Family and Community Health Bureau
Center for Health Statistics
Population Health Assessment Quarterly
Volume 2, Issue 1
Winter 2001

TOBACCO USE IN MINNESOTA

Background

Tobacco use is by far the leading cause of preventable illness and death in the United States, associated with about 20% of all U.S. deaths and exceeding the total number of deaths from alcohol, drugs, firearms, motor vehicle crashes, and HIV/AIDS combined (McGinnis & Foege, 1993). Approximately 6,400 Minnesota deaths were related to cigarette smoking in 1995; this toll would be even greater if deaths related to environmental tobacco smoke (ETS or secondhand smoke) and smokeless tobacco products were included (MDH, 1996).

Given essentially stable adult and escalating adolescent smoking prevalence rates across the 1990s, and in the wake of the $6.1 billion landmark settlement in 1998 between the State and the tobacco industry, tobacco use prevention and reduction in Minnesota has taken on heightened priority. The dedication to addressing the health consequences related to tobacco is reflected in the Healthy Minnesotans 2004 Public Health Improvement Goals (MDH, 1998).

> Healthy Minnesotans 2004
>
> Public Health Improvement Goals
>
> Goal 1: Reduce the behavioral risks that are primary contributors to morbidity and mortality
>
> Goal 4: Promote health for all children, adolescents, and families
>
> Goal 11: Reduce exposure to environmental health hazards

This report will cover four critical areas related to tobacco use in Minnesota. First, key economic costs and related factors will be described. Next, smoking prevalence rates for adults and adolescents will be presented. Smoking rates among important demographic groups will be considered. Finally, we will discuss the damaging effects of ETS on the health and well-being of Minnesotans.

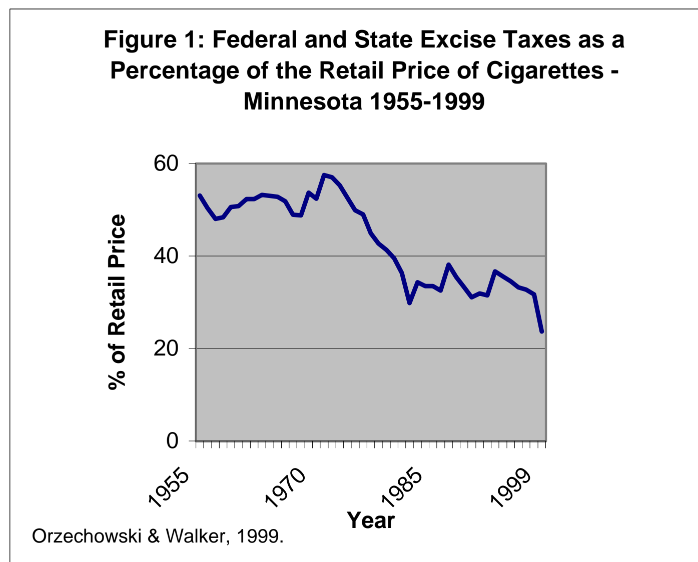
Economic Burden, Industry Advertising, and Excise Taxes

The heavy economic burden related to tobacco use affects all Minnesotans. In 1995, the economic cost of tobacco use to Minnesota, including health care costs and lost productivity costs, was estimated at $1.3 billion, equivalent to $3.36 per pack of cigarettes or $277 per capita (MDH, 1996).

A concurrent rise over time has been evident in the tobacco industry's overall level of advertising and promotion, notwithstanding certain advertising constraints (FTC, 2001). These industry campaigns feature messages and product positioning that are often most persuasive to youth. The latest available figures indicate that in 1999 the tobacco industry spent $8.2 billion on advertising and promotion (FTC, 2001); Minnesota's share, based on its portion of the U.S. population, was estimated to be $144 million.

Substantial evidence shows that increasing the price of tobacco serves as an effective means of reducing tobacco use, especially in adolescents, as well as providing additional funding for prevention programs (CDC, 2000). Nonetheless, current average cigarette excise taxes in the U.S. lag far behind the levels implemented in other industrialized nations, and federal and average state excise taxes on cigarettes have failed to keep pace with the retail price of tobacco. As shown in Figure 1, federal and state excise taxes as a percentage of the retail price of cigarettes in Minnesota began a downward trend in the 1970s and stood at only 23.7% in 1999, compared to 57.5% in 1971 (Orzechowski & Walker, 1999).

