Promoting Evidence-Based Strategies to Fight the Global Tobacco Epidemic

The International Tobacco Control Policy Evaluation Project

ITC United States National Report

FINDINGS FROM THE WAVE 1 TO 8 SURVEYS (2002-2011)

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Findings from the ITC US Wave 1 to 8 Surveys

ITC United States National Report

2002-2011

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Message

The Society for Research on Nicotine and Tobacco (SRNT) is the leading professional scientific organization dedicated to fostering the exchange of information on nicotine and tobacco with the aim of reducing the enormous global health burden caused by tobacco use. SRNT has been a strong supporter of the World Health Organization’s Framework Convention on Tobacco Control (FCTC), the first modern-day evidence based public health treaty, which almost all countries in the world have accepted as legally binding.

The International Tobacco Control Policy Evaluation Project (ITC) has focused research efforts on evaluating the FCTC. Scientific studies of policy impact take on special importance in the domain of tobacco control given the tobacco industry’s well-documented history of distorting facts, inventing “facts”, and attempting to create doubt in the minds of governments and the public through their well-funded public relations campaigns.

SRNT is happy to recognize the ITC United States Report as an important contribution to tobacco control. The report reveals that while significant advances have been made over the past decade, most smokers still are struggling to overcome their nicotine addiction. Also, despite the fact that smoking remains the number one killer in America, attention to the tobacco problem appears to be waning.

This most recent ITC report also reminds us that despite the success of efforts to counter tobacco addiction in high-income countries such as the US, we have a long way to go to combat the tobacco problem. It is imperative that we organize commitment and support to implement the public health policies that will relegate the tobacco problem to the history books.

SRNT offers our congratulations to Drs. Fong and Cummings, and the entire ITC team for formulating this comprehensive assessment of US efforts to combat tobacco use.

Sincerely,

Anne Joseph, MD, MPH
President, Society for Research on Nicotine and Tobacco (SRNT)
Message

Cigarette smoking causes 30% of all cancer deaths and more than 85% of all lung cancer deaths. Although there have been significant reductions in smoking rates in United States since the Report of the US Surgeon General’s Advisory Committee on Smoking was issued 50 years ago, smoking still remains by far the single most important preventable cause of cancer and premature death in United States. Thus, efforts to prevent cancer in the United States and throughout the world must include tobacco control.

Because science has demonstrated that population-based interventions such as effective policy changes offer the greatest promise in reducing tobacco use, there is a need for measuring the impact of policies such as pictorial warnings, smoke-free laws, bans on advertising, promotion, and sponsorship, higher taxes to increase price of tobacco products, availability of tobacco dependence treatment, and measures to reduce illicit trade. In the same way that methods for treating cancer must be continually and rigorously evaluated in order to increase their effectiveness, so too must methods for preventing cancer be subjected to rigorous evaluation in order to determine what works best and what does not.

The International Tobacco Control Policy Evaluation Project (ITC) and its international collaboration of more than 100 researchers across 22 countries, covering over half of the world’s population, is a world-leading research program that focuses on evaluating the impact of FCTC policies. Over the past decade, the ITC Project has become a leading authority on what works and what does not work in the implementation of tobacco control policies—in United States and throughout the world.

The American Cancer Society is pleased and proud to have been one of the earliest supporters of the ITC Project, beginning in 2002. The findings of the ITC United States Wave 1 to 8 National Report will, without doubt, have a powerful and lasting impact in helping to advance tobacco control policies in the US and abroad. The report makes it clear that, while significant advances in tobacco control have been made over the past decade, most smokers are still struggling to overcome their nicotine dependence. Also, despite the fact that smoking still remains the number one killer in America, many are concerned that attention to the tobacco problem may be waning. The ITC US report should serve as a wake-up call to those in the business of cancer prevention since it shows that the progress we have made is not enough and we still have far to go to reach an endgame for the tobacco problem here in the US and abroad.

However, unlike so many problems we face in society today, we know how to end the tobacco epidemic. We have the tools. Thanks in large measure to the ITC project, we know what policies and what programs work, as this report makes very clear. The only remaining question is whether we can muster the kind of commitment, political will, and support to implement the public health policies that will relegate the tobacco problem to the history books.

We congratulate Professors Fong and Cummings along with their all of their ITC colleagues in preparing this comprehensive evaluation of America’s efforts to fight the number one cause of premature death and disease.

Sincerely,

Thomas J. Glynn, PhD
Director, Cancer Science and Trends and Director, International Cancer Control
American Cancer Society
“The ITC US report should serve as a wake-up call to those in the business of cancer prevention since it shows that the progress we have made is not enough and we still have far to go to reach an endgame for the tobacco problem here in the US and abroad.”

Thomas J. Glynn, PhD
Director, Cancer Science and Trends and
Director, International Cancer Control
American Cancer Society
EXECUTIVE SUMMARY

This Report provides a detailed picture of the tobacco control landscape in the United States over the past decade using cohort survey data from the International Tobacco Control Policy Evaluation Project (the ITC Project). ITC Surveys have been conducted in more than 20 countries. However, this Report focuses on the findings of the ITC Wave 1 to 8 Surveys conducted among smokers in the US between 2002 and 2010-11.

The sample size in the US was 2,138 at the baseline Wave 1 Survey in 2002, with replenishment sampling from the same sampling frame to maintain sample size across waves (with a slightly reduced sample in Waves 7 and 8). The ITC US Survey spans the time period of the implementation of the Master Settlement Agreement, which restricted additional elements of tobacco product marketing (i.e., billboards, print advertising, sponsorships, and sampling) while also providing resources to support a nationwide paid anti-smoking campaign directed at youth (i.e., the truth® campaign). The period between 2002 and 2010-11 was also a time when many states and localities adopted comprehensive clean indoor air laws, raised taxes on cigarettes, and sponsored dedicated tobacco control initiatives. Nationally, 2002 to 2010-11 also included a period which saw the creation of a national network of telephone helplines, aggressive marketing of alternative nicotine delivery products and electronic cigarettes (e-cigarettes), and in 2009 a federal excise tax hike of $0.61 per pack and the beginning of the US Federal Drug Administration’s (FDA) authority to regulate tobacco products.

While many of these developments were positive for public health, the study period also encompassed the post-9-11 period dominated by foreign wars and refocused government priorities that reduced support for tobacco control as well as other public health programs. In addition, the media’s interest in the tobacco issue began to fade after the cigarette industry acknowledged that smoking was harmful. Indeed, results from the ITC US Survey show that between 2002 and 2010-11, smokers reported seeing fewer and fewer anti-tobacco news stories.

Large-scale studies of trends in smoking demonstrate that despite increasing evidence of motivation to stop smoking, the average annual quit rate among adult smokers in the US remained low and did not increase over the decade. The use of medications to help smokers quit did increase over time, although a significant percentage of smokers reported making unassisted quit attempts. On a positive note, the average number of cigarettes consumed daily by smokers has decreased, although this trend was offset by increased use of other tobacco products, especially cigars. Perhaps the most interesting recent development has been the rapid growth of e-cigarettes, reportedly used by 15% of smokers in the 2010-11 ITC Survey.

For the most part, smoking in workplaces has fallen to approximately the same levels seen in Canada and Australia (15% of US males and 16% of US females report noticing smoking indoors at their workplace in the last month). But whereas Canada, Australia, France, the United Kingdom, Scotland, and Ireland have essentially achieved smoke-free bars and restaurants, in the US, 11% of male smokers and 10% of female smokers reported noticing smoking in restaurants in the last 6 months and 29% of male smokers and 33% of female smokers reporting noticing smoking in bars at last visit.
In addition, the majority of smokers (59%) reported still permitting smoking in their homes. Smokers reported that they would be motivated to try to stop smoking if the price of cigarettes was increased substantially. Unfortunately, the inflation-adjusted price of a package of cigarettes as reported by smokers in our surveys remained fairly stable throughout most of the study period owing in large measure to the success of the cigarette industry in nullifying tax hikes by offering price discounts and less expensive cigarette brands. Following the 2009 Federal excise tax increase many smokers did report paying more for their cigarettes, but there was also an increase in the use of tax avoidance strategies and switching to discount brand cigarettes.

