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Alaskans and Quitting Tobacco: A Population-Based Picture

Final Report

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Table of Contents

Foreword

In 2007, over 21% of Alaskan adults, or almost 94,000 people, were current smokers. Approximately one-third of that number, or over 30,000 people, will eventually die a premature death from a smoking-related disease if they continue to smoke.

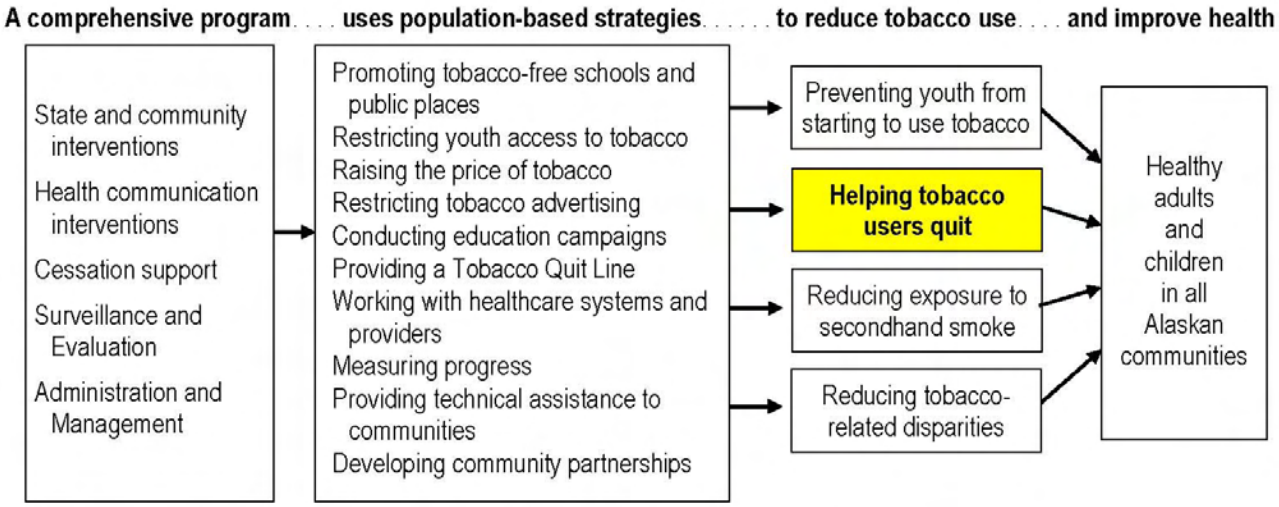
This tobacco-related mortality burden is not irreversible, however. Smoking cessation is quite effective in reducing the morbidity and mortality associated with prior smoking. For smokers who quit prior to age 44, 100% of smoking-related death is preventable. Even for those over 65, one quarter of these premature deaths can be prevented.[1]

Even though smoking prevalence has decreased in Alaska, the process has been slow. Smoking is highly addictive, and cessation remains difficult for the average smoker. Nevertheless, most smokers would like to kick the habit. In Alaska, about two-thirds of smokers say they want to quit, and over half of all smokers have made an attempt in the previous year.[2] Unfortunately, smokers usually need to make multiple quit attempts before finally becoming successful because relapse rates in the first few weeks after quitting are extremely high.[3]

Interventions that help smokers quit are often conceptualized in terms of clinical efforts, such as in-person cessation counseling. But clinical interventions, even if they are highly effective, cannot lower smoking prevalence on the population level if they affect only a few people. Interventions that can be implemented for the population as a whole - even if they are less effective that clinical interventions - will eventually result in lowered prevalence.

Statewide comprehensive tobacco control programs, such as the Alaska Tobacco Prevention and Control Program (ATPCP) were designed to deliver such interventions. These programs mount a coordinated effort combining educational, clinical, regulatory, economic and social strategies to establish smoke-free environments and change social norms. Specifically, they use a combination of population-based efforts, such as mass media counter marketing, community programs, school programs, increased tobacco taxes, and a telephone quit line are designed to assist smokers in cessation, as well as to lower prevalence in other ways. Figure 1 shows how the components and strategies of comprehensive programs work to help smokers quit, as well as to lower prevalence in other ways.

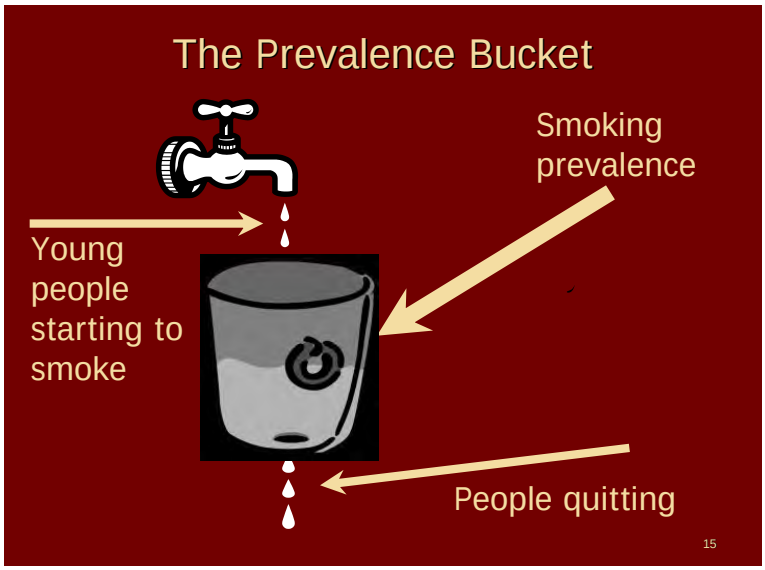
Figure 1. The Public Health Model of Tobacco Prevention



Understanding prevalence

It is important to understand that the magnitude of smoking prevalence in a population changes depending on two factors - how many youth are beginning to smoke, and how many current smokers are quitting. Prevalence can be thought of as similar to the level of water in a bucket with a hole in the bottom and a faucet on top (see Figure 2). The level of the water will change as water flows in through the faucet (that is, young people begin to smoke) or flows out through the hole in the bottom (people quit smoking). If the faucet is turned down, (youth are prevented from initiating) and the hole in the bucket is enlarged, (more smokers quit permanently), the level of the water will fall to zero. But if the same number of people start smoking every year as quit smoking, the level of water in the bucket would stay exactly the same. This is why population-based tobacco control programs must work on both promoting quitting, and on preventing initiation.

Figure 2. The prevalence bucket: How smoking initiation and smoking cessation contribute to smoking prevalence



In this report, we will first examine trends in current smoking, i.e., the level of smoking prevalence. Because of the relationship between prevalence and both initiation and cessation, we also assess trends in never smoking and former smoking. We then focus more specifically on cessation, and provide a review of existing data about quit intentions, behaviors, and other cessation-related factors among Alaskan tobacco smokers. Specifically, the report will:

- Review existing literature and the most current knowledge of best practices for population-based cessation strategies.
- Describe changes over time in smoking status, quit intent and quit behavior, for all Alaskans and for specific subpopulations by gender, race, socio-economic status, age, and region.
- Explore associations for key smoking cessation outcome measures.
- Present a set of findings that can inform Alaska Tobacco Prevention and Control Program goals related to supporting cessation grantees and helping current Alaskan smokers to quit.

Literature Review

Introduction

As noted, two methods exist to reduce death and disease due to smoking: prevent youth smoking initiation and encourage smokers to quit. While preventing youth initiation will have a long lasting impact, its impact on death and disease will not be felt for decades. In contrast, quitting smoking can have an immediate health impact on an individual. For these reasons, the Centers for Disease Control and Prevention (CDC) recommends both reducing the initiation of smoking (particularly among youth) and promoting quitting among all smokers.

A common goal of a tobacco control program is to increase successful smoking cessation. This can occur by increasing quit attempts among smokers and improving the long-term success of those quitters. A large portion of research efforts (providing nicotine replacement therapy (NRT) or improving counseling methods) has been concentrated on improving the long-term success of a quitter. A population-based cessation approach also focuses on increasing the number of smokers who make quit attempts. Strategies include raising the price of tobacco products, implementing smoke-free workplace laws, and other policies that encourage a tobacco-free social norm. These efforts are generally blended with systemic methods to support a smoker in their quit attempts and improve long-term success, such as: providing telephone cessation services, linking cessation services with healthcare providers and reducing barriers to obtaining pharmacotherapy products (such as NRT). Examples from California, New York and Canada demonstrate that population approaches to cessation can be extremely successful.

Health Benefits of Smoking Cessation

The health benefits of quitting smoking are substantial. Smoking cessation reduces the excess risk of coronary heart diseases by half within the first year, improves pulmonary function by 5 percent within the first few months, and significantly increases infant birth weight when women quit before pregnancy or before the 30th week of gestation.[4] Additionally, rates of respiratory symptoms such as cough, sputum production, wheezing and respiratory infections decrease with smoking cessation (U.S. Department of Health and Human Services, 1990).[4] Smoking cessation is the only proven intervention that slows the progression of chronic obstructive pulmonary disease (COPD)[5] and reduces respiratory symptoms.[6]

The long term impact of smoking cessation is even more impressive. After 5 years of abstinence, the risk of lung cancer decreases by 15 percent while after 10 years, the risk of lung cancer decreases by 30 to 50 percent.[4] As soon as five years after quitting smoking, the risk of oral cavity and esophageal cancer decreases by 50 percent.[4] After 15 years of abstinence, the risk of coronary heart disease is similar to that of never smokers. Additionally, the risk of ischemic stroke is reduced to the level of never smokers between 5 and 15 years of abstinence.[4]

The health benefits of quitting smoking lead to dramatic reductions in the risk of death and illness after a smoker quits. This is true for all quitters, regardless of age and gender. In a study of British male doctors, smoking cessation at age 50 cut the excess risk of death in half, while quitting at age 30 almost eliminated the excess risk entirely.[7] Smokers who quit at age 60, 50, 40, and 30 added about 3, 6, 9, and 10 years respectively to their life expectancy.[7] Although it is clear that it is advantageous to quit earlier, cessation is beneficial at all ages.

Additionally, when a smoker quits there is less secondhand exposure to non-smoking individuals, such as family members, co-workers or service employees. A large body of literature shows that secondhand smoke exposure shows a causal relationship to low birth weight in newborns, pre-term deliveries, bronchitis, pneumonia, asthma, and ear infections in children and lung cancer and coronary heart disease in adults.[8] [9] Because of this impact on non-smokers, smoking cessation leads to improved health among all members of a population.

CDC's Best Practices for Tobacco Control, IOM's Blueprint & the Clinical Practice Guidelines

Because of the dramatic health effects of quitting smoking, governmental organizations and other public health groups have created recommendations and guidelines related to increasing smoking cessation. Usually, these recommendations are part of larger tobacco control interventions, typified by the CDC's "Best Practices for Comprehensive Tobacco Control Programs –2007" [10] which recommends that tobacco control programs reduce youth and young adult smoking initiation, promote quitting among adults and youth, eliminate exposure to secondhand smoke, and eliminate health disparities.

The CDC's smoking cessation recommendations rely partially on the meta-analysis conducted by "The Guide to Community Preventive Services".[11] "The Guide" reviews various interventions for tobacco use to determine which strategies have a strong or sufficient evidence base. Based on a large body of published literature, "The Guide" concludes that the following are effective interventions to increase tobacco cessation:

- Increasing the unit price for tobacco products;
- Mass media education campaigns (when combined with other interventions);
- Interventions appropriate for health care systems: provider reminder systems (alone), provider reminder systems plus provider education, reducing patient out-of-pocket costs for effective treatments for tobacco use and dependence; and,
- Patient telephone support (quit lines) when combined with other interventions.

The Institute of Medicine (IOM) is a congressional chartered organization that provides unbiased information and advice about a variety of topics that are requested by federal government agencies. The IOM's "Ending the Tobacco Problem: A Blueprint for the Nation" [12] recommends numerous strategies to reduce tobacco use in the U.S. A number of the recommendations apply to the federal government and another set of recommendations are very specific strategy avenues under a comprehensive statewide tobacco control program and include raising the price of tobacco, conducting a mass media campaign, limiting the number of tobacco retailers, and addressing smoke-free multi-unit housing.

Various federal and non-profit public health organizations came together in 2008 to create the "Clinical Practice Guidelines: Treating Tobacco Use and Dependence".[13] Although the "Guidelines" focus on the clinical treatment of tobacco use, several recommendations address population based smoking cessation:

- Health care delivery systems should identify and document tobacco use status and treat tobacco users;

- Tobacco cessation medications and counseling should be covered benefits for all insurance plans; and,

- Telephone counseling (quit lines) can be effective within diverse populations.

Integrating the recommendations from these various organizations, comprehensive statewide tobacco control programs should include a variety of focus areas and strategies to address population-based smoking cessation, including: 1) conducting a mass media campaign, 2) raising the price of tobacco products, 3) establishing smoke-free workplaces, 4) promoting the use of NRT and counseling, and 5) improving the delivery of smoking cessation in the healthcare system.

State-level Interventions and the Process of Cessation

The standard model for smoking cessation is the Transtheoretical Model of behavior, which is commonly called the Stages of Change model.[14] [15] This model deals with intentional behavior change and views change as a process instead of an event. The 'precontemplation' stage usually describes smokers that are not planning to quit in the next 6 months, whereas the 'contemplation' stage depicts smokers who are seriously considering quitting in the next 6 months. The exact definition of the 'preparation' stage varies but one common definition is a smoker who is planning to quit within the next 30 days. The 'action' stage describes a smoker within the first six months of being quit and the 'maintenance' stage describes a smoker who has been quit for more than six months. When an individual attempts to change a behavior, it is typical to cycle through the stages of change.

Although there are 5 defined stages of change, when contemplating potential interventions one can consider dividing the 'action' and 'maintenance' stages into three separate stages: the 'action' stage, which implies the attempt to quit, 'short-term success' stage, which indicates quitting for up to three months, and 'long-term success' stage, which indicates quitting for longer than three months.

The model's utility and success reflects its ability to target interventions to smokers in these stages and focus on moving them into the next stage. Some debate has emerged regarding the model and its relevance in population-based efforts to move individuals through these,[16] [17] because population-based smoking cessation strategies rarely target smokers in only one stage in the model. As an example, smoke-free workplace laws help smokers in 'preparation' move into the 'action' stage, and also help smokers move from 'short-term success' into the 'long-term success' stage.[18] Nevertheless, different strategies are more highly associated with movement into particular stages of change, and therefore the model provides a useful framework for evaluating cessation at a population level.

Although we know that a number of individual-level factors, such as greater education level, help smokers move within the Stages of Change model, we will focus on the factors that are implicated in state-level interventions, including:

- Mass media campaigns
- Price
- Smoke-free laws
- Nicotine replacement therapy (NRT)
- Telephone quit lines
- Systems-level approaches to smoking cessation
- Social norm change

Mass media campaigns

Based on a broad review of the literature involving over 100 peer-reviewed articles, mass media campaigns have been shown to be effective in increasing smoking cessation in adults.[19] Mass media campaigns usually try to move smokers through the precontemplation and contemplation stages to the preparation and action stages by providing motivation to quit smoking. Mass media campaigns can do this in a number of ways: by providing information about the health effects of smoking or secondhand smoke, by providing social pressure and by promoting telephone quit lines.

Mass media involves communication through television, radio, newspaper, and billboards. Although strategies have differed in California, Massachusetts and Australia, most mass media campaigns have tried to motivate and encourage smokers to quit. Some of the campaigns have focused on educating the public about the dangers of secondhand smoke, but ultimately this message also motivates and encourages smokers to quit.

It is often difficult to quantify the impact of a media campaign on smoking prevalence, specifically because campaigns usually occur within the context of other activities. Two studies that examined long-term, sustained mass media campaigns showed a dramatic impact. Levy et al. (2007)[20] estimated that 28 percent of the decline in smoking prevalence in California was due to the media campaign alone. A recent Australian study showed that exposure to four ads per month led to an absolute monthly decrease in the population-level smoking prevalence of 0.3 percent.[21] Additional research in California[22] and in Massachusetts[23] suggests that specific ads are associated with increased quit attempts and successful quits among smokers.

Price

A vast amount of literature exists regarding the relationship between the price of cigarettes and smoking behavior.[24] Increasing the price of cigarettes has proven to be one of the most effective chronic disease interventions. Price increases interact with the stages of change in multiple ways. Increasing the price of cigarettes has been shown to move smokers from the contemplation stage to the action stage and has been associated with increasing long-term success.

At the population level, the literature consistently states that an increase in price of 10 percent produces a 4 percent decrease in the number of cigarettes consumed. About half of this decrease is due to smokers quitting, while the remaining half is due to smokers cutting back the number of cigarettes that they smoke.[24] Because a cigarette price increase differentially affects youth and young adults, a price increase is an important intervention to ensure that smokers quit before they become long-term smokers and increase their risk of smoking-related disease.[25]

A substantial amount of literature shows that an increase in price also disproportionately affects smokers who are poorer, i.e., more of them quit or cut back on their consumption when the price increases.[24] Recent literature has suggested that the impact of cigarette price on smoking prevalence among low-income populations may have decreased over time compared to its impact in the past.[26] [27] [28] One possible hypothesis is that the tobacco industry is more effective at discounting the price of cigarettes sold to those populations most likely to be affected by price increases; however, the impact of increasing tobacco prices is still quite considerable and the totality of the literature consistently supports the expected impact.

Smoke-free laws

Although originally designed to protect non-smoking employees from exposure to secondhand smoke, clean indoor air policies passed by local municipalities or statewide have been shown to be extremely effective at increasing smoking cessation around the world. This strategy has been shown to move smokers from the precontemplation and contemplation stages to the preparation and action stages. Additionally, smoke-free laws have also been associated with an increased likelihood of short-term and long-term quitting success. A tangible illustration of this is an increase in the calls to the telephone quit line after a smoke-free workplace law was implemented.[29]

Limiting the ability of smokers to smoke reduces the number of cigarettes they smoke per day and increases smoking cessation. A meta-analysis of 26 studies showed that employees at smoke-free workplaces reduced their smoking prevalence by 3.8 percent and their number of cigarettes smoked per day by over 3 cigarettes.[30]

A more recent study of worksites across the U.S. confirmed these findings. Over a nine-year period, smokers that worked in a smoke-free workplace were almost two times more likely to quit smoking than those that did not.[31] Additionally, smokers that continued to smoke reduced their daily consumption by over two and half cigarettes per day. In California, the smoke-free workplace law has been associated with a dramatic decrease in the number of daily smokers, which is expected to lead to reduced health risks among smokers.[32] Lastly, smoke-free workplace laws are a cost-effective population-based smoking cessation approach. In Minnesota, a free NRT effort proved to cost nine times more per successful quit ($7,020) compared to a statewide smoke-free workplace law ($799).[33]

Nicotine Replacement Therapy

Nicotine replacement therapy (NRT) in the form of gum, a patch, nasal spray, an inhaler or lozenges is beneficial in helping smokers quit. Although each form of NRT has different efficiency levels, NRT in general improves the chances of long-term successful quitting by at least 50 percent.[34] NRT helps smokers who make a quit attempt achieve short-term and long-term success.

Although efforts exist to expand the insurance plan to include coverage of NRT among healthcare providers, which can be successful and cost-effective,[35] [36] the proper utilization of NRT by individuals is still a cause for concern.[37] [38]

Questions have been raised regarding the ability of NRT to produce significant impacts at the population level.[39] The hypothesis is that when NRT became available over-the-counter (without a physician prescription) it was being used by smokers that were not as motivated to quit, did not receive the necessary behavioral counseling, did not use it for the necessary length of time and did not use the proper dosage. The same authors showed that NRT was still highly effective

among those smokers most motivated to quit and in an environment that promoted quitting (smoke-free homes), but the effectiveness of NRT decreased without these indicators.[40] A contrasting study of real world NRT use showed an increase in long-term successful quitting, even without behavioral counseling.[41]

A variety of methods exist to increase NRT use, but at the population level the public health community has primarily focused on one approach: giving away free NRT which is occasionally tied to behavioral counseling.

Providing free NRT has been shown to generate numerous calls to quit lines. In addition to the free publicity that generates calls, providing free NRT increases the use of NRT at the population-level which results in increased success rates. This has been shown in multiple states, including: Minnesota,[42 43] New York,[44 45] Oregon,[46 47] Maine,[48] and Ohio.[49]

Telephone quit lines

Telephone quit lines provide behavioral counseling to smokers over the telephone. These services are usually centralized for a state or healthcare system. Telephone quit lines for smoking cessation are useful for a population-based cessation strategy because they provide access to well-trained counselors and are convenient for a large and diverse number of smokers, and are cost efficient.[18] In addition, quit lines are easily integrated with mass media campaigns, referral programs for medical professionals, and can easily be combined with NRT.