Figure 1: Federal and State Excise Taxes as a Percentage of the Retail Price of Cigarettes - Minnesota 1955-1999

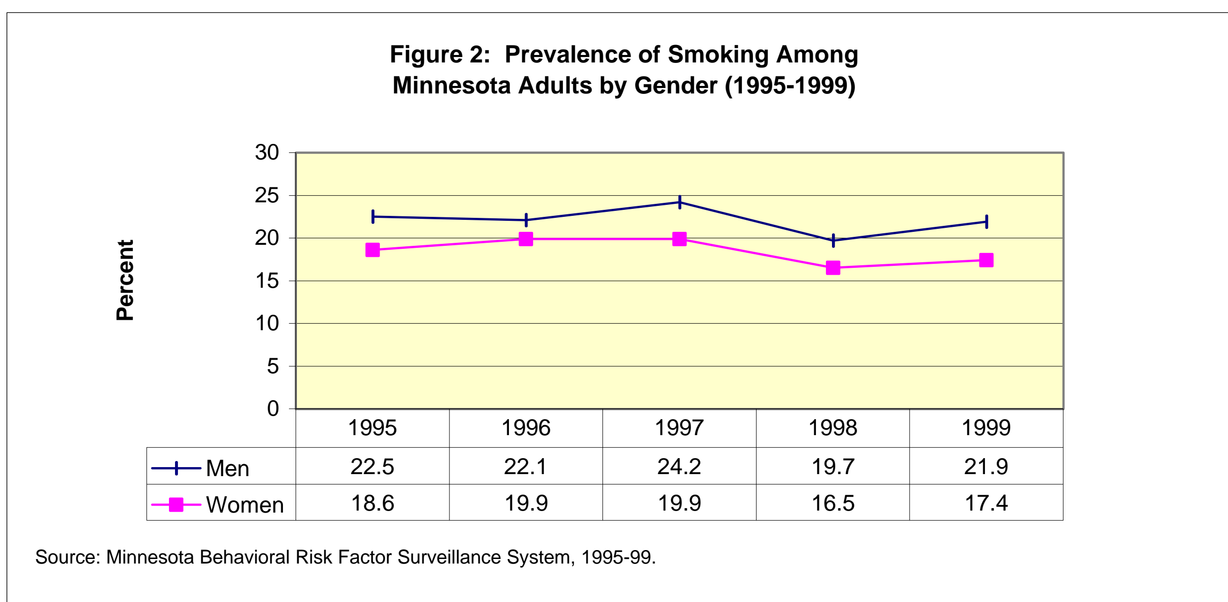


Orzechowski & Walker, 1999.

Smoking Rates for Adults in Minnesota

Results from the Minnesota BRFSS phone survey reflect health behavior trends in the state's adult population. A *current smoker* is defined as an individual who reports having smoked at least 100 cigarettes in his or her lifetime and who now smokes every day or some days. Overall, the self-reported smoking rate of Minnesota adults, aged 18 and older, remained relatively stable over the five-year period from 1995 to 1999, hovering around 20%, with a slight decline noted in 1998. Minnesota's self-reported smoking rate in 1999 for all adults (19.6%) ranked fifth lowest in the U.S. (the national median rate was 22.7%). Within Minnesota, the annual prevalence rates for men generally exceed the annual prevalence rates for women (Figure 2).

Figure 2: Prevalence of Smoking Among Minnesota Adults by Gender (1995-1999)



	1995	1996	1997	1998	1999
Men	22.5	22.1	24.2	19.7	21.9
Women	18.6	19.9	19.9	16.5	17.4

Source: Minnesota Behavioral Risk Factor Surveillance System, 1995-99.

In 1999, the Minnesota Partnership for Action Against Tobacco (MPAAT) conducted an independent study to identify tobacco use throughout the general adult population of Minnesota. The MPAAT study obtained a prevalence rate for current cigarette smoking (one-fifth of adults) consistent with the BRFSS annual estimates (MPAAT, 2000). Note that both studies shared the same telephone survey methodology as well as the same definition of a current adult smoker.

Considering 1999 BRFSS information, roughly 60% of men and women in the state reported never having smoked cigarettes or having smoked fewer than 100 cigarettes in their lives (see *Non-smoker* column in Table 1). Of those adults who reported having smoked at least 100 cigarettes in their lives, approximately one-half described themselves as former smokers.