In summary, this Report, and findings from other recent national studies of tobacco use in the US demonstrate that although there have been significant advances in tobacco control, which have led to strong decreases in smoking rates, tobacco’s relevance as a societal problem appears to have lessened over the past decade as other issues emerged to dominate the US political agenda. This study shows that despite increasing exposure to clean indoor air policies, higher cigarette taxes, and anti-smoking messages, the average annual quit rate among adult smokers in the US is low and has remained unchanged over the last decade.

Below are 12 recommendations that if implemented today would dramatically reduce tobacco use in the US and allow us a chance to meet the public goal of reducing smoking prevalence below 12% by 2020.

The first recommendation urges the US to ratify the WHO Framework Convention on Tobacco Control (WHO FCTC). The FCTC provides an evidence-based roadmap to guide the implementation of effective tobacco control policies and obligates Parties to undertake measures to reduce the prevalence of tobacco use and exposure to tobacco smoke. Since the FCTC was adopted by the World Health Assembly in 2003, more than 175 countries around the world have ratified the Treaty. The 11 recommendations that follow this overarching recommendation are organized according to the major policy domains of the FCTC.

**WHO Framework Convention on Tobacco Control**

1. Ratify and aggressively implement the WHO Framework Convention on Tobacco Control.

**Protection of public health policies with respect to tobacco control from the interests of the tobacco industry (Article 5.3)**

2. Support Malaysia's proposal to “carve out” tobacco from the Trans Pacific Partnership (TPP) Agreement to prevent the tobacco companies from using the TPP to fight tobacco control measures here and around the world.
Price and tax measures (Article 6)
3. Raise the federal tax on cigarettes to a level to recoup the health care costs from smoking.

Protection from exposure to tobacco smoke (Article 8)
4. All indoor public areas including workplaces, restaurants, bars, and casinos should be 100% smoke-free.

Regulation of tobacco products (Articles 9 and 10)
5. Prohibit the use of additives in all combustible tobacco products.

Packaging and labeling (Article 11)
6. Require large graphic warning labels on all combustible tobacco products.

Packaging and labeling (Article 11)/Tobacco advertising, promotion, and sponsorship (Article 13)
7. Standardize all cigarettes so they are not allowed to vary by weight, length, circumference, and color of the wrapping and tipping paper.
8. Prohibit cigarette brand line extensions.

Public education and awareness (Article 12)
9. Fully fund a paid mass media campaign on the dangers of smoking until the national smoking rate drops below 10%.

Tobacco advertising, promotion, and sponsorship (Article 13)
10. Ban the sale of tobacco products in all licensed pharmacies.

Tobacco dependence and cessation (Article 14)
11. Increase consumer access to affordable, low harm, consumer acceptable nicotine products as an alternative to combustible tobacco.

Sales to minors (Article 16)
12. Raise the minimum purchase age of tobacco products to 21 years.
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Anne Joseph, MD, MPH
President, Society for Research on Nicotine and Tobacco (SRNT)
The International Tobacco Control Policy Evaluation Project (the ITC Project) is a multi-country prospective cohort study designed to measure the psychosocial and behavioral impact of key policies of the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) in more than 20 countries.

In 2002, researchers in Canada (University of Waterloo) formed a collaboration with an international team of researchers in Australia (The Cancer Council of Victoria), the United Kingdom (University of Strathclyde), and the United States (Roswell Park Cancer Institute and University of Illinois at Chicago) to create the ITC Four Country Project. Over the years, a number of other organizations and investigators have been involved in the ITC Four Country Project including University of Stirling, The Open University, State University of New York at Buffalo, Medical University of South Carolina, University of Nottingham, St. Andrews University, and King’s College London.

The ITC Four Country Project conducts nationally representative longitudinal cohort surveys of adult smokers in Canada, Australia, the United Kingdom, and the United States (US). The ITC US Wave 1 to 8 Surveys were conducted approximately annually between 2002 to 2011.

**ITC Four Country Survey Investigators**

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**ITC US Project Management**

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The United States has been a leader in tobacco control dating back to the 1950’s with research efforts to establish the link between smoking and disease, which ultimately led to the adoption of policies requiring health warnings on cigarette packs, limits on product marketing, higher taxes on cigarettes, and laws restricting where smokers are allowed to light up.\(^1\) Since 1963, per capita consumption has declined by more than 70%.\(^2\) In 1965, approximately 42% of adults were current smokers (52% of males and 34% of females); as of 2011, 19% were current smokers (22% of males, 17% of females).\(^3,4\) Smoking patterns vary regionally and by socio-economic status. Adults from the Western and Northeastern regions of the US are less likely to smoke compared to those in the South and Midwest.\(^5\) Adults with a bachelor’s degree and/or higher household incomes are less likely to smoke.\(^5\) Fewer teenagers are also taking up smoking. Since 1996, there has been a steady decrease in the percentage of high school students who report having smoked in the past 30 days.\(^4,6\)

Among the many forces driving down smoking prevalence over the past 50 years were the recognition of tobacco use as an addiction and cause of cancer, along with concerns about the ill-effects of secondhand smoke.\(^7-12\) These factors contributed to the declining social acceptance of smoking, especially with the advent of legal restrictions on smoking in public spaces, mass media counter-marketing campaigns, and higher taxes on cigarettes.\(^1,13-16\)

The US was among the first countries to mandate health warnings on cigarettes and limit cigarette advertising. In 1966, the first cautionary warning label appeared on cigarette packs, stating that cigarette smoking “may be hazardous to your health.”\(^1\) The health warning was modified in 1970 and again in 1985. The current US warnings have not changed since 1985 consisting of one of four text warnings on the side of the pack (see Figure 1).

50 years after the first Surgeon General’s Report on Smoking and Health, the Surgeon General released The Health Consequences of Smoking: 50 Years of Progress. The report presents new data on the health consequences of smoking and identifies opportunities that can potentially end the smoking epidemic in the United States.

Left: Jonathan M. Samet, M.D., M.S., Senior Scientific Editor, Professor and Flora L. Thornton Chair, Department of Preventive Medicine, Keck School of Medicine; Director, Institute for Global Health, University of Southern California, Los Angeles, California.
Many studies, including those conducted by the ITC Project, have demonstrated that the small text warning located on the side of the pack is much less effective than large pictorial warnings located prominently on the front and back of the pack, features that have already been adopted by over 60 countries, including Canada and Mexico.\textsuperscript{1, 17, 18} In June 2011, the FDA issued regulations requiring a new set of nine pictorial warnings that would cover 50% of the front and back of the pack following the landmark 2009 Family Smoking Prevention and Tobacco Control Act. The warnings were to be implemented by September 2012; however, in August 2012, the US Court of Appeals for the DC Circuit struck down the proposed warnings. Rather than appealing the DC Circuit’s ruling to the US Supreme Court, the FDA chose to revise their regulations for a new set of pictorial warnings; as of February 2014, that revision process is still in progress.

In 1967, anti-smoking advertisements began to air on television as part of a Federal Communications Commission Fairness Doctrine ruling requiring broadcasters to run an anti-smoking advertisement for every cigarette ad aired.\textsuperscript{1} While compliance with this ruling was incomplete, smoking rates dropped dramatically during the brief period between 1967 and 1970 when the anti-smoking ads aired during prime time helping to make the public aware of the serious health consequences of smoking.\textsuperscript{1} In 1971, cigarette advertisements were banned from television and radio.

Looking back 50 years, smoking was permitted nearly everywhere: smokers could light up at work, in hospitals, in school buildings, in bars, in restaurants, and even on buses, trains, and planes. However, evidence regarding the health consequences of secondhand smoke led to increasingly stronger policies that limited where people could use cigarettes. Smoking was banned on domestic airlines in the early 1990’s and by 2014, 27 states and 598 communities in the US had adopted comprehensive laws prohibiting smoking in workplaces, restaurants, and bars.\textsuperscript{19, 20}

In the US today, tobacco taxes are levied at the federal, state, and local levels of government. In 1951, the Federal tax was set at 8 cents per pack, the level at which it would remain for more than 30 years.\textsuperscript{1} Today, the Federal tax on cigarettes is $1.01 per pack.\textsuperscript{21} Beginning in the 1970s and continuing to this day, many states and localities have increased cigarette excise taxes in a dual effort to raise revenue and to reduce smoking and its consequences. For example, the average retail price of a cigarette pack in New York City today is more than $10 due in large measure to the combination of local, state, and Federal excise taxes. Economists estimate that an increase of 10% in the price of cigarettes reduces cigarette consumption by 3-5%.\textsuperscript{22, 23} Much of the state-to-state variation in smoking prevalence observed in the US today can be traced to variations in cigarette taxes with higher cigarette consumption found in states that have lower tax rates on cigarettes.\textsuperscript{24, 25}

Despite its very strong legacy of tobacco control, the US is one of only a handful of countries that have not yet ratified the WHO Framework Convention on Tobacco Control which obligates countries to implement a comprehensive set of tobacco control policies.
THE ITC POLICY EVALUATION PROJECT

The International Tobacco Control Policy Evaluation Project, known as the ITC Project, was started in 2002 in an effort to evaluate the psychosocial and behavioral impact of national-level tobacco control policies that were beginning to be implemented as a result of the WHO FCTC. So far, the ITC United States (ITC US) Project has involved eight longitudinal surveys conducted between 2002 and 2011. The initial Wave 1 Survey included 2,138 randomly selected adult (age 18 years and older) cigarette smokers. Subsequent follow-up surveys have tracked the smoking behaviors of the original cohort as well as newly recruited respondents to replace those lost to follow up. The main objectives of the ITC US Survey were:

1) To examine patterns of smoking behavior and opinions associated with smoking among adults in the US. The ITC Survey collects detailed information on adult smokers’ quitting behavior, consumption patterns, and other important aspects of smoking behavior.

