



Quitting Smoking, 1999-2003: Nicotine Addiction in Minnesota

January 2004

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NICOTINE ADDICTION IN MINNESOTA**

This report was prepared by:

Blue Cross and Blue Shield of Minnesota

Minnesota Department of Health

Minnesota Partnership for Action Against Tobacco

University of Minnesota

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INTRODUCTION

Quitting Smoking, 1999-2003: Nicotine Addiction in Minnesota is one in a series of collaborative research reports about smoking based on the 2003 Minnesota Adult Tobacco Survey. Four organizations — the Minnesota Department of Health, the Minnesota Partnership for Action Against Tobacco (MPAAT), Blue Cross and Blue Shield of Minnesota (Blue Cross), and the University of Minnesota — joined together to conduct the survey and produce this report.

This report describes Minnesotans' efforts to quit smoking and provides an update to the findings from the 1999 Adult Tobacco Prevalence Survey that were presented in our July 2001 report, *Quitting Smoking: Nicotine Addiction in Minnesota*. (See Appendix A for a description of the research methods for both surveys.) Other reports in the series explore patterns of young adult smoking and exposure to and attitudes regarding secondhand smoke.

Our objective in conducting these surveys was to obtain scientifically valid data on Minnesotans' knowledge, attitudes, and behaviors concerning adult tobacco use and exposure to secondhand smoke in order to support policy development, advocacy, and program planning. Our overarching goals are to help current smokers quit, to prevent more people from starting to smoke, and to protect all Minnesotans by reducing exposure to secondhand smoke.

This report describes quitting smoking patterns among the general population of adult Minnesotans. Between November 2002 and June 2003, 8,821 adults (age 18 and older) were interviewed for the Minnesota Adult Tobacco Survey.

This report interprets the 2003 survey results in light of several important changes that have occurred in the state since the 1999 Adult Tobacco Prevalence Survey. (See *Recent environmental shifts may influence quitting*, page 6.) Results from the 1999 and 2003 surveys are compared to show changes in smokers' attitudes and behaviors that may have occurred because of these environmental shifts. All comparisons between 1999 and 2003 presented in this report are statistically significant at or beyond $p < .05$, unless otherwise noted.

For several reasons, this report focuses on cigarette smoking, rather than use of other forms of tobacco, such as cigars, pipes, or chewing tobacco. First, 18 percent of adult Minnesotans smoke cigarettes or both smoke cigarettes and use other forms of tobacco. A comparatively small, additional 4 percent use only other forms of tobacco. Second, this survey collected less information about individuals' efforts to quit using other tobacco products than about cigarette smoking. Finally, less is known about the effectiveness of methods to help users of these other tobacco products quit successfully.

EVERY MINNESOTAN PAYS THE HUMAN AND ECONOMIC COSTS OF SMOKING

The human cost

Smoking is a major cause of death and disease in the United States. As the leading cause of preventable death in the United States, smoking prematurely kills more than 440,000 Americans each year from diseases caused by smoking or exposure to secondhand smoke. Smoking causes death primarily from cancer, cardiovascular disease, and respiratory diseases. Smokers who die of smoking-related diseases shorten their lives by an average of 13 to 14 years.¹ In Minnesota, one in every seven deaths, or 5,600 deaths each year, is attributable to smoking.²

Beyond mortality, the Centers for Disease Control (CDC) estimated that more than 8.5 million Americans suffer from smoking-related illnesses, primarily chronic bronchitis, emphysema, and heart disease.³ Many people experience decreased quality of life because of these illnesses. In Minnesota, an estimated 280,000 children are exposed to secondhand smoke in their homes. These children experience asthma, bronchitis, middle ear infections, and sudden infant death syndrome at higher rates.⁴

The economic cost

According to CDC estimates, tobacco use costs Americans more than \$75 billion each year in excess direct medical expenses, representing 8 percent of total U.S. health care costs.¹ Smokers incur these increased medical costs because they suffer from certain diseases at higher rates. Minnesotans lose an estimated \$1.6 billion annually from health care

expenses for tobacco-related disease.⁵ That figure does not include the excess medical costs of treating children who are exposed to secondhand smoke.

Who is paying the medical costs for tobacco use?

- **Minnesota businesses** face increased health care insurance costs and/or direct medical expenditures for their employees.
- **Minnesota state and local governments** pay more to cover enrollees in MinnesotaCare and Medical Assistance, the state's public health care programs.
- **Minnesotans with smoking-related diseases** often pay additional out-of-pocket costs for their treatments, medications, medical equipment, and other items.
- **All Minnesotans**, whether through taxes that cover government health programs or increased health premium contributions, co-payments, or deductibles, share the costs of tobacco use.

In addition to medical costs, smoking costs the U.S. economy an estimated \$82 billion each year in lost productivity because of premature death.¹ The Minnesota economy loses approximately \$996 million annually in lost productivity.²

Lost productivity costs specifically borne by Minnesota businesses include lost work time because of smoking breaks and more illnesses, early retirements due to smoking-related illnesses, and training to replace workers who leave or die prematurely.

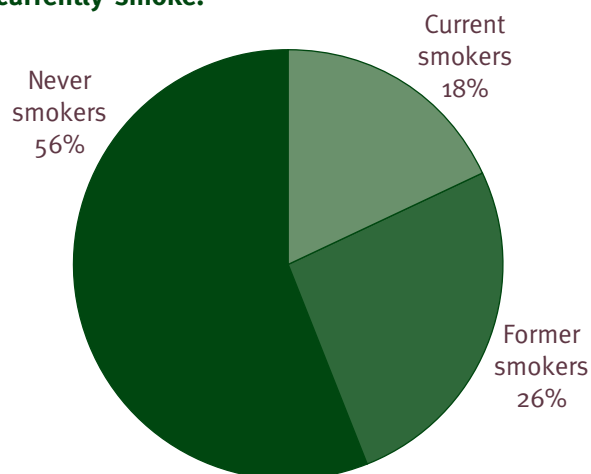
MANY ADULT MINNESOTANS STILL SMOKE

Nearly one in five (18%) Minnesota adults reported that they were current smokers at the time of the 2003 Minnesota Adult Tobacco Survey (Figure 1). That represents more than 666,000 adult Minnesotans.