Telephone quit lines improve the success of a quit attempt leading to short-term and long-term success. An abundance of evidence shows that telephone quit lines are an effective way to deliver smoking cessation counseling.[13 50 51] Success rates of quit lines vary by the type and intensity of counseling, but meta-analysis suggests that long-term cessation is increased between 40 percent and 60 percent on average when compared with no counseling or self-help materials only.[13 50] Additionally, incorporating telephone counseling with medication can increase successful abstinence rates by about 30 percent compared to medication alone.[13]

Recent evaluation of Alaska's Quit Line indicated that it was effective and services were generally well-received by those who called. Overall, 39% reported being quit for 7 days at the 3-month follow-up. This 3-month point prevalence quit rate was somewhat higher than that of some other quit line studies, including ones in Washington (30%), Oregon (34%) and New York (21-25%).[52]

Although quit lines are highly effective in improving quit outcomes and are a necessary part of a population-based cessation strategy, they are not in themselves a cost-effective way to reduce population prevalence. In the fiscal year 2004-2005, the proportion of North American smokers who utilized a quit line averaged 1%, although this rate ranged from <1% to 4% across different states and provinces.[53] In 2006, 6% of current and former smokers in Alaska reported ever having called the Alaska Quit Line.[54]

Systems-level approaches to smoking cessation

Approaches to smoking cessation on the level of healthcare systems have the ability to impact individuals within various stages of change. A physician can move the smoker through the precontemplation and contemplation stages to the action stage by providing information about the health risks of smoking and advising the smoker to quit. Additionally, the coverage of smoking cessation medications help to move smokers toward long-term success.

Although progress has been made, clinicians still do not consistently use evidence-based approaches to smoking cessation. There is a large disconnect between the reports of physicians asking and advising their patients of tobacco use and the reports of patients on the same topic.[55]

A systems-level approach to smoking cessation that is embraced by healthcare providers, administrators, and purchasers is believed to provide a more comprehensive approach that could lower smoking prevalence by several percentage points.[56] The integrated systems-level approach includes: the provision of smoking cessation medications available within provider formularies at discounted rates, administrators utilizing pay-for-performance methods for clinicians who provide the five A's or who "Ask, Advise, and Refer," and purchasers demanding medication coverage or pay-for-performance measures for clinicians. A study of four different insurance plans in Washington with various levels of coverage for a behavioral program and NRT showed that smokers with full smoking cessation benefits were much more likely to use the benefits versus those with limited coverage.[35]

The measures suggested above have not yet been realized in a large scale way.[13] Some of these actions can be facilitated by state governments when purchasing healthcare plans for their employees, or through other avenues such as the provision of cessation coverage through Medicaid.

A meta-analysis regarding physician advice to quit showed, on average, about a 30 percent increase in abstinence rates when physicians provided this advice.[13] Of course, these quit rates varied by length of contact time and number of times advised. Because of the large number of people who visit a healthcare provider in a year, this intervention has the potential to have a large impact on the population if implemented.

Social norm change

The promotion of social norm change regarding tobacco use is a vital component of population-based tobacco control. Public health interventions, such as mass media campaigns, can begin to make tobacco use less generally acceptable. The public then begins to expect that individuals will not smoke and that public and private areas will be smoke-free. This results in a feedback loop as public expectations lead to further policy changes such as tobacco price increases and smoke-free workplaces. Policy change then reinforces the social unacceptability of tobacco use. Social norm change measured by changing attitudes toward tobacco use has been documented in both Massachusetts and California.[57] [58]

These changes in social norms also increase the process of cessation among smokers. Two recent California studies show that smokers with strong secondhand smoke social norms are over two times more likely to have quit intentions and to make quit attempts compared to smokers with weak social norms.[22] [58] However, the social norm strategy is not without controversy because it can be argued that it involves the stigmatization of smoking.[59] To counter this, social norm campaigns that have been implemented in Massachusetts and California have included smoking cessation support through counseling as well as anti-tobacco counter-marketing, to emphasize the point that a smoker is not at fault for their addiction.

The importance of social norm change is also evident in immigrants from countries that do not have the same social norms. Using language or generational status as a marker for acculturation, Asian and Hispanic adult male smoking prevalence dramatically decreases compared to rates in their homelands, while female smoking prevalence increases.[42] [60] [61] [62] [63]

Changing social norms also play a part in the implementation of smoke-free laws. For the most part, public approval of these laws dramatically increases after their introduction. The regulations then become self-enforcing because of the changing expectations referred to above.[64] [65] [66]

In general, changing the social acceptability of tobacco use is a difficult process that must be approached using multiple strategies. For this reason, comprehensive programs tobacco control programs utilize mass media, tax increases, community and school programs and clean indoor air laws. The multi-faceted approach works to change norms because it targets the whole environment, not just the individual smoker. The individual approaches also have a synergistic effect, each reinforcing the other.[24]

Examples of the impact of tobacco control programs on adult smoking

Over the last 20 or so years there have been many examples of population-based tobacco control programs. California has led the way, as it was the first state to implement a statewide program based on a comprehensive model, and it was the first statewide program in the nation to address the impact of socioeconomic status on smoking prevalence. Other states, such as Massachusetts, Arizona, and Oregon later instituted programs, and currently, there is some form of a tobacco control program in all US states and territories. We give a short history here of California's program, and we also have included some information on the British Columbia, Canada program, because of its extensive work with its indigenous population and its applicability to Alaska.

California

The California Tobacco Control Program (CTCP) was started in 1989 with a $0.25 cigarette pack tax. Although the strategy of the CTCP has changed over time, the underlying structure of the program focuses on changing the social norms around smoking in California.[67] From the beginning, this approach was believed to be a cost-efficient way to address the needs of the 5 million smokers and the 23 million non-smokers in the state. The goal was to motivate smokers to quit and offer centralized telephone quit line counseling for smokers that needed help.[68]

From a practical standpoint, CTCP implemented their program with four strategies: 1) preventing secondhand smoke exposure (through education campaigns and policies), 2) reducing the availability of tobacco products (through local policies), 3) countering the tobacco industry (by educating the public about the tobacco industry's marketing practices) and 4) promoting cessation (through the statewide telephone quit line).

The program's initial focus on the passage of smoke-free restaurant and bar laws in local communities led to the implementation of a smoke-free workplace law in 1995 (excluding bars). In 1998 the state implemented a smoke-free bar law. Cities throughout California continue to pass additional smoke-free laws, including smoke-free outdoor dining, smoke-free parks and playgrounds and smoke-free beaches.[69]

Smoke-free workplace laws in California and throughout the U.S. motivate many smokers to quit, and also make it easier for those who continue to smoke to at least decrease the number of cigarettes that they smoke per day.[30] Decreasing consumption—the number of cigarettes smoked per day—not only provides some modest long-term health benefits but also increases the chances that a smoker will quit in the future.

Twenty years of tobacco control in California has led to dramatic changes in smoking prevalence rates, cigarette consumption, and health outcomes. Currently, California has the second lowest smoking prevalence[70] and the lowest per capita cigarette consumption rate in the U.S.[71] Smoking prevalence in California was 13.3 percent in 2006, a decrease from 22.8 percent in 1988 with the per capita consumption rate decreasing from 123 in 1988 to 40 per capita in 2007. The CTCP is associated with a significant decline in daily smoking consumption among daily smokers age 35 and older, which is expected to lead improved smoking-related health outcomes.[72]

The smoking prevalence and consumption declines have led to dramatic health improvements. Since 1988, lung cancer incidence in California has decreased at three times the rate of the rest of the U.S.[69] CTCP has been attributed with avoiding roughly 11,000 lung cancer cases in its first ten years – a number that will dramatically increase over time.[73] Additional health improvements have been seen in heart disease[30] and smoking attributable cancer mortality.

The CTCP social norm change strategies of implementing clean indoor air policies, making the tobacco industry accountable for their actions, and reducing the availability of tobacco products are part of the structural foundation for CDC's best practices.

British Columbia, Canada

Canada has created a population health approach to tobacco control that addresses the issue through multiple avenues.[74] Community interventions are balanced with tailored individual interventions for different groups such as the Metis and Inuit.

In 1999 the federal, provincial and territorial ministers of health endorsed a ten-year tobacco control plan. This plan focused on prevention (prevent youth from starting to smoke), cessation (providing resources for smokers to quit), protection (protect non-smokers from secondhand smoke) and denormalization (educating the public about the marketing practices of the tobacco industry). The implementation of these goal areas was accomplished by policy and legislation, public education, building and supporting capacity for action, industry accountability and product control, and research, evaluation, and monitoring.[74]

The province of British Columbia has led the charge for tobacco control in Canada. Their denormalization strategy focuses on preventing youth and young adults from starting smoking, encouraging and assisting smokers to quit and reducing exposure to secondhand smoke.[75] In 1999, the Capital Regional District of British Columbia was the first region in Canada to implement a complete smoke-free restaurant and bar law.[76] In March 2008, the amended Tobacco Control Act for British Columbia "banned smoking in indoor public places and work places; banned smoking near public doorways, open windows, and air intakes; and limited the display and sale of tobacco and tobacco products".[77] Additionally, British Columbia has shown very progressive tactics by suing the tobacco industry in 1998 for tobacco-related health care costs, proposing legislation for smoke-free cars with kids under 16 in 2007, and working on smoke-free multi-unit housing.[78]

These efforts have led to tremendous outcomes. British Columbia has seen a decline in smoking prevalence among people age 15 years and older from 20 percent in 1999 to 16 percent in 2004.[75] These declines have been observed across all age groups. Notably, British Columbia had the lowest smoking prevalence among all Canadian provinces in 2007.[79] Unfortunately, the smoking prevalence of the Aboriginal or indigenous population in British Columbia is over 50 percent, more than twice as high as the general population.[80]

Tobacco use and interventions among Native-specific populations

As in British Columbia, indigenous people in the United States (classified by the U.S. Census as Alaska Natives (AN) and American Indians (AI)) smoke and use tobacco at higher levels compared to their counterparts.[81 82 83] AI/AN youth and adults have the highest smoking prevalence among all racial/ethnic groups,[70 84] with Alaska Natives having the highest rate, which was 35 percent higher than the general population during the 1990's.[85]

In discussion of Alaska-specific studies, we use the term Alaska Native to refer to all original inhabitants of the land that is now the state of Alaska - that is, both AI and AN. A recent study documented disproportionately high smoking prevalence among Alaska Natives, noting that 42% of Alaska Native adults and 44% of youth reported current smoking.[86] Quit attempts among Alaska Native adults were similar to those of non-Natives, with nearly two thirds (61%) of current smokers having made an attempt in the past year. Four out of five (83%) Alaska Native high school students reported they had ever tried smoking.

Alaska Natives now have greater risk than whites for some tobacco-related diseases that were not historically prevalent among Natives, and the occurrence of these diseases has increased dramatically in recent years. Rates of lung cancer among Alaska Natives are 40 percent higher than non-Natives.[87] Knowledge of other chronic disease risk factors, besides smoking, is also lower among AI/AN elders compared to whites.[88]

A number of articles documenting the high levels of tobacco use among Alaska Natives have called for better, more tailored interventions.[89 90 91] Many of the interventions recommended for AI/AN people relate to smoking cessation focused on the individual. These include tailoring smoking cessation materials to specific populations and incorporating the history of tobacco use among American Indians.[92 93]

Some studies have shown that the Aboriginal or indigenous people in Canada under-utilize physician services and have a low willingness to use smoking cessation drug therapy, which results in low usage of smoking cessation drug therapy.[94] American Indians in Minnesota held negative attitudes towards pharmacotherapy, lack of information from healthcare providers[95] and mistrusted and had negative experiences with doctors.[96]

Telephone quit lines have provided the most evidence of success for smoking cessation among indigenous peoples in the U.S. and Canada. Even without a targeted campaign, indigenous people of Canada use the telephone quit line and succeed at quitting.[97] An analysis in the state of Washington showed that quit rates and satisfaction levels among American Indians were similar to the rest of the population.[98]

Alaska Natives also succeed in quitting using the Alaska Quit Line, although not at the same rate as non-Natives. Although the Alaska Quit Line provides services that are proportionally used by non-Alaska Natives and Alaska Natives with similar levels of user satisfaction, its effectiveness among non-Natives was substantially higher, illustrated by the disproportionate seven-day quit rates for non-AN and AN populations (40.7 percent versus 22.2 percent respectively).[52]

At this point in time, a large amount of literature exists on documenting the problem of tobacco use in the AIAN community and providing recommendations for the public health community on developing interventions for the AIAN community. These recommendations include: involve the target populations as equal partners, build capacity within these communities, respect the tribes' interests and diversity, and start from the ground up using culturally appropriate formative and

qualitative research.[99 100 101 102] Unfortunately, less literature exists on implemented strategies that are successful.

Tobacco Use and Interventions among low SES populations

Across the United States, including Alaska, smoking prevalence is highest for adults with less education and among adults living below the poverty level.[70 82] In Alaska, a recent study indicated that non-Native low socioeconomic status (SES) Alaskans were about twice as likely as those with higher SES to smoke (37% vs. 18%).[103] Socio-economic status was defined by education, income, age and number of people in the household; the low SES definition included those aged 25-64 who were either living at or below 185% poverty level or had less than a high school education.

National data show that smokers below poverty status are less likely to successfully quit smoking compared to smokers at or above poverty status. Similarly, the percentage of smokers who quit is highest for those with college degrees and lowest among those with less than a high school diploma.[70]

Honjo et al. found that smokers from higher social classes are more likely to use effective resources for smoking cessation and to have home smoking bans, two factors that lead to relatively higher smoking cessation rates compared with those from lower social classes.[104] Barriers to cessation such as cost of cessation services and lower chances of intervention from health care providers, as well as increased stress levels may contribute to lower success rates among persons of low SES. People of low SES often have less access to smoking cessation and other preventative health and treatment services.[105 106] Lowering the cost of effective treatments increases the number of people who successfully quit using tobacco products; as noted earlier, one mechanism for doing this is providing NRT for free or at reduced cost as part of quit line services.

With cigarette smoking increasingly confined to poorer groups, the tobacco control community is being urged to identify what messages and interventions work to get lower SES groups to stop smoking.[107] Several community-based tobacco cessation approaches show success.

As previously noted, numerous studies have documented the fact that low income smokers are more likely to reduce their tobacco use or quit smoking in response to increased prices for tobacco products.[24 108] According to the CDC, smokers with family incomes at or below the national median are four times as likely to quit because of cigarette price increases as those with higher incomes.[24] Low-income populations can also benefit from the tax revenues if some portion is used to finance prevention and cessation programs that target low-income communities.

Other studies indicate opportunities for targeted intervention strategies by comprehensive statewide tobacco control programs. Studies that analyze the effects of mass media campaigns suggest that smokers of low SES, especially women, are more likely than smokers of higher SES to watch and obtain cessation information from television.[109] Shavers et al. concluded that smoking bans in the home show promise reducing smoking among low SES women.[110] Researchers have also outlined the health benefits of smoke-free work policies for bar employees.[111 112]

There has been a growing interest in testing the effectiveness of cessation interventions with low SES populations. One community-based approach to tobacco cessation is the quit and win contest. Hahn et al. [113] reported that on average, low income quit and win participants were 3.5

times more likely than controls to self-report quitting and 12.8 times more likely to demonstrate confirmed quitting. Telephonic counseling for smoking cessation supported by a computer-guided program on relapse prevention was shown to be effective in increasing cessation rates in a low income population.[114] Women of low SES enrolled in intensive cessation intervention programs (stress management, self-esteem enhancement, group support, and other activities that improve quality of life) have 20%–25% successful cessation rates; however, only a small proportion of women of low SES appear to take advantage of these programs.[109]

California has been a leader in prioritizing specific tobacco control services for low SES populations. Based on results from focus group interviews, key informant interviews, and statistical reports based on analysis of survey data, the California Department of Health Services/Tobacco Control Section[115] suggests addressing the onslaught of tobacco advertising in low income neighborhoods, designing programs to account for the immense diversity within the low SES population, and providing accessible and appropriate cessation services for the low SES population. To do so, they suggest that collaborations should be pursued with agencies that serve the poor and may not traditionally be involved in tobacco control such as: community based organizations and their staff that already serve the low SES population; health care providers/clinics; social service agencies/providers; substance abuse prevention programs/agencies; religious organizations/churches; maternal and child health programs; prenatal programs; the Salvation Army; veterans groups; places of incarceration; homeless shelters; immigrant or ethnic-specific agencies; migrant camps; ESL classes; vocational/trade schools; immigration lawyers; and parents involved in their neighborhood schools.

To date, the policy response has been to increase investment in conventional approaches to tobacco control. According to Graham et al., it is possible that improved messages and more interventions are not enough: that the barriers lie in the social disadvantages to which recipients are exposed.[107] Policies that level up opportunities and living standards across the lifespan have an important role to play in reducing socioeconomic differentials in smoking. Any tobacco policy that is beneficial to those of low SES must be linked with housing, child care, training, and economic policies and programs.[107 116]

Methods

A description of the data sources, conceptual model and analysis strategy for this report is provided below. For additional detail on technical terms or the primary data source, please see Appendix A.

Data Sources: BRFSS and YRBS

For all analyses of adult Alaska residents, we used data from the Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is an annual population-based telephone survey administered to a sample of all adult non-institutionalized Alaskans with a landline. It is sponsored by the Centers for Disease Control (CDC) and is administered in all 50 states. The Alaska BRFSS consists of a core survey, with a set of standard behavioral risk factor measures, and an additional modified survey, with a number of tobacco-related indicators used for this report.

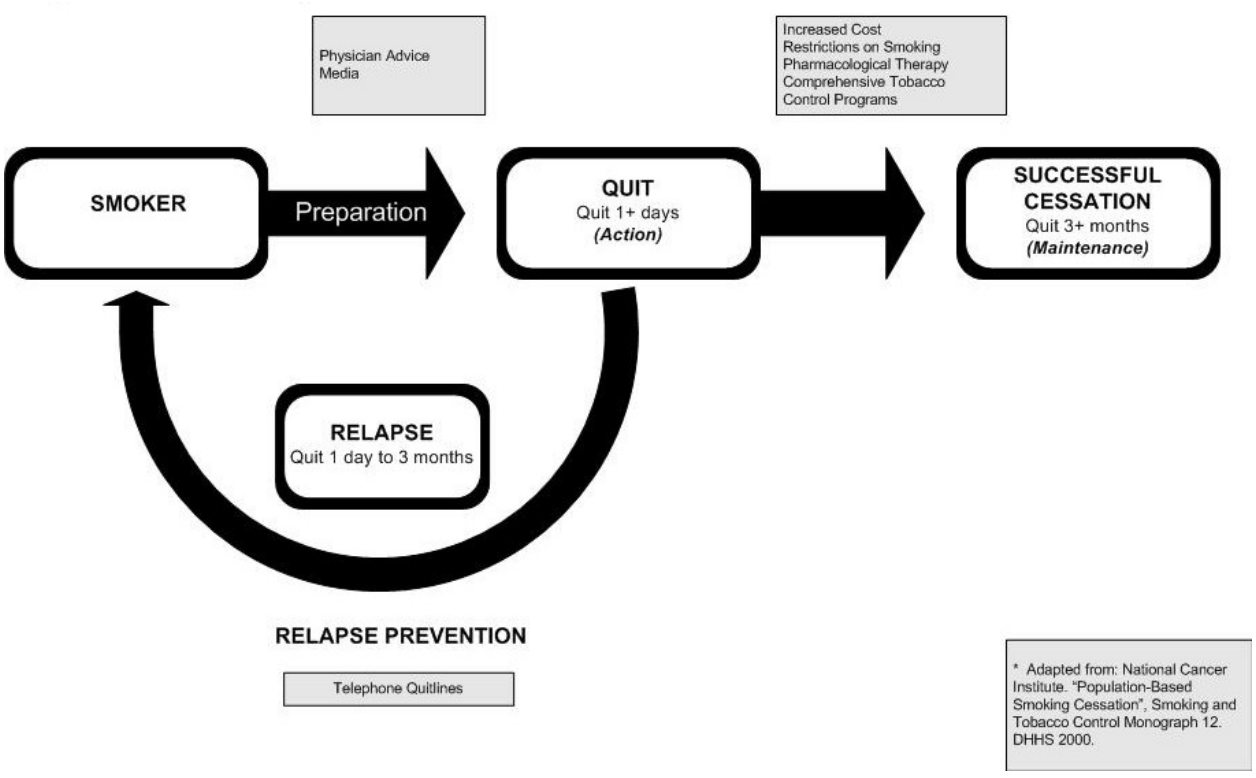
The number of respondents in the BRFSS dataset provides us with the ability to examine the frequency of tobacco use, quit attempts and other quit-related behaviors, overall, and by the subgroups of geography, sex, race/ethnicity, age, employment and other factors. In addition, the BRFSS includes information about income, household size, and education, which were used to create a marker of socio-economic status (SES), as used previously in the report *Smoking Behavior and Beliefs Among Non-Native Alaskans of Low Socio-Economic Status: Implications for Program Planning*.[103]

Additional data were incorporated from the Alaska Youth Risk Behavior Survey (YRBS) Alaska has collected statewide representative YRBS data for high school students in 1995, 2003, and 2007. Information is available regarding smoking initiation, current smoking and attempts to quit.

Conceptual model

As noted in the literature review section of this report, Prochaska's Transtheoretical or Stages of Change model classifies adult smokers as they progress through the cessation process. Those in precontemplation are not thinking of quitting smoking, those in contemplation are thinking of quitting smoking in the next six months, but not in the next 30 days, and those in preparation are planning to quit in the next 30 days. Quit intentions, as classified into the precontemplation, contemplation and preparation stages are highly associated with self-reported quit attempts. Figure 3, adapted from the National Cancer Institute's monograph on population-based smoking cessation, uses the stage of change model to show the process of smoking cessation along with some of the population-based strategies most useful at different points along the quitting continuum.