Table 1: 1999 Smoking Status of Adults Living in Minnesota (%)

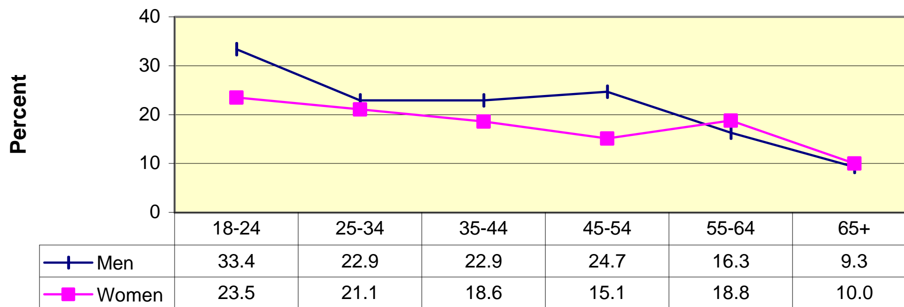
	Current smoker	Former smoker	Non-smoker
Men	21.9	20.5	57.6
Women	17.4	19.1	63.4

A current smoker has smoked at least 100 cigarettes in his or her entire life and smokes now.
A former smoker has smoked at least 100 cigarettes in his or her entire life but does not smoke now.
A non-smoker has never smoked or has smoked fewer than 100 cigarettes in his or her entire life.

Source: Minnesota BRFSS, 1999.

Figure 3 presents 1999 smoking rates by age group and gender. Considerably higher prevalence rates among 18-24 year olds (especially men) likely stem in part from the increase in smoking among teens that occurred during the 1990s. Substantially lower rates among those aged 65 and older may in part reflect the insidious toll, including major illnesses and premature death, produced by a lifetime of smoking.

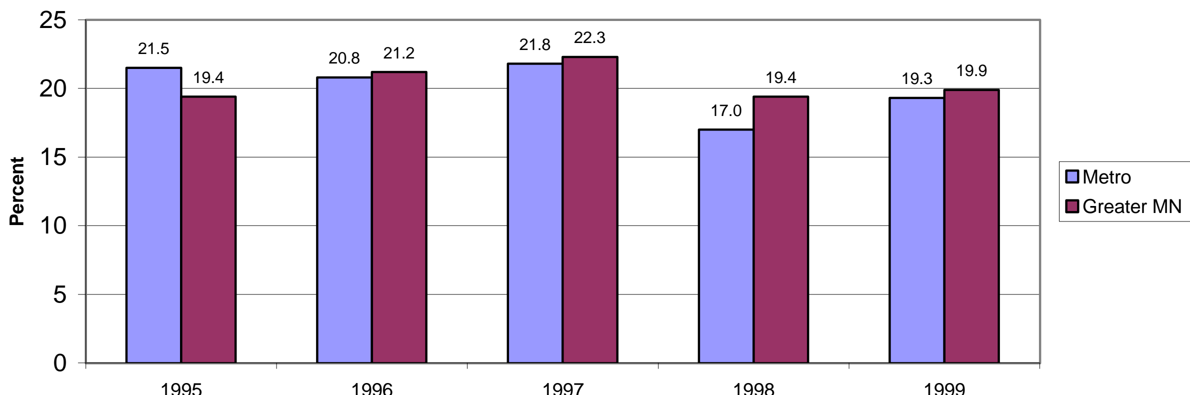
Figure 3: Prevalence of Smoking Among Men and Women in Minnesota by Age Group (1999)



Source: Minnesota Behavioral Risk Factor Surveillance System, 1999.

Smoking prevalence among residents of the Seven County Metropolitan area has not varied substantially from smoking prevalence among residents of Greater Minnesota (Figure 4), with respective rates remaining relatively stable over time.

Figure 4: Smoking Among Adults in Minnesota: Metropolitan vs. Greater MN Residents (1995-1999)



Source: Minnesota Behavioral Risk Factor Surveillance System, 1995-99.

Socioeconomic Factors and Adult Smoking

For some time, a number of studies have pointed to higher prevalence of smoking among less educated persons and blue collar workers than in the overall population (CDC, 1989). Among Minnesotans, level of education attained is strongly related to whether or not an individual reported currently smoking cigarettes. Non-college graduates' self-reported smoking rates were at least twice as high as the prevalence rates provided by college graduates, as shown in Table 2.