The 18 percent prevalence of current smoking measured in the 2003 survey is slightly lower than the 20 percent prevalence finding from the 1999 Adult Tobacco Prevalence Survey. While this difference is encouraging, one can not yet conclude that this modest decline represents more than a minor variation over time in smoking prevalence. In fact, the smoking prevalence measured by the Minnesota Behavioral Risk Factor Surveillance System, a survey conducted every year, has remained relatively stable since 1990.⁶

While lower than the 2002 national median cigarette smoking prevalence of 23 percent,⁶ this rate is still too high, considering the high costs associated with smoking. California's tobacco control program demonstrated the potential to achieve an even lower statewide smoking prevalence⁷ and the associated long-term health and economic benefits of reduced disease.⁸

Figure 1: 18 percent of Minnesota adults currently smoke.



Data Source: 2003 Minnesota Adult Tobacco Survey

ADULT SMOKING STATUS – DEFINITIONS

The Centers for Disease Control and most previous studies use the following standard criteria to define adult smoking status: *

A **current smoker** reported smoking at least 100 cigarettes in his or her lifetime and now smokes every day or some days.

A **former smoker** reported smoking at least 100 cigarettes in his or her lifetime but does not smoke now.

A **never smoker** reported not smoking 100 cigarettes in his or her lifetime.

* Most national surveys of tobacco use employ this standard definition of adult smoking status. Another report from the 2003 Minnesota Adult Tobacco Survey, *Patterns of Smoking Among Minnesota's Young Adults*, explores a new, broader definition of smoking status for the young adult (ages 18 to 24) population.

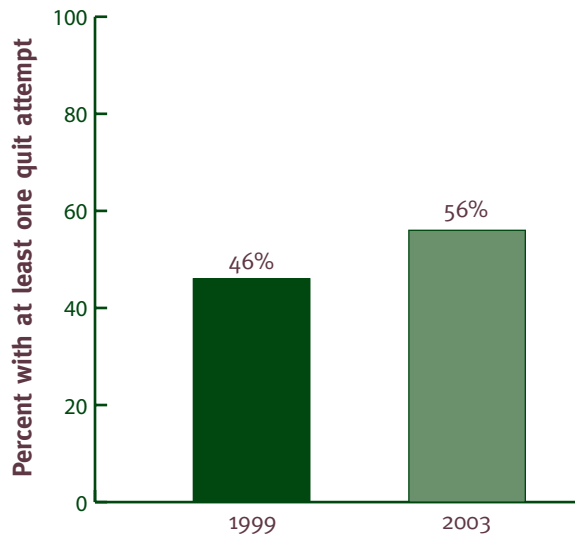
MORE MINNESOTANS ARE TRYING TO QUIT SMOKING

National health survey results indicate that seven out of 10 American adult smokers want to quit.⁹ The 2003 Minnesota Adult Tobacco Survey reveals that, compared to 1999, more adult smokers have attempted to quit smoking and more are preparing to quit smoking.

Quit attempts dramatically increase

In the 1999 Adult Tobacco Prevalence Survey, 46 percent of Minnesota current adult smokers reported that they had stopped smoking for one day or longer in the past 12 months because they were trying to quit. This percent rose dramatically to 56 percent of adult smokers in the 2003 Minnesota Adult Tobacco Survey (Figure 2). That is, nearly 370,000 adult Minnesota smokers attempted to quit in the year before the 2003 survey — an increase of nearly 52,000 individuals making quit attempts since 1999.

Figure 2: The percent of current adult smokers with at least one quit attempt in the past 12 months increased from 1999 to 2003.



Data Sources: 2003 Minnesota Adult Tobacco Survey
1999 Adult Tobacco Prevalence Survey

More smokers are getting ready to quit

Describing smokers in terms of their readiness to quit smoking, or “stage of change,” provides a second way to quantify the desire to quit. (See *Readiness to Quit — Definitions*.) The percent of smokers in the *preparation* stage of readiness to quit grew from 20 percent in the 1999 Adult Tobacco Prevalence Survey to 25 percent in the 2003 Minnesota Adult Tobacco Survey ($p < .10$) (Figure 3). The 2003 result means that over 150,000 adult Minnesota smokers were planning a quit attempt within the next month — approximately 22,500 more smokers than in 1999.

READINESS TO QUIT—DEFINITIONS

Current smokers’ readiness to quit often is characterized in terms of the following “stages of change.”

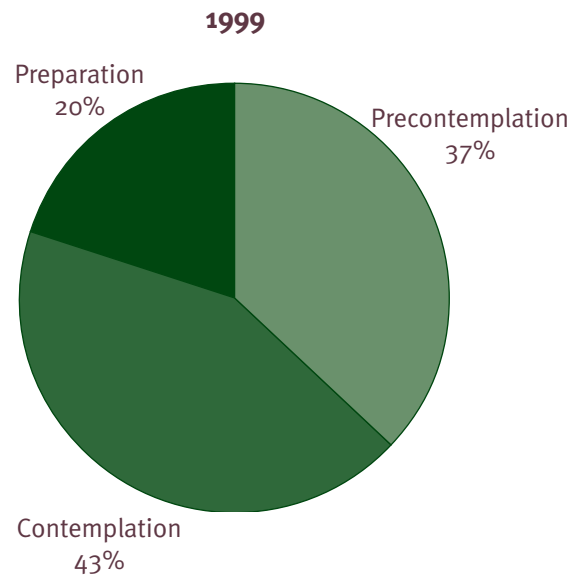
Precontemplation: Smokers not seriously considering stopping smoking within the next six months.

Contemplation: Smokers seriously considering stopping smoking within the next six months.

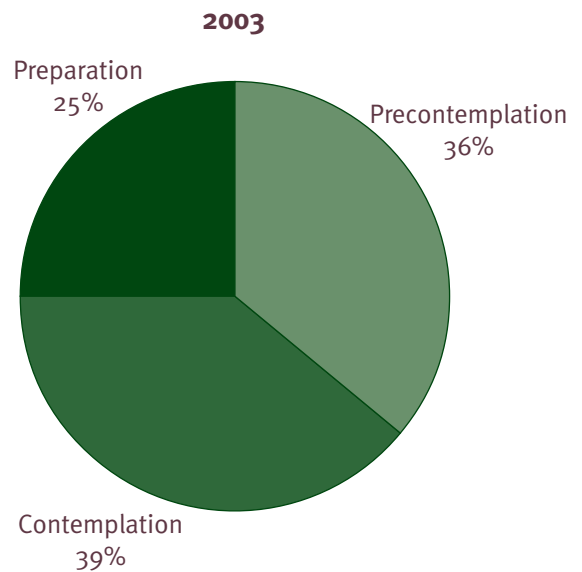
Preparation: Smokers planning to stop smoking within the next 30 days who have also tried quitting within the past 12 months.

Action and maintenance, two additional stages, describe former smokers, who are not the focus of this section.

Figure 3: Current adult smokers’ readiness to quit increased from 1999 to 2003.