Figure 3. Population based smoking cessation and smoker stages of change



A smoker generally moves through the period of preparation prior to making a quit attempt. A quit attempt of at least one day characterizes the action stage, whether that attempt is ultimately successful or unsuccessful. Only some quitters will move into maintenance, as relapse among early quitters is very common (about 65% relapse in the first week, 80% in the first month, and about 90% will relapse before they have been quit for three months).[3] These quitters recycle back into the smoker pool, distributed among precontemplation, contemplation and preparation. Quitters that remain abstinent for 3 months or more can be classified as being in maintenance, during which time relapse rates are much lower. We used these classifications to create outcome measures that assess cessation activity in the adult Alaska population. Measures are described below.

Outcome measures: Adults

Smoking status

The BRFSS categorizes current smokers using two questions. First, respondents are asked whether they have smoked 100 cigarettes in their lives. If they respond "no", they are categorized as never smokers. If they respond "yes", they are then asked if they currently smoke every day, some days or not at all. Those that answer "not at all" are categorized as former smokers, and those that answer "every day" or "some days" are categorized as current smokers. Everyday (or daily) and some day (or non-daily) smokers are added together when calculating the prevalence of current smoking, however we have assessed each separately as well for this report.

Note that the percentage of current smokers is affected by both the number initiating smoking and the number quitting, and cannot therefore be used alone as a cessation indicator. For this reason, we examine a variety of smoking status measures, including the quit ratio, which is defined as the proportion of former smokers among ever smokers. The quit ratio excludes never smokers, and assesses more precisely the cessation activity occurring in the population

We have used six measures of smoking status in this report as cessation-related indicators: 1) current smokers, 2) daily smokers, 3) non-daily smokers, 4) former smokers, 5) quit ratio, and 6) never smokers.

Preparation stage of the Stages of Change

Among current smokers, those that are thinking of quitting in the next 30 days are in the preparation stage. Data for this measure are available only for years 2004-2007.

Quit attempt status

We created a number of outcome measures to assess quit attempts. We confined former smokers to those who have quit sometime within the last year, in order to ensure that these analyses reflect cessation behavior that took place in a recent time frame (e.g., between 2000-2001 for the 2001 survey, and so on throughout the years examined). Data elements used to identify former smokers who quit within the past year are not available for 2002 and 2003, and therefore are not presented for some of the quit status outcome measures.

Table 1 outlines these groups. Current smokers (groups 1 and 2), were asked, "Have you quit at least one day in the previous year, because you were trying to quit?" Those who answer "yes" were classified as having had an unsuccessful quit attempt (group 2). Former smokers were asked, "When did you quit smoking regularly?" Those who answer "within the last 3 months"

were classified as having short-term success (group 3), and those who answer “3 months or more” were classified as having long-term success (group 4).

Table 1: Classification of current smokers and former adult smokers who quit within the past year

Smoking status at time of survey	Category	Cessation-related behaviors/ stage of change		
Current smokers	1	Without quit attempt in the last year *		
	2	With a quit attempt in the last year * (unsuccessful)	**Action:** Quit at least one day in the last year, with varying levels of success	
Former smokers (quit sometime within the last year)	3	Abstained at least one day but less than three months at time of survey		
	4	Abstained at least three months at time of survey		**Maintenance:** Quit at least 3 months

* Note that current smokers are also categorized into precontemplation, contemplation, and preparation, depending on their intent to quit. Stages of change in this table are shown only for demonstrated quit behaviors.

The following outcome measures were created from these groups:

1) Quit attempts in the past year among current smokers (unsuccessful attempts)

Group 2 / Groups 1-2

2) Quit attempts in the past year among all who smoked within past year (successful or unsuccessful, among current smokers and former smokers who quit within the past year). This group also represents the Action stage, above.

Groups 2-4, / Groups 1-4

3) Any successful quits among all who smoked within past year: Those who have been quit 1 day or more at the time of the survey, among smokers and former smokers who quit within the past year.

Groups 3-4 / Groups 1-4

4a) Long-term successful quits among all who smoked within past year: Those who have been quit 3-12 months at the time of the survey, among smokers and former smokers who quit within the past year. This group corresponds to the Maintenance stage, above. This outcome measure provides an estimate of the total proportion of past year smokers who will stay quit and not relapse into smoking again. As noted above, about 90% of smokers who make a quit attempt relapse before having been quit for 3 months, but those who make it past the 3-month mark are much more likely to stay quit.[3]

Group 4 / Groups 1-4

4b) Long-term successful quits among those who tried to quit within the past year: Those who have been quit 3-12 months at the time of the survey, among any respondent who attempted to quit in the last year, successfully or unsuccessfully. The denominator corresponds to all those in the Action stage, while the group of interest (numerator) corresponds to the Maintenance stage.

Group 4 / Groups 3-4

Receipt of Care and Advice to Quit

Receipt of health care: Current smokers who saw a health care provider for any kind of care in the past 12 months. Data are available for 2001, and 2004-2007.

Advice to Quit: Among current smokers who had a health care visit within the past 12 months, those who received advice from a health professional to quit smoking. Data are available for 2001, 2004, 2006 and 2007.

Outcome Measures: Youth

Two measures, current smoking and attempts to quit, were used as cessation-related measures for youth in this report. It should also be noted that 16.5% of YRBS survey participants are 18 years or older, but they are included in these analyses because youth prevalence trends are reported for all high school youth, not just those under age 18.

Smoking status

The Youth Risk Behavior Survey assesses high school youth smoking by asking the following question: “During the past 30 days, on how many days did you smoke cigarettes?” Students who answer that they smoked on one or more days were considered current smokers. Although this definition of current smoker is somewhat different from that used for adult smokers, virtually all adults who reported being current smokers smoked on one or more days within the past 30 days.

It should be noted that in the YRBS data, “never” and “former” smokers couldn’t be identified using the same definition as that for the BRFSS. For the youth survey, current smoking is defined any smoking in the past 30 days, whereas adults self-identify as current or former smokers, after being asked whether they have smoked 100+ cigarettes in their lifetime. Never smokers are those who have not smoked 100+ cigarettes, and this question is not a part of the youth survey. Smoking status definition differences between adult and youth survey data make sense given that smoking before age 18 is not legal and future smoking patterns may not yet be established for youth. For these reasons, we did not attempt to categorize former or never smokers among youth.

Attempts to Quit

Students are asked, “During the past 12 months, did you ever try to quit smoking cigarettes?” Those who reported smoking on one or more days in the past 30 days and answered “yes” were classified as current smokers who had a quit attempt. It should be noted that although the proportion of current youth smokers who report quit attempts is similar to that of adults, this youth outcome measure defines quit attempt somewhat differently, including any attempts (ever) rather than any attempts in the past year. Therefore adult and youth quit attempts should not be directly compared.

Factors Related to Smoking and Cessation

Demographic factors: Questions on a standard set of demographic indicators, such as age, race, gender, education, income, employment status, and presence of children in the home were asked on each of the surveys. These variables were used in analyzing the associations between cessation outcome measures and other factors, and to identify trends and associations for priority populations with previously reported higher prevalence of tobacco use, such as Alaska Natives and persons of low socioeconomic status. In addition, information about geographic regions was examined in trend and associations analyses. More detailed information about each of these measures is included in the Appendix A.

Other smoking-related factors: The BRFSS includes other questions about behaviors, attitudes and conditions that may be related to whether a person quits smoking. These factors include cigarette consumption, use of smokeless tobacco, use of nicotine replacement therapy and/or counseling during a quit attempt, receiving advice to quit, home and work smoking bans, support for smoke-free public indoor places, respondents perceptions of whether people close to them have been upset about their smoking, and use or willingness to use Alaska Quit Line. More detailed information about each of these measures is included in the Appendix A.

Analytic Strategies

Because of the nature of the sampling for BRFSS and the YRBS, confidence intervals and significance tests were generated using Stata (version 9.2) software to account for complex sampling designs. Data tables in Appendix B and Appendix C present the point estimates and p-values from logistic modeling for trends or associations. Trend tables also present margins of error, or symmetric confidence intervals, around the point prevalence for each year.

Trend Analyses

Adults: Trends in smoking prevalence and quit measures were reviewed for 2001 through 2007 for adults. These years were chosen because: a) many of the quit-related questions of interest changed between 2000 and 2001 or were not asked prior to that time, and b) this time period includes years both before and after 2003, when the Alaska Tobacco Prevention and Control Program funding increased considerably, reaching more than 50% of the CDC recommendation for comprehensive tobacco control. Reporting prevalence from a few prior years allowed us the opportunity to consider potential program effects during this time period.

Data are not available for all years for some of the key measures, because some questions were not included in all survey years. Where the total number of survey respondents was high enough by year, we also reported trends for subpopulations, including men, women, Alaska Natives, low

SES non-Natives (ages 25-64), age groups, and regions. Appendix A provides additional detail about how the subpopulation groups were defined.

Youth: Trend measures were limited for youth because data were available only for 1995, 2003 and 2007. Subgroups measures were also limited, because regional information and socioeconomic status was not available.

Associations between cessation-related outcomes and demographic and smoking-related factors

Adults: Using the 2004-2007 BRFSS data, we tested for associations between key quit outcome measures and independent factors including demographics, behaviors and conditions that might affect quitting such as smoking bans and attitudes about secondhand smoke, cessation-related factors such as receiving advice to quit or use of the Alaska Quit line, medications or counseling to help quit, and (where possible) smoking characteristics such as frequency, consumption, and dual tobacco use (using both smokeless tobacco and cigarettes). Detailed description of the independent factors can be found in Appendix A, and general prevalence information about the factors is shown for reference in Appendix E. Key outcome measures for the associations analyses were a subset of those used for trend analyses, and included:

1. Current smoking

2. Preparation to quit

3. Quit attempts in the past year (successful or unsuccessful) among all who smoked within past year (see definition 2 under "Quit Attempt Status", above)

4. Long-term successful quits (3+ months at the time of the survey) among those who tried to quit within the past year (see definition 4b under "Quit Attempt Status", above)

5. Receipt of health care (1 or more health care visits in the past year) among current smokers

6. Receipt of advice to quit (among current smokers who had a health care visit in the past 12 months)

We used simple logistic regression to test for bivariate associations. We then used multiple logistic regression using the factors that were significantly associated with the key outcome measures from the simple models as well as a set of standard demographic characteristics, including gender, age, race, and SES. In some cases, data were not available for all years.

All outcome measures for used for logistic models paralleled those used for the trend analyses with one exception. In order to assess differences between smokers who relapse early (1 day to 3 months), and those who are able to remain quit for more than 3 months, we compared former smokers who have been quit 3-12 months at the time of the survey to other respondents with a quit attempt (see definition 4b above).

We assessed the relationship between region and each outcome variable using simple logistic regression (generating unadjusted associations), and then used region as a covariate the multiple logistic models (generating adjusted associations). When we reported results by regions,

we have focused on the unadjusted results. We did this because a primary aim of this report is to inform programmatic approaches. Geographic region is an appropriate focus area even if it is highly associated with another variable in a logistic model, and loses statistical significance after adjustment.

Youth: Trend analyses were conducted for Alaska Native youth versus whites. No analyses of associations between youth current smoking or attempts to quit and other factors were done in this report, as they have been considered elsewhere.[117]

Results

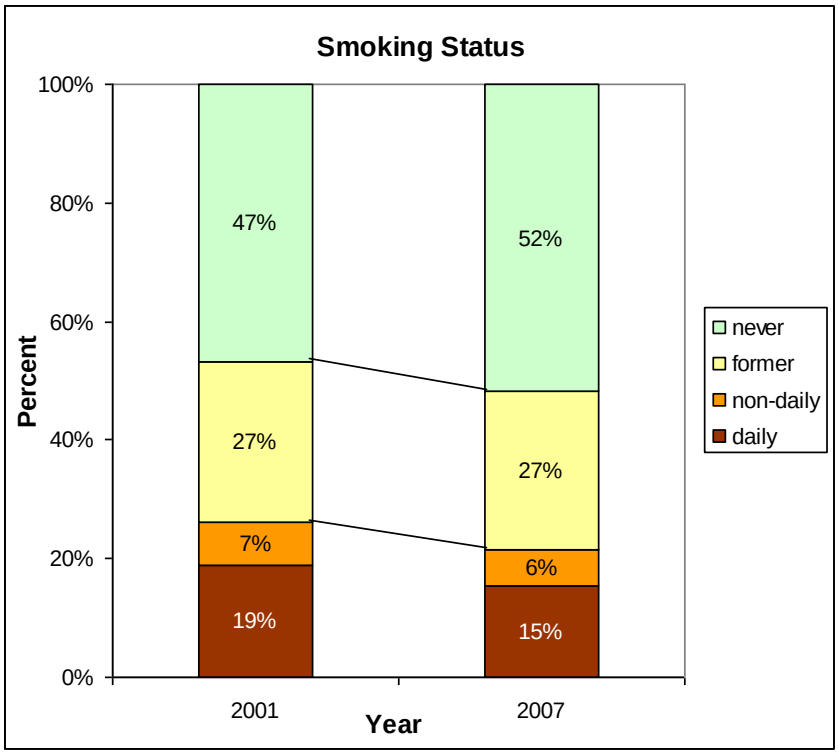
Part I: Trends in Smoking Status and Cessation-Related Outcomes

This section presents trends in smoking status, readiness to quit, quit advice from health professionals, quit attempts, and successful quits in the past year. In addition to data from the adult BRFSS survey, this section incorporated information from the Alaska YRBS.

Trends in Smoking Status

Between 2001 and 2007, there was a statistically significant 18% decrease in current smoking among Alaskan adults from 26.2% to 21.5%. Any decline in current smoking can be due to either increased cessation activity, or decreased smoking initiation, or both. Although we primarily see a decline in smoking initiation in Alaska over the years studied as represented by “never smokers” and no apparent change in the proportion of former smokers (see Figure 3), further analyses did show increases in quit behavior.

Figure 4. Changes in Smoking Status in Alaska, 2001-2007



Current smoking

Adults: The decreasing trend in smoking (combined daily smoking and non-daily smoking) was significant for both men and women, for young adults aged 18-39, and for those aged 40-59 (see Table 1, Appendix B). By region, significant decreases were seen in Anchorage/Mat-Su, the Gulf Coast and Southeast Alaska. Trends for other groups and areas also indicated likely decreases, but did not reach significance. Exceptions to the overall decline in smoking included relatively flat prevalence for Alaska Natives and non-Natives of low SES, with prevalences of mid-40% and mid to high 30% ranges respectively. In addition, other regions showed little overall change; smoking prevalence remained relatively high for Y-K/Bristol Bay and the Interior/Norton Sound/Arctic regions, whereas it remained relatively low in Fairbanks North Star Borough.

Youth: For Alaska high school youth, the proportion who smoked in the past 30 days dropped from 37% in 1995 to 19% in 2003 and 18% in 2007 (see Table 1, Appendix C). These decreases occurred primarily between 1995 and 2003 across groups by race and gender, but among Alaska Native youth not there was a significant decrease not only between 1995 and 2003 (62% to 44%), but also between 2003 and 2007 (44% to 32%). Although being Alaska Native is still significantly and independently associated with tobacco use among high school youth, the odds have decreased for Alaska Natives between 2003 and 2007, indicating that tobacco use has decreased among Alaska Native youth at a faster rate than non-Native youth.[117]

Daily and non-daily smoking

Tables 2 and 3, Appendix B, show trends in daily and non-daily smoking, respectively. In general, daily smoking declined while non-daily smoking remained relatively stable. There were significant declines in daily smoking in all demographic groups except for Alaskans aged 60 or older, and for non-Natives of low SES. However, even for these latter two groups the data indicated declines, with trends approaching significance. The geographic pattern in daily smoking decline was similar to the overall smoking decline.

Former smoking

Trends in former smoking are an important indicator of cessation activity in a population. Overall, former smoking has remained flat (see Table 4, Appendix B); however, this may be due to the increase in never smokers. When we examined subgroups, we observed a statistically significant increase among low SES non-Natives, from 19% in 2001 to 26% in 2007. In addition, a higher proportion of adults aged 60 and older became former smokers, from 39% to 44% during the same time period.

It is important to note that many middle-aged and older smokers have been quit for long periods of time. In Alaska in 2007, 86% of former smokers quit one or more years ago. Recent cessation activity is difficult to assess by tracking differences in the entire group of former smokers. For this reason, we restricted many of our later analyses to persons who quit within the last year.

Quit ratio

We also looked at changes in the quit ratio, defined as the proportion of current smokers among ever smokers (see Table 5, Appendix B). We observed an increased quit ratio among the population as a whole, among women, among non-Natives of low SES, and among adults aged 60 and older. Two of the regions (the Gulf Coast and Southeast) showed this significant increase as well.

Never smoking

Adults: Among all Alaskan adults, there was an increase in those who have never smoked, from 47% to 52% (see Table 6, Appendix B). This trend was significant among men and women as well as younger and middle-aged adults. By region, only Anchorage/Mat-Su and the Gulf Coast areas showed significant increases. However, trend patterns were also positive for Southeast Alaska and the combined regions of Interior, Norton Sound and Arctic, even though the increase was not yet significant. Among Alaska Native and low SES non-Native adults, the proportion who had never smoked did not show an increase.

Initiation among youth and young adults

Starting smoking at an early age increases the likelihood that a person will continue smoking and it increases the risk of disease and death from tobacco-related causes. Over half of all current Alaskan adult smokers (57% in 2007) were smoking before they turned 18. However, there are indications that overall, fewer people are smoking at an early age.

The proportion of young adults ages 18-29 who never smoked increased from 50% in 2001 to 57% in 2007. As noted earlier, current smoking prevalence for high school youth was essentially cut in half between 1995 (37%) to 2007 (18%). In general, decreases in youth smoking indicate

declines in initiation rather than increases in cessation activity. For these reasons, we did not attempt to categorize former or never smokers among youth.

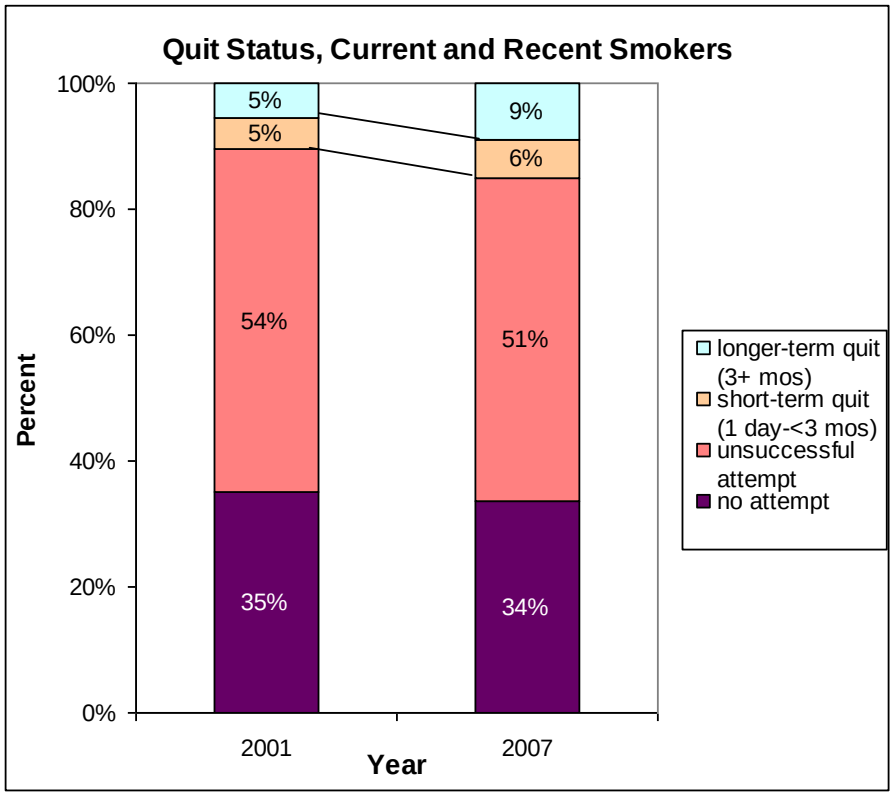
Trends in Readiness to Quit (Preparation)

Between 2004 and 2007, BRFSS survey respondents who reported being current smokers were also asked about intentions to quit. Those who reported that they wanted to quit and had a plan to stop smoking within the next 30 days are considered to be in the preparation stage of the Stages of Change model, versus those who do not want to quit (precontemplation) or those who want to quit and might consider trying to quit within the next 6 months (contemplation). In recent years, approximately two thirds of Alaskan smokers reported wanting to quit, and of those, nearly half had a plan to stop within the next 30 days. In 2007, 30% of all smokers planned to quit within 30 days. However, there have been no significant changes in the proportion of current smokers who are in the preparation stage (see Table 7, Appendix B). We did not review possible trends by region due to small numbers.