2) To examine the impact of specific tobacco control policies implemented in the US. The ITC Survey includes modules that were designed to evaluate the impact of specific policies (e.g., health warning labels on cigarette packs, smoke-free laws, mass media campaigns, and price/taxation increases) on smoking-related behaviors, beliefs, and attitudes.

3) To compare the behaviors of smokers and the impact of policies as measured in different ITC countries. ITC Surveys have been conducted in more than 20 countries so far. Survey questions are identical or nearly identical across all ITC countries, which allow for comparisons of smoking patterns and the impact of policies in the US with other ITC countries.

This Report presents findings from the ITC US Wave 1 to 8 Surveys (2002-2011). The sample size was 2,138 at the baseline Wave 1 Survey in 2002, with replenishment sampling from the same sampling frame to maintain sample size across waves (with a slightly reduced sample in Waves 7 and 8).
ITC SURVEY METHODS

The ITC US Survey is a prospective longitudinal study of adult smokers aged 18 years or older. Data for Waves 1 to 6 were collected using computer-assisted telephone interviewing (CATI) software. In recognition of the declining survey response rates experienced by virtually all surveys conducted in the US and in other high-income countries, the ITC US Survey (and those in Canada, Australia, and the United Kingdom) started web-based administration methods of the survey in addition to CATI methods at Wave 7. Sampling and recruitment of adult smokers into the cohort were still conducted via random-digit dialing (RDD) for both administration methods. Data for the Wave 7 and 8 Surveys were collected using online web-based surveys, with respondents who did not complete the web survey within a set timeframe being re-routed back into the telephone interview queue to complete the survey by CATI.

This Report presents findings from the ITC US Wave 1 to 8 Surveys (2002-2011). The sample size was 2,138 at baseline in 2002, with replenishment sampling from the same sampling frame to maintain sample size across waves (with a slightly reduced sample in Waves 7 and 8). Hence, the sample was composed of both recontacted and replenished individuals. This process was used to maintain a sample size of approximately 2,000 in each follow-up survey between Waves 2 and 6.

Because of the considerable increase in costs, particularly in recruiting new cohort members, in follow-up Waves 7 and 8, the replenishment numbers were reduced to maintain a sample size of 1,500 per wave.

Between Wave 7 and 8 we also conducted a special recontact-only survey of 678 participants to complete a shortened interview assessing respondents reactions to the federal tax hike on cigarettes and the 2009 Family Smoking Prevention and Tobacco Control Act, which granted the US Food and Drug Administration (FDA) authority to regulate tobacco products. Further details of the sampling method are available at www.itcproject.org. The survey dates and sample sizes are listed in Table 1 below.

Table 1. ITC US Wave 1 to 8 Survey dates and sample sizes, by wave

<table>
<thead>
<tr>
<th>Wave</th>
<th>Survey Dates</th>
<th>Survey Sample</th>
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<tr>
<td>1</td>
<td>October to December 2002</td>
<td>2,138 Smokers</td>
</tr>
<tr>
<td>2</td>
<td>May to September 2003</td>
<td>2,028 Smokers and Former Smokers</td>
</tr>
<tr>
<td>3</td>
<td>June to December 2004</td>
<td>2,088 Smokers and Former Smokers</td>
</tr>
<tr>
<td>4</td>
<td>October 2005 to January 2006</td>
<td>2,004 Smokers and Former Smokers</td>
</tr>
<tr>
<td>5</td>
<td>October 2006 to February 2007</td>
<td>2,034 Smokers and Former Smokers</td>
</tr>
<tr>
<td>6</td>
<td>September 2007 to February 2008</td>
<td>2,002 Smokers and Former Smokers</td>
</tr>
<tr>
<td>7</td>
<td>October 2008 to February 2009</td>
<td>1,763 Smokers and Former Smokers</td>
</tr>
<tr>
<td>7.5</td>
<td>November 2009 to January 2010</td>
<td>678 Smokers and Former Smokers</td>
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<tr>
<td>8</td>
<td>July 2010 to June 2011</td>
<td>1,520 Smokers and Former Smokers</td>
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</table>
Characteristics of the ITC US Wave 1 to 8 Surveys such as survey mode, names of survey firms, and retention rates are provided in Table 2.

Table 2. Summary of characteristics of ITC US Wave 1 to 8 Surveys

<table>
<thead>
<tr>
<th>Wave</th>
<th>Sampling method for new cohort members (replenishment)</th>
<th>Survey Mode</th>
<th>Survey Firm</th>
<th>Retention Rate</th>
</tr>
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<tbody>
<tr>
<td>Wave 1</td>
<td>Random-digit dialing</td>
<td>Telephone</td>
<td>Environics (Toronto, Canada)</td>
<td>–</td>
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<tr>
<td>Wave 2</td>
<td>Random-digit dialing</td>
<td>Telephone</td>
<td>Environics (Toronto, Canada)</td>
<td>62.9%</td>
</tr>
<tr>
<td>Wave 3</td>
<td>Random-digit dialing</td>
<td>Telephone</td>
<td>Roy Morgan Research (Melbourne, Australia)</td>
<td>59.1%</td>
</tr>
<tr>
<td>Wave 4</td>
<td>Random-digit dialing</td>
<td>Telephone</td>
<td>Roy Morgan Research (Melbourne, Australia)</td>
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</tr>
<tr>
<td>Wave 5</td>
<td>Random-digit dialing</td>
<td>Telephone</td>
<td>Roy Morgan Research (Melbourne, Australia)</td>
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</tr>
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<td>Telephone</td>
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<td>63.5%</td>
</tr>
<tr>
<td>Wave 7</td>
<td>Random-digit dialing</td>
<td>Telephone and web</td>
<td>Survey Research and Data Acquisition Resource (SRDAR) at Roswell Park Cancer Institute (Buffalo, USA)</td>
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</tr>
<tr>
<td>Wave 8</td>
<td>Random-digit dialing</td>
<td>Telephone and web</td>
<td>Survey Research and Data Acquisition Resource (SRDAR) at Roswell Park Cancer Institute (Buffalo, USA)</td>
<td>64.9%</td>
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CHARACTERISTICS OF THE US SAMPLE, WAVES 1 TO 8

At initial enrollment, survey participants included adult smokers who reported that they had smoked at least 100 cigarettes in their lifetime and had smoked at least 1 cigarette in the past 30 days. Table 3 shows the number of participants interviewed by gender and wave of recruitment. Table 4 displays the demographic characteristics of participants by wave.
Table 3. Total unique respondents interviewed in the US, by wave

<table>
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<th>Wave of Study</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
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<td>61</td>
<td>152</td>
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<td>Wave 8 Total</td>
<td>805</td>
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Table 4. Demographic characteristics of the US sample, by wave

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<th>Characteristic</th>
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<th>Wave 3</th>
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<th>Wave 4</th>
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<td>%</td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
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<td>958</td>
<td>44.8</td>
<td>886</td>
<td>43.7</td>
<td>874</td>
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Table 4 continued. Demographic characteristics of the US sample, by wave

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<td>%</td>
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</table>
CONTENT OF THE ITC US SURVEY

In each of the ITC US Surveys, respondents were categorized as either a current smoker or former smoker and then asked to respond to the following types of questions:

1. **Smoking- and cessation-relevant questions** including smoking history and frequency, current smoking behavior and dependence, quit history, self-efficacy for quitting, and quitting behaviors including questions about method(s) used at last quit attempt;

2. **Knowledge and basic beliefs about smoking** including knowledge and beliefs about the health effects of smoking and important beliefs relevant to smoking and quitting, perceived risk, and perceived severity of tobacco-related diseases;

3. **Policy-relevant questions** including awareness of, impact of, and beliefs relevant for each of the FCTC demand reduction policy domains (health warnings, taxation/price, advertising/promotion, smoke-free policies, light/mild descriptors, public communication), level of support for future policies and for government efforts to reduce tobacco use;

4. **Psychosocial predictors** including normative beliefs, attitudes, intentions to quit, and regret about smoking;

5. **Individual difference variables** relevant to smoking such as measures of depression, stress, and time perspective;

6. **Demographic variables** such as age, gender, marital status, income, and educational attainment.