Data Source: 1999 Adult Tobacco Prevalence Survey



Data Source: 2003 Minnesota Adult Tobacco Survey

RECENT ENVIRONMENTAL CHANGES MAY INFLUENCE QUITTING

The social environment may either encourage or discourage a smoker from attempting to quit. An understanding of how efforts to reduce tobacco use in Minnesota since 1999 shaped the social environment will help the reader understand the results in this report. Many of these efforts developed from the funds that the State of Minnesota received in its settlement of the lawsuit filed with Blue Cross against the tobacco companies in 1994. The 1998 settlement terms and subsequent legislation dedicated some of these funds to reducing tobacco use in Minnesota. Blue Cross also settled with the tobacco companies in 1998; however, with the exception of a portion given to the Blue Cross and Blue Shield of Minnesota Foundation in 1999, its settlement funds remain unavailable because of legal issues.

Environmental factors that support quitting

- ***MPAAT and the state's health plans increased access to quit-smoking assistance***, including both medications and counseling. (See *Quitting assistance is now available to every Minnesotan*, page 10.)
- ***Health professionals received support in encouraging patients to quit***. Health plans have reimbursed clinicians for treatment of tobacco use as a chronic illness, offered incentive programs for active identification and assistance to smokers, facilitated recommendations to smokers to use telephone helplines, and provided print and training resources about supporting quit attempts.
- ***Media campaigns encouraged the use of stop-smoking telephone helplines***. Both Blue Cross (since 2000) and MPAAT (since 2001) have aggressively promoted the availability of their telephone helplines using televised ad campaigns and other media. In addition to increasing use of the helplines, the messages also promoted the general idea of quitting smoking.
- ***A media campaign described the dangers of secondhand smoke***. In the spring of 2001, MPAAT launched a media campaign that educated Minnesotans about the harm secondhand smoke causes to themselves and others.
- ***Some communities passed smoke-free ordinances***. Duluth, Cloquet, Moose Lake, and Olmsted County enacted smoke-free workplace ordinances that also extend protection to restaurants. Several communities also made their parks smoke-free.
- ***The Minnesota Clean Indoor Air Act was strengthened***. The new regulations, announced in 2002 and effective in September 2003, expanded the requirement for smoke-free workplaces to include factories, warehouses, and other similar places.
- ***The Target Market campaign organized youth***. Between 2000 and 2003, this innovative Minnesota Department of Health program engaged Minnesota's youth (ages 12 to 17), through organizing and a mass media campaign, to realize that they are being targeted by the tobacco industry's sophisticated marketing.

Environmental barriers that do not support quitting

- ***The tobacco industry continues to market its product.*** Since 1998, spending on advertising and promotion of cigarettes increased by 67 percent. In Minnesota, the industry spent an estimated \$196 million in 2001 to recruit new smokers, increase consumption, and maintain customer loyalty.¹⁰
- ***Funding decreased for smoke-free media campaigns and local policy efforts.*** MPAAT's focus shifted to individual-level stop-smoking services in 2002 and its media campaign was redesigned to promote those services.
- ***Target Market was eliminated.*** The Minnesota legislature sharply reduced funding for youth prevention initiatives in 2003, bringing an end to the Target Market advertising campaign and youth organizing efforts.
- ***Tobacco settlement funds are not yet available to Blue Cross.*** Since the 1998 tobacco settlement, ongoing legal battles have tied up Blue Cross' allocated funds. Blue Cross plans to implement large-scale health improvement programs with a significant portion of this money.

QUITTING SMOKING IS DIFFICULT

Many former smokers say that quitting was one of the hardest things they ever did. Quitting smoking is difficult because smokers become addicted to nicotine and because the social environments of smokers tend to support smoking.

Smoking is addictive

Of the current cigarette smokers who had tried to quit in the 12 months before the 2003 Minnesota Adult Tobacco Survey, 68 percent made multiple quit attempts. Fourteen percent had tried to quit six or more times that year. Smokers who tried to quit reported an average of 3.1 quit attempts in the past 12 months, suggesting the need for many attempts before quitting successfully.

Among former smokers, 5 percent had quit within the six months prior to the survey. This group of nearly 48,000 recent quitters faces a high risk of relapse.

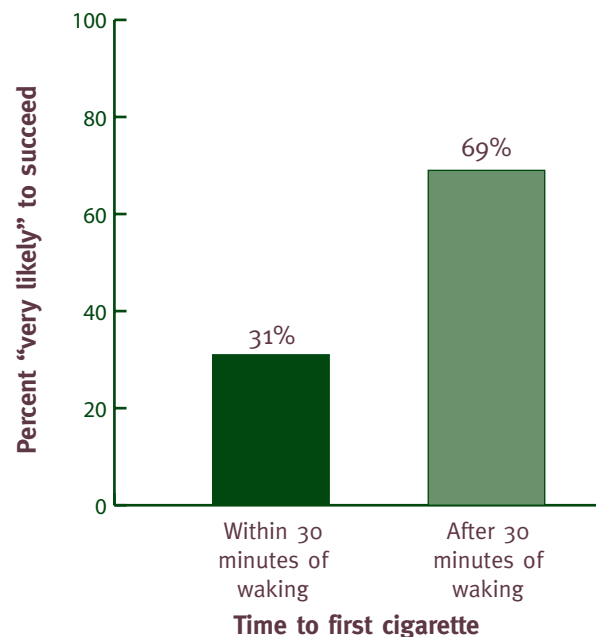
To characterize and measure addiction, the survey asked smokers, “How soon after you wake up do you have your first cigarette?” Nearly half (46%) of Minnesota smokers have their first cigarette within 30 minutes of waking. Indicating an even greater level of addiction, 19 percent — nearly 123,000 Minnesota smokers — light their first cigarette within five minutes of waking.

Current smokers’ individual levels of addiction clearly influence their predictions of their ability to stop smoking successfully. The survey asked, “If you decided to give up smoking altogether, how likely do you think you would be to succeed?” One-third (31%) of the more addicted smokers (who have their first cigarette *within* 30 minutes of waking) thought they would be very likely to succeed if they decided to quit. Yet, more than two-thirds (69%) of the less addicted smokers (who have their first cigarette *after* 30 minutes of waking) thought they would be very likely to succeed (Figure 4).

QUITTING SUCCESSFULLY TAKES MANY ATTEMPTS

The 2001 Surgeon General’s report notes that former smokers made an average of eight to 11 quit attempts before succeeding.¹¹ The bad news is that failed quit attempts can be discouraging. The good news is that each time smokers attempt to quit, they learn what works and what does not work for them. With this knowledge, tobacco users have a better chance of succeeding each time they try to quit in the future.