Trends in Quit Attempt Status

Between 2004 and 2007, among people who were smokers within the past year (those who are current smokers or former smokers who quit smoking within the past year), about two thirds (63%) have made an attempt to quit, and 14% were successful in quitting. The following section reports trends in 4 groups: a) unsuccessful quit attempts, b) all quit attempts, successful or unsuccessful c) successful quits (any length of time in the past year), and d) long-term quits (successfully quit for 3 or more months at the time of the survey). Figure 5 categorizes current and recent former smokers in terms of their quit status.

Figure 5. Changes in Past Year Smokers' Quit Status in Alaska, 2001-2007



Unsuccessful quit attempts

Adults: Nearly two thirds of current smokers (61%) stopped smoking for 1 day or longer in the past year because they were trying to quit (see Table 8, Appendix B). There was no change in the frequency of quit attempts overall between 2001 and 2007, although among Alaska Natives the proportion of those with recent unsuccessful quit attempts has increased from 59% to 70%. Quit attempt trends also appear to have increased among those aged 60 and older. In Southeast Alaska, the trend in quit attempts by current smokers decreased slightly, going from 62% in 2001 to 57% in 2007.

Youth: Among high school students who had smoked one or more days in the past 30 days, about two thirds reported ever having tried to quit smoking. There were no significant changes in quit attempts for youth smokers overall (see Table 2, Appendix C). However, quit attempts among girls showed a significant decline (p=0.04) between 1995 and 2007. In 2007, over two thirds of Alaska Native youth (70%) reported having made a quit attempt. Although this appears higher than for white youth (53%), the difference is not significant, potentially because of small numbers of respondents.

All quit attempts, successful, or unsuccessful

About 66% of all persons who smoked within the past year, whether they were current or former smokers at the time of the survey made an attempt that would ultimately result in either success or failure (see Table 9, Appendix B). There were no significant changes over time in this measure, either for the whole population or in any subgroups.

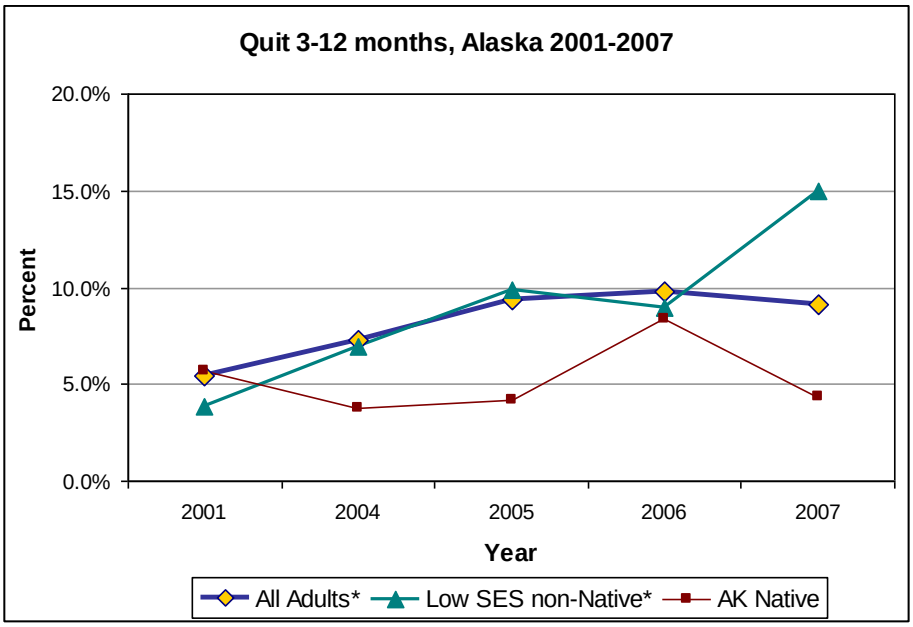
Successful Quits

In 2007, 15% of past year smokers (including current and recent former smokers) successfully quit for some length of time (from one day to one year) This proportion increased significantly among younger adults aged 18-39, from 10% in 2001 to 16% in 2007, and appeared to increase overall, although this overall trend did not reach significance (see Table 10, Appendix B).

Long-Term Successful Quits

Among those who smoked within the past year, there has been a significant increase for successful quitting (3-12 months) among all adults, from 5% in 2001 to 9% in 2007 (see Table 11, Appendix B). There has been a significant increase in long-term quits among non-Native Alaskans of low SES, from 6% in 2001 to 25% in 2007 as well, although the trend for Alaska Natives remains flat (see Figure 6).

Figure 6. Trends in Quitting 3-12 Months among Past Year Smokers, 2001-2007



Trends in Receipt of Health Care and Quit Advice

Educating health care providers to deliver advice to quit smoking is an important part of any tobacco control program. In Alaska, there was a significant increasing trend in the proportion of smokers who had a health care visit in previous 12 months. About 58% received care in 2001, and 62% in 2007, with higher proportions in the intervening years (see Table 12, Appendix B). In

particular, the proportion of men having a recent health care visit increased, from 46% in 2001 to 52% in 2007, although women were still more likely to have had a recent health care visit.

Among current smokers who had a health care visit for any reason in the past year, roughly two thirds (63%) received advice from a health care professional to quit smoking in 2007 (see Table 13, Appendix B). This figure represents a significant decline from 2001, when the proportion was 73%. Among subgroups, this trend was significant for women smokers. Small denominators for other subgroups made it difficult to further analyze patterns in receiving advice to quit.

The increasing frequency of patient visits combined with the decreasing frequency of advice resulted in a fairly unchanged overall prevalence of cessation advice. Overall, in 2007, only 2 in 5 Alaskan smokers (39%) received advice to quit within the past year, with nearly the same proportion (38%) reporting no health care visits during that time. In 2001, the corresponding proportions were roughly equal - 42% received advice to quit, and 42% reported no visits.

Part II: Assessment of Factors Related to Smoking Cessation

This section focuses on the associations between demographic and quit-related factors that are likely to influence quit readiness and behavior. Variables considered include: a) demographic factors such as gender, age, race, socio-economic status, employment, presence of children in the home, and region; b) smoking and cessation-related behaviors such as cigarette consumption; c) the presence of smoking bans at home or at work; and d) attitudes about secondhand smoke.

In order to generate more stable estimates, we combined four years of data (2004-2007). However, two factors included in this section were asked only in 2006: use of or interest in using the Alaska Quit line, and perceptions of whether people close to the respondent were upset about his/her smoking. For this reason, these factors are included in bivariate analyses, but not in multiple logistic modeling.

Associations between Current Smoking and Selected Factors

Table 1 (Appendix D) shows the unadjusted and adjusted associations between selected factors and current smoking. Unadjusted results showed that groups more likely to smoke included men, adults aged 18-29, Alaska Natives, persons of low SES (including the priority group non-Natives of low SES, aged 25-64), those who were unemployed or unable to work, those who did not have home bans, those who did not agree with smoke-free workplace policies, and those who worked indoors at a workplace without a smoke-free policy.

An adjusted model that included all demographics and other factors with unadjusted associations showed that most of these characteristics remained associated, with the exception of gender and SES, and working in a smoke-free indoor workplace.

Geographically, most regions had higher smoking rates than the referent region Anchorage, with the exception of Southeast and Fairbanks North Star, which had similar smoking rates to Anchorage.

Associations between Preparation to Quit and Selected Factors

Table 2 (Appendix D) shows the unadjusted and adjusted associations between selected factors and readiness to quit. Unadjusted results indicated that the smokers with children in the home, who were lighter smokers (some days versus every day), who agreed that smoking should not be allowed in public places, and/or who had a history of one or more quit attempts in the past year had higher odds of being in the preparation stage.

An adjusted model that included all factors showed that the previous characteristics remained associated with being in the preparation stage. In addition, male gender, older age and non-Native ethnicity became significantly associated with preparation. The presence of a home smoking ban was associated with readiness to quit in unadjusted models, but this association was not significant after adjustment. There were no regional differences in readiness to quit.

Associations between Quit Attempt Status and Selected Factors

Quit attempts among anyone who smoked within past year

The truest measure of past-year attempts to quit in the population is represented by the proportion who try to quit among those who are current smokers at the time of the survey added to those who have quit within the past year. Among all respondents from the 2004 to 2007 surveys, about two thirds (63%) made an attempt to quit (49% were unsuccessful and 14% were successful).

Unadjusted results indicated that smokers who were younger, employed, had children at home, had a home smoking ban, and felt that smoking should not be allowed in public places were more likely to attempt to quit. Two factors, willingness to call the quit line, and significant others being upset with the respondent's smoking, were assessed only in 2006, in unadjusted models. Both were highly associated with quit attempts in the previous year (see Table 3, Appendix D).

Adjusted results remained generally the same, except that smokers who said they were "unable to work" had increased odds of having a quit attempt after controlling for all other variables in the model.

Regional unadjusted results indicated that smokers from Kenai, Southeast and the Interior had lower odds of making a quit attempt.

We also assessed associations between the same set of independent variables for the group of smokers that was unsuccessful in attempting to quit - i.e., they had made a quit attempt in the previous year, but were current smokers at the time of the survey. As expected, similar factors were associated with quit attempts: younger age, children at home, and home smoking bans. In addition, we were able to assess the relationship between attempting to quit and receiving advice to quit among this group of unsuccessful quitters. We found that advice to quit was significantly associated with making an unsuccessful quit attempt within the past year (when the group that did not receive advice was combined with the group that didn't receive a visit). Unfortunately, the advice to quit question was not asked of former smokers and so cannot be assessed for the entire group of persons who attempted to quit within the last year.

Long-Term Successful Quits

Among those who smoked within the past year - including current and former smokers - 14% had successfully quit for three or more months. As shown in Table 4, Appendix D, There were no differences in unadjusted models for successful long-term quits by gender, socio-economic status, or presence of children in the home. However, Alaska Natives, persons unable to work and persons with a home smoking ban were less likely to have quit successfully for 3-12 months.

After adjustment, the factors mentioned above remained significantly associated with long-term quitting. In addition, older adults (ages 55 and over) had two and a half times the odds of being long-term quitters compared to younger adults (ages 18-29).

Alaskans in the Kenai/Kodiak/Valdez Cordova region were half as likely and those in the Interior were a third as likely to have long-term quit success as those in Anchorage. Although quit prevalence varied in other regions, differences were not significant.

Associations between Receipt of Health Care and Quit Advice and Selected Factors

Receipt of health care

Approximately 66% of Alaskan smokers had a health care visit in the past year. Women and older smokers were more likely to have had a visit, but there were no other significant differences observed (see Table 5, Appendix D).

Receipt of advice to quit

Among the group of current smokers who had a health care visit for any reason in the past year, about two thirds (or 57% for 2004-2007 combined surveys) received advice from a health care professional to quit smoking (see Table 6, Appendix D). There were no differences in receiving quit advice by gender, age, region, or socio-economic status, but unemployed smokers were half as likely as employed smokers to have received quit advice, even after adjusting for other demographic and smoking-related factors. Although Alaska Natives were less likely than non-Natives to have received advice, this association was no longer significant after adjusting for other factors.

Cigarette consumption was related to receipt of quit advice among smokers who had a health care visit in the past 12 months. Daily smokers who smoked 1 pack or less a day were twice as likely as non-daily smokers to have been advised to quit; heavy daily smokers (more than a pack per day) were 3 times as likely to receive advice, and this association persisted after adjustment. Those who reported that they had called or would call the Quit line were twice as likely to have received advice to quit, but this variable could not be tested in an adjusted model as it was available for one year of data only.

Summary and Programmatic Recommendations

Program Successes: Declining trends in Current Smoking

Alaskans are smoking less. Smoking prevalence for both adults and youth has declined over the past several years as the Alaska Tobacco Prevention and Control Program has accelerated its population-based tobacco control activities.

The declines in smoking in the population have been due to both decreases in smoking initiation and increases in smoking cessation. Decreased initiation may be partially related to declining smoking among youth. As these young people who never initiated smoking move into the adult population, the proportion of adults reporting never smoking begins to increase. But there has also been great success in increasing quit behavior as well. Although the proportion of former smokers has remained relatively flat, the quit ratio has increased overall, in several regions of Alaska, and among non-Natives of low SES, a priority population.

Overall, we have seen a decrease in smoking prevalence among:

- Men and women
- Youth and adults of all ages
- Residents of three regions of Alaska (Anchorage/MatSu, Gulf Coast, and Southeast)

These prevalence declines have been due partially to decreased initiation among:

- Men and women
- Adults aged 18 to 59
- Residents of Anchorage/MatSu and the Gulf Coast

But also due to increased quitting among:

- Women
- Low SES non-Native
- Gulf Coast and Southeast

And among past year smokers, increased ***long-term*** quitting among:

- All adults
- Low SES non-Native, and
- Young people aged 18-39 ($p = .06$)

These results represent significant success in lowering the risk of tobacco-related morbidity and mortality for the Alaskan population. Especially significant is the increase in the proportion of long-term quitters (3 or more months), and the fact that this has occurred among non-Natives of low SES as well as those of higher SES. As noted earlier, relapse rates are high for those who succeed in quitting in the short term, but by the time quitters have abstained three months, their chances of a long-term quit are vastly improved, and their chances of developing tobacco-related disease are markedly reduced.[3]

Interestingly, the population rates of quit attempts measured among all respondents who smoked within the past year remained roughly stable, while quit ratios and long-term successful quits

rose. So, while smokers are continuing to try to quit at the same rates, more are succeeding. This was true in the population as a whole, non-Native persons of low SES, and young adults.

As shown in figure 1, some strategies utilized by comprehensive tobacco programs, such as the promotion of smoke-free environments, the promotion of increased tobacco taxes, funding community and school programs, establishment of quit lines with nicotine replacement therapy) assist smokers to move from quit attempts to successful cessation.[18] Activities such as physician advice to quit and mass media are more highly related to making the initial quit attempt than to long-term success. This information should be considered when planning strategies to reach populations showing less long-term success, such as Alaska Natives and older persons.

The regions of Anchorage/MatSu, the Gulf Coast, and Southeast Alaska have generally shown positive changes. Decreased prevalence overall (all three), decreased initiation (Anchorage/MatSu and Gulf Coast), increased quit ratios (Gulf Coast and Southeast) are encouraging. Two other regions remain of particular concern—Y-K/Bristol Bay and the Interior/Norton Sound/Arctic regions have demonstrated very high prevalence and little change over the period studied. Although Fairbanks/North Star has not shown declines, prevalence there remained low and is roughly equal to the other more urban regions in Alaska.

Programmatic Recommendations

In the figures below, we summarize cessation-related factors and characteristics generated from the logistic models previously reviewed. Below, we have used this information to highlight those groups that might need greater programmatic focus. The first figure identifies groups more likely to currently smoke. Then, among smokers, we identify groups that were less likely to be in the preparation stage, to receive advice to quit.

Figure 7. Current Smokers: Who smokes, and who is most at risk for continuing as a smoker? Alaska, 2004-2007

Factors	Adult Population	Current smokers	
	More Likely to Be a Current Smoker	Less Likely to be in Preparation	Did not Receive Advice to Quit[d]
Demographic Factors			
Gender	(Men)	Women	
Age group	Younger than 30	Younger than 30	
Race/Ethnicity	Alaska Natives	Alaska Natives	(Alaska Natives)
Socio-Economic Status	(Low SES Non-Native)		
Employment status	Unemployed Unable to work		Unemployed
Presence of children in home		No children	
Region	Bristol Bay/Aleut/Prib Norton Sound/Arctic Interior (Y-K, MatSu, Kenai/Kodiak/Valdez)		
Smoking and Cessation Factors			
Consumption		Daily smokers	Some days smokers
Used NRT or Counseling in Most Recent Quit Attempt			(No NRT or Counseling)
Dual Use (Smokeless)			
Smoking Bans (Home or Work)	No home ban (No work ban)	(No home ban)	(No home ban)
Support Smokefree Indoor Workplace Policies	Disagree	Disagree	
Factors asked in 2006 BRFSS only			
People are upset by my Smoking			
Would call/Have called the Quitline			(No)

Source: Alaska BRFSS 2004-2007 modified surveys.
Groups in parentheses indicate significant disparity found only in unadjusted analyses.
[d] Advice to Quit received by those who had a healthcare visit for any reason in the past year.

The second figure identifies those groups less likely to have made a quit attempt (successful or unsuccessful) among everyone who smoked within the past year, and, those groups less likely to succeed, among all who tried. These two figures allow us to make some recommendations for programmatic targeting of groups within the population. We will first summarize the status of each of the two priority populations of the TPCP program and then identify other populations that present an opportunity for program focus.

Figure 8. Quitting smoking: Who experiences less success?

Factors	Less likely to have a quit attempt in past year[a]	Less likely to be quit 3+ months[b]
Demographic Factors		
Gender		
Age group	Age 55 and older (Age 45 to 54)	Younger than 55
Race/Ethnicity		Alaska Natives
Socio-Economic Status		
Employment status	(Homemaker, student, or retired)	Unable to work
Presence of children in home	No children	
Region	Southeast; (Interior) (Kenai/Kodiak/Valdez)	Interior; Kenai/Kodiak/Valdez
Smoking and Cessation Factors		
Dual Use (Smokeless)		
Used NRT or Counseling in Most Recent Quit Attempt		
Smoking Bans (Home or Work)	No home ban	No home ban
Support Smokefree Indoor Workplace Policies	Disagree	
Factors asked in 2006 BRFSS only		
People are upset by my Smoking (2006)	(Disagree)	
Would call/Have called the Quitline (2006)	(No)	

Source: Alaska BRFSS 2004-2007 modified surveys.
Groups in Parentheses indicate significant disparity found only in unadjusted analyses
[a] Quit attempts among all respondents who were smokers within the past year.
[b] Successful longer term quits among past year smokers who made a quit attempt.

Alaska Natives

Figure 7 indicates that Alaska Natives, a priority population for the Alaska TPCP, are more likely to be current smokers. In addition, they are less likely to be in preparation, and may be less likely to receive advice to quit. Figure 8 shows that although Alaska Natives are not less likely to have made a quit attempt, they are less likely to be successful in long-term quitting.

As noted in the trend results, there were no increase in long-term quits, and quit ratios were unchanged. However, there was an increasing proportion of quit attempts within the group and also relative to non-Natives. Although this finding was not replicated in logistic models, it is an encouraging suggestion that should be watched. If there is an increasing desire to stop smoking, but less success, efforts at relapse prevention should be a priority for state and local tobacco prevention and control groups.

Among youth, the declining trend in smoking is particularly promising among Alaska Natives. As noted earlier, while Alaska Native youth are still more likely to smoke than non-Native youth, tobacco use has decreased among Alaska Native youth at a faster rate than non-Native youth, between 2003 and 2007.

- Recommendations:
    - Promote relapse prevention in the AN community. Interventions such as promotion of clean indoor air, increased taxes, and quit line services help prevent relapse. Ensure that these services are available in AN communities, and explore other ways to help AN smokers stay quit.
    - Assess programmatic efforts in the Bristol Bay/Aleut/Pribiloff, and Interior Norton Sound/Arctic regions, areas where Alaska Native population predominates.
    - Collaborate with the AN community to find ways to increase the reach of population-based tobacco control strategies, appropriately tailored to account for cultural differences.
    - Examine the success story of decreased initiation in smoking by Alaska Native youth to identify its relationship to social norm change, and identify ways for Alaska Native communities to use social norm change in increasing successful quitting.

Non-Native persons of low SES

As indicated in Figure 7, non-Native persons of low SES are more likely to be smokers. However, as indicated in trend analyses, this group is making more progress. Increasing quit ratios and increased proportions of long-term quits are very encouraging. Logistic modeling also indicated that SES was not associated with most cessation-related outcome measures, at least not when SES is measured by educational attainment and household income status.

In logistic models, we also used employment, a measure related to SES, and one that includes a measure of disability ("unable to work"). We found that being unemployed or unable to work was related to current smoking, and not receiving advice to quit. Being a homemaker, student, or retired was related to less success in quitting.

- Recommendation: Explore ways to reach the unemployed, uninsured and disabled populations. Consider integration of cessation messages with services for unemployed and disabled, such as Medicaid, Medicare, food stamps, or other public services.

Age groups

Despite declining trends, young people are still more likely to be current smokers, and less likely to be in preparation. There was an increasing trend, though, for the "one-year quit ratio" (the percentage of former smokers among all who smoked within the past year), indicating that quit activity is increasing. Nevertheless, both young and middle-aged adults are less likely than older adults to have long-term quits (between 3 and 12 months) as so both remain populations of concern. Younger and middle-aged adults are also less likely to have health care visits than older persons, decreasing their opportunity to receive quit advice, but once they receive care, they are equally likely to receive advice to quit.

- Recommendations:
    - Target young adults in media messages, using age-specific content.
    - Promote the quit line among young adults, especially for relapse prevention.
    - Continue efforts to decrease initiation among youth, using media, school and community programs.
    - Consider the use of the internet as a tobacco control medium for both youth and young adults

Gender

Figure 7 indicates that men are more likely to be smokers, despite their declining trends. Women smokers were less likely to be in preparation.

- Recommendation: No gender-specific approaches appear to be needed. Both genders can benefit from continued programmatic interventions.

Lighter smokers

Among current smokers, those who do not smoke daily were less likely to receive advice to quit from a health care provider.