Table 2: Adult Smoking Prevalence Rates by Level of Education (1995-1999)

	1995	1996	1997	1998	1999
<High school	22.9	23.7	27.6	20.3	22.5
High school graduate	26.3	27.3	27.4	23.0	24.4
Some college	22.0	22.5	22.7	20.1	21.8
College graduate	**11.3**	**11.7**	**12.4**	**10.1**	**10.7**

Source: Minnesota Behavioral Risk Factor Surveillance System, 1995-99.

The rather striking relationship between level of education and current smoking status is essentially paralleled in the association between type of occupation and smoking status. For example, in 1999, individuals employed in crafts and laborer occupational groups were much more likely to smoke than members of the managerial and professional occupations (Figure 5). This pattern held true for men and women alike.

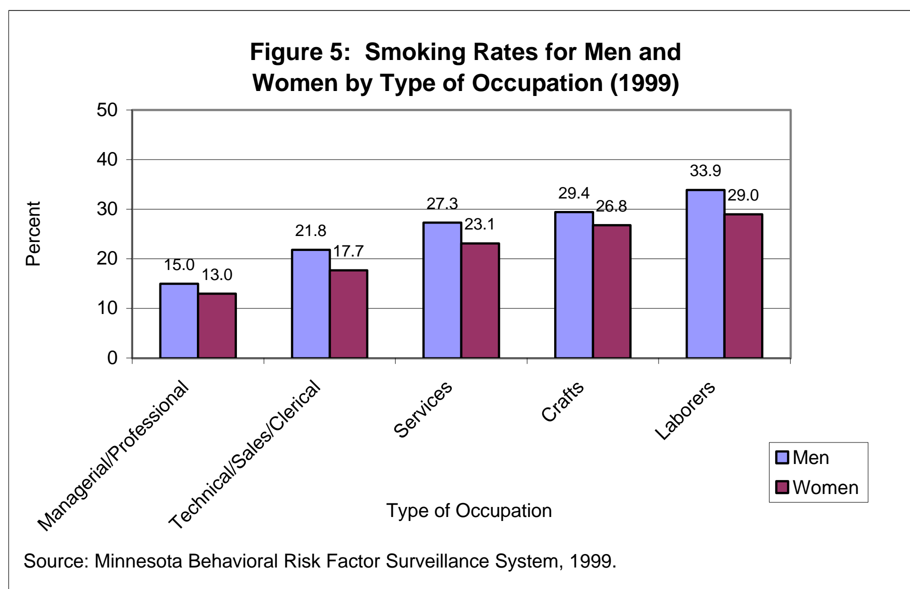


Figure 5: Smoking Rates for Men and Women by Type of Occupation (1999)

Source: Minnesota Behavioral Risk Factor Surveillance System, 1999.

Given that most adult smokers began smoking prior to age 18 (CDC, 1994), addressing the problem of youth tobacco use in Minnesota is of paramount importance. To illustrate further the magnitude of early tobacco use, results from the 2000 Minnesota Youth Tobacco Survey revealed that, among high school students who are current smokers, nearly one-half (47.2%) reported having smoked their first whole cigarette at age 12 or younger, and one-fifth reported having smoked their first whole cigarette by age 10 (MDH, 2000).

Youth and Tobacco

Following the State's legal and financial settlement with the tobacco companies, the Minnesota Legislature focused the State's anti-tobacco efforts on preventing youth tobacco use. As part of the State's efforts to understand and address the problem of youth use, MDH recently analyzed information gathered through the Minnesota Youth Tobacco Survey (MYTS). Students in grades 6 through 12 from randomly selected public schools responded to the survey in January, February, and March 2000. The results of this survey are the most recent and comprehensive available about the encroachment of tobacco on the lives of young people in Minnesota.

It is important to note that the questions in the MYTS were different than the tobacco-related questions contained in the BRFSS, and that definitions of current smoking were different in the two surveys. Prevalence rate comparisons between MYTS and BRFSS should not be performed.

Figure 6 shows the prevalence of tobacco use among Minnesota students by grade and gender from the 2000 MYTS. Aggregate rates are also available for middle and high school students overall. (Middle school includes grades 6-8, while high school includes grades 9-12.) In middle school, 12.6% of students responded that they had used tobacco of some kind in the previous 30 days. By high school, the proportion jumped to 38.7%.