Figure 4: Adults who smoke soon after waking are less likely to think they will succeed if they decide to give up smoking altogether.



Data Source: 2003 Minnesota Adult Tobacco Survey

Further, smoking intensity, or number of cigarettes per day, also is associated with a smoker's personal prediction of success in quitting. Figure 5 demonstrates that the more cigarettes smoked per day, the more likely smokers are to predict that they will not stop smoking successfully.

Addiction to tobacco remains a serious challenge for Minnesota smokers. The 1999 Adult Tobacco Prevalence survey results provided similar evidence of the need for multiple attempts before quitting successfully. The 1999 survey also detected the high level of addiction among Minnesota smokers. Finally, smokers' confidence in their ability to quit was similarly related both to level of addiction and to smoking intensity, respectively, in the 1999 survey results.

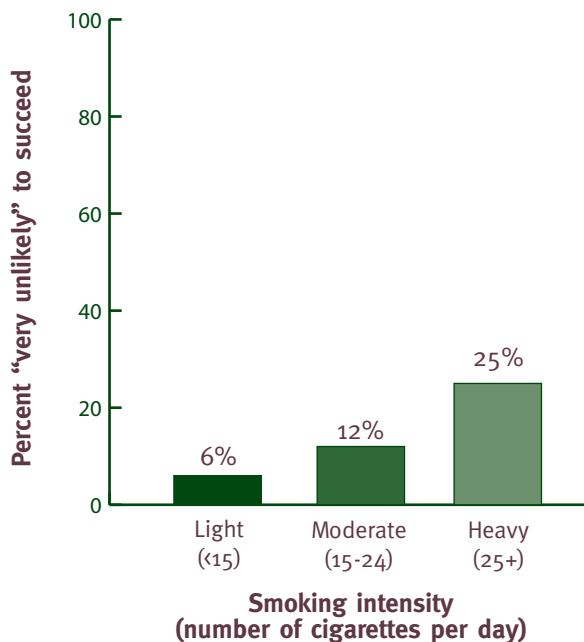
The social environments of smokers support smoking

Quitting smoking also is difficult because the social environment of many current smokers supports the behavior. In the 2003 Minnesota Adult Tobacco Survey, nearly two-thirds (63%) of current smokers reported having a spouse, parent, friend, or other person close to them who also smokes cigarettes or uses other forms of tobacco. In contrast, only about one-third of former (32%) and never (30%) smokers reported having someone close to them who uses tobacco (Figure 6).

Of the current smokers with someone close who smokes, one-quarter (26%) said that "most or all" of the people close to them use tobacco. In contrast, a very small percent of the former (4%) and never (6%) smokers with someone close who smokes reported that "most or all" of the people close to them use tobacco.

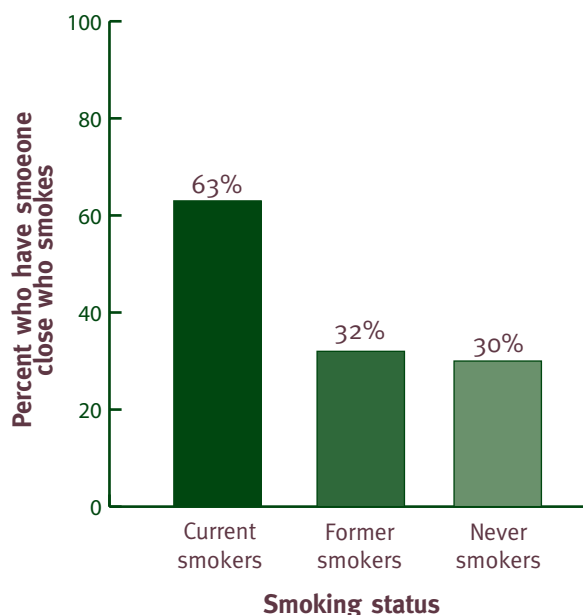
The 1999 Adult Tobacco Prevalence Survey results also showed these relationships. More often than never and former smokers, current smokers stated that the people close to them smoke.

Figure 5: Adults who smoke more cigarettes per day are more likely to think they will not succeed if they decide to give up smoking altogether.



Data Source: 2003 Minnesota Adult Tobacco Survey

Figure 6: Current adult smokers reported having someone close to them who also uses tobacco more often than former and never smokers did.



Data Source: 2003 Minnesota Adult Tobacco Survey

QUITTING ASSISTANCE IS NOW AVAILABLE TO EVERY MINNESOTAN

National public health goals aim to reduce the prevalence of cigarette smoking in the United States to less than 12 percent by 2010.¹² National experts have developed guidelines for states, communities, health care systems, and health care providers that describe evidence-based best practices to reach this goal.^{13,14} Among the recommendations, those specific to the treatment of tobacco use include:

- Reducing patients' out-of-pocket costs for effective quit-smoking medications
- Providing telephone helpline counseling in combination with medications
- Encouraging providers to identify and treat their patients who use tobacco

In Minnesota, the combined efforts of the major health plans and MPAAT have made some form of quitting assistance available to every Minnesota resident and are increasing accessibility to stop-smoking medications.

Effective stop-smoking medications are available to many Minnesotans

Several medications help reduce the symptoms of withdrawal from nicotine or help people cope better with those symptoms. Nicotine replacement therapy (NRT) products effectively increase the odds of quitting smoking. These medications include nicotine patches, gum, nasal sprays, inhalers, and lozenges. Bupropion, a non-nicotine medication marketed as Zyban®, also is effective and may be combined with NRT.¹⁴ Smokers may purchase many NRT products without a prescription. Zyban, however, requires a doctor's prescription.

Many Minnesotans have access to stop-smoking medications through their health plans. Individuals who have health insurance can call the telephone number on the back of their health plan identification card to find out what coverage on stop-smoking medications they may have.

Several behavioral counseling programs are available

Stop-smoking telephone helplines: Telephone-based stop-smoking counseling is an effective approach to quitting smoking.¹⁵ National studies have found that the *combination* of counseling and medication, however, leads to the greatest success in quitting.¹⁶ Therefore, many counseling programs include covered medications for participants. The following telephone helplines are available to Minnesotans:

Health plan stop-smoking telephone helplines: The major Minnesota health plans offer their members no-cost telephone counseling to help them stop smoking. These health plans include Blue Cross, HealthPartners, Medica, Metropolitan Health Plan, Preferred One, and UCare Minnesota. Some health plans provide stop-smoking medications to participants through their telephone helplines. Several others are also developing plans to do the same. The Mayo Clinic Tobacco Quitline also provides telephone counseling in conjunction with stop-smoking medications to its employees and their dependents.