- Recommendation: Improve routine assessment of smoking among health care providers. All patients should be assessed, not only those who are known to smoke.

Lack of smoke-free environments

An absence of home smoking bans and having no children at home were associated with current smoking. These characteristics often appear together, since many smokers appear to believe that secondhand smoke is more harmful to children than other adults. The association between home bans and quitting is important because it has been shown that bans can help smokers quit, and home bans should be encouraged in order to reduce smoking prevalence.

Lack of support for smoke-free indoor workplace policies was also associated with current smoking, with a lower likelihood of being in preparation, and making a quit attempt. These associations may represent that group of smokers that does not want to quit.

- Recommendations:
    - Ensure that counter-marketing campaigns contain the message that secondhand smoke is harmful to both children and adults
    - Promote home smoking bans through media, messages from health care providers, Medicaid and Medicare, community and school programs.
    - Try to reach smokers who do not want to quit and who do not support clean indoor air policies through media and health care provider advice.

Regions of Alaska

Substantial progress has been observed in the Anchorage/MatSu region, the Gulf Coast region, and the Southeast region. There remains work to be done in other regions.

- Recommendations:
    - Assess programmatic reach in the following regions:
        - Kenai/Kodiak/Valdez Cordova
        - Bristol Bay/Aleutian Islands/Pribilof Islands
        - Yukon-Kuskokwim
        - Interior/Norton Sound/Arctic
        - Fairbanks North Star

Limitations

It should be noted that this study was constrained by some limitations associated with the primary data source, BRFSS. The CASRO response rate for the Alaska BRFSS ranged from 62-68% between 2004 and 2007, which is higher than that of many other states, but still indicating that some people were not reached through this survey method. In addition, Alaska's BRFSS findings may not accurately represent non-English speaking populations, and the BRFSS does not represent people who live in institutions, including military housing, college dormitories or assisted living communities. The BRFSS also does not represent people who do not have a telephone "land line" (i.e., households or individuals who only have cellular telephone service, or no phone service).

In addition, BRFSS data are cross-sectional, meaning that each year of data are drawn from a random sample or "cross-section" of Alaskans chosen to represent the state's adult population. Because these data are collected each year, we can use the information to identify trends and patterns in behavior, and to examine associations between smoking cessation, demographic characteristics, and attitudes, behaviors and conditions that are likely to affect a smoker's ability to quit. However, because we are not gathering information from the same group of people over time, we are limited in our ability to support or refute theories about cause and effect between cessation behaviors and factors associated with those behaviors. In addition, the changes in smoker status over time may also reflect other demographic changes in the Alaska population over time.

Changing social norms over the period of time reviewed in this study might result in respondents being less likely to report being a current smoker. However, external revenue data on cigarette consumption also show declining trends, and therefore we do not believe that social desirability is having a discernible effect on the decline in prevalence observed here.

BRFSS data do not positively identify the smoking status of all respondents at one year prior to the study, and therefore we are limited in our ability to compare to prior studies, which do identify smoking status at one year past. In addition, BRFSS data include limited information about barriers to quitting and both motivators and supports that might be most useful to Alaskans in quitting, or never starting tobacco use. BRFSS does not include number of quit attempts in the past year, or information about advice to quit or consumption patterns of those who have already quit at the time of the survey, and information about use of NRT and classes or counseling for both current and former smokers is very limited. Adding questions in future BRFSS surveys, or conducting additional studies would be useful in addressing these issues.

Concluding remarks

The success of the Alaska TCPC over the last seven years is laudable. Declining trends in prevalence and initiation show that the program is reaching all sectors of the population. In addition, the fact that long-term successful quits are increasing is particularly encouraging as it is much easier for smokers to attempt to quit than to remain quit. Also, it is these long-term quitters who will reap the greatest health benefits in terms of decreased smoking-related morbidity and mortality.

A concern often mentioned as population prevalence declines is that remaining smokers become “hardened”. As more quitting occurs, those left behind may be more refractory to the cessation process. In that case, we would see declining attempts among current quitters, increasing proportions of daily smoking relative to non-daily smoking, and perhaps decreasing proportions of smokers in preparation. We have not observed this in the Alaska population, indicating that the population of smokers does not appear to be undergoing this hardening process.

The Alaska TPCP should continue to employ the comprehensive tobacco prevention model it has been using. Its challenges lie in reaching young adults, the Alaska Native population, unemployed and disabled persons, and smokers who do not want to quit. Nevertheless movement is occurring on all fronts, and as a whole, the population is making clear progress toward a reduced burden of tobacco-related disease.

Appendix A. Methods Detail and Technical Notes

Alaska Behavioral Risk Factor Surveillance System (BRFSS)

BRFSS is an anonymous telephone survey of adults conducted by the Alaska Division of Public Health since 1991 in cooperation with the CDC. The survey includes questions about health-related behaviors and health status. Interviews are conducted throughout the year and combined by calendar year.

The BRFSS uses a random digit dial method to select a representative sample of Alaska adults. The sample is stratified into five regions, with roughly equal numbers of interviews conducted in each region. One survey respondent from each selected household is randomly chosen from among the adults living in the household. People without home-based telephones are not eligible for sampling (that is, persons living in dormitories, military housing, prisons, nursing homes and other institutional settings). Cell phones are not available for sampling, so individuals who use only cell phones as their home telephone are ineligible. Alaska's BRFSS is administered only in English.

Data are weighted to compensate for under- or over-representation of people by age, race, gender and region and to appropriately reflect the general population.

Analytic Terms and Methods

Because of the nature of the sampling for BRFSS, analyses were conducted using Stata (version 9.2) software to account for complex sampling designs. Data tables in Appendix B and Appendix C present the point estimates and p-values from logistic modeling for trend or associations. Trend tables also present margins of error around the point prevalence for each year.

Confidence Intervals

Confidence intervals are used to account for the difference between a sample from a population and true population. They can also be used to account for uncertainty that arises from natural variation inherent in the world around us. As such, they provide a way of assessing and reporting the precision of a point estimate, such as the frequency of reported behaviors. In this report, we have used confidence levels of 95%. This level means that in 95 out of 100 cases, the confidence interval contains the true value. Because of the nature of the sampling for BRFSS, confidence intervals for frequencies using these data sources were generated using Stata (version 9.2) software to account for complex sampling designs.

It should be noted that although confidence intervals help to give us a sense of how precise an estimate is, they do not account for some sources of uncertainty, including missing or incomplete data, bias resulting from non-response to a survey, or problems in the data collection.

Margin of Error

Margin of error is the term used in this report to describe the number above or below the point estimate that is roughly two standard deviations (1.96) from the point estimate. This is also

referred to as the half-width of the confidence interval, because it is half of the overall confidence interval.

Odds Ratio

The odds ratio compares two or more groups or characteristics and presents the likelihood of an event occurring to one group, compared to a reference group. An adjusted odds ratio factors in the effects of more than one characteristic. For example, women smokers are roughly 3 times as likely as men to get health care in a 12-month period; their odds ratio is 2.9, with a confidence interval of 2.2-3.8. Even when adjusted for age, race, socio-economic status, employment, region, and other factors, women smokers are still 3 times as likely as men to get care (OR 3.2, c.i. 2.3-4.3).

Tests for Statistical Significance of Associations

Statistically significant differences - differences between estimates that are not likely due to chance alone - are identified in this report in Appendix B and C tables.

P-values less than 0.05 indicate that both percentages are statistically significant at the 95% confidence level. In this report, we used logistic regression test for trend or for associations, and thus produced p-values for the unadjusted and adjusted odds ratios (OR) reported in tables.

Independent Variables

Priority Populations

As noted previously, Alaska Natives and people of low SES are two groups with disproportionately high prevalence of tobacco use. Alaska Natives comprise roughly 14% of the adult population in Alaska. We drew upon the previous ATPCP studies, *Smoking Behavior and Beliefs Among Non-Native Alaskans of Low Socio-Economic Status: Implications for Program Planning* and *What State Surveys Tell Us About Tobacco Use Among Alaska Natives: Implications for Program Planning* to define Alaska Native and low SES priority groups.

Alaska Native

The term Alaska Native is used to refer to the original inhabitants of the land that is now the state of Alaska. For this study, Alaska Native includes all survey respondents who reported “Alaska Native/American Indian” as their primary or only race group. Although some Alaska Natives such as the Tlingit and Haida share cultural background with Pacific Coast Native Americans, many Alaska Natives are culturally much closer to other sub-arctic region peoples such as Canadian First Nations. Alaska Natives are also different than “lower 48” Native Americans in their relationship with tobacco. Tobacco was not historically or traditionally used by Alaska Native people, but was widely adopted after introduction by Russian traders in the 1700s.

Low SES (non-Native)

The Low SES priority group is defined more specifically as non-Native Alaskans between the ages of 25 and 64 who are at or below 185% of poverty level and/or have less than a high school education. This group excludes Native Alaskans primarily because they are a priority group in themselves. “Non-Native Alaskan” is defined as those who did not identify Native Alaskan or

American Indian as any of their multiple race groups, including those who reported their race as White, African American or Black, Asian, Hawaiian or other Pacific Islander, and Other (non-Native), as well as those who did not report race.

Young adults under the age of 25 were not included in the analyses because the measures of SES used in this study (i.e., income and education) are not adequate markers of socio-economic status for those who have not had a chance to complete their education and begin to earn an income. Older adults were similarly excluded because income and education might not be adequate SES markers for those who are potentially retired and eligible for Medicare.

Poverty level (as calculated by income and household size) and less education were identified as key indicators of low SES that were available using BRFSS. The state of Alaska guidelines for Medicaid eligibility - household incomes at or below the 185% poverty guideline - were adopted as the poverty measure. Of the response categories available for education, *less than high school* was chosen as a conservative estimate of low education - 7% of 2004/2005 BRFSS respondents ages 25-64 reported having less than high school education whereas almost one third of the respondents (30%) reported having a high school education or GED. Those with missing information on income (7% of non-Native Alaskans ages 25-64) were categorized as low or higher SES based on information about their education only. Those missing information about income, household size and education represented only a handful of cases in the 2004-2006 AK BRFSS dataset.

Region (geographic classification)

Regions were defined using borough designation, developed for the BRFSS dataset by Charles Utermohle using a mapping of telephone prefixes to borough. Although the BRFSS survey data do not provide enough representation for reporting by most of the individual boroughs, combining boroughs provided a useful geographic factor for analyses. Boroughs were grouped with reference to geographic proximity, Alaska Native ethnicity and relative similarity of tobacco prevalence, based on combined 2004-2007 BRFSS data.

Region was also modified by tribal health organization region designation. This variable was developed by Charles Utermohle upon the request of staff at the Alaska Native Medical Center as a means of summarizing data into meaningful geographic groups. While the individual tribal health organizations are generally too small to represent with survey data from the BRFSS, these aggregated units help meet the need of providing information at a useful level of geography. In some cases, boroughs are large and extended, and tribal health care is provided by organizations in another borough, and the regions used in this report reflect that difference between tribal health provision and borough. For this reason, about 14% of respondents from the Yukon-Koyukuk Borough are categorized with the Yukon-Kuskokwim region, and about 14% of those from the Denali Borough are grouped with the Gulf Coast boroughs for this report.

Regional groups for the associations analyses are as follows:

1) Anchorage
2) Mat-Su
3) Gulf Coast – Kenai/Kodiak/Valdez Cordova (Prince William Sound)
4) Bristol Bay/Aleutians/Pribilofs – also includes Dillingham and Lake & Peninsula boroughs
5) Yukon-Kuskokwim – Bethel/Wade Hampton/Yukon-Koyukuk (lower part)
6) Southeast – Yakutat/Skagway/Juneau/Sitka/Haines/Wrangell-Petersburg/Ketchikan
7) Interior – Yukon-Koyukuk/Southeast Fairbanks/Denali

8) Fairbanks North Star
9) Norton Sound/Arctic – Nome /Northwest Arctic/North Slope

For the trend analyses, smaller numbers of respondents for some years required some additional combining of groups; Mat-Su was combined with Anchorage, Bristol Bay with Y-K, and Interior with the Norton Sound/Arctic group.

Other Demographic Factors

With the exception of Age, all variables described below were used for the associations analyses only. Those who refused or answered "Don't Know" to the question were treated as missing in most cases; for attitude questions, "Don't Know" answers were treated as valid.

Age groups

Respondents were grouped by age in three categories for trend analyses: younger adults (18-39), middle aged adults (40-59), and older adults (60 and older). For associations analyses, the larger number of respondents from the 2004-2007 surveys allowed us to revise groups so that our younger adult group (18-29) better matched analyses conducted for other studies. The other groups were ages 30-44, 45-54, and 55 or older.

Socio-Economic Status (SES)

As described above in the "Priority Populations" section, SES is defined by a combination of education and poverty level information (derived from household income and number of people in household). For the purposes of bivariate and regression analyses conducted in the associations section, "Low SES" includes all respondents who are at or below 185% of poverty level and/or have less than a high school education, not just non-Native Alaskans between the ages of 25 and 64. However, unadjusted odds ratios are also presented for the Low SES priority group (non-Native and between the ages of 25 and 64).

Employment status

All BRFSS respondents are asked, "Are you currently: Employed for wages, Self-employed, Out of work for more than 1 year, Out of work for less than 1 year, a Homemaker, a Student, Retired, or Unable to work?" Respondents were required to choose a single answer to the question. For the purposes of this study, answers were grouped into four categories: 1) Employed or self-employed; 2) Unemployed (out of work for more or less than a year); 3) Homemaker, Student, or Retired; and 4) Unable to work.

Children in home

All BRFSS respondents are asked, "How many children less than 18 years of age live in your household?" These children may or may not be related to the respondent, but they reside in the same household. In this study we grouped answers by any children, or no children in the home.

Behaviors and Attitudes related to Smoking and Cessation

Consumption

All BRFSS respondents are asked about daily smoking ("Do you now smoke cigarettes every day, some days, or not at all?"). Those who smoke every day or some days (current smokers) are then asked about number of cigarettes smoked per day ("On the average, on days when you smoked during the past 30 days, about how many cigarettes did you smoke a day?"). For this study, we classified current smokers (those who responded every day or some days) into three cigarette consumption categories: 1) some days smokers, 2) everyday light smokers (up to a pack per day), and 3) everyday heavy smokers (more than a pack per day).

Dual use of cigarettes and smokeless tobacco

Alaska BRFSS respondents are asked this question about current smokeless use: "Do you currently use any smokeless tobacco products such as chewing tobacco, snuff, Iq'mik*, or Blackbull?". In this study, we categorized current and former smokers who smoked in the past year as "dual use" if they answered yes to the current smokeless use question.

Use of NRT or counseling

Current and former smokers are asked about use of nicotine replacement therapy (NRT) in their most recent quit attempt (Former smokers are asked, "When you quit smoking for good, did you use the nicotine patch, nicotine gum, or any other medication to help you quit?" Current smokers are asked, "The last time you tried to quit smoking, did you use the nicotine patch, nicotine gum, or any other medication to help you quit?") They are also asked a similar question about use of counseling ("…Did you use any other assistance, such as classes or counseling?"). Those who said yes to use of either NRT or counseling/classes were grouped together for analyses of factors associated with the outcome measures.

Home smoking ban

Alaska BRFSS respondents are asked this question about home smoking bans: "Which statement best describes the rules about smoking inside your home? Do not include decks, garages, or porches.

1 Smoking is not allowed anywhere inside your home
2 Smoking is allowed in some places or at some times
3 Smoking is allowed anywhere inside the home

Those who report that smoking is not allowed anywhere inside their homes are considered to have a home smoking ban.

Workplace policy on smoking

Alaska BRFSS respondents are asked about whether they work primarily indoors; those who do are asked about workplace smoking policies ("Which statement best describes your place of work's official smoking policy for work areas?

1 Smoking is not allowed in any work areas
2 Smoking is allowed in some work areas
3 Smoking is allowed in all work areas

In this study, current and recent former smokers were classified into 3 groups regarding workplace smoking ban: 1) no ban (smoking allowed in some or all work areas) 2) not applicable

(respondent does not work or does not primarily indoors) and 3) yes (smoking is not allowed in any work areas).

Home and/or Workplace Smoking Ban

For this study, we also combined information about home and workplace smoking bans. Those who worked primarily indoors and had neither a home ban nor a workplace ban were the referent group. Other groups were 2) indoor workers who had both a home and workplace ban, 3) anyone with a home ban only (including those who did not primarily work indoors), 4) indoor workers with no home ban but a workplace ban, and 5) those not working indoors who also did not have a home smoking ban. This variable was included in unadjusted analyses, but the separate home and workplace items were used (where appropriate) for calculation of adjusted odds ratios.

Support for smoke-free indoor work areas

Alaska BRFSS respondents are asked about their attitudes towards clean air policies: "In indoor work areas do you think that smoking should be allowed in all areas, in some areas, or not allowed at all?" Those who answered that it should not be allowed at all were categorized as supporting smoke-free indoor work areas, whereas those who felt it should be allowed in some or all areas, or who said they did not know, were categorized as disagreeing that smoking should not be allowed in indoor work areas.

People are upset by my smoking

In 2006, Alaska BRFSS current and former smoker respondents were asked, "How strongly do you agree or disagree with the following statement: People close to me are/were upset by my using tobacco." Those who reported that they agreed (37%) or strongly agreed (24%) with the statement were grouped as "Agree". The "Disagree" group included those who said they did not know (7%), those who disagreed (25%) and those who strongly disagreed (7%). However, since this item was only available for the 2006 data, it was not included in adjusted models using the 2004-2007 data.

Would call or have called the Quit line

In 2006, Alaska BRFSS current and former smoker respondents were asked, "Would you ever call a telephone support service for help in quitting tobacco?" They were then asked about whether they were aware of the Alaska Quit Line, and those who responded yes were asked if they had called the Alaska Quit Line. Those who responded either "definitely yes" or "probably yes" to the "Would you ever call…" question were grouped with those who reported that they had [ever] called the Alaska Quit Line. However, since this item was only available for the 2006 data, it was not included in adjusted models using the 2004-2007 data.

Appendix B. Trends in Adult Smoking and Cessation

This section includes thirteen outcome measures organized in four groups:

Smoking status

1. Trends in current smoking (including daily and non-daily smoking)
2. Trends in daily smoking
3. Trends in non-daily smoking
4. Trends in former smoker prevalence
5. Trends in the quit ratio (former smokers as proportion of ever smokers)
6. Trends in never smoking

Stage of Change

7. Trends in preparation to quit (plan to quit within the next 30 days, among current smokers)

Quit Attempt Status

8. Trends in quit attempts in the past year among current smokers
9. Trends in quit attempts in the past year (successful or unsuccessful, among current smokers and former smokers who smoked within the past year)
10. Trends in successful quit attempts (successfully quit for 1 or more days at time of survey) among all who smoked within the past year
11. Trends in long-term successful quits (3+ months) among all who smoked within the past year

Quit Advice and Receipt of Health Care

12. Trends in prevalence of current smokers who had a health care visit in the past 12 months
13. Trends in prevalence of receiving advice to quit (among current smokers who had a health care visit in the past 12 months)

Smoking Status

Table 1. Current smoking prevalence, Alaska, 2001 – 2007

	2001	2002	2003	2004	2005	2006	2007	p-value**
All Adults	26%	29%	26%	24%	25%	24%	22%	**0.00**
±	2.4%	2.7%	2.4%	1.7%	1.7%	1.9%	1.8%	decrease
Male	26%	32%	30%	27%	29%	25%	24%	**0.01**
±	3.6%	4.1%	3.6%	2.6%	2.6%	2.9%	2.9%	decrease
Female	26%	27%	22%	21%	21%	22%	19%	**0.00**
±	3.2%	3.6%	3.0%	2.1%	2.0%	2.5%	2.2%	decrease
AK Native	43%	44%	45%	44%	41%	44%	39%	0.21
±	6.1%	6.9%	6.3%	4.6%	4.1%	5.3%	5.4%	
Low SES non-Native	35%	44%	40%	35%	39%	38%	33%	0.24
±	7.0%	7.8%	7.4%	5.0%	5.1%	6.6%	5.7%	
Ages 18-39	32%	34%	29%	28%	30%	28%	25%	**0.01**
±	4.0%	4.5%	3.9%	2.9%	3.0%	3.5%	3.4%	decrease
Ages 40-59	24%	28%	27%	24%	24%	23%	22%	**0.02**
±	3.3%	3.8%	3.7%	2.4%	2.4%	2.6%	2.5%	decrease
60 and older	13%	19%	16%	14%	14%	15%	11%	0.09
±	4.7%	6.6%	4.2%	3.2%	2.8%	3.2%	2.7%	decrease
Regions	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**p-value****
Anchorage/Mat-Su	24%	28%	25%	23%	24%	21%	20%	**0.01**
±	4.1%	4.8%	4.1%	2.8%	2.9%	3.2%	3.1%	decrease
Gulf Coast	31%	31%	23%	26%	21%	27%	20%	**0.00**
±	4.9%	4.6%	4.3%	3.0%	2.6%	3.5%	3.1%	decrease
Y-K/Bristol Bay	35%	32%	41%	34%	35%	43%	34%	0.48
±	6.5%	7.1%	7.3%	4.8%	4.7%	6.2%	4.9%	
Southeast	27%	26%	24%	23%	21%	23%	19%	**0.00**
±	4.2%	4.3%	4.0%	3.2%	2.7%	3.5%	2.7%	decrease
Interior/ Norton Sound/Arctic	39%	48%	44%	37%	43%	38%	36%	0.06
±	6.4%	8.2%	6.8%	4.6%	4.7%	5.5%	4.9%	decrease
Fairbanks North Star	23%	25%	23%	21%	21%	21%	22%	0.25
±	3.9%	4.5%	4.0%	2.8%	3.0%	3.4%	3.2%	

Source: Alaska BRFSS 2001-2007 combined surveys
**P for trend, a value <0.05 indicates significant trend.
Margin of error presented in grey bar below point prevalence.