As Table 3 shows, cigarettes are the most common type of tobacco used in middle and high school. However, other types of tobacco, including smokeless tobacco, cigars, pipes, and bidis contribute to overall tobacco use. In middle school, 35.6% of current tobacco users reported using two or more types of tobacco. In high school, the percent grew to 40.7% of current users.

MYTS found little difference in current cigarette use between boys (8.7% in middle school and 32.0% in high school) and girls (9.5% in middle school and 32.6% in high school). However, boys were more likely than girls to use other forms of tobacco such as smokeless tobacco or cigars.

While the MYTS sample was representative of youth in the state as a whole, it was not designed to allow analyses by geographic region. County-level data on youth tobacco use from the Minnesota Student Survey, which represents 6th, 9th, and 12th graders in public schools, can be found in the Minnesota Health Profiles: http://www.mnplan.state.mn.us/datanetweb/health.html

Figures 7 and 8 show the levels of cigarette smoking seen in middle and high school students, respectively. Notably, while 2/3 of middle school students have never smoked cigarettes, only 1/3 of high school students remain smoke-free.

In the pie charts, "current smokers," smokers in the past 30 days, are divided into moderate and frequent smokers.

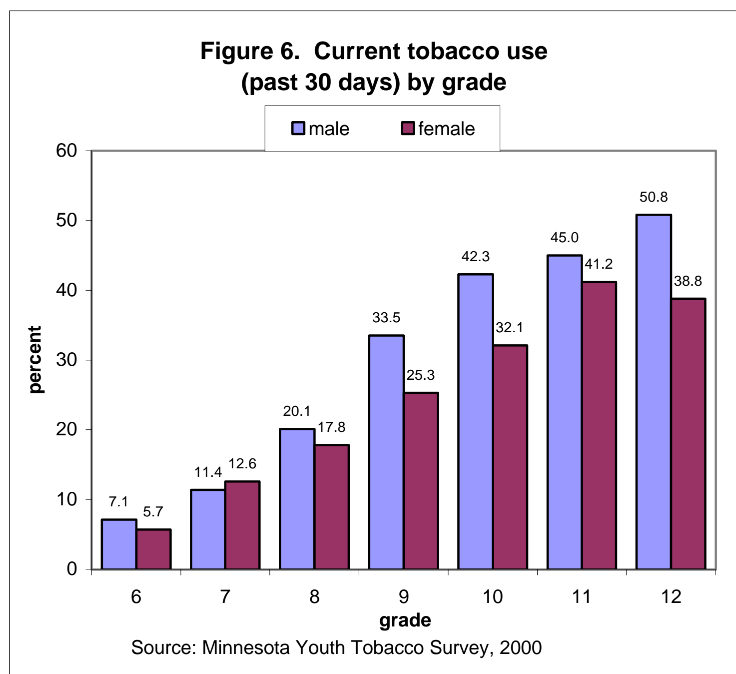
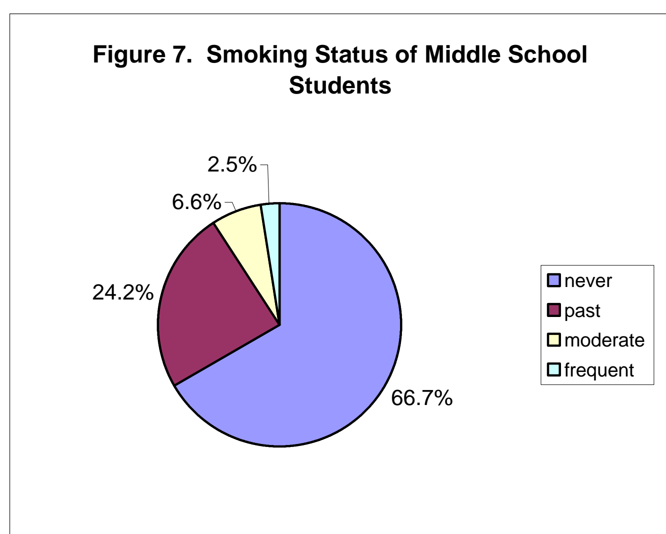
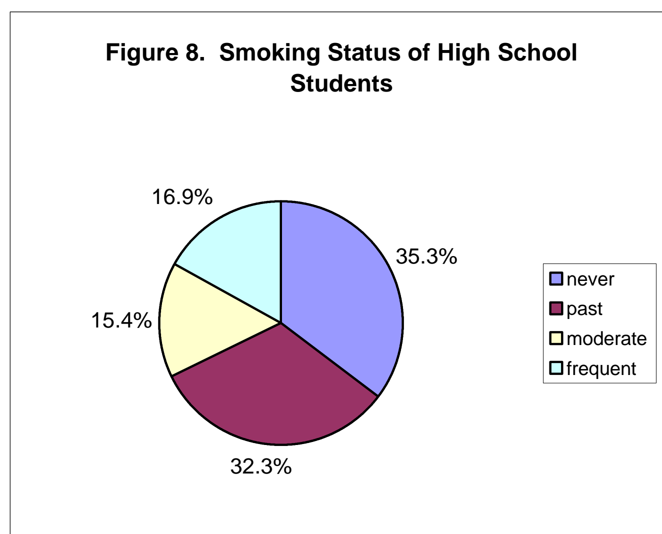