QUITPLAN HelplineSM: The MPAAT stop-smoking telephone service, called the QUITPLAN Helpline, provides both behavioral counseling and nicotine patches or gum to participants. MPAAT's services are free to Minnesota residents who are uninsured or who do not have access to some form of quitting assistance through their health plan, ensuring that all Minnesotans have access to quitting assistance. The QUITPLAN Helpline, (888) 354-PLAN (7526), is advertised throughout the state.

Evaluations of both the MPAAT and Blue Cross telephone helplines demonstrated that these programs increased chances of success in quitting for smokers who used the programs compared to smokers trying to quit without assistance.

Internet-based stop-smoking assistance: MPAAT provides Minnesotans free access to quitplan.com, a Web site that offers immediate support to those quitting tobacco use and to those who already have quit. Features include self-evaluations, expert advice, and personalized quitting plans. At any time, users can communicate with others who are quitting or who already have quit. Medications are not a

part of the quitplan.com free service, but users can purchase stop-smoking medications at competitive prices through a site link.

Counseling provided by health care professionals is another effective means of support for smokers interested in quitting. When providers follow the "five A's" by routinely asking, advising, assessing, assisting, and arranging follow-up care for tobacco users, they can increase their patients' likelihood of quitting successfully.¹⁴

In Minnesota, MPAAT, Blue Cross, and the other health plans have joined together to help providers direct their patients who smoke to the appropriate telephone helpline. Most health plans support health care providers in counseling patients for tobacco use during their visits. Some health plans have offered incentives to providers for implementing effective treatment for smokers. The Institute for Clinical Systems Improvement, a collaboration of Minnesota's health care organizations, regularly updates its treatment of tobacco use health care guidelines.¹⁷

MPAAT also provides face-to-face counseling statewide at worksites and treatment centers through the QUITPLAN at WorkSM and QUITPLAN CenterSM programs.

MINNESOTANS ARE INTERESTED IN USING THE WIDELY AVAILABLE ASSISTANCE

In the 2003 Minnesota Adult Tobacco Survey, two-thirds (66%) of current smokers reported that if they were trying to quit smoking and “cost were not an issue,” they would use a program, product, or medicine to help them quit. This level of interest in using a quit aid has risen from 60 percent to 66 percent since the 1999 Adult Tobacco Prevalence Survey, a possible indication of the increased promotion of and access to these products and services at reduced or no cost since 1999.

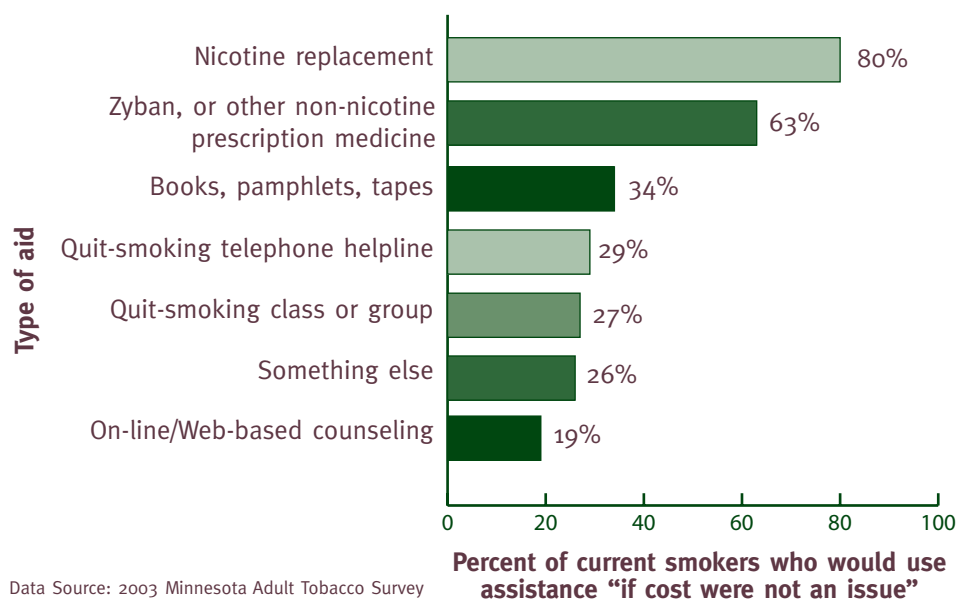
Minnesotans demonstrated interest in a variety of forms of medication and behavioral counseling.

High interest in medications remains stable

In the 2003 survey, the group of current smokers who would use a quit aid “if cost were not an issue” most often expressed interest in medications that reduce the craving for nicotine and other symptoms of withdrawal. Eight out of 10 (80%) current smokers who would use a quit aid showed interest in nicotine replacement therapy (NRT) such as patches, nasal spray, gum, or an inhaler. Nearly two-thirds (63%) of those who would use quit aids reported interest in Zyban, or another non-nicotine prescription medicine (Figure 7).

Compared to the 1999 Adult Tobacco Prevalence Survey results, interest in using NRT among those who would use a quit aid was 75 percent in 1999 and 80 percent in 2003, but the difference was not statistically significant. Interest in using Zyban decreased slightly from 67 percent to 63 percent between the 1999 and 2003 surveys.

Figure 7: Current adult smokers who would use assistance “if cost were not an issue” would use a variety of forms.

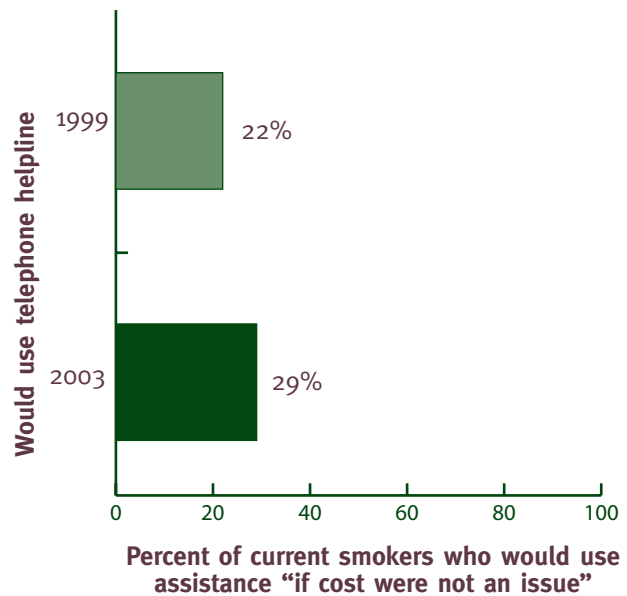


Telephone helpline interest grows significantly

The combination of behavioral counseling with medications leads to the greatest success in quitting.¹⁶ Interest in one form of behavioral counseling, the telephone helpline, grew significantly between 1999 and 2003. In the 1999 Adult Tobacco Prevalence Survey, 22 percent of the smokers who would use a quit aid “if cost were not an issue” said they would use such a service. This proportion grew to 29 percent of the smokers interested in quit aids at the time of the 2003 Minnesota Adult Tobacco Survey. This increase reflects the wide promotion and increased availability of telephone counseling by MPAAT and the health plans to all Minnesotans in the past few years (Figure 8).