Table 2. Daily smoking prevalence, Alaska, 2001 - 2007

	2001	2002	2003	2004	2005	2006	2007	p-value**
All Adults	19%	22%	19%	17%	18%	16%	15%	**0.00**
±	2.1%	2.5%	2.2%	1.5%	1.5%	1.6%	1.6%	decrease
Male	18%	23%	23%	19%	22%	17%	16%	**0.01**
±	2.9%	3.8%	3.3%	2.3%	2.5%	2.4%	2.6%	decrease
Female	19%	21%	15%	14%	15%	15%	14%	**0.00**
±	2.9%	3.4%	2.7%	1.7%	1.8%	2.1%	2.0%	decrease
AK Native	30%	32%	29%	29%	27%	28%	25%	0.13
±	5.9%	6.5%	5.5%	4.2%	3.8%	5.0%	5.4%	
Low SES non-Native	27%	36%	32%	24%	30%	27%	24%	0.09
±	6.5%	7.8%	7.2%	4.3%	4.9%	5.8%	5.3%	
Ages 18-39	21%	24%	20%	18%	21%	17%	16%	**0.00**
±	3.3%	4.4%	3.5%	2.5%	2.8%	2.9%	3.0%	decrease
Ages 40-59	18%	22%	21%	18%	18%	17%	17%	**0.02**
±	3.0%	3.5%	3.4%	2.2%	2.3%	2.2%	2.4%	decrease
60 and older	10%	13%	13%	9%	11%	11%	7%	0.06
±	4.3%	5.1%	4.0%	2.4%	2.5%	2.9%	2.0%	decrease
Regions	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**p-value****
Anchorage/Mat-Su	17%	21%	18%	16%	19%	13%	14%	**0.00**
±	3.5%	4.4%	3.7%	2.5%	2.7%	2.6%	2.8%	decrease
Gulf Coast	23%	23%	18%	19%	15%	21%	15%	**0.00**
±	4.5%	4.3%	3.9%	2.6%	2.2%	3.3%	2.6%	decrease
Y-K/Bristol Bay	22%	23%	26%	19%	21%	26%	19%	0.63
±	5.4%	6.4%	6.6%	4.0%	4.0%	5.4%	4.0%	
Southeast	18%	18%	17%	14%	16%	14%	13%	**0.00**
±	3.5%	3.7%	3.6%	2.6%	2.4%	2.7%	2.1%	decrease
Interior/ Norton Sound/Arctic	29%	40%	34%	28%	30%	26%	26%	**0.01**
±	5.8%	8.5%	6.5%	4.4%	4.5%	4.9%	4.5%	decrease
Fairbanks North Star	18%	17%	16%	14%	15%	16%	15%	0.12
±	3.6%	4.0%	3.5%	2.3%	2.6%	2.9%	2.8%	

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Source: Alaska BRFSS 2001-2007 combined surveys
**P for trend, a value <0.05 indicates significant trend.
Margin of error presented in grey bar below point prevalence.

Table 3. Non-daily smoking prevalence, Alaska, 2001 - 2007

	2001	2002	2003	2004	2005	2006	2007	p-value**
All Adults	7%	7%	7%	7%	6%	8%	6%	0.55
±	1.5%	1.5%	1.3%	1.0%	0.9%	1.4%	1.0%	
Male	8%	9%	7%	8%	7%	9%	7%	0.68
±	2.5%	2.5%	2.1%	1.5%	1.4%	2.0%	1.6%	
Female	6%	6%	7%	7%	6%	7%	5%	0.66
±	1.7%	1.7%	1.7%	1.3%	1.1%	1.7%	1.2%	
AK Native	13%	12%	16%	15%	13%	15%	13%	0.81
±	4.0%	4.7%	5.3%	3.4%	2.4%	3.6%	2.9%	
Low SES non-Native	8%	9%	8%	10%	9%	11%	8%	0.51
±	3.7%	4.0%	4.1%	3.3%	3.1%	4.8%	3.1%	
Ages 18-39	10%	9%	9%	10%	8%	11%	9%	0.92
±	2.8%	2.5%	2.3%	2.0%	1.7%	2.6%	2.0%	
Ages 40-59	5%	6%	6%	6%	6%	7%	5%	0.72
±	1.7%	2.1%	2.1%	1.2%	1.2%	1.7%	1.1%	
60 and older	3%	6%	3%	4%	3%	4%	4%	0.77
±	2.0%	5.0%	1.6%	2.3%	1.4%	1.6%	1.8%	
Regions	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**p-value****
Anchorage/Mat-Su	7%	7%	6%	6%	5%	8%	5%	0.71
±	2.7%	2.7%	2.3%	1.7%	1.5%	2.3%	1.6%	
Gulf Coast	8%	9%	5%	7%	6%	6%	5%	**0.03**
±	3.0%	2.9%	2.2%	1.9%	1.6%	1.8%	1.9%	decrease
Y-K/Bristol Bay	13%	9%	14%	14%	14%	16%	14%	0.16
±	4.8%	4.4%	5.0%	3.6%	3.7%	5.4%	3.7%	
Southeast	9%	7%	7%	9%	6%	8%	6%	0.20
±	3.0%	2.7%	2.4%	2.3%	1.5%	2.6%	1.8%	
Interior/ Norton Sound/Arctic	9%	8%	10%	8%	12%	11%	9%	0.30
±	3.7%	3.4%	4.1%	2.4%	3.0%	3.6%	3.0%	
Fairbanks North Star	4%	8%	7%	7%	6%	5%	7%	0.67
±	1.8%	2.7%	2.4%	1.7%	1.7%	2.0%	1.9%	

Source: Alaska BRFSS 2001-2007 combined surveys
**P for trend, a value <0.05 indicates significant trend.
Margin of error presented in grey bar below point prevalence.

Table 4. Former smokers in Alaska, 2001 - 2007

	2001	2002	2003	2004	2005	2006	2007	p-value**
All Adults	27%	26%	26%	25%	25%	27%	27%	0.66
±	2.5%	2.5%	2.4%	1.7%	1.6%	1.9%	1.8%	
Male	31%	28%	27%	28%	27%	31%	29%	0.90
±	3.8%	3.7%	3.5%	2.5%	2.4%	2.9%	2.6%	
Female	23%	23%	25%	22%	24%	24%	25%	0.37
±	2.9%	3.4%	3.3%	2.1%	2.1%	2.3%	2.4%	
AK Native	29%	27%	27%	25%	27%	22%	31%	0.81
±	5.5%	5.8%	5.4%	4.0%	4.0%	4.0%	4.8%	
Low SES non-Native	19%	17%	21%	25%	23%	26%	27%	**0.00**
±	5.2%	4.9%	5.5%	4.8%	4.1%	5.6%	5.1%	increase
Ages 18-39	18%	17%	19%	17%	16%	18%	18%	0.74
±	3.4%	3.4%	3.6%	2.4%	2.2%	2.7%	2.6%	
Ages 40-59	33%	31%	29%	28%	29%	30%	29%	0.19
±	3.8%	4.1%	3.7%	2.5%	2.5%	2.9%	2.7%	
60 and older	39%	37%	40%	38%	40%	46%	44%	**0.03**
±	7.6%	7.0%	6.2%	4.6%	4.2%	4.8%	4.4%	increase
Regions	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**p-value****
Anchorage/Mat-Su	27%	26%	28%	25%	25%	28%	26%	0.87
±	4.3%	4.4%	4.2%	2.9%	2.7%	3.2%	3.0%	
Gulf Coast	27%	26%	27%	23%	29%	30%	29%	0.12
±	4.5%	4.0%	4.3%	2.8%	2.8%	3.5%	3.2%	
Y-K/Bristol Bay	26%	22%	22%	24%	21%	22%	25%	0.70
±	6.4%	5.5%	5.8%	4.2%	3.6%	4.7%	4.3%	
Southeast	25%	31%	27%	30%	30%	28%	30%	0.21
±	3.9%	4.5%	4.2%	3.4%	2.9%	3.4%	3.1%	
Interior/ Norton Sound/Arctic	29%	18%	23%	26%	21%	28%	25%	0.65
±	6.2%	5.1%	5.4%	4.2%	3.7%	5.0%	4.4%	
Fairbanks North Star	28%	23%	22%	23%	23%	26%	25%	1.00
±	4.2%	4.1%	3.9%	3.0%	2.8%	3.4%	3.1%	

Source: Alaska BRFSS 2001-2007 combined surveys
**P for trend, a value <0.05 indicates significant trend.
Margin of error presented in grey bar below point prevalence.

Table 5. Trends in the quit ratio (former smokers as a proportion of ever smokers), Alaska 2001 - 2007

	2001	2002	2003	2004	2005	2006	2007	p-value**
All Adults	51%	47%	50%	51%	51%	53%	56%	**0.00**
±	3.7%	3.9%	3.8%	2.8%	2.6%	3.0%	3.0%	increase
Male	54%	47%	47%	51%	48%	55%	54%	0.14
±	5.4%	5.4%	5.2%	3.8%	3.7%	4.2%	4.3%	
Female	47%	46%	53%	50%	53%	51%	57%	**0.00**
±	4.9%	5.7%	5.4%	3.8%	3.7%	4.2%	4.1%	increase
AK Native	40%	38%	37%	36%	40%	34%	44%	0.66
±	7.2%	7.6%	7.1%	5.4%	5.3%	5.7%	6.5%	
Low SES non-Native	35%	28%	34%	42%	38%	40%	45%	**0.01**
±	8.6%	7.8%	8.6%	6.9%	6.2%	7.8%	7.5%	increase
Ages 18-39	37%	33%	39%	37%	35%	39%	41%	0.21
±	6.0%	6.2%	6.4%	4.6%	4.3%	5.2%	5.4%	
Ages 40-59	59%	53%	51%	54%	55%	56%	58%	0.48
±	5.2%	5.6%	5.6%	3.9%	3.9%	4.2%	4.2%	
60 and older	74%	66%	71%	74%	75%	76%	80%	**0.02**
±	8.3%	10.0%	7.0%	5.8%	4.9%	5.1%	4.6%	increase
Regions	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**p-value****
Anchorage/Mat-Su	53%	48%	53%	52%	50%	57%	57%	0.10
±	6.7%	7.0%	6.6%	4.9%	4.6%	5.4%	5.4%	increase
Gulf Coast	47%	45%	54%	47%	58%	52%	60%	**0.00**
±	7.0%	6.4%	7.0%	4.8%	4.3%	5.2%	5.1%	increase
Y-K/Bristol Bay	43%	41%	35%	41%	38%	33%	42%	0.54
±	9.2%	9.3%	8.5%	6.4%	6.0%	6.9%	6.5%	
Southeast	48%	55%	53%	57%	59%	55%	61%	**0.00**
±	6.3%	6.5%	6.5%	5.0%	4.4%	5.5%	4.6%	increase
Interior/ Norton Sound/Arctic	43%	27%	35%	41%	33%	42%	41%	0.23
±	8.1%	7.8%	7.4%	6.0%	5.5%	6.8%	6.4%	
Fairbanks North Star	55%	48%	49%	53%	52%	55%	53%	0.46
±	6.6%	7.3%	7.0%	5.1%	5.3%	5.8%	5.4%	

Source: Alaska BRFSS 2001-2007 combined surveys
**P for trend, a value <0.05 indicates significant trend.

Table 6. Never-smoking prevalence, Alaska, 2001-2007

	2001	2002	2003	2004	2005	2006	2007	p-value**
All Adults	47%	45%	48%	51%	50%	49%	52%	**0.00**
±	2.8%	2.9%	2.7%	2.0%	1.9%	2.2%	2.1%	increase
Male	43%	40%	43%	45%	45%	44%	48%	**0.02**
±	4.1%	4.2%	3.9%	2.9%	2.8%	3.3%	3.2%	increase
Female	51%	51%	53%	57%	55%	54%	56%	**0.01**
±	3.8%	4.0%	3.6%	2.6%	2.5%	2.9%	2.7%	increase
AK Native	28%	29%	28%	31%	32%	34%	30%	0.11
±	5.1%	6.3%	5.4%	4.3%	3.8%	5.3%	4.7%	
Low SES non-Native	46%	39%	39%	40%	38%	36%	40%	0.19
±	7.7%	7.4%	7.0%	5.3%	4.8%	6.8%	6.0%	
Ages 18-39	50%	49%	52%	55%	54%	54%	57%	**0.00**
±	4.4%	4.5%	4.4%	3.3%	3.2%	3.8%	3.7%	increase
Ages 40-59	43%	41%	44%	48%	47%	46%	49%	**0.00**
±	3.9%	4.3%	4.0%	2.9%	2.7%	3.2%	3.0%	increase
60 and older	48%	44%	44%	48%	46%	40%	44%	0.33
±	8.2%	7.9%	6.3%	4.7%	4.3%	4.6%	4.4%	
Regions	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**p-value****
Anchorage/Mat-Su	49%	45%	48%	53%	51%	51%	54%	**0.02**
±	5.0%	5.1%	4.6%	3.4%	3.3%	3.7%	3.6%	increase
Gulf Coast	42%	43%	51%	51%	49%	44%	51%	**0.03**
±	4.9%	4.7%	5.1%	3.4%	3.2%	3.8%	3.7%	increase
Y-K/Bristol Bay	39%	45%	37%	42%	44%	35%	42%	0.71
±	6.5%	7.3%	6.9%	5.0%	4.6%	5.6%	5.0%	
Southeast	48%	43%	48%	46%	48%	49%	50%	0.07
±	4.6%	4.8%	4.7%	3.7%	3.3%	4.1%	3.4%	increase
Interior/ Norton Sound/Arctic	32%	34%	33%	38%	37%	35%	39%	0.12
±	6.4%	7.4%	6.8%	4.6%	4.5%	5.4%	4.9%	
Fairbanks North Star	50%	52%	55%	56%	56%	53%	53%	0.33
±	4.7%	5.0%	4.7%	3.5%	3.5%	4.0%	3.7%	

Source: Alaska BRFSS 2001-2007 combined surveys
**P for trend, a value <0.05 indicates significant trend.
Margin of error presented in grey bar below point prevalence.

Stage of Change

Table 7. Prevalence of smokers in preparation to quit, Alaska, 2004 - 2007[Ψ]

	2004	2005	2006	2007	p-value**
All Adults	29%	26%	21%	30%	0.85
±	5.3%	4.7%	5.1%	6.3%	
Male	29%	26%	24%	30%	0.997
±	7.4%	6.6%	7.5%	8.4%	
Female	29%	27%	18%	30%	0.77
±	7.2%	6.4%	6.5%	9.6%	
AK Native	27%	27%	17%	24%	0.33
±	9.0%	8.1%	7.3%	9.0%	
Low SES non-Native	38%	30%	27%	24%	0.12
±	13.4%	11.3%	12.3%	12.2%	
Ages 18-39	34%	25%	19%	33%	0.66
±	8.8%	6.1%	7.3%	9.8%	
Ages 40-59	24%	29%	23%	28%	0.78
±	6.7%	8.3%	7.6%	9.0%	
60 and older	28%	26%	20%	25%	0.60
±	16.9%	12.0%	12.1%	14.5%	

Source: Alaska BRFSS 2001-2007 modified surveys
Trends for Region are not shown because of small numerators and denominators for this item.
Ψ Preparation stage defined as planning to quit within the next 30 days.
**P for trend, a value <0.05 indicates significant trend.
Margin of error presented in grey bar below point prevalence.

Quit Attempt Status

Table 8. Prevalence of unsuccessful quit attempts in the past year among current smokers, Alaska, 2001 - 2007

	2001	2002	2003	2004	2005	2006	2007	p-value**
All Adults	61%	54%	55%	56%	58%	58%	61%	0.45
±	5.1%	5.7%	5.4%	3.9%	4.0%	4.6%	4.7%	
Male	64%	50%	49%	53%	55%	58%	60%	0.65
±	7.2%	8.1%	7.2%	5.6%	5.6%	6.4%	6.8%	
Female	57%	58%	64%	61%	62%	58%	62%	0.48
±	7.0%	8.0%	7.7%	5.1%	5.3%	6.5%	6.1%	
AK Native	59%	51%	57%	56%	66%	65%	70%	**0.01**
±	10.2%	10.9%	9.7%	7.3%	5.7%	7.2%	8.2%	increase
Low SES non-Native	58%	60%	55%	57%	62%	66%	51%	0.93
±	12.0%	12.2%	12.3%	8.5%	8.6%	10.2%	10.8%	
Ages 18-39	68%	61%	65%	63%	60%	61%	69%	0.79
±	6.8%	8.9%	7.5%	5.8%	6.0%	7.3%	7.0%	
Ages 40-59	53%	51%	48%	51%	56%	56%	54%	0.22
±	8.0%	8.0%	8.2%	5.7%	5.9%	6.3%	6.8%	
60 and older	39%	27%	39%	45%	48%	46%	48%	**0.05**
±	17.4%	13.7%	13.0%	12.7%	11.1%	12.1%	12.8%	increase
Regions	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**p-value****
Anchorage/Mat-Su	64%	51%	52%	55%	58%	59%	61%	0.56
±	9.6%	10.3%	9.8%	7.2%	6.9%	8.6%	8.8%	
Gulf Coast	52%	56%	63%	58%	52%	53%	54%	0.79
±	10.1%	9.5%	10.0%	6.5%	6.8%	8.0%	8.4%	
Y-K/Bristol Bay	66%	55%	59%	65%	62%	65%	65%	0.42
±	10.3%	13.6%	11.9%	8.4%	8.4%	9.6%	8.3%	
Southeast	62%	63%	56%	54%	50%	48%	57%	**0.03**
±	8.6%	9.0%	9.6%	8.1%	7.2%	8.8%	7.6%	decrease
Interior/ Norton Sound/Arctic	63%	50%	56%	54%	63%	61%	58%	0.51
±	9.7%	13.4%	10.1%	7.9%	7.4%	9.4%	8.5%	
Fairbanks North Star	55%	59%	54%	56%	61%	58%	67%	0.08
±	9.8%	10.6%	10.0%	7.3%	7.8%	8.7%	7.6%	increase

Source: Alaska BRFSS 2001-2007 combined surveys
**P for trend, a value <0.05 indicates significant trend.
Margin of error presented in grey bar below point prevalence.

Table 9. Prevalence of any quit attempts among all who smoked within the past year, Alaska, 2001 – 2007[Ψ]

	2001	2004	2005	2006	2007	p-value**
All Adults	65%	59%	65%	63%	66%	0.83
±	4.7%	5.3%	4.9%	5.9%	6.0%	
Male	68%	56%	63%	63%	62%	0.40
±	6.5%	7.6%	6.8%	8.1%	8.6%	
Female	62%	63%	68%	62%	71%	0.15
±	6.5%	6.8%	6.4%	8.8%	7.5%	
AK Native	64%	56%	68%	60%	68%	0.72
±	9.5%	10.4%	7.8%	9.2%	12.4%	
Low SES non-Native	62%	62%	64%	66%	61%	0.86
±	11.1%	11.3%	11.3%	13.5%	13.3%	
Ages 18-39	71%	65%	68%	67%	72%	0.84
±	6.3%	7.8%	6.8%	9.2%	9.0%	
Ages 40-59	59%	54%	63%	57%	62%	0.55
±	7.4%	7.8%	8.0%	8.3%	8.4%	
60 and older	42%	48%	54%	53%	53%	0.29
±	17.0%	18.0%	14.5%	17.0%	17.6%	
Regions	**2001**	**2004**	**2005**	**2006**	**2007**	**p-value****
Anchorage/Mat-Su	67%	60%	68%	69%	68%	0.73
±	8.7%	9.5%	8.1%	11.0%	10.7%	
Gulf Coast	56%	61%	60%	54%	56%	0.87
±	9.7%	9.4%	9.2%	10.6%	12.0%	
Y-K/Bristol Bay	68%	69%	62%	64%	68%	0.63
±	9.6%	13.5%	10.9%	12.7%	11.2%	
Southeast	65%	51%	58%	48%	60%	0.10
±	8.0%	10.8%	9.2%	10.9%	10.0%	
Interior/ Norton Sound/Arctic	67%	53%	65%	49%	64%	0.32
±	8.8%	11.7%	9.5%	13.4%	11.1%	
Fairbanks North Star	62%	56%	64%	64%	74%	0.10
±	9.1%	9.5%	9.7%	10.6%	9.8%	

Source: Alaska BRFSS 2001-2007 modified surveys

[Ψ] All who made a successful or unsuccessful quit attempt in the past year, among current smokers and former smokers who quit within the past year.