Table 3. Current use (on one or more of the past 30 days) of different tobacco types

	Middle School	High School
Cigarettes	9.1% (±1.3)	32.4% (±2.3)
Smokeless	2.2% (±0.5)	10.2% (±1.2)
Cigars	3.7% (±0.8)	13.0% (±1.3)
Pipes	2.7% (±0.8)	5.0% (±0.7)
Bidis	2.8% (±0.9)	4.8% (±0.9)

Source: Minnesota Youth Tobacco Survey, 2000





Note: Never smokers have never smoked cigarettes, not even one or two puffs.
Past smokers have smoked before, but not in the past 30 days.
Moderate smokers have smoked on 1-19 of the past 30 days.
Frequent smokers have smoked on 20 or more of the past 30 days.

Source: Minnesota Youth Tobacco Survey, 2000

Moderate smokers smoke on fewer days and smoke fewer cigarettes per day than frequent smokers. It is important to remember, however, that "moderate smokers" are not out of harm's way. In addition to an increased risk of negative health consequences at even these lower levels, less frequent smokers may still move into heavier use as they become more addicted to nicotine.

Table 4 demonstrates the grip nicotine has over young smokers. In the MYTS, many current smokers reported signs of addiction and unsuccessful quit attempts.

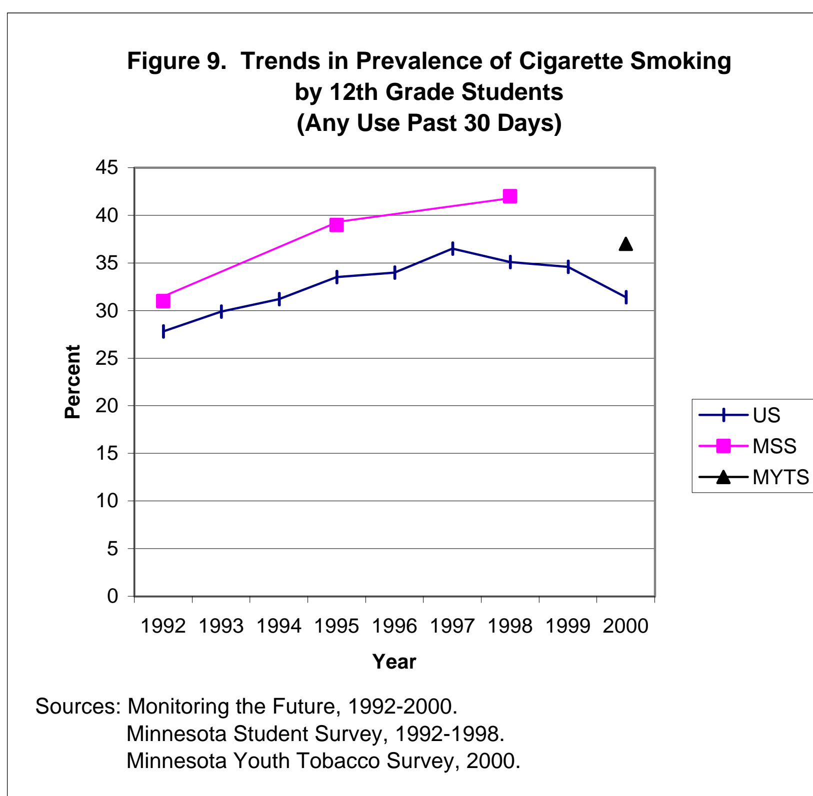
Figure 9 shows the national and state trends in prevalence of cigarette use by 12th graders. While the prevalence rates come from three different surveys, the question used to determine prevalence was the same in all: "During the last 30 days, how frequently have you smoked cigarettes?" The national trend from the Monitoring the Future Survey showed an increase through the mid-1990s, with a slight decline in recent years. State data from the MSS and the MYTS show a similar trend at slightly higher levels. Better evaluation of the trend will be possible when the 2001 MSS and future MYTS results are available.