Among smokers who would use a quit aid “if cost were not an issue,” one-quarter to one-third noted that they would use behavioral aids, such as books, pamphlets, video or audio tapes, classes, or groups, in the 2003 Minnesota Adult Tobacco Survey. Interest in these other behavioral methods remained stable from 1999 to 2003. Nineteen percent of smokers interested in quit aids would use an on-line or Web-based counseling service, which is readily available in Minnesota (Figure 7).

Figure 8: Among current adult smokers who would use assistance “if cost were not an issue,” a greater percent said they would use a telephone helpline in 2003 than in 1999.



Data Sources: 2003 Minnesota Adult Tobacco Survey
1999 Adult Tobacco Prevalence Survey

INTEREST IN QUIT AIDS IS GREATER THAN THEIR USE

Through the efforts of MPAAT and the health plans, every Minnesotan currently benefits from at least some coverage for stop-smoking medications as well as access to free behavioral counseling. (See *Quitting assistance is now available to every Minnesotan*, page 10.) Nevertheless, actual use falls short of the expressed interest. (See *More Minnesotans who try to quit could use assistance*, page 14.) This gap may result from the lack of awareness of these benefits. The misperception that quitting is expensive may in itself be a barrier for some smokers to quit.

MORE MINNESOTANS WHO TRY TO QUIT COULD USE ASSISTANCE

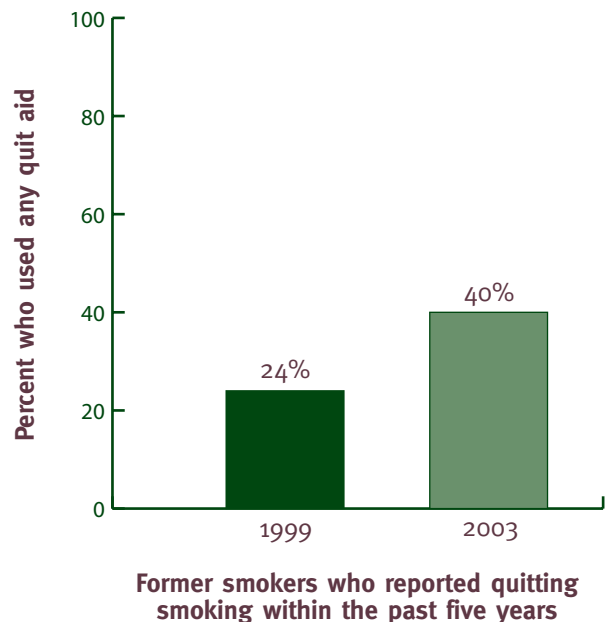
Studies show that only about 3¹⁸ to 7¹⁴ percent of smokers succeed when they try to quit without any form of support. Evidence suggests that quitting success increases when the recommended forms of assistance are used,^{14,15} demonstrating the importance of encouraging smokers to use them. The enhanced access to quitting assistance that Minnesota smokers now enjoy began to improve most dramatically in 1999. To understand how they have responded, the following section focuses on current smokers with at least one quit attempt in the past year and former smokers who quit within the five years prior to the survey.

Among this combined group, 36 percent reported in the 2003 survey that they had used at least some form of quitting assistance, including medication and/or behavioral counseling. This percentage represents more than 200,000 Minnesota adult current and former smokers. By comparison, in the 1999 Adult Tobacco Prevalence Survey, 31 percent of the combined group reported using assistance ($p < .10$).

Figure 9 further compares the use of assistance among former smokers who had quit within the five years prior to the surveys. In 2003, former smokers who had quit in the past five years said they utilized quit aids much more often (40%) than the same group in 1999 (24%). The level of use among current smokers with a quit attempt in the past year, however, remained stable from 1999 to 2003. The fact that these former smokers quit successfully suggests that these aids were helpful.

Still, almost two-thirds (65%) of current smokers with recent quit attempts did not use any assistance in their last attempt. This result means that the great majority of smokers attempting to quit do not use the methods that have been proven to greatly improve their chances for success.

Figure 9: From 1999 to 2003, use of quit aids increased among adult former smokers who had recently quit.



Data Sources: 2003 Minnesota Adult Tobacco Survey
1999 Adult Tobacco Prevalence Survey

Medication use remains stable

Among the current and former smokers from the 2003 survey who used some quit aid in their last attempt, 78 percent reported using some form of nicotine replacement therapy, such as patches or gum. About half as many (39%) used Zyban. The 1999 survey revealed similar levels of use for these kinds of medication (NRT, 75%; Zyban, 34%).

MANY MINNESOTANS BEGIN TO USE STOP-SMOKING TELEPHONE HELPLINES

In Minnesota, the broad availability and large-scale promotion of stop-smoking telephone helplines, such as MPAAT's QUITPLANSM Helpline and Blue Cross' *Blueprint for Health*[®] stop-smoking program, have led to many smokers using this form of behavioral counseling. Participation should continue to grow as long as telephone helplines remain available to Minnesotans.

The Blue Cross telephone helpline, one of the largest in the state, provides an example. By the end of 2003, the program had supported more than 18,000 participants in their attempts to quit since the June 2000 launch.*

*Data Source: 2003 Blue Cross program participation data

DISCUSSION

As the leading cause of preventable death and disease, tobacco use takes a major human and economic toll on Minnesota and the nation. Smokers in Minnesota made substantially more attempts to quit in the year prior to the 2003 Minnesota Adult Tobacco Survey than in the year prior to the 1999 Adult Tobacco Prevalence Survey. In addition, more smokers reported an increased readiness to make quit attempts. Most smokers also stated interest in using quitting assistance, which has become widely available to all Minnesotans in the past five years. Interest in stop-smoking medications remained high between 1999 and 2003, while interest increased in the stop-smoking telephone helplines made available in the last five years. Despite the availability of these resources, two-thirds of current smokers with recent quit attempts did not use any form of assistance, pointing to a major opportunity to help more Minnesotans quit successfully.