Respondents who quit smoking between survey waves were asked a similar set of survey questions, but with some questions rephrased to be relevant to those who had quit (e.g., using the past tense).

In this Report, former smokers have been categorized as smokers except in cases where a measure was not relevant for former smokers (e.g., avoiding health warnings on cigarette packages, or reported smoking during last visit to a bar). All ITC US Surveys (smokers, former smokers) at all survey waves are available at [http://itcproject.org/countries/united_states](http://itcproject.org/countries/united_states)
ANALYTIC APPROACH

Time-In-Sample Effects

The ITC US Survey is a longitudinal cohort study where participants lost to attrition were replenished with newly recruited participants in order to maintain a representative sample of 1,500-2,000 US smokers at each wave. The longitudinal design ensures the ability to compare differences in smoking behaviors assessed before, and after the implementation of tobacco control policies or of other events (e.g., mass media campaigns; a manufacturer's price increase of a brand) that would be relevant to smokers. Each survey wave consists of both recontacted and replenishment samples. For example, the Wave 5 Survey sample consists of 745 new, replenished participants, with varying number of participants who began the survey at Waves 1, 2, 3, and 4. Previous work from the ITC Project and other longitudinal surveys has shown there are systematic differences in the way that questions are answered based on the number of times the participant has completed the survey. These time-in-sample effects confound the potential of the survey results to accurately measure trends over time, especially when such wave-to-wave differences are used to measure the impact of a policy. The following methods address how time-in-sample and other potential confounders are controlled in analyses.

Analytic Methods

All variables shown were weighted so that prevalence rates reflect the adult US smoking population. The analytical dataset used contains 6,669 participants and 15,577 observations. Accompanying text indicates whether data are restricted to current smokers or includes both current smokers and former smokers.

Variables of interest are shown over all eight waves, excluding Wave 7.5. Wave 7.5 included analyses focused on specific FDA regulations of interest. In cases where variables were not collected or were collected differently, data are presented only for those waves where the estimates are directly comparable.

All analyses were completed using SAS 9.3. Survey weights, strata, and cluster information were also taken into account. If the same questions were asked across waves, summary measures such as proportions (for categorical variables) and means (for continuous variables) were computed for each wave. Unadjusted, weighted measures account for geographical strata using either the SAS SURVEYFREQ or SURVEYMEANS procedures, depending upon whether the variable of interest was categorical or continuous.

Generalized estimating equations (GEE) were used to account for repeated measures and adjust for the effects of potentially confounding covariates on the outcome of interest (except where indicated). If the same questions were asked across waves, and the outcome of interest is categorical, then a complex survey logistic approach was used to generate standardized and adjusted proportions over time, where feasible. Variables such as sex, age, smoking status, wave, and time-in-sample were included in the model as covariates with the variable of interest specified as the outcome variable in the model.

Using the SAS GENMOD procedure, adjusted measures were weighted, and a cluster variable was used to account for repeated measures. Based on the logistic model generated, the time-specific least squares means of the outcome variable were calculated using parameter estimates from the regression models assuming the overall distributions of the covariates in the data combined across all waves. This approach is called the logistic regression adjustment for descriptive statistics. If the variable of interest is continuous, complex survey regression models may also be used in order to attain predicted means adjusted for covariates.

If not explicitly stated, measures are adjusted for time-in-sample, wave, daily smoking, age, and sex. If working models could not be obtained for all variables over time, only the unadjusted, weighted estimates are given, and this is indicated below the figure or table. The section on electronic cigarettes presents unadjusted, weighted estimates. As well, reference to ‘smokers’ in the text refers to both current and former smokers. Error bars represent 95% confidence intervals.

In cross-country comparisons, since the country samples vary in their composition, the same kind of adjustment is applied. Multi-country comparisons include current smokers only and control for differences in age, smoking status (daily vs. non-daily smokers), and time-in-sample.

Note that the Wave 8 percentages reported in the ITC cross-country comparison figures for the United States are slightly different than the reported Wave 8 longitudinal frequencies due to differences in statistical adjustment methods.
FINDINGS

An overview of the ITC US Survey dates in relation to the implementation of tobacco control policies in the US is displayed in Figure 2 below.

Figure 2. Timeline of tobacco control policies in the United States in relation to the ITC US Surveys
The data presented in this Report are organized into seven sections as follows:

1. Tobacco use behaviors;
2. Smoking cessation;
3. Knowledge, beliefs, and attitudes about tobacco;
4. Smoke-free policies;
5. Health warning labels;
6. Tobacco product marketing;
7. Anti-tobacco communications; and
8. Tobacco affordability and reactions to higher cigarette taxes.
TOBACCO USE BEHAVIORS AND SMOKING CESSATION

In response to scientific evidence on the dangers of tobacco use, policies and other actions to reduce the prevalence of smoking have been enacted. As a result, smokers’ consumption patterns and views regarding smoking have greatly changed over the years. In order to assess smokers’ changes in attitudes and behaviors related to tobacco use, the ITC US Survey (Waves 1 to 8, 2002 to 2010-11) included several measures to assess smoking behavior, perceptions on smoking, and smoking-related societal norms.

As shown in Figure 3, more than 90% of current smokers were daily smokers. No differences in prevalence were detected over the eight waves, although a statistically significant decrease† was detected between Waves 7 and 8 when the 2009 Federal excise tax was increased by $0.61 to $1.01 per pack.

More than 90% of current smokers were daily smokers. No differences in prevalence were detected over the eight waves, although a statistically significant decrease was detected between Waves 7 and 8 when the 2009 Federal excise tax was increased by $0.61 to $1.01 per pack.

† In this Report, terms “increase,” “decrease,” and “differ” represent a statistically significant increase, decrease, or difference (p<0.05) unless otherwise noted.
As shown in Figure 5, over 88% of current smokers were exclusively smoking factory-made cigarettes. The number of current smokers using any roll-your-own (RYO) cigarettes increased from 6% in 2002 to 12% in 2010-11. The percentage of current smokers using RYO cigarettes exclusively more than doubled (from 1% to 3%) between 2002 and 2010-11.
A total of 129 different cigarette brands were reported in 2002 and 92 brands were reported in 2010-11. Across all survey waves, Marlboro was the most frequently reported cigarette brand, followed by Camel, and Newport, consistent with other studies of cigarette brands in the US.\(^\text{28}\)

As shown in Figure 6, the percentage of current smokers who reported smoking Marlboro remained stable over the survey period, averaging about 35%. Slight increases in the percentage of current smokers reporting use of Newport and Camel were observed. The percentage of Pall Mall smokers increased nine-fold between 2002 and 2010-11, with a sharp increase between Waves 7 and 8 (4% to 7%) corresponding to the $0.61 per pack increase in the federal cigarette tax.

![Figure 6. Percentage of current smokers using selected cigarette brands, by wave](image)

Males were more likely to report smoking Camel. Younger age was associated with smoking Marlboro, Camel, and Newport. Those classified as White and other races reported a higher prevalence of smoking Marlboro and Camel, while those classified as Black reported a higher prevalence of smoking Newport. The greatest prevalence of Marlboro smokers was among the high-income group (41%) when compared to middle- (36%) and low-income (29%) smokers. Smokers in the South reported a higher prevalence of smoking Marlboro, while smokers in the Midwest and Northeast reported a higher prevalence of smoking Newport. A slightly greater prevalence of those reporting non-daily use reported smoking Newport.