Table 4. Addiction and Quit Attempts Among Current High School Smokers

	All Current Smokers
Cannot go an entire day without "feeling like you need a cigarette"	41.4%
Tried to quit smoking at least once in the last 12 months	61.0%
Stayed off cigarettes fewer than 30 days when they last tried to quit smoking	69.7%

Source: Minnesota Youth Tobacco Survey, 2000.

Figure 9. Trends in Prevalence of Cigarette Smoking by 12th Grade Students (Any Use Past 30 Days)



Sources: Monitoring the Future, 1992-2000.
Minnesota Student Survey, 1992-1998.
Minnesota Youth Tobacco Survey, 2000.

Environmental Tobacco Smoke

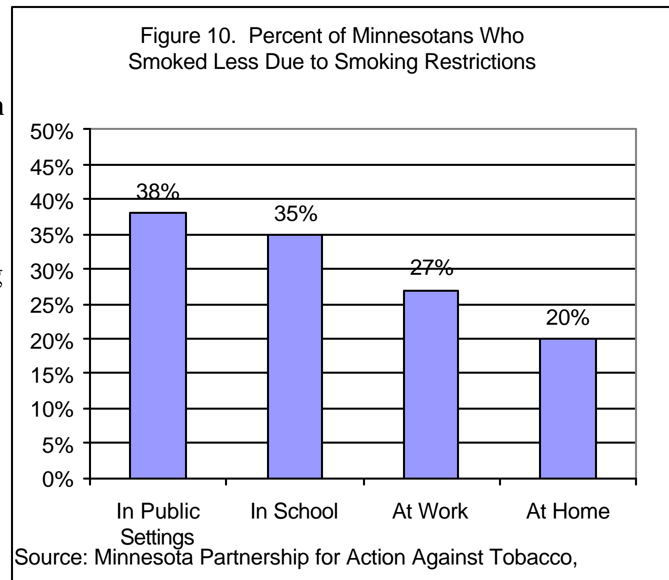
"The [tobacco] industry is concerned that the increasing focus on ETS may cause the public and policymakers to view smoking as an environmental issue with broad social consequences instead of as personal behavior involving individual choice." *-CDC, 2000*

Inhaling smoke from someone else's cigarettes can contribute to a multitude of health problems, including pneumonia, asthma, coronary heart disease, lung cancer, and Sudden Infant Death Syndrome (SIDS). Nationally, an estimated 3000 non-smoking adults die of lung cancer as a result of secondhand smoke each year (CDC, 2000). In addition, ETS may account for as many as 62,000 heart disease deaths annually (CDC, 2000). Being exposed to ETS may be especially harmful to children, who not only suffer health consequences from the exposure, but also become more likely to smoke cigarettes themselves.

In the 1999 MPAAT survey of Minnesota adults, the vast majority reported believing that ETS is harmful to adults (89%) and children (95%) and that ETS is annoying (81%). These beliefs held true, to a lesser extent, even among current smokers, with 78% believing ETS harms adults, 93% believing ETS harms children, and 52% finding ETS annoying (MPAAT et al., 2000).

Because current clean indoor air legislation (MN Statutes sections 144.411-144.417) is only partially protective, exposure to ETS still occurs in many settings, including restaurants and bars, workplaces, and homes. In the MYTS, 57.9% of middle school students and 75.8% of high school students reported being in the same room or car with someone who was smoking in the previous week (MDH, 2000). The MPAAT survey found that only 2/3 of employed Minnesotans reported that their workplace has a ban on all smoking in the building (MPAAT et al., 2000). The remaining third said there was no policy or the policy in place does not completely eliminate secondhand smoke. Likewise, just 2/3 of Minnesotans reported having a ban on any type of smoking in their homes (MPAAT et al., 2000).