The greater accessibility of reduced or no cost quitting assistance grew out of the settlements the State of Minnesota and Blue Cross made with the tobacco industry in 1998. The state's settlement provided the impetus and funds to several statewide organizations — including the Minnesota Department of Health and MPAAT (itself created by the settlement) — to implement comprehensive tobacco control programs. Legal disputes have kept Blue Cross from accessing its settlement dollars, with the exception of a small portion given to the Blue Cross and Blue Shield of Minnesota Foundation in 1999. Nevertheless, the health plan has implemented many programs to help Minnesotans reduce tobacco use since 1999. Other health plans, voluntary organizations, foundations, local health departments, and other organizations have contributed to these efforts. As a result of these programs, every Minnesotan has access to

medication or behavioral counseling to support a quit attempt.

These combined efforts may have influenced quitting behaviors among Minnesota smokers. Other developments, however, such as increased tobacco industry advertising and recently reduced funding for youth prevention and smoke-free policy campaigns, may have eroded the social environment that supports quitting smoking.

The substantial increase in smokers' quit attempts and the greater readiness to quit, together with high interest in effective quitting assistance, signal the start of what may become an important trend leading to decreases in the prevalence of smoking among adults in Minnesota. Because most smokers must make multiple attempts before quitting successfully, more time may be necessary to see these hopeful signs translate into reduced prevalence. Even so, the epidemic smoking rates among young adults described in *Patterns of Smoking Among Minnesota's Young Adults* suggest that new young smokers will keep the proportion of adults who smoke high for years to come. Reducing the prevalence of smoking, therefore, will require continuing to offer and to more aggressively encourage use of these medical and behavioral resources in support of Minnesota smokers' quit attempts.

Still, many factors influence quitting among smokers. Ultimately, the social environment must change in order to discourage youth from starting and to encourage adult smokers to quit. The experience of other states, most notably California where the decline in prevalence of adult smoking was significantly greater than in the rest of the nation,⁷ demonstrates that the *combination* of a social environment discouraging smoking and readily available quitting assistance most successfully leads

to long-term reduced prevalence of smoking.

Developed for states, local communities, and health systems by a national task force, *The Guide to Community Preventive Services* recommends specific, evidence-based strategies to address such environmental factors. These strategies include: increasing the tax on tobacco products; media campaigns motivating smokers to quit; policies banning smoking in public places and the workplace; and counter-marketing efforts that make youth aware that they are being targeted by the tobacco industry.¹³ With such changes in the social environment, fewer Minnesotans would start to smoke and even more current smokers would attempt to quit, thus driving down the prevalence of cigarette smoking among adults below current levels.

APPENDIX A: METHODS

A Note on the Sample and Methods Used in the 2003 Minnesota Adult Tobacco Survey and Comparisons to the 1999 Adult Tobacco Prevalence Survey

The Minnesota Adult Tobacco Survey (MATS) was designed to estimate smoking prevalence rates and other tobacco-related attitudes, beliefs, and behaviors for a representative sample of adults aged 18 and above living in the State of Minnesota, and for a representative sample of individual adult members of the Blue Cross and Blue Shield of Minnesota (Blue Cross) health plan. In addition, the MATS sought to gather sufficient information from young adults, ages 18 to 24, to perform a detailed analysis of their attitudes, beliefs, and behaviors regarding smoking.

To accomplish these goals the MATS set a target of interviewing 10,000 Minnesota adult residents. Because of the survey's multiple goals, the MATS required a complex sample design, which was devised by researchers from the University of Minnesota School of Public Health. The sample included 5,500 adults from a statewide random digit dial sample (RDD sample), which gave all households in Minnesota with telephones a chance of inclusion in the study. The sample also included 4,500 adults from an enrollee list of Blue Cross members (Blue Cross list sample). The Blue Cross list sample was itself composed of representative random samples from each of four major under-writing pools of Blue Cross members: (1) Senior Medicare supplemental insurance (Medicare), (2) Blue Plus Prepaid Medical Assistance Program enrollees (PMAP), (3) Blue Plus MinnesotaCare enrollees, and (4) those covered through commercially purchased health plans (both self-insured employer plans and fully-insured plans) (Commercial). Self-insured plans, used only by large employers, directly bear the risk of health care costs and are only administered by the health plan. In fully insured plans, the health plan assumes the risk for health care costs on behalf of the employer and subscriber. The goal of gathering sufficient data on

young adults ages 18 to 24 was accomplished by over-sampling this group in both the RDD sample and the Blue Cross list sample.

The MATS team employed quality control procedures throughout the survey process — including the overall design of the survey, the wording of questions, review of the work of interviewers and coders, and statistical review of reports. Most survey questions were derived from a survey instrument developed by the Centers for Disease Control (CDC), and other questions had been previously tested and used in other large surveys, such as the ongoing California Tobacco Surveys (CTS) and the 1999 Minnesota Adult Tobacco Prevalence Survey. Clearwater Research, Inc., an experienced telephone survey vendor, administered the survey using research-quality methods. The University of Minnesota researchers and the MATS team supervised the implementation of the survey. The Clearwater Research interviewers used Computer Assisted Telephone Interviewing (CATI) software to perform data collection accurately and efficiently. The interviewers made at least 15 attempts to reach persons in the sample. Interviews were conducted from November 2002 to June 2003. For the purpose of this study, the Council of American Survey Research Organizations (CASRO) methodology was used to calculate the response rate. The overall response rate for the survey was 56.5 percent.

The MATS team made every effort to ensure the confidentiality of respondents. The survey's design and confidentiality procedures were approved by Institutional Review Boards at the University of Minnesota and the Minnesota Department of Health. Names or other identifying information

were not gathered for the RDD sample, and respondent identifiers in the Blue Cross list sample were not retained. Reports cite only aggregate data.

After completion of all interviews, the data from the subsamples in the complex sample design were merged using standard scientific methods in order to create the final merged sample file. The 2003 data in this report are derived from this final merged data set, which consists of 8,821 respondents. The final merged data set includes all of the RDD respondents and the Blue Cross list sample respondents in the MinnesotaCare, Commercial, and Senior strata. The Blue Cross list PMAP respondents were not brought into the final merged data set because the Minnesota PMAP program is only a partial subset of the broader statewide Medical Assistance program. The Medical Assistance program includes some types of enrollees that are not enrolled in the PMAP program. However, the RDD sample does include all types of Medical Assistance program members, including PMAP members, so enrollees of the entire Medical Assistance program are represented in the final merged data set.