** P for trend, a value <0.05 indicates significant trend.

Margin of error presented in grey bar below point prevalence.

Table 10. Prevalence of successful quit attempts (quit 1+ days at time of survey, among all who smoked within the past year), Alaska, 2001 – 2007[Ψ]

	2001	2004	2005	2006	2007	p-value**
All Adults	11%	11%	17%	13%	15%	0.05
±	3.1%	3.5%	4.1%	4.3%	4.3%	
Male	11%	11%	18%	16%	13%	0.15
±	4.6%	5.0%	5.7%	6.6%	5.6%	
Female	11%	12%	15%	10%	17%	0.20
±	4.0%	4.6%	5.2%	4.9%	6.7%	
AK Native	12%	7%	17%	10%	11%	0.81
±	6.2%	4.0%	9.3%	6.3%	6.2%	
Low SES non-Native	11%	13%	15%	11%	19%	0.38
±	6.5%	9.3%	7.7%	10.4%	11.3%	
Ages 18-39	10%	15%	18%	18%	16%	**0.03**
±	4.3%	6.0%	6.2%	7.4%	6.5%	
Ages 40-59	12%	6%	15%	6%	13%	0.96
±	4.9%	3.0%	6.0%	2.7%	5.9%	
60 and older	*	20%	17%	21%	14%	0.10
±	*	18.2%	12.9%	16.7%	10.9%	
Regions	**2001**	**2004**	**2005**	**2006**	**2007**	**p-value****
Anchorage/Mat-Su	11%	13%	19%	14%	18%	0.14
±	5.7%	6.5%	6.8%	8.3%	7.7%	
Gulf Coast	9%	8%	15%	8%	15%	0.31
±	5.8%	4.8%	9.1%	6.7%	8.3%	
Y-K/Bristol Bay	8%	11%	14%	14%	7%	0.64
±	5.6%	7.9%	6.8%	8.3%	6.0%	
Southeast	8%	8%	18%	14%	13%	0.08
±	4.5%	5.4%	7.9%	7.3%	7.0%	
Interior/ Norton Sound/Arctic	12%	9%	8%	*	9%	0.31
±	6.3%	7.1%	5.1%	*	8.0%	
Fairbanks North Star	15%	11%	14%	20%	14%	0.78
±	8.2%	6.3%	6.5%	8.9%	8.5%	

Source: Alaska BRFSS 2001-2007 modified surveys

[Ψ] Former smokers who quit in the past year among current smokers and former smokers who quit within the past year.

* Data not shown where numerator < 5 and/or denominator < 50

**P for trend, a value <0.05 indicates significant trend.

Margin of error presented in grey bar below point prevalence.

Table 11. Prevalence of Long-term successful quits (3+ months) among all who smoked within the past year, Alaska, 2001 – 2007[Ψ]

		2001	2004	2005	2006	2007	p-value**
All Adults		5%	7%	9%	10%	9%	**0.03**
	±	2.4%	3.0%	3.0%	4.0%	3.4%	increase
Male		5%	7%	10%	12%	8%	0.12
	±	3.6%	4.2%	4.1%	6.1%	4.2%	
Female		5%	7%	9%	7%	10%	0.13
	±	3.0%	3.9%	4.4%	4.6%	5.5%	
AK Native		6%	4%	4%	8%	4%	0.87
	±	4.7%	2.6%	3.9%	6.2%	3.1%	
Low SES non-Native		4%	7%	10%	*	15%	**0.04**
	±	2.9%	7.2%	6.4%	*	11.0%	increase
Ages 18-39		5%	9%	9%	12%	9%	0.06
	±	3.4%	4.9%	4.3%	6.7%	4.9%	increase
Ages 40-59		5%	3%	9%	5%	8%	0.29
	±	3.2%	2.1%	4.9%	2.6%	5.1%	
60 and older		*	20%	10%	17%	13%	0.20
	±	*	18.2%	11.3%	16.7%	10.6%	
Regions		**2001**	**2004**	**2005**	**2006**	**2007**	**p-value****
Anchorage/Mat-Su		5%	9%	12%	12%	11%	0.07
	±	4.4%	5.6%	5.2%	7.9%	6.0%	increase
Gulf Coast		3%	4%	6%	*	9%	0.11
	±	2.3%	3.2%	5.0%	*	7.1%	
Y-K/Bristol Bay		6%	7%	5%	12%	5%	0.54
	±	5.1%	6.2%	3.9%	7.9%	5.3%	
Southeast		6%	5%	9%	7%	9%	0.32
	±	4.0%	4.6%	6.2%	5.1%	6.4%	
Interior/ Norton Sound/Arctic		5%	5%	*	*	*	0.58
	±	3.8%	5.8%	*	*	*	
Fairbanks North Star		10%	8%	10%	13%	*	0.88
	±	7.3%	5.5%	5.7%	7.8%	*	

Source: Alaska BRFSS 2001-2007 modified surveys

[Ψ] Former smokers who have been quit at least 3 months among current smokers and former smokers who quit within the past year.

* Data not shown where numerator < 5 and/or denominator < 50

**P for trend, a value <0.05 indicates significant trend.

Margin of error presented in grey bar below point prevalence.

Quit Advice and Receipt of Health Care

Table 12. Prevalence of current smokers who had a health care visit in the past 12 months, Alaska, 2001 - 2007[Ψ]

		2001	2004	2005	2006	2007	p-value**
All Adults		58%	61%	66%	73%	62%	**0.01**
	±	5.5%	5.8%	5.8%	6.1%	6.7%	
Male		46%	49%	57%	67%	52%	**0.02**
	±	7.9%	8.0%	7.9%	8.7%	9.5%	
Female		70%	77%	81%	81%	76%	0.06
	±	6.6%	6.1%	6.7%	7.8%	7.4%	
AK Native		52%	54%	61%	65%	50%	0.43
	±	10.3%	10.9%	9.8%	10.6%	12.2%	
Low SES non-Native		65%	54%	62%	84%	55%	0.51
	±	11.0%	13.1%	13.0%	8.1%	15.4%	
Ages 18-39		55%	51%	61%	67%	57%	0.20
	±	7.8%	9.1%	8.5%	10.6%	10.5%	
Ages 40-59		62%	70%	71%	78%	67%	0.06
	±	8.1%	7.4%	8.6%	7.5%	8.9%	
60 and older		60%	61%	87%	84%	70%	0.10
	±	18.7%	17.5%	8.3%	11.3%	19.3%	

Source: Alaska BRFSS 2001-2007 modified surveys
Trends for Region are not shown because of small numerators and denominators for this item.
Ψ Question asked of respondents is:

"In the past 12 months, have you seen a doctor, nurse or other health professional nurse or other health professional to get any kind of care for yourself?"

**P for trend, a value <0.05 indicates significant trend.
Margin of error presented in grey bar below point prevalence.

Table 13. Prevalence of current smokers who received advice to quit (among those who had health care visit in the past 12 months), Alaska, 2001 - 2007[Ψ]

		2001	2004	2007	p-value**
All Adults		73%	68%	63%	**0.05**
	±	5.4%	6.6%	8.5%	decrease
Male		69%	65%	66%	0.68
	±	9.4%	10.6%	11.2%	
Female		76%	71%	60%	**0.02**
	±	6.2%	7.9%	12.3%	decrease
AK Native		69%	64%	56%	0.16
	±	10.5%	13.1%	14.0%	
Low SES non-Native		70%	58%	*	0.38
	±	15.3%	15.8%	*	
Ages 18-39		73%	70%	61%	0.12
	±	7.6%	10.3%	13.9%	
Ages 40-59		70%	70%	64%	0.35
	±	8.7%	9.1%	11.0%	
60 and older		*	*	*	0.29
	±	*	*	*	

Source: Alaska BRFSS 2001-2007 modified surveys
Trends for Region are not shown because of small numerators and denominators for this item.
[Ψ] Question asked of respondents is:

"In the past 12 months, has a doctor, nurse or other health professional advised you to quit smoking?"

Note: This question was not asked in 2005. Although the advice to quit question was asked in 2006, these data were excluded from the analysis of advice to quit trends, due to changes in question order. For other years, the advice to quit question immediately followed the health care visit question, whereas in 2006, the question about health care visits was included among other questions about health care, and was not asked directly in proximity to questions about tobacco.

* Data not shown where numerator < 5 and/or denominator < 50
**P for trend, a value <0.05 indicates significant trend.
Margin of error presented in grey bar below point prevalence.

Appendix C. Trends in Youth Smoking and Quit Attempts

Table 1. Prevalence of Current High School Youth Smoking

	1995	2003	2007	p-value**
All High School Youth	37%	19%	18%	**0.00**
±	4.0%	2.5%	2.8%	
Boys	36%	18%	16%	**0.00**
±	4.9%	2.8%	2.6%	
Girls	37%	20%	20%	**0.00**
±	5.8%	3.9%	4.8%	
AK Natives	62%	44%	32%	**0.00**
±	9.5%	5.0%	7.6%	
Whites	34%	12%	14%	**0.00**
±	3.2%	2.6%	2.6%	
Other Race Groups	24%	12%	7%	**0.00**
±	5.1%	4.8%	3.4%	

Table 2. Prevalence of Quit Attempts (among current youth smokers)

	1995	2003	2007	p-value**
All High School Youth	66%	69%	61%	0.61
±	3.8%	5.6%	8.6%	
Boys	59%	68%	65%	0.15
±	5.8%	7.4%	10.9%	
Girls	74%	71%	59%	**0.04**
±	4.8%	7.9%	13.3%	
AK Natives	78%	78%	70%	0.30
±	6.5%	7.5%	12.3%	
Whites	62%	58%	53%	0.15
±	5.2%	10.8%	11.3%	
Other Race Groups	61%	*	*	0.57
±	13.3%	*	*	

Source: Alaska YRBS
**P for trend, a value <0.05 indicates significant trend.
Margin of error presented in grey bar below point prevalence.

Appendix D. Associations for Quitting and Related Outcomes

This section presents odds ratios for associations between outcome measures and selected factors or predictors. These outcome measures are:

1. Current smoking
2. Preparation to quit (plan to quit within the next 30 days, among current smokers)
3. Quit attempts in the past year among anyone who smoked within past year (successful or unsuccessful, among current smokers and former smokers who smoked within the past year)
4. Long-term quit success (3+ months) among those who made quit attempts in past year
5. Receipt of health care (current smokers who had a health care visit in the past 12 months)
6. Receipt of advice to quit (from a health professional, among current smokers who had a health care visit in the past 12 months)

Notes:

Odds ratios are shown with 95% confidence intervals in parentheses.

The unweighted "N" represents the total denominator, or population of interest, by group.

The weighted prevalence estimate represents the proportion of people in the predictor group who met the outcome measure definition.

Table 1. Associations for Current Smoking, Alaska, 2004-2007

Predictors	N	Percent	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Overall	**10045**	**23%**		
Demographic Factors				
Gender				
Males	4585	27%	Referent	
Females	5460	20%	**0.7 (0.6 - 0.8)**	0.9 (0.7 - 1.0)
Age group				
18-29	1590	32%	Referent	
30-44	3030	24%	**0.7 (0.6 - 0.8)**	**0.7 (0.6 - 0.9)**
45-54	2469	22%	**0.6 (0.5 - 0.8)**	**0.5 (0.4 - 0.7)**
Age 55 and older	2832	15%	**0.4 (0.3 - 0.5)**	**0.3 (0.2 - 0.4)**
Race/Ethnicity				
Non-Native	8020	20%	Referent	
Alaska Native	1878	40%	**2.7 (2.3 - 3.1)**	**2.1 (1.7 - 2.7)**
Socio-Economic Status				
Higher SES	7172	18%	Referent	
Low SES	2850	37%	**1.3 (1.1 - 1.7)**	1.1 (0.8 - 1.4)
Low SES priority group (Non-Native, ages 25-64)				
Higher SES	5340	17%	Referent	
Low SES	1246	36%	**2.7 (2.2 - 3.3)**	
Employment status				
Employed or Self-employed	6864	22%	Referent	
Unemployed	639	46%	**3.0 (2.3 - 3.9)**	**1.7 (1.2 - 2.4)**
Homemaker, Student, or Retired	2112	16%	**0.7 (0.6 - 0.8)**	**0.7 (0.5 - 0.9)**
Unable to work	382	51%	**3.7 (2.7 - 5.1)**	**2.6 (1.7 - 4.0)**
Children in home				
No children in the home	5682	22%	Referent	
Children in the home	4335	24%	1.1 (1.0 - 1.3)	
Region				
Anchorage	1586	20%	Referent	
Mat-Su	515	27%	**1.5 (1.1 - 2.0)**	1.2 (0.9 - 1.8)
Kenai/Kodiak/Valdez Cordova	2088	24%	**1.3 (1.0 - 1.5)**	1.2 (0.9 - 1.5)
Bristol Bay/Aleutians/Pribilofs	381	43%	**3.0 (2.2 - 4.0)**	**2.3 (1.6 - 3.2)**
Yukon-Kuskokwim	621	32%	**1.9 (1.4 - 2.4)**	1.2 (0.8 - 1.8)
Southeast	1972	22%	1.1 (0.9 - 1.4)	1.1 (0.9 - 1.4)
Interior	395	29%	**1.6 (1.2 - 2.2)**	**1.4 (1.0 - 1.9)**
Fairbanks North Star	1862	21%	1.0 (0.9 - 1.3)	1.0 (0.8 - 1.3)
Norton Sound/Arctic	625	42%	**2.9 (2.3 - 3.7)**	**1.7 (1.2 - 2.3)**

Table 1. Associations for Current Smoking--continued

Predictors	N	Percent	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Smoking and Cessation Factors				
Dual Use (Smokeless)				
No	9510	23%	Referent	
Yes (also uses smokeless tobacco)	501	28%	1.3 (0.9 - 1.8)	
Have Ban on Smoking in Home				
No	1742	57%	Referent	
Yes	8236	17%	**0.2 (0.1 - 0.2)**	
Workplace Policy on Smoking (Indoor)				
No policy	941	35%	Referent	
Not applicable (do not work indoors)	3933	27%	**0.7 (0.5 - 0.9)**	
Yes -- no smoking	5034	19%	**0.4 (0.3 - 0.5)**	
Home and/or Workplace Smoking Ban				
No	240	59%	Referent	
Yes, both	4356	13%	**0.1 (0.1 - 0.2)**	**0.2 (0.1 - 0.3)**
Home ban only	3778	21%	**0.2 (0.1 - 0.3)**	**0.2 (0.1 - 0.4)**
Workplace ban only	661	54%	0.8 (0.5 - 1.3)	1.3 (0.7 - 2.3)
Not working indoors, no home ban	823	59%	1.0 (0.6 - 1.6)	1.3 (0.7 - 2.2)
Smoking Should Not be Allowed in Indoor Work Areas				
Disagree	2037	45%	Referent	
Agree	7929	17%	**0.3 (0.2 - 0.3)**	**0.4 (0.3 - 0.5)**

Source: Alaska BRFSS 2004-2007 modified surveys

Table 2. Associations for Preparation to Quit, Alaska, 2004-2007

Predictors	N	Percent	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Overall	**2390**	**26%**		
Demographic Factors				
Gender				
Males	1205	27%	Referent	
Females	1185	26%	0.9 (0.7 - 1.2)	**0.7 (0.5 - 1.0)**
Age group				
18-29	515	24%	Referent	
30-44	775	30%	1.3 (0.9 - 1.9)	**1.6 (1.1 - 2.3)**
45-54	609	28%	1.2 (0.8 - 1.8)	**1.7 (1.1 - 2.6)**
Age 55 and older	458	22%	0.9 (0.6 - 1.3)	**1.7 (1.1 - 2.8)**
Race/Ethnicity				
Non-Native	1589	27%	Referent	
Alaska Native	765	24%	0.8 (0.6 - 1.1)	**0.7 (0.5 - 1.0)**
Socio-Economic Status*				
Higher SES	1348	27%	Referent	
Low SES	1040	26%	0.9 (0.7 - 1.2)	0.9 (0.7 - 1.2)
Low SES priority group (Non-Native, ages 25-64)				
Higher SES	938	29%	Referent	
Low SES	447	30%	1.1 (0.7 - 1.5)	
Employment status				
Employed or Self-employed	1564	27%	Referent	
Unemployed	288	27%	1.0 (0.6- 1.6)	
Homemaker, Student, or Retired	347	24%	0.8 (0.6- 1.2)	
Unable to work	176	26%	1.0 (0.6- 1.6)	
Children in home				
No children in the home	1264	21%	Referent	
Children in the home	1118	32%	**1.8 (1.4 - 2.4)**	**1.6 (1.1 - 2.2)**
Region				
Anchorage	299	27%	Referent	
Mat-Su	128	24%	0.8 (0.5 - 1.4)	
Kenai/Kodiak/Valdez Cordova	469	29%	1.1 (0.7 - 1.6)	
Bristol Bay/Aleutians/Pribilofs	150	24%	0.8 (0.5 - 1.4)	
Yukon-Kuskokwim	170	33%	1.3 (0.8 - 2.2)	
Southeast	416	23%	0.8 (0.5 - 1.2)	
Interior	116	27%	1.0 (0.6 - 1.7)	
Fairbanks North Star	387	26%	0.9 (0.6 - 1.4)	
Norton Sound/Arctic	255	26%	0.9 (0.6 - 1.5)	

Source: Alaska BRFSS 2004-2007 modified surveys

Table 2: Associations for Preparation to Quit—continued

Predictors	N	Percent	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Smoking and Cessation Factors				
Consumption				
Some days Smoker	693	37%	Referent	
Everyday Light (1 pack or less)	1545	23%	**0.5 (0.4 - 0.7)**	**0.7 (0.5 - 0.9)**
Everyday Heavy (>1 pack a day)	151	11%	**0.2 (0.1 - 0.4)**	**0.4 (0.2 - 0.7)**
Dual Use (Smokeless)				
No	2265	26%	Referent	
Yes (also uses smokeless tobacco)	119	27%	1.0 (0.6 - 1.9)	
Made Quit Attempt in past 12 months				
No	1075	12%	Referent	
Yes	1294	38%	**4.5 (3.3 - 6.2)**	**3.8 (2.7 - 5.2)**
Used NRT or Counseling in Recent Quit Attempt				
No	884	38%	Referent	
Yes	413	38%	1.0 (0.7 - 1.4)	
Received Advice to Quit (not asked 2005)				
No	448	26%	Referent	
Yes	636	26%	1.0 (0.7 - 1.5)	
No health visit in past 12 months	575	28%	1.1 (0.7 - 1.7)	
Have Ban on Smoking in Home				
No	1047	21%	Referent	
Yes	1324	30%	**1.7 (1.3 - 2.2)**	1.2 (0.9 - 1.7)
Workplace Policy on Smoking (Indoor)				
No policy	338	23%	Referent	
Not applicable (do not work indoors)	1073	25%	1.1 (0.7 - 1.7)	
Yes -- no smoking	949	30%	1.4 (0.9 - 2.2)	
Home and/or Workplace Smoking Ban				
No	157	22%	Referent	
Yes, both	564	34%	1.8 (1.0 - 3.4)	
Home ban only	743	28%	1.3 (0.7 - 2.5)	
Workplace ban only	381	22%	1.0 (0.5 - 2.0)	
Not working indoors, no home ban	502	19%	0.8 (0.4 - 1.6)	
Smoking Should Not be Allowed in Indoor Work Areas				
Disagree	932	20%	Referent	
Agree	1433	31%	**1.9 (1.4 - 2.5)**	**1.6 (1.1 - 2.2)**
Factors asked in 2006 BRFSS only				
People are upset by my Smoking (2006)				
Disagree	207	16%	Referent	
Agree	287	26%	1.8 (1.0 - 3.5)	
Would call/Have called the Quitline (2006)				
No	337	18%	Referent	
Yes	171	28%	1.8 (1.0 - 3.2)	

Table 3. Associations for Past Year Quit Attempts among Anyone Who Smoked within Past Year, Alaska, 2004-2007