**Consumption of Menthol Cigarettes**

Across all survey waves, 27% of the sample smoked menthol cigarettes. A higher proportion of African American smokers smoked menthol cigarettes compared with Caucasian smokers and smokers of other races, consistent with other studies.\(^\text{29, 30}\) As well, females and those younger in age were more likely to smoke menthol cigarettes.
Brand Switching

For the purposes of this Report, brand switching was defined as changing the named cigarette brand family between survey waves. Figure 7 shows the rate of brand switching between survey waves adjusted for time-in-sample, age, gender, race, income, nicotine addiction, brand type, education, and reported daily smoking. About 23% of participants followed over multiple survey waves reported switching brands at least one time. Participants followed over multiple survey waves could potentially display multiple patterns of brand switching. The observed switching patterns included switching from one discount brand to another discount brand (348/838; 42%), switching from a premium brand to a discount brand (269/838; 32%), switching from a premium brand to another premium brand (269/838; 26%), and switching from a discount brand to a premium brand (131/838; 16%). After an initial increase in brand switching from 2002 to 2004, the rate of brand switching was fairly constant until 2009 when it increased again. Factors associated with brand switching were younger age (18-24 years of age), lower household income, and use of a discount brand (data not shown). Statistically significant differences in brand switching were detected when comparing Waves 2 to 7 with Wave 8. The odds of switching brands was 76% greater in Wave 8 compared with Waves 2 to 7. Additionally, the sharpest increase was between Waves 7 and 8 (15% to 23%), with the odds of switching in Wave 8 being 91% greater than in Wave 7. This coincides with the Federal excise tax increase.

Figure 7. Percentage of current smokers who switched brands since the previous survey wave, by wave

After an initial increase in brand switching from 2002 to 2004, the rate of brand switching was fairly constant until 2009 when it increased again. The sharpest increase was between Waves 7 and 8. This coincides with the Federal excise tax increase.
Nicotine Dependence

The level of nicotine addiction can vary between individuals with some displaying higher degrees of nicotine dependence compared to others. Several studies have documented the reliability and predictive validity of the Heaviness of Smoking Index (HSI) as a measure of nicotine dependence.\textsuperscript{31-34} The HSI uses: 1) number of cigarettes smoked per day, and 2) time to first cigarette of the day to rate someone’s degree of nicotine dependence. A greater number of cigarettes per day or a shorter time to first cigarette of the day increases the HSI score. HSI scores range from a low of 0 to a high of 6. Those who score 0-2 are rated as low dependence, those scoring 3-4 are rated as moderate dependence, and those scoring 5-6 are rated as high dependence.

As shown in Figure 8 almost half (over 40%) of current, daily smokers smoked their first cigarette within 6-30 minutes after waking. About one-quarter smoked their first cigarette within 5 minutes. The lowest prevalence of participants (<13%) smoked their first cigarette after more than 61 minutes.

Figure 8. Time to first cigarette after waking among daily smokers, by wave

Figure 9 shows average scores on the HSI by survey wave. The average HSI was 2.7 over all waves (possible values of 0 to 6) and increased with age. Among current smokers, the adjusted mean HSI for males was 2.8 compared with 2.6 among females over the course of this survey period. Less than 13% of current smokers had high HSI values indicative of high nicotine dependence. Approximately 40% to 49% of current smokers had low and medium severity HSI values over the survey period.
The ITC Survey also asked smokers to self-report their addiction to smoking. Figure 10 shows the percentage of daily cigarette smokers who self-reported themselves as “very addicted” to cigarettes. Over 60% of current smokers perceived themselves to be “very addicted” to smoking from 2004 to 2010-11.

Around 40% (38% to 44%) of current smokers surveyed in Waves 3 to 8 thought seriously about quitting smoking within the last month. The ITC Survey asked current smokers how sure they were of being able to give up smoking completely within the next 6 months. This item represents a standard measure of self-efficacy for quitting. Over the eight survey waves, only about one-quarter of current smokers (21% to 25%) felt “very sure” or “extremely sure” that they could succeed in quitting smoking if they decided to give up smoking completely within the next 6 months.
Use of Other Tobacco Products

Other smoked tobacco products

As shown in Figure 11, less than 11% of participants used non-cigarette smoked tobacco products, with cigars being the most frequently reported type. The prevalence of non-cigarette smoked tobacco doubled over the survey period from 5% to 10%, with statistically significant increases in cigars (2% to 7%), cigarillos (0% to 1%), and pipe (0% to 1%) use.

Figure 11. Percentage of current smokers who use non-cigarette smoked tobacco products, by wave

Electronic cigarettes

Electronic cigarettes (i.e., e-cigarettes) are battery-powered devices that deliver nicotine in an aerosol to the user. E-cigarettes initially emerged in China in 2004 and have since become widely available globally, particularly over the internet and more recently in retail establishments. In the Wave 8 Survey (i.e., 2010-11) respondents were asked about their awareness and use of e-cigarettes. The majority of smokers (73%) surveyed were aware of e-cigarettes, with 15% of current and former smokers having “ever tried” e-cigarettes. Among the 85 respondents (6% of the total sample) who were currently using e-cigarettes, most used them daily (39%) and less than monthly (30%), while 18% used them at least once a week, and 12% used them at least monthly. As shown in Figure 12, reasons for use included to reduce harm, to cut down on smoking regular cigarettes, and to smoke in smoke-free areas. Fewer (16%) used e-cigarettes for the taste. Among those who had never tried e-cigarettes, 30% said that they were interested in trying them.
Smokeless tobacco products

As shown in Figure 13, the use of smokeless tobacco among current smokers increased from 3% to 10% from 2002 to 2010-11, although most of the increase was from 2008-09 to 2010-11 (5% to 10%). The use of smokeless tobacco was higher among males compared to females. Most smokers who reported using smokeless tobacco used either moist snuff or chewing tobacco. The use of moist snuff (the vast majority being “snus,” a form of tobacco that originated in Sweden and was adopted by several of the major cigarette brands, such as Camel) tripled from 2% in 2002 to 7% in 2010-11, with most of the increase occurring between 2008-09 and 2010-11 (3% to 7%). Similarly, the use of chewing tobacco increased from 2% in 2002 to 4% in 2010-11, with most of the increase between 2008-09 and 2010-11 (2% to 4%).

Figure 12. Reasons for e-cigarette use among smokers who currently use e-cigarettes (N=85), Wave 8 (Jul 10 – Jun 11)*

Figure 13. Percentage of smokers who used smokeless tobacco products within the past year, by wave*

* Wave 2 replenishment respondents were asked about the last 6 months.
SMOKING CESSATION

Nicotine addiction prevents most smokers from successfully quitting. As a result of addiction to nicotine, abstaining from smoking remains a difficult task. Evidence-based assistance is available to help smokers quit smoking, including behavioral programs, nicotine replacement, and pharmacological interventions (i.e., prescription stop smoking medications (SSMs)). The US Preventive Services Task Force guidelines recommend that clinicians screen for tobacco use and offer smokers cessation assistance. Visits to healthcare providers present a one-on-one opportunity for both prompting smokers to think about quitting and influencing quit attempts. However, many smokers do not utilize these evidence-based interventions. The combination of nicotine addiction, lack of access to evidence-based treatments, and increased access to lower cost cigarettes may function to promote continued smoking.

Most smokers desire to quit and have attempted to quit. According to the 2010 National Health Interview Survey, 69% of adult smokers desired to quit smoking, with 52% of current and former smokers having attempted to quit within the past year, and 6% of current and former smokers remaining abstinent for at least 6 months within the past year. The ITC US Surveys captured information on smoking cessation, perceptions of quitting, quit attempts, smoking abstinence, and nicotine replacement and SSM use in order to assess trends over the survey period.

Quit Attempts

As shown in Figure 14, 35% to 46% of smokers reported making at least one quit attempt since the previous survey. Over 75% of current and former smokers reported having tried to quit at least once in their lifetime at their initial survey. The median number of times having tried to quit within one’s lifetime was 2 to 3 across all survey waves. A total of 96% of the smokers who participated from 2002 to 2010-11 reported having made at least one quit attempt in their lifetime.

