also pertain to restrictions on eligibility for employment. Efforts by the Manville Corporation, a Texas asbestos manufacturer, to hire only nonsmokers and ban workplace smoking have been stymied by litigation instigated by the International Machinists Union. Although in some cases management has successfully defended its nonsmoker-hiring policies, the general recommendation for employers is to develop and impose hiring policies and smoking restrictions in consultation with the unions involved and in accordance with current collective bargaining agreements (Action on Smoking and Health, 1989).

The second situational limitation on the legal right of employers to hire only nonsmokers occurs when state or local laws prohibit such practices. In 1989 legislation was passed in Virginia that prohibits state agencies from requiring employees

**Differential
Insurance
Premiums
Current Status**

to be nonsmokers. Private employers are not affected by the legislation, nor are agencies prevented from implementing workplace smoking restrictions. A similar bill in the State of Maryland, applicable to both public and private employers, was defeated in 1989.

Substantial evidence that smoking is firmly associated with reduced longevity, health care costs, and damage to property has accumulated over the past 45 years. This evidence has elicited varying degrees of response from the corresponding major components of the insurance industry—life, health, and property. Before the release of the 1964 Surgeon General's Report, no major insurer of any type offered premium reductions to nonsmokers. Now almost all life insurance companies provide nonsmoker discounts, whereas only a small but growing number of health and property insurers do so. This section examines the development and current status of differential premium rates for smokers and nonsmokers for each of the three major arms of the insurance industry. To the extent that these differentials are visibly passed on to individual consumers, they may provide an economic incentive not to smoke. Premium differentials could be labeled as either nonsmoker discounts or smoker surcharges; the net premium costs to smokers and nonsmokers would be the same. However, for both historical reasons and marketing purposes, the term "nonsmoker discount" is generally used.

Although life insurance companies began to introduce nonsmoker discounts as early as 1965, adoption proceeded slowly until 1979. In that year, a definitive actuarial study by State Mutual Life Assurance revealed a substantial and statistically significant mortality difference between smokers and nonsmokers. Collaborative evidence provided by other companies soon followed. By 1984, the National Association of Insurance Commissioners had developed formal guidelines for setting differential premium rates for smokers and nonsmokers, which were subsequently incorporated into practice in most states. Currently, the vast majority of companies provide nonsmoker discounts on individual policies. The size of the discounts varies across ages and gender; average discounts are in the range of 12 to 22 percent (US DHHS, 1989a).

The situation for health insurance, where providers have been slower to adopt nonsmoker discounts, is considerably more complicated. Most health insurance is purchased as group coverage, where the health status and risk factors of individuals typically are not considered. Furthermore, actuarial data on the health care cost differentials of smokers and nonsmokers have not been as complete and readily available as for mortality differentials (US DHHS, 1989a). Administrative costs and the problem of verifying the smoking status of individuals covered

by group policies may also contribute to the reluctance of the industry to provide discounts. Despite a National Association of Insurance Commissioners resolution (1985) supporting premium differentials in both group and individual policies and an Action on Smoking and Health (1987) special report that questioned the legality of not differentiating, only about 15 percent of individual policies offer nonsmoker discounts. Even fewer group plans do. Individual policies carry discounts that range from 3 to 15 percent. Group plan differentials are usually provided on the basis of the percentage of nonsmokers in the group and offer discounts of a few percentage points to groups below a specified smoking prevalence level.

Nonsmoker discounts in property and casualty insurance are also relatively uncommon. This situation exists despite solid evidence that smoking materials are responsible for a significant percentage of house fire property damage and fire-related deaths and that smokers have more vehicular accidents than nonsmokers (US DHHS, 1989a). The Farmer's Insurance Group was the first company to offer nonsmoker discounts and as of 1987 was still the only major insurer to offer them on both homeowner and automobile policies. Discounts on homeowner policies range from 3 to 7 percent and on automobile policies from 10 to 25 percent. Recently the Hanover Insurance Company increased its nonsmoker discount for automobile policies from 5 to 10 percent. The difficulty of verifying smoking status, as well as prohibitory regulations in certain states, have deterred more companies from adopting discount policies.

State insurance commissions and legislatures have prohibited certain practices that offer premium differentials because they were deemed discriminatory. However, the National Association of Insurance Commissioners has actively sought to encourage state governments to remove legal barriers to nonsmoker discounts and has facilitated the collection of actuarial data to help justify the practice. In the future, a willingness on the part of state legislatures and insurance commissions to require the availability of differentially priced policies may result from these efforts.

One additional insurance industry practice that indirectly offers a financial incentive to quit smoking is the coverage of costs for smoking cessation programs. This coverage is currently uncommon, and the future growth of such policies is uncertain. Only 11 percent of carriers surveyed in 1985 provided benefits for smoking cessation programs (US DHHS, 1989a). Employers have absorbed some of the burden for providing cessation resources, and more may be expected to do so if discounts for group health insurance policies continue to become more widely available.

**Effects of Premium
Differentials**

Similar to the situation regarding preferential hiring, no empirical studies have assessed the impact of differential insurance premiums on smoking. Until such studies are conducted, expectations must remain speculative. Premium differentials may reduce smoking by providing both economic incentives and social or educational influences. For several reasons, premium differentials will probably provide less economic incentive for not smoking than direct increases in the price of cigarettes. Their impact is acute only at the time the policies are paid, and even then it may not be made clear to consumers that smokers are paying more. In many circumstances, smokers will have the option of simply switching to another policy or provider that does not differentiate. Health insurance premiums are often paid entirely by employers, although increasing efforts by employers to reduce their health insurance costs may result in more smokers having to pay extra for health insurance.