Predictors	N	Percent	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Overall	**2709**	**63%**		
Demographic Factors				
Gender				
Males	1363	61%	Referent	
Females	1346	66%	1.2 (1.0 - 1.6)	1.2 (0.9 - 1.5)
Age group				
18-29	610	71%	Referent	
30-44	865	63%	0.7 (0.5 - 1.0)	0.8 (0.5 - 1.1)
45-54	686	61%	**0.6 (0.5 - 0.9)**	0.9 (0.6 - 1.3)
Age 55 and older	512	50%	**0.4 (0.3 - 0.6)**	**0.6 (0.4 - 1.0)**
Race/Ethnicity				
Non-Native	1821	63%	Referent	
Alaska Native	845	63%	1.0 (0.8 - 1.3)	0.9 (0.6 - 1.4)
Socio-Economic Status*				
Higher SES	1540	63%	Referent	
Low SES	1167	64%	1.0 (0.8 - 1.3)	0.9 (0.7 - 1.1)
Low SES priority group (Non-Native, ages 25-64)				
Higher SES	1073	61%	Referent	
Low SES	500	64%	1.1 (0.8 - 1.5)	
Employment status				
Employed or Self-employed	1785	64%	Referent	
Unemployed	316	61%	0.9 (0.6 - 1.3)	0.8 (0.5 - 1.3)
Homemaker, Student, or Retired	398	56%	**0.7 (0.5 - 1.0)**	0.9 (0.6 - 1.4)
Unable to work	193	70%	1.3 (0.8 - 2.1)	**2.0 (1.2 - 3.2)**
Children in home				
No children in the home	1426	56%	Referent	
Children in the home	1275	70%	**1.8 (1.4 - 2.4)**	**1.6 (1.2 - 2.1)**
Region				
Anchorage	349	67%	Referent	
Mat-Su	154	65%	0.9 (0.6 - 1.5)	0.9 (0.5 - 1.4)
Kenai/Kodiak/Valdez Cordova	521	58%	**0.7 (0.5 - 0.9)**	0.8 (0.5 - 1.1)
Bristol Bay/Aleutians/Pribilofs	161	57%	0.7 (0.4 - 1.1)	0.7 (0.4 - 1.2)
Yukon-Kuskokwim	204	71%	1.2 (0.7 - 1.9)	0.8 (0.4 - 1.5)
Southeast	475	54%	**0.6 (0.4 - 0.8)**	**0.6 (0.4 - 0.9)**
Interior	121	53%	**0.6 (0.3 - 0.9)**	0.7 (0.4 - 1.2)
Fairbanks North Star	451	65%	0.9 (0.6 - 1.3)	0.9 (0.6 - 1.3)
Norton Sound/Arctic	273	60%	0.8 (0.5 - 1.1)	0.7 (0.4 - 1.1)

Table 3. Associations for Past Year Quit Attempts—continued

Predictors	N	Percent	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Smoking and Cessation Factors				
Dual Use (Smokeless)				
No	2559	63%	Referent	
Yes (also uses smokeless tobacco)	142	64%	1.1 (0.6 - 1.9)	
Have Ban on Smoking in Home				
No	1099	51%	Referent	
Yes	1588	70%	**2.3 (1.8 - 3.0)**	**2.0 (1.5 - 2.6)**
Workplace Policy on Smoking (Indoor)				
No policy	381	59%	Referent	
Not applicable (do not work indoors)	1195	63%	1.2 (0.8 - 1.7)	
Yes -- no smoking	1102	66%	1.3 (0.9 - 1.9)	
Home and/or Workplace Smoking Ban				
No	165	53%	Referent	
Yes, both	692	71%	**2.2 (1.3 - 3.7)**	
Home ban only	879	70%	**2.1 (1.3 - 3.4)**	
Workplace ban only	405	55%	1.1 (0.6 - 1.9)	
Not working indoors, no home ban	522	47%	0.8 (0.5 - 1.3)	
Smoking Should Not be Allowed in Indoor Work Areas				
Disagree	1022	55%	Referent	
Agree	1661	69%	**1.8 (1.4 - 2.3)**	**1.5 (1.2 - 2.0)**
Factors asked in 2006 BRFSS only				
People are upset by my Smoking (2006)				
Disagree	230	49%	Referent	
Agree	327	71%	**2.5 (1.5 - 4.2)**	
Would call/Have called the Quitline (2006)				
No	391	58%	Referent	
Yes	184	71%	**1.7 (1.0 - 3.0)**	

Source: Alaska BRFSS 2004-2007 modified surveys

Table 4. Associations for Long-term Quit Success (3+ months) among all who Made Quit Attempts in the Past Year, Alaska, 2004-2007

Predictors	N	Percent	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Overall	**1633**	**14%**		
Demographic Factors				
Gender				
Males	784	15%	Referent	
Females	849	13%	0.8 (0.6 -1.3)	0.8 (0.5 -1.3)
Age group				
18-29	423	13%	Referent	
30-44	532	13%	1.0 (0.5 - 1.7)	1.1 (0.6 - 2.0)
45-54	398	13%	1.0 (0.5 - 1.7)	1.2 (0.7 - 2.3)
Age 55 and older	262	21%	1.7 (0.9 - 3.2)	**2.5 (1.2 - 5.2)**
Race/Ethnicity				
Non-Native	1070	16%	Referent	
Alaska Native	537	8%	**0.5 (0.3 -0.8)**	**0.5 (0.2 -0.9)**
Socio-Economic Status*				
Higher SES	913	15%	Referent	
Low SES	719	14%	0.9 (0.6 - 1.4)	1.3 (0.9 - 2.1)
Low SES priority group (Non-Native, ages 25-64)				
Higher SES	624	15%	Referent	
Low SES	298	15%	1.0 (0.6 - 1.9)	
Employment status				
Employed or Self-employed	1069	15%	Referent	
Unemployed	201	11%	0.7 (0.3 - 1.6)	0.9 (0.4 -2.0)
Homemaker, Student, or Retired	234	18%	1.3 (0.7 - 2.2)	1.1 (0.6 - 2.2)
Unable to work	121	5%	**0.3 (0.1 - 0.8)**	**0.2 (0.1 - 0.7)**
Children in home				
No children in the home	765	15%	Referent	
Children in the home	863	13%	0.8 (0.5 - 1.3)	
Region				
Anchorage	226	16%	Referent	
Mat-Su	94	17%	1.1 (0.5 - 2.2)	1.0 (0.5 - 2.2)
Kenai/Kodiak/Valdez Cordova	298	9%	0.5 (0.3 - 1.0)	**0.5 (0.3 - 1.0)**
Bristol Bay/Aleutians/Pribilofs	93	9%	0.5 (0.2 - 1.1)	0.6 (0.2 - 1.5)
Yukon-Kuskokwim	148	13%	0.8 (0.4 - 1.7)	1.1 (0.4 - 2.8)
Southeast	255	14%	0.8 (0.5 - 1.5)	0.9 (0.5 - 1.6)
Interior	69	1%	**0.1 (0.0 - 0.3)**	**0.03 (0.0 - 0.3)**
Fairbanks North Star	286	14%	0.9 (0.5 - 1.5)	0.8 (0.5 - 1.5)
Norton Sound/Arctic	164	8%	0.4 (0.2 - 1.0)	0.6 (0.2 - 1.6)

Table 4. Associations for Long-term Quit Success (3+ months)—continued

Predictors	N	Percent	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Smoking and Cessation Factors				
Dual Use (Smokeless)				
No	1539	14%	Referent	
Yes (also uses smokeless tobacco)	89	18%	1.4 (0.6 - 3.0)	
Used NRT or Counseling in Recent Quit (Attempt)				
No	1118	15%	Referent	
Yes	514	12%	0.8 (0.5 - 1.2)	
Have Ban on Smoking in Home				
No	526	7%	Referent	
Yes	1095	17%	**2.8 (1.5 - 5.3)**	**3.2 (1.8 - 5.8)**
Workplace Policy on Smoking (Indoor)				
No policy	219	16%	Referent	
Not applicable (do not work indoors)	712	15%	0.9 (0.5 - 1.7)	
Yes -- no smoking	689	13%	0.8 (0.4 - 1.5)	
Home and/or Workplace Smoking Ban				
No	77	7%	Referent	
Yes, both	480	16%	2.6 (0.5 - 12.3)	
Home ban only	608	18%	3.0 (0.6 - 13.9)	
Workplace ban only	205	6%	0.9 (0.1 - 5.3)	
Not working indoors, no home ban	242	8%	1.1 (0.2 - 6.4)	
Smoking Should Not be Allowed in Indoor Work Areas				
Disagree	516	14%	Referent	
Agree	1104	14%	1.0 (0.6 - 1.6)	
Factors asked in 2006 BRFSS only				
People are upset by my Smoking (2006)				
Disagree	113	17%	Referent	
Agree	215	12%	0.6 (0.2 - 1.8)	
Would call/Have called the Quitline (2006)				
No	214	18%	Referent	
Yes	124	12%	0.6 (0.2 - 1.7)	

Source: Alaska BRFSS 2004-2007 modified surveys

Table 5. Associations for Receipt of Health Care (Health Care Visit in the Past 12 months among Current Smokers), Alaska, 2004-2007

Predictors	N	Percent	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Overall	**2362**	**66%**		
Demographic Factors				
Gender				
Males	1192	56%	Referent	
Females	1170	79%	**2.9 (2.2 - 3.8)**	**3.2 (2.3 - 4.3)**
Age group				
18-29	507	59%	Referent	
30-44	771	63%	1.2 (0.8 - 1.7)	1.2 (0.8 - 1.7)
45-54	602	74%	**2.0 (1.4 - 2.9)**	**1.8 (1.2 - 2.7)**
Age 55 and older	451	76%	**2.2 (1.4 - 3.4)**	**1.9 (1.2 - 3.1)**
Race/Ethnicity				
Non-Native	1579	68%	Referent	
Alaska Native	748	58%	**0.6 (0.5 - 0.9)**	0.8 (0.5 - 1.2)
Socio-Economic Status*				
Higher SES	1333	70%	Referent	
Low SES	1027	61%	0.8 (0.6 - 1.0)	0.8 (0.6 - 1.1)
Low SES priority group (Non-Native, ages 25-64)				
Higher SES	931	69%	Referent	
Low SES	448	64%	0.8 (0.6 - 1.1)	
Employment status				
Employed or Self-employed	1548	64%	Referent	
Unemployed	281	57%	0.8 (0.5 - 1.1)	1.0 (0.6 - 1.6)
Homemaker, Student, or Retired	346	73%	**1.5 (1.0 - 2.2)**	1.1 (0.7 - 1.7)
Unable to work	173	81%	**2.3 (1.0 - 5.2)**	2.2 (1.0 - 4.8)
Children in home				
No children in the home	1244	70%	Referent	
Children in the home	1110	62%	**0.7 (0.5 - 0.9)**	0.8 (0.6 - 1.2)
Region				
1 Anchorage	296	65%	Referent	
1 Mat-Su	126	72%	1.4 (0.8 - 2.5)	1.2 (0.6 - 2.2)
3 Kenai/Kodiak/Valdez Cordova	467	69%	1.2 (0.8 - 1.7)	1.0 (0.7 - 1.5)
4 Bristol Bay/Aleutians/Pribilofs	147	68%	1.2 (0.7 - 2.0)	1.1 (0.6 - 2.1)
4 Yukon-Kuskokwim	168	43%	**0.4 (0.3 - 0.6)**	0.6 (0.3 - 1.0)
6 Southeast	411	68%	1.1 (0.8 - 1.7)	1.1 (0.7 - 1.6)
7 Interior	114	57%	0.7 (0.4 - 1.2)	0.6 (0.4 - 1.1)
7 Fairbanks North Star	385	72%	1.4 (0.9 - 2.1)	1.4 (0.9 - 2.2)
9 Norton Sound/Arctic	248	53%	**0.6 (0.4 - 0.9)**	0.7 (0.4 - 1.1)

Source: Alaska BRFSS 2004-2007 modified surveys

Table 5. Associations for Receipt of Health Care—continued

Predictors	N	Percent	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Smoking and Cessation Factors				
Cigarette Consumption				
Some days Smoker	686	63%	Referent	
Everyday Light (1 pack or less)	1526	66%	1.1 (0.8 - 1.6)	
Everyday Heavy (>1 pack a day)	150	70%	1.4 (0.8 - 2.3)	
Dual Use (Smokeless)				
No	2233	66%	Referent	
Yes (also uses smokeless tobacco)	119	54%	0.6 (0.3 - 1.1)	
Used NRT and/or Counseling in Recent Quit (Attempt)				
No	865	67%	Referent	
Yes	409	75%	1.4 (1.0 - 2.3)	
No recent quit attempt	1062	61%	0.8 (0.6 - 1.1)	
Have Ban on Smoking in Home				
No	1034	70%	Referent	
Yes	1307	63%	**0.8 (0.6 - 1.0)**	1.1 (0.8 - 1.5)
Workplace Policy on Smoking (Indoor)				
No policy	333	65%	Referent	
Not applicable (do not work indoors)	1058	61%	0.9 (0.6 - 1.3)	
Yes -- no smoking	939	70%	1.3 (0.9 - 2.0)	
Home and/or Workplace Smoking Ban				
No	155	63%	Referent	
Yes, both	558	68%	1.3 (0.7 - 2.2)	
Home ban only	732	60%	0.9 (0.5 - 1.5)	
Workplace ban only	377	74%	1.7 (0.9 - 3.0)	
Not working indoors, no home ban	495	68%	1.3 (0.7 - 2.2)	
Smoking Should Not be Allowed in Indoor Work Areas				
Disagree	921	64%	Referent	
Agree	1413	67%	1.1 (0.8 - 1.5)	
Factors asked in 2006 BRFSS only				
People are upset by my Smoking (2006)				
Disagree	203	67%	Referent	
Agree	284	78%	1.7 (0.9 - 3.2)	
Would call/Have called the Quitline (2006)				
No	333	72%	Referent	
Yes	167	77%	1.3 (0.7 - 2.6)	

Source: Alaska BRFSS 2004-2007 modified surveys

Table 6. Associations for Receipt of Advice to Quit (among current smokers who had a health care visit in the past 12 months), Alaska, 2004, 2006, and 2007 data

Predictors	N	Percent	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Overall	**1085**	**57%**		
Demographic Factors				
Gender				
Males	465	58%	Referent	
Females	620	56%	0.9 (0.6 - 1.3)	1.0 (0.7 - 1.5)
Age group				
18-29	203	54%	Referent	
30-44	331	53%	1.0 (0.6 - 1.7)	0.8 (0.4 - 1.3)
45-54	295	63%	1.4 (0.8 - 2.5)	1.1 (0.6 - 2.1)
Age 55 and older	243	64%	1.5 (0.8 - 2.8)	1.2 (0.6 - 2.2)
Race/Ethnicity				
Non-Native	753	61%	Referent	
Alaska Native	317	49%	**0.6 (0.4 - 0.9)**	0.7 (0.5 - 1.1)
Socio-Economic Status*				
Higher SES	651	56%	Referent	
Low SES	432	59%	1.0 (0.7 - 1.3)	1.1 (0.8 - 1.6)
Low SES priority group (Non-Native, ages 25-64)				
Higher SES	458	61%	Referent	
Low SES	196	64%	1.1 (0.7 - 1.9)	
Employment status				
Employed or Self-employed	696	59%	Referent	
Unemployed	111	41%	**0.5 (0.3 - 0.9)**	**0.5 (0.3 - 1.0)**
Homemaker, Student, or Retired	178	59%	1.0 (0.6 - 1.8)	0.9 (0.5 - 1.8)
Unable to work	94	70%	1.6 (0.8 - 3.2)	1.2 (0.6 - 2.4)
Children in home				
No children in the home	602	59%	Referent	
Children in the home	475	56%	0.9 (0.6 - 1.3)	
Region				
1 Anchorage	138	56%	Referent	
1 Mat-Su	62	63%	1.3 (0.6 - 3.0)	
3 Kenai/Kodiak/Valdez Cordova	230	55%	1.0 (0.6 - 1.6)	
4 Bristol Bay/Aleutians/Pribilofs	65	53%	0.9 (0.4 - 1.8)	
4 Yukon-Kuskokwim	53	47%	0.7 (0.3 - 1.5)	
6 Southeast	201	58%	1.1 (0.6 - 1.8)	
7 Interior	47	48%	0.7 (0.3 - 1.6)	
7 Fairbanks North Star	196	61%	1.2 (0.7 - 2.1)	
9 Norton Sound/Arctic	93	53%	0.9 (0.5 - 1.6)	

Table 6. Associations for Receipt of Advice to Quit—continued

Received Advice to Quit (among Current Smokers who had a health care visit in the past 12 months)				
Predictors	**N**	**Percent**	**Unadjusted OR (95% CI)**	**Adjusted OR (95% CI)**
Smoking and Cessation Factors				
Consumption (Current Smokers Only)				
Some days Smoker	297	44%	Referent	
Everyday Light (1 pack or less)	713	62%	**2.1 (1.3 - 3.3)**	**2.1 (1.2 - 3.4)**
Everyday Heavy (>1 pack a day)	75	71%	**3.1 (1.4 - 6.8)**	**2.8 (1.1 - 7.1)**
Dual Use (Smokeless)				
No	1033	58%	Referent	
Yes (also uses smokeless tobacco)	47	52%	0.8 (0.3 - 2.1)	
Used NRT and/or Counseling in Recent Quit (Attempt)				
No	385	55%	Referent	
Yes	226	68%	**1.8 (1.1 - 3.0)**	1.4 (0.8 - 2.4)
No recent quit attempt	465	55%	1.0 (0.6 - 1.5)	0.7 (0.4 - 1.1)
Have Ban on Smoking in Home				
No	507	63%	Referent	
Yes	569	53%	**0.7 (0.4 - 1.0)**	0.7 (0.5 - 1.1)
Workplace Policy on Smoking (Indoor)				
No policy	148	47%	Referent	
Not applicable (do not work indoors)	464	60%	1.6 (0.9 - 2.9)	
Yes -- no smoking	461	59%	1.6 (0.9 - 2.8)	
Home and/or Workplace Smoking Ban				
No	73	59%	Referent	
Yes, both	266	54%	0.8 (0.4 - 1.8	
Home ban only	297	52%	0.7 (0.3 - 1.6)	
Workplace ban only	193	66%	1.3 (0.5 - 3.2)	
Not working indoors, no home ban	237	62%	1.1 (0.5 - 2.5)	
Smoking Should Not be Allowed in Indoor Work Areas				
Disagree	425	61%	Referent	
Agree	651	55%	0.8 (0.5 - 1.2)	
Factors asked in 2006 BRFSS only				
People are upset by my Smoking (2006)				
Disagree	142	41%	Referent	
Agree	218	47%	1.3 (0.7 - 2.5)	
Would call/Have called the Quitline (2006)				
No	239	38%	Referent	
Yes	132	57%	**2.1 (1.1 - 4.0)**	

Source: Alaska BRFSS 2004, 2006 and 2007 modified surveys

Appendix E. Characteristics of the Population

Table 1. Characteristics of the Adult Population, Alaska 2004-2007

Factors		N	Percent
Demographic Factors		**10112**	
Gender			
	Males	4619	52%
	Females	5493	48%
Age group			
	18-29	1601	23%
	30-44	3051	31%
	45-54	2481	23%
	Age 55 and older	2847	24%
Race/Ethnicity			
	Non-Native	8063	85%
	Alaska Native	1898	15%
Socio-Economic Status			
	Higher SES	7212	72%
	Low SES	2873	28%
Low SES priority group (Non-Native, ages 25-64)			
	Higher SES	5363	80%
	Low SES	1255	20%
Employment status			
	Employed or Self-employed	6901	70%
	Unemployed	651	6%
	Homemaker, Student, or Retired	2125	20%
	Unable to work	385	4%
Children in home			
	No children in the home	5716	53%
	Children in the home	4367	47%
Region			
	Anchorage	1599	40%
	Mat-Su	519	13%
	Kenai/Kodiak/Valdez Cordova	2097	12%
	Bristol Bay/Aleutians/Pribilofs	385	2%
	Yukon-Kuskokwim	627	4%
	Southeast	1988	11%
	Interior	399	2%
	Fairbanks North Star	1869	13%
	Norton Sound/Arctic	629	3%

Table 1. Characteristics of the Adult Population, Alaska 2004-2007 (continued)

Factors	N	Percent
Smoking and Cessation Factors	**10112**	
Current Dual Use (Smokeless and Cigarette)		
Neither	7240	73%
Cigarettes only	2270	22%
Smokeless only	381	3%
Both Smokeless and Cigarettes	120	1%
Have Ban on Smoking in Home		
No	1746	16%
Yes	8292	84%
Workplace Policy on Smoking (Indoor)		
No policy	945	10%
Not applicable (do not work indoors)	3967	38%
Yes -- no smoking	5058	52%
Home and/or Workplace Smoking Ban		
No	240	2%
Yes, both	4378	46%
Home ban only	3811	38%
Workplace ban only	662	7%
Not working indoors, no home ban	826	7%
Smoking Should Not be Allowed in Indoor Work Areas		
Disagree	2055	21%
Agree	7975	79%

Source: Alaska BRFSS 2004-2007 modified surveys

Table 2. Characteristics of Adults Who Smoked within the Past Year, Alaska 2004-2007

Factors	N	Percent
Among Current Smokers Only	N=1677	
Consumption		
Some days Smoker	699	29%
Everyday Light (1 pack or less)	1551	66%
Everyday Heavy (>1 pack a day)	151	5%
Made Quit Attempt in past 12 months		
No	1076	43%
Yes	1296	57%
Received Advice to Quit		
No	442	28%
Yes	633	38%
No health visit in past 12 months	570	34%
Among Current and Former Past Year Smokers	N=3161	
Used NRT or Counseling in Recent Quit (Attempt)		
No (did not use)	1118	45%
No (no past year quit or quit attempt)	1076	37%
Yes	514	18%
Used NRT in Recent Quit (Attempt)		
No (no use or no attempt)	2225	83%
Yes	482	17%
Used Counseling/Classes in Recent Quit (Attempt)		
No (no use or no attempt)	2616	97%
Yes	91	3%
People are upset by my Smoking (2006 data only)		
Disagree	391	12%
Agree	184	12%
Would call/Have called the Quitline (2006 data only)		
No	391	68%
Yes -- would call	150	26%
Yes -- have called	34	5%

Source: Alaska BRFSS 2004-2007 modified surveys

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