Restrictions on smoking not only protect non-smokers from ETS, but also help current smokers reduce their own smoking, as shown in Figure 10 (MPAAT et al., 2000). In addition, concerns from food establishments about losing business if they enact a smoking ban seem to be unfounded. According to the Surgeon General, studies examining the effect of local ordinances that ban smoking in restaurants have revealed no change in taxable revenues (CDC, 2000).



Resources for Change

In 1999, the Minnesota Legislature set aside $590 million from Minnesota's historic $6 billion tobacco lawsuit settlement to create an endowment devoted to preventing tobacco use and other high-risk youth behaviors. Income generated by the endowment is being used by the Minnesota Department of Health to create and fund a comprehensive Youth Tobacco Prevention Initiative based in part on CDC recommendations (CDC, 1999). Elements of the strategy include statewide and local programs to reduce tobacco use, a youth movement and ad campaign that work against tobacco industry marketing tactics, and tougher enforcement of laws prohibiting tobacco sales to minors. Further information about Minnesota's youth tobacco prevention programs can be found on the web at http://www.health.state.mn.us/divs/fh/assist/assist.html. Target Market, the youth movement that is organizing teens to reject the influence of tobacco marketing, can be reached at http://www.tmvoice.com/.

While the Legislature directed the Department of Health to focus on youth, many other organizations are working to help people of all ages quit or avoid smoking. The Minnesota Partnership for Action Against Tobacco (MPAAT) is a non-profit foundation that conducts research and provides grant funding aimed at reducing the harm caused by tobacco. MPAAT can be reached at http://www.mpaat.org/. Minnesota Smoke-Free Coalition is a statewide coalition of health, business, and community organizations dedicated to reducing tobacco use in Minnesota. The Coalition supports measures to prevent children from beginning a lifelong addiction to tobacco, to help those who want to quit smoking, and to protect nonsmokers from exposure to secondhand smoke. Their web address is http://www.smokefreecoalition.org. The American Cancer Society, American Lung Association, American Heart Association, and many health insurance plans and clinics are involved in efforts to help individuals and communities reduce tobacco use.

References

Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health (1989). Reducing the Health Consequences of Smoking: 25 Years of Progress. A Report of the Surgeon General.

Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health (1994). Preventing Tobacco Use Among Young People: A Report of the Surgeon General.

Centers for Disease Control and Prevention, Office on Smoking and Health (1999). Best Practices for Comprehensive Tobacco Control Programs.

Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health (2000). Reducing Tobacco Use: A Report of the Surgeon General.

Federal Trade Commission (2001). Cigarette Report for 1999.

McGinnis, J. M. and Foege, W.H. (1993). "Actual Causes of Death in the United States," Journal of the American Medical Association, Volume 270, Number 18: 2207-2212.

Minnesota Department of Children, Families, and Learning (1999). Minnesota Student Survey 1989, 1992, 1995, 1998: Behavioral Trends for Minnesota's Youth.

Minnesota Department of Health (1996). "Minnesota Estimates of Mortality and Economic Costs Due to Smoking, Based on 1995 Data."

Minnesota Department of Health, Center for Health Statistics (1994-1999). Behavioral Risk Factor Surveillance System, Minnesota.

Minnesota Department of Health, Community Health Services Division (1998). Healthy Minnesotans Public Health Improvement Goals 2004.

Minnesota Department of Health, Center for Health Statistics (2000). Teens and Tobacco in Minnesota: Results from the Minnesota Youth Tobacco Survey. http://www.health.state.mn.us/divs/chs/data/tobacco.htm

Minnesota Partnership for Action Against Tobacco, Blue Cross Blue Shield of Minnesota, Minnesota Department of Health, Minnesota Smoke-Free Coalition (2000). Secondhand Smoke: Knowledge, Attitudes, and Behaviors of Minnesotans.

121 East Seventh Place
P.O. Box 64975
Saint Paul, Minnesota 55164-0975
http://www.health.state.mn.us/divs/chs/top_2.htm

Please email michele.seeley@health.state.mn.us, or call (651) 296-8422 to receive this newsletter regularly or for more information.

If you require this document in another format such as large print, Braille or cassette tape, call (651) 296-8422.

Printed on recycled paper.

April 2001