The role of the insurance industry in providing additional awareness and support for the declining social acceptability of smoking may be just as powerful as any economic incentives it provides. Being asked about one's smoking status when completing insurance forms is yet another reminder of the potential personal health and economic consequences of smoking. Health maintenance organizations may be especially inclined to provide educational reminders and resources for smoking cessation, although adoption of such efforts is also advocated for the larger community of health care providers (S.R. Cummings et al., 1989).

**An Overview
Of Economic
Incentives**

There are several aspects of the use of economic incentives to discourage smoking that have raised ethical concerns about their fairness and appropriateness. The regressivity issue concerning excise taxes has surfaced repeatedly and is a basis for opposition to proposals to increase taxes on cigarettes. A regressive tax is defined as one where the proportion of individual's income consumed by the tax is inversely related to income level (Fusfeld, 1982). Cigarette taxes appear to be highly regressive (Citizens for Tax Justice, 1988; Toder, 1985), although Harris (1985) suggests that the regressivity issue has been exaggerated. Proponents of increasing excise tax rates, although aware of the regressivity issue, weigh this concern against the expected improvements in health status and longevity resulting from the reduced prevalence of smoking. They also note that the lower income groups, where the burden of smoking-related disease is greatest, are also expected to show the greatest response to a price increase (Townsend, 1987).

Many other elements have been introduced into the debate over the fairness of economic incentives. Among these are ethical concerns about paternalism, victim blaming, and fair distribution of costs. The current racial and socioeconomic disparities between smokers and nonsmokers has elicited charges that economic incentive policies are racist and elitist. The accuracy of projected effects of a tax increase has been questioned, and little empirical evidence is available on the effects of the other economic incentive strategies. Potential consequences include a lack of employment opportunities and affordable insurance for those who are unwilling or unable to stop smoking.

Despite the numerous arguments raised in opposition to economic incentive policies, there is broad support for these approaches. Increases in the cigarette excise tax are advocated by numerous health organizations, including the American Heart Association, American Lung Association, American Cancer Society, American Public Health Association, and American and Canadian Medical Associations. Several proposals have been offered to mitigate at least some of the previously raised ethical concerns. These suggestions merit serious consideration and further reflect the importance of a coordinated, multifaceted approach to smoking and tobacco control. For example, Toder (1985) and Warner (1986b) argue that potentially negative effects of excise tax regressivity could be offset by making other aspects of the tax structure more progressive. Earmarking of tobacco tax revenues for health care and tobacco cessation and education programs may reduce the perception that smokers are being victimized or exploited. A 1987 American Medical Association poll (Harvey and Shubat, 1987) showed that a majority of smokers support an increase in the cigarette excise tax if the revenues are earmarked for Medicare costs. In California, 75 percent of the estimated \$600 million generated in the first year of the Proposition 99 tax increase is designated for health care, drug education, and research. Increased affordability and availability of smoking cessation resources and programs help remove economic and logistical barriers to quitting and also contribute to an atmosphere of positive support and reinforcement for those trying to quit.

The economic incentive strategies examined here focus on methods that increase the cost of smoking for consumers. Another approach is to apply economic inducements and policies to the supply side of the smoking problem, which includes agricultural practices and policies, cigarette manufacturing and distribution, and advertising (Walsh and Gordon, 1986). Initiatives that may reduce smoking by affecting this side of the smoking equation include (1) elimination of the tobacco support program (Warner, 1988), (2) agricultural

policies that promote and subsidize alternative crops (Milio, 1985), (3) elimination of tax deductions for tobacco advertising (US DHHS, 1989a), (4) further restrictions on advertising (Warner et al., 1986), and (5) tighter controls on the distribution and sale of tobacco products (DiFranza et al., 1987). The political influence of the tobacco industry has undoubtedly impeded the implementation of these initiatives, but the increasing political influence of the antismoking movement enhances the opportunity for a broad spectrum of antismoking legislation. The potential impact of policies to restrict advertising and actively support the agricultural transition to other crops extends beyond their direct impact by complementing and reinforcing other antismoking efforts. For example, economic inducements and educational efforts might be even more effective when seen as part of a broader and more congruous Federal policy to reduce smoking and improve health.

CONCLUSIONS

- The targets of recent interventions to control tobacco use are social networks that shape the attitudes of individual smokers and nonsmokers, including media, health care providers, worksites, and schools.
- The use of media in tobacco control includes providing information on the risks of tobacco use and dangers of policies that promote tobacco use, motivating smokers to stop and others to not start, and conducting cessation programs or recruiting smokers into treatment programs.
- Health care providers should not only intervene with their smoking patients but also be agents for social change.
- Restrictions on smoking in the worksite and other locations change the social acceptability of smoking and may increase the number of individuals who try to quit and who have long-term success after cessation.
- Comprehensive smoking control strategies are best implemented at the local level and can be implemented through formation of coalitions of established community groups.
- Most adolescent smokers have little difficulty in purchasing cigarettes, even when these purchases violate local laws. Increasing the barriers to cigarette purchases by minors is important in strategies to prevent the initiation of regular tobacco use.
- Economic incentives that may reduce the consumption of cigarettes include increasing the excise tax on tobacco products; preferential hiring and promotion of nonsmokers; and increasing the cost of life, health, and other forms of insurance for smokers.

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