![Figure 14. Percentage of current and former smokers who tried to quit since the previous survey wave, by wave](image-url)

**Figure 14. Percentage of current and former smokers who tried to quit since the previous survey wave, by wave**
**Quit Intentions**

Figure 15 shows the data on quit intentions measured among smokers who were surveyed at each survey wave. Between 34% to 42% of current daily smokers responded that they planned to quit sometime in the future beyond 6 months, while 22% to 30% were not planning on quitting. Fewer planned to quit within one to 6 months (20% to 27%) and the fewest indicated that they were going to quit within the next month (7% to 13%). Among those who planned to quit within the next month, 28% to 44% of current smokers had a firm quit date.

**Smoking Abstinence**

In this Report, smoking abstinence was defined in two ways: 1) self-reported continuous abstinence from cigarettes for at least 1 month prior to the survey interview; and 2) self-reported continuous abstinence from cigarettes for at least 6 months prior to the survey interview. Figure 16 shows the percentage of smokers who reported abstinence from cigarettes for 1 month and 6 months prior to the follow-up interview. The prevalence of quitting, whether measured as abstinence for 1 month or longer, or 6 months or longer, was low and relatively stable across all survey waves. The prevalence of quitting for 1 month or longer ranged from a low of 7% to a high of 9%, with an average of 9% across all survey waves. The prevalence of quitting for 6 months or longer ranged from a low of 3% to a high of 6%, with an average of 4% across all survey waves. Because those lost to follow-up would be expected to be less likely to have refrained from smoking, these estimates may overestimate the actual smoking abstinence rates in the population.

**Reasons for Making a Quit Attempt**

Figure 17 shows reasons for quitting reported by current and former smokers. The top four reasons given for thinking about quitting included concern for personal health, trying to set an example for children, the price of cigarettes, and worry about the effects of smoking on non-smokers.
Figure 16. Percentage of smokers who quit since the previous survey wave, by wave*

<table>
<thead>
<tr>
<th>Wave 3</th>
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<td>(n=1162)</td>
<td>(n=1137)</td>
<td>(n=1129)</td>
<td>(n=1199)</td>
<td>(n=966)</td>
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</table>

* Adjusted for time-in-sample, wave, sex, and age.

Figure 17. Various reasons that led smokers to thinking about quitting “somewhat” or “very much” in the last 6 months, by wave
Methods Used to Stop Smoking

Smokers who reported making a quit attempt in the past year were asked what methods they had used to try to stop smoking. Stop smoking methods were classified as either assisted or unassisted methods. Assisted methods include using SSMs, getting help from a health professional, attending a stop smoking clinic, going to a hypnotist, or calling a telephone helpline. Unassisted methods include doing things on their own to stop smoking, such as switching brands, trying to reduce the amount smoked daily, or trying to stop “cold turkey.” Figure 18 shows the percentage of smokers who reported using an assisted or unassisted method to stop smoking. Assisted quit methods increased over time, due largely to the increased use of medications to stop smoking.

Figure 18. Prevalence of assisted quit attempts, by wave*

![Graph showing prevalence of assisted quit attempts by wave.](image)

*The bars represent the prevalence of assisted quit attempts among those who attempted to quit (N=2040), while the dashed lines represent the prevalence of use/receipt of assistance among all respondents (N=3667).

Figure 19 shows trends in the use of SSMs among all smokers who reported making a quit attempt from 2003 to 2010-11. Up until 2007 (Wave 6), nicotine patches were the most commonly reported SSMs used by smokers. Use of any SSMs among smokers trying to quit peaked at 48% following the introduction of varenicline (Chantix™) to the marketplace in 2007. The introduction of Chantix™ did not appear to have a dramatic impact on use of other SSMs, although there were slight decreases in the use of nicotine patch and bupropion. After the FDA issued a “black box” warning on Chantix™, its use declined, which appears to have been partially compensated by increases in both the use of nicotine patch and bupropion.

* A black box warning is an alert or warning placed within the packaging for prescription drugs that have a significant risk of life-threatening adverse effects according to scientific studies.
Figure 19. Prevalence of any SSM use among smokers who were attempting to quit in the past year, by wave

Note: The lighter shaded sections of bars indicate more than one type of medication used.
* Battery of items used to assess SSM use during this survey wave differed somewhat from the battery of items used during the previous survey wave.
Starting in 2006-07 (Wave 5), smokers who reported using nicotine replacement therapy or some other SSM (e.g., buproprion or varenicline) were asked if they were using these medications to quit smoking, to cope with wanting to smoke in situations where that was not possible (e.g., at a smoke-free workplace or public place), to cut back on their smoking, or for some other reason. Figure 20 shows that among those having used nicotine replacement or SSMs within the past 12 months, most used it to try to stop smoking (>70%), while the fewest used it for some other, unidentified, reason. However, “other” was reported increasingly over time (7% to 42%), with a much larger increase between 2008-09 and 2010-11 (17% to 42%). The prevalence of reporting “coping with non-smoking situations” as a reason rose from 22% in 2006-07 to 54% in 2010-11), while the prevalence reporting “to reduce smoking” as a reason rose from 16% to 71%.

**Figure 20. Smokers’ reasons for using nicotine replacement/SSMs within the past 12 months, by wave***

![](figure20.png)

* Restricted to most recent waves where any SSM use was assessed ‘within the past 12 months’.

**Advice from a Health Professional**

Over 60% of current smokers reported that they visited a doctor or healthcare professional in the past year. The proportion of smokers who visited a health professional and received advice to quit smoking was fairly steady, ranging between 64% and 73% (see Figure 21). However, among those who received advice to quit, less than one-third (9% to 30%) received a referral or a prescription for SSMs.
Figure 21. Percentage of current smokers who received quit advice from a health professional in the past 6 or 12 months, by wave

KNOWLEDGE, BELIEFS, AND ATTITUDES

Since the 1964 Surgeon General’s Report linking tobacco use to cancer, the US public has received increased information on the hazards due to smoking. The ITC US Surveys asked questions on knowledge related to the harms of smoking and assessed smokers’ beliefs on personal health effects of their smoking. The surveys also assessed their attitudes about smoking and regulation of the tobacco industry.

Beliefs about the Diseases and Health Harms Caused by Smoking

From 2002 to 2010-11, most of the survey respondents expressed the belief that smoking caused lung cancer (>90%), heart disease (>85%), and stroke (>70%); and that secondhand smoke could cause lung cancer in non-smokers (>65%) (see Figure 22). However, only 34% to 40% of current and former smokers correctly responded that smoking causes impotence.

Knowledge of the Chemicals in Cigarette Smoke

The ITC US Survey asked participants about their knowledge of constituents in cigarette smoke. As shown in Figure 23, approximately 9 in 10 respondents were aware that carbon monoxide was a component of tobacco smoke, but a smaller percentage were aware that cyanide and arsenic were also present in tobacco smoke.
Figure 22. Percentage of current and former smokers who believe that smoking causes various health effects, by wave

Figure 23. Percentage of current and former smokers who are aware that tobacco smoke contains cyanide, arsenic, and carbon monoxide, by wave
Respondents were asked a series of questions about their health status and beliefs about how smoking either has, or will harm their health. As shown in Figure 24, over 65% of current smokers ranked their health as “good,” “very good,” or “excellent.” However, approximately 40% indicated that smoking has already damaged their health “a fair amount” or “a great deal.” About one-quarter of respondents indicated that they are “very much” worried that smoking will damage their health and lower their quality of life in the future.

**Figure 24.** Smokers’ perceptions of health status and smoking-related damage to health, by wave

Most respondents also believed there was a benefit to stopping smoking. When asked “How much do you think you would benefit your health if you were to quit smoking permanently in the next 6 months,” two-thirds responded “very much.” As shown in Figure 25, nearly 9 in 10 respondents expressed regret about having ever started to smoke.

**Figure 25.** Percentage of smokers who “agree” or “strongly agree” that if they had to do it over again, they would not have started smoking, by wave
**Attitudes about Smoking**

As shown in Figure 26, nearly half of the respondents expressed a negative opinion of smoking in general (a measure of general attitude towards smoking). Most respondents (>80%) expressed the view that society disapproves of smoking (see Figure 27).