The MATS data represent the attitudes, beliefs, and behaviors of Minnesota's adult residents in 2002-03, when the MATS interviews were conducted. This report frequently compares results from the MATS data to results from the Minnesota sample of the 1999 Adult Tobacco Prevalence Survey, a similar telephone-based random digit dial survey of approximately 6,000 adult residents of Minnesota. The methods used in this survey are described in more detail in two public reports derived from the Adult Tobacco Prevalence Survey; *Secondhand Smoke: Knowledge, Attitudes and Behaviors of Minnesotans*, issued in November 2000, and *Quitting Smoking: Nicotine Addiction in Minnesota*, issued in July 2001. The Adult Tobacco Prevalence Survey also was administered by Clearwater Research, Inc. using similar research methods, including full protection of all respondents'

confidentiality. The response rate for the Minnesota sample of the Adult Tobacco Prevalence Survey was 44.8 percent. Questions from the two surveys that are compared in the present report are identical or very similar. Nevertheless, while the two surveys are comparable, caution must be used when interpreting changes observed between these surveys. In particular, causal inferences should be drawn very cautiously because many factors may have been involved in producing any observed differences over this time period.

The 1999 Adult Tobacco Prevalence Survey data and the 2003 MATS data provide highly accurate and detailed representations of the smoking related attitudes, beliefs and behaviors of Minnesota's adult residents at two points in time. However, statistics from surveys are always subject to sampling and nonsampling error. All comparisons between results from the two surveys presented in this report have taken sampling error into account and, unless otherwise noted, are statistically significant at or beyond $p < .05$. Statistical tests were computed using t-tests and standard errors were adjusted for the complex survey design of the MATS survey.

Nonsampling errors in surveys may be attributed to a variety of sources, such as how the survey was designed, how respondents interpret questions, how able and willing respondents are to provide correct answers, and how accurately the answers are coded and classified. The Adult Tobacco Prevalence Survey and the MATS teams took several steps to minimize nonsampling errors. Following completion of the interviews in each survey, post-stratification adjustments were applied, whereby sample estimates are adjusted to independent estimates of the statewide adult population by age, sex, and geographic region. This weighting partially corrects for bias because of minor discrepancies in the representativeness of the sample. Moreover, biases also may be present when people who are missed in the survey differ from those interviewed in ways

other than the categories used in weighting. As with most surveys that rely on telephone interviewing, it is likely that racial and ethnic minority communities are under-represented in both surveys. All of these considerations affect comparisons across different surveys or data sources. Most of these limitations are inherent in all surveys, but the Adult Tobacco Prevalence Survey and the MATS teams made every effort to minimize these limitations through pretesting of the survey questions and other standard techniques.

For more information about the MATS sample design and methods for comparing its results to the 1999 Adult Tobacco Prevalence Survey, please contact:

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APPENDIX B: PROFILE OF ADULT CURRENT, FORMER, AND NEVER SMOKERS IN MINNESOTA

Using data from the 2003 Minnesota Adult Tobacco Survey, Table 1 provides demographic data on the current and former smokers, the subject of this report. Never smokers are included to provide a comparison group. Among each of the three groups, slightly more than half live in the Twin Cities seven-county metropolitan area, reflecting the distribution of the Minnesota population. A greater percentage of men are current and former smokers than are women. Among never smokers, however, 55 percent are women.

Never, former, and current smokers differ primarily on age, education, and marital status. Never smokers

are, on average, 10.0 years younger than former smokers and 4.2 years older than current smokers. Never smokers (42%) are much more likely to have a college degree than former smokers (35%) and current smokers (19%). Two-thirds (66%) of never smokers, nearly three-quarters (72%) of former smokers, and only about half (49%) of current smokers are married, a difference that in part reflects the average age of the groups.

In the 1999 Adult Tobacco Prevalence Survey, the demographic characteristics among the three groups were similar to the 2003 profile.

Table 1: 2003 Profile of Adult Current, Former, and Never Smokers in Minnesota

	Current smokers	Former smokers	Never Smokers
Geographic Area			
Greater Minnesota	47%	46%	46%
Seven-county metro area	53%	54%	54%
Total	100%	100%	100%
Gender			
Female	44%	44%	55%
Male	56%	56%	45%
Total	100%	100%	100%
Average Age (years)	39.5	53.8	43.7
Education			
Less than high school	8%	5%	6%
High school graduate/GED	39%	29%	23%
Some college or technical school	34%	31%	29%
College graduate and above	19%	35%	42%
Total	100%	100%	100%
Married	49%	72%	66%

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COLLABORATING ORGANIZATIONS

BLUE CROSS AND BLUE SHIELD OF MINNESOTA (Blue Cross), with headquarters in the St. Paul suburb of Eagan, was chartered in 1933 as Minnesota's first health plan and continues to carry out its charter mission today: to promote a wider, more economical and timely availability of health services for the people of Minnesota. Its Center for Tobacco Reduction and Health Improvement was formed in 1998 in the wake of Blue Cross' landmark lawsuit against and settlement with the tobacco industry. The Center works to reduce tobacco use among Blue Cross members, invests in community-wide prevention and treatment efforts for tobacco use and related health risks, and creates new knowledge and models for health improvement. Blue Cross and Blue Shield of Minnesota is an independent licensee of the Blue Cross and Blue Shield Association.

THE MINNESOTA DEPARTMENT OF HEALTH works to protect, improve, and maintain the health of all Minnesotans. The Department is creating tobacco-free communities in Minnesota by funding community-based organizations to influence community norms and the social environment of youth through science-based and population-based strategies. These strategies include adopting private and public policies restricting tobacco use, implementing comprehensive school-based tobacco prevention, and reducing youth access to tobacco. The goal of the Minnesota Department of Health is to reduce tobacco use by 25 percent by 2005 and to achieve a social environment in which tobacco use is undesirable, unacceptable, and inaccessible by youth. The Department also conducts research on youth and adult tobacco use through its Center for Health Statistics.

THE MINNESOTA PARTNERSHIP FOR ACTION AGAINST TOBACCO (MPAAT) is an independent, non-profit organization that improves the health of Minnesota by reducing the harm caused by tobacco. MPAAT serves Minnesota through its grant-making program, QUITPLANSM services to help people stop smoking and statewide outreach activities. It is funded with 3 percent of the state's tobacco settlement.

THE UNIVERSITY OF MINNESOTA participated in this project through the State Health Access Data Assistance Center (SHADAC), a research and policy center in the School of Public Health at the University of Minnesota. In addition to conducting research on factors contributing to health care coverage and access in the U.S., SHADAC also provides technical assistance to state analysts and policy makers in the areas of survey design and sampling, data collection and policy development. SHADAC is funded by a grant from The Robert Wood Johnson Foundation.

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