As shown in Figure 28, 41% to 47% of current smokers expressed the belief that tobacco companies should take responsibility for the harm caused by smoking, and 46% to 53% believed that the government should do more to tackle the harm caused by smoking.
The Wave 7 and 8 Surveys asked participants about a number of possible future tobacco control initiatives including restricting where cigarettes could be purchased, banning flavored cigarettes, and banning all tobacco products. In addition, support for governments suing tobacco companies to recover health care costs associated with smoking was also assessed. As shown in Figure 29, between 45% and 50% of current smokers supported a ban on flavored cigarettes and about 40% supported governments suing tobacco companies to recover healthcare costs. Approximately 33% of smokers supported additional restrictions on where cigarettes could be sold, while about 20% of smokers supported a complete ban on the sale of all tobacco products. Over 70% of smokers supported having the government require that cigarette companies reduce the nicotine in cigarettes to make them less addictive.
SMOKE-FREE POLICIES

The prevalence of smoke-free policies in the workplace reported by smokers and smokers’ support for a complete ban on smoking in the workplace increased between 2002 and 2010-11. In 2002, 66% of employed smokers worked in workplaces where complete smoking bans are in place. This increased to 84% in 2010-11 (see Figure 30). In 2010-11, 15% of male smokers and 16% of female smokers noticed smoking in their workplace. ITC cross-country comparisons indicate that this level of observed smoking is comparable to countries such as Canada, Australia, and France where comprehensive workplace smoking bans are in place (see Figure 31). Smokers’ support for complete smoking bans in workplaces also increased from 38% in 2002 to 67% in 2010-11 (see Figure 32).

As the percentage of smokers who reported that their workplaces had complete bans on smoking increased from 66% in 2002 to 84% in 2010-11, smokers’ support for smoke-free workplaces also increased from 38% in 2002 to 67% in 2010-11.
Figure 31. Percentage of smokers‡ who noticed people smoking indoors at their workplace in the last month among those who are employed outside the home, by country

* Countries with complete smoking bans in hospitality venues and other workplaces in effect at time of survey.
† Brazil implemented a complete smoking ban in hospitality venues prior to the time of survey, however, regulations for implementation have not been defined at time of survey.
‡ Smokers refer to only cigarette users for all countries except Bangladesh, India, and Zambia where dual tobacco users (those tobacco users who reported smoking both cigarettes and bidis) and mixed tobacco users (those tobacco users who reported smoking both smoked tobacco and smokeless tobacco) were also included in the analysis.
As shown in Figure 33, the percentage of smokers who reported having a complete smoking ban in restaurants increased dramatically over the survey period from 18% in 2002 to 83% in 2010-11. In 2010-11, 11% of male smokers and 10% of female smokers who went to a restaurant in the last 6 months reported noticing smoking in restaurants during their last visit. ITC cross-country comparisons show that this is higher than in Ireland, Canada, Australia, France, the United Kingdom, and Scotland where smoking in restaurants has almost been eliminated (see Figure 34). Smokers’ support for smoke-free restaurants has more than doubled over the survey period from 27% of smokers in 2002 to 62% in 2010-11 (see Figure 35). By 2010-11, only 6% of participants believed that smoking should be allowed inside restaurants.
Figure 34. Percentage of smokers who noticed smoking in restaurants at last visit among those who visited a restaurant in the last 6 months, by country

* Countries with a complete smoking ban in restaurants in effect at time of survey.
† Brazil implemented a complete smoking ban in restaurants prior to the time of survey, however, regulations for implementation have not been defined at time of survey.
‡ ‘Smokers’ refer to only cigarette users for all countries except Bangladesh, India, and Zambia where dual tobacco users (those tobacco users who reported smoking both cigarettes and bidis) and mixed tobacco users (those tobacco users who reported smoking both smoked tobacco and smokeless tobacco) were also included in the analysis.
As shown in Figure 36, the percentage of participants reporting complete indoor smoking bans in local bars and pubs rose dramatically from 13% in 2002 to 68% in 2010-11. However, in 2010-11, the percentage of smokers who noticed smoking in bars at last visit in the last 6 months was considerably higher than many other low- and middle-income countries. Approximately one-third of US smokers (29% of males; 33% of females) noticed smoking in bars compared to Ireland, Canada, Australia, France, the United Kingdom, and Scotland where less than 10% of smokers noticed smoking (see Figure 37). As the prevalence of smoke-free bars increased, so did the percentage of smokers who supported smoke-free bars. Support for smoke-free bars increased three-fold from 9% in 2002 to 35% in 2010-11 (see Figure 38).

**Figure 36. Percentage of smokers who report having a complete smoking ban in bars and pubs, by wave**
Figure 37. Percentage of smokers* who noticed smoking in bars at last visit among those who visited a bar in the last 6 months, by country

* Countries with a complete smoking ban in bars in effect at time of survey.
† Brazil implemented a complete smoking ban in bars prior to the time of survey, however, regulations for implementation have not been defined at time of survey.
‡ ‘Smokers’ refer to only cigarette users for all countries: India and Zambia where dual tobacco users (those tobacco users who reported smoking both cigarettes and bidis) and mixed tobacco users (those tobacco users who reported smoking both smoked tobacco and smokeless tobacco) were also included in the analysis.
As shown in Figure 39, the percentage of participants indicating that smoking is never allowed anywhere within the home increased from 25% to 41% between 2002 and 2010-11. The percentage of smokers who reported that smoking was not allowed increased two-fold if the respondent reported that there were small children living in the home. Among the participants who smoked in the home, nearly half reported that they had plans for making their home smoke-free.
Although the US was one of the first countries in the world to mandate a health warning on cigarette packs, the warning messages on cigarette packs have not changed in the US since 1985. Currently the law requires one of four text-only rotating health warnings on the sides of cigarette packages and in cigarette advertisements.

As shown in Figure 40, between 2002 and 2010-11, less than one-third (24% to 33%) of current smokers noticed warning labels on cigarettes “often” or “very often” in the last month, with between 13% to 21% looking closely at them. Fewer than 15% of smokers attribute the health warnings with stopping them from smoking and indicate that the labels make them think about the health risks “a lot.” Approximately 5% of smokers across all survey waves indicated that the warnings labels made them “a lot” more likely to quit. An ITC study of changes in effectiveness in cigarette health warnings between 2002 and 2010-11 in Canada and the US concluded that warning label effectiveness has declined significantly over time in both countries. The study created a Warning Label Impact Index (WLII) by combining four measures of label effectiveness (all those in Figure 40 except “looked closely at labels”) and weighting each measure according to its impact on quit attempts. The study indicated that despite declines in effectiveness in both countries, Canada’s pictorial warnings on 50% of both sides of the pack were more effective than the US warnings throughout the study period. ITC cross-country comparisons indicate that a lower percentage of US smokers noticed the warnings “often” or “very often” compared to smokers in countries that had pictorial warnings on packs at the time of the most recent survey wave such as Canada, Australia, France, and the United Kingdom (see Figure 41).

**Figure 40. Impact of health warnings on smokers’ perceptions and behaviors in the last month, by wave**
Figure 41. Percentage of smokers' who “often” or “very often” noticed warning labels, by country

† Smokers refer to only cigarette users for all countries except Bangladesh, India, and Zambia where dual tobacco users (those tobacco users who reported smoking both cigarettes and bidis) and mixed tobacco users (those tobacco users who reported smoking both smoked tobacco and smokeless tobacco) were also included in the analysis.

* Countries with pictorial warnings at time of survey.

‡ In India and Zambia, there was an extra filter that asks “As far as you know, do any smoked tobacco/cigarette packages in India/Zambia have warning labels?”. If the respondent answered “no” then noticing warning labels was set to ‘never’. 
As shown in Figure 42, there was increasing support for requiring more health information on cigarette packs which coincides with the public discussion about the FDA's proposal to add new graphic health warnings on cigarette packs. Unfortunately, the FDA's proposed graphic warning labels scheduled to appear on cigarette packs in 2012 were delayed by a court challenge brought by several cigarette manufacturers. A recent study using ITC data in part that corrected for flaws in the FDA analysis found that had the US adopted Canadian-style graphic health warnings in 2012 as planned, the number of adult smokers in the US would have been reduced by an estimated 5.3-8.6 million (see Textbox).  

Pictorial Warnings Decreased Smoking Rates in Canada

A 2013 study comparing smoking rates in Canada for a 9-year period before and a 9-year period after the implementation of pictorial warnings in 2001 with US smoking rates over the same two 9-year periods provides strong evidence that pictorial warnings are effective in decreasing overall smoking rates. The findings show that the Round 1 pictorial warnings that were introduced in Canada in 2001 led to a decrease of between 12-20% in smoking rates, corresponding to a decrease in smoking rates of between 2.7 and 4.8 percentage points. The reduction was greater than the difference in smoking rates during the same two 9-year periods in the US where there was no change in the warnings. The analyses took into account the price of cigarettes using ITC Wave 1 to 7 data on actual prices paid by smokers.

As shown in Figure 42, there was increasing support for requiring more health information on cigarette packs which coincides with the public discussion about the FDA's proposal to add new graphic health warnings on cigarette packs. Unfortunately, the FDA's proposed graphic warning labels scheduled to appear on cigarette packs in 2012 were delayed by a court challenge brought by several cigarette manufacturers. A recent study using ITC data in part that corrected for flaws in the FDA analysis found that had the US adopted Canadian-style graphic health warnings in 2012 as planned, the number of adult smokers in the US would have been reduced by an estimated 5.3-8.6 million (see Textbox).  

![Example of one of Canada’s 16 rotating pictorial health warnings](Image)

![Figure 42. Percentage of current and former smokers who think there should be more health information on cigarette packs, by wave](Chart)
TOBACCO PRODUCT MARKETING

The Family Smoking Prevention and Tobacco Control Act of 2009 banned tobacco company sponsorship of sports and entertainment events, non-tobacco merchandise bearing tobacco product logos, and free samples of products. The ITC US Surveys measured the frequency with which smokers were aware of advertising, promotions, and sponsorships and also their views on industry advertising in order to determine changing trends. As shown in Figure 43, exposure to tobacco product marketing declined between 2002 and 2010-11. Respondents were most likely to notice cigarette promotions in-store (77% to 89%). There was an overall decline in the percentage of participants noticing smoking promotions via magazines/newspapers (59% to 32%) and on billboards (49% to 35%).

Figure 43. Percentage of current smokers who noticed cigarettes or tobacco products being advertised in various venues and media in the last 6 months, by wave
The Master Settlement Agreement placed limits on what cigarette companies could do in the way of sports promotions and event sponsorships. As Figure 44 illustrates, respondents became less likely to report exposure to cigarette brand promotions at sporting and art events.

As Figure 45 indicates, the majority of respondents were exposed to special price promotions for cigarettes. Over 70% of current smokers noticed special price offers. Approximately 48% to 66% utilized these special offers over the eight waves, although there was a statistically significant decline in use of price promotions over time.

In 2010-11 more than three-quarters (77%) of current smokers noticed special price offers for cigarettes in the last 6 months and half (50%) of smokers used special price offers.
As shown in Figure 46, cigarette smokers in the US support stronger regulations to limit tobacco marketing. In 2010-11, two-thirds of participants “agreed” or “strongly agreed” that tobacco companies should not be allowed to advertise as they please.
For decades, tobacco companies have used package design as a key component in their marketing efforts. In December 2012, Australia became the first country to require that smoked tobacco products (e.g., cigarettes and cigars) be sold in “plain packaging” — that is, without logos, colours, and package designs, but with the pictorial warnings still present (see image on the right). The tobacco industry first challenged Australia’s plain packaging law in the Australian court system, but lost in Australia's High Court. As of February 2014, Philip Morris Asia is challenging the plain packaging law through a bilateral investment treaty between Hong Kong and Australia, and several countries are in the process of mounting a challenge of the law at the World Trade Organization. When asked about plain packaging for cigarettes in Waves 6 to 8, 25% to 31% of smokers supported requiring plain packs (see Figure 47).

**Figure 47. Percentage of smokers who “agree” or “strongly agree” that cigarettes should be sold in plain packages, by wave**

ANTI-TOBACCO COMMUNICATIONS

The percentage of respondents reporting noticing any anti-smoking information in the previous 6 months “often” or “very often” declined from 46% in Wave 1 to 27% by Wave 8. Consistent with this finding was an overall decline in the percentage of current and former smokers reporting having heard news stories about smoking between 2002 and 2010-11 (20% to 9%).

As shown in Figure 48, most smokers who reported noticing any anti-smoking information did so on television or in magazines and newspapers. However, the percentage of smokers who noticed anti-smoking information via television, posters, radio, and newspapers/magazines decreased between 2002 and 2010-11. There was a corresponding increase in the percentage of current and former smokers who reported noticing anti-smoking information on cigarette packs, the internet, and inside shops.
Figure 48. Percentage of current and former smokers who noticed anti-smoking information in various venues in the last 6 months, by wave
TOBACCO AFFORDABILITY AND REACTIONS TO HIGHER CIGARETTE PRICES

The most direct way to reduce cigarette use is to increase the price of purchase, thereby making cigarettes less affordable. As a percentage of household income, cigarettes were less affordable in 2010-11 compared to 2002. However, this change is due almost entirely to the higher price of cigarettes in 2010-11. As shown in Figure 49, the average inflation adjusted price per pack of cigarettes paid by smokers was relatively unchanged between 2002 and 2008-09. Between Waves 7 and 8, the average price of a package of cigarettes increased by 20% corresponding to the $0.61 Federal excise tax on cigarettes.

Figure 49. Average price paid per pack, by wave

Figure 50 shows that one way smokers adjusted to higher cigarette prices was to switch to less expensive discount brands. Between the Wave 7 and 8 Surveys, the percentage of smokers reporting the use of a discount brand cigarette increased from 27% to 31%.

As a percentage of household income, cigarettes were less affordable in 2010-11 compared to 2002. However, this change is due almost entirely to the higher price of cigarettes in 2010-11.
Smokers are concerned about the amount of money they spend on cigarettes. For example, over 60% of smokers reported that they thought about money spent on smoking “often” or “very often.” Approximately 72% to 80% of participants named “price” as a reason for quitting in Wave 1 through Wave 8. In the Wave 1 to Wave 5 Surveys (i.e., 2002 to 2006-07) smokers were asked: ‘Have you spent money on cigarettes that you knew would be better spent on household essentials like food?’ A quarter to one-third of smokers responded “yes” from Wave 1 to Wave 5 (i.e., 2002 to 2006-07) (see Figure 51).
In the Wave 4 Survey (i.e., 2005-06), smokers were asked how they might respond if the price of cigarettes were increased by 50% over what they were currently paying for a pack of cigarettes. Respondents were allowed to give multiple responses; 80% of smokers reported that they would respond by trying to stop smoking, 69% said they would look for cheaper places to purchase their cigarettes, 46% said they would try to buy cigarettes in bulk to lower costs, while 37% said they would buy smaller quantities to lower their purchase cost.

Figures 52 and 53 illustrate trends in the quantity and location of cigarettes purchased by respondents. Between 2002 and 2010-11, the reported purchase of cigarette cartons and the use of coupons declined, while multi-pack purchases increased. Compared with those purchasing by single packs, those who purchased by multi-packs and cartons saved an average of $0.53 and $1.63, respectively (see Figure 54). Purchases in grocery and discount stores declined between 2002 and 2010-11, while purchases in tobacco only outlets increased slightly. Thus, it appears that as cigarette prices have gone up, more smokers have begun purchasing via multi-packs instead of cartons. As carton sales have declined, purchases from grocery and discount stores have also declined, while an increasing, although still relatively small percentage of smokers report moving to low tax sources as their usual purchase location for their cigarettes.
Figure 53. Locations of reported last cigarette purchase by smokers, by wave

- Convenience store, gas station, newsstand, milkbar
- Grocery, discount stores
- Tobacco outlets, smoke shops
- Tax avoidance locations
- Other

Wave 1: Oct - Dec 02
- Convenience store, gas station, newsstand, milkbar: 20%
- Grocery, discount stores: 12%
- Tobacco outlets, smoke shops: 4%
- Tax avoidance locations: 7%
- Other: 7%

Wave 2: May - Sep 03
- Convenience store, gas station, newsstand, milkbar: 18%
- Grocery, discount stores: 12%
- Tobacco outlets, smoke shops: 5%
- Tax avoidance locations: 7%
- Other: 5%

Wave 3: Jun - Dec 04
- Convenience store, gas station, newsstand, milkbar: 15%
- Grocery, discount stores: 15%
- Tobacco outlets, smoke shops: 5%
- Tax avoidance locations: 6%
- Other: 6%

Wave 4: Oct 05 - Jan 06
- Convenience store, gas station, newsstand, milkbar: 16%
- Grocery, discount stores: 16%
- Tobacco outlets, smoke shops: 4%
- Tax avoidance locations: 6%
- Other: 6%
Compared with those purchasing by single packs, those who purchased by multi-packs and cartons saved an average of $0.53 and $1.63, respectively.
CONCLUSIONS

The ITC Wave 1 to 8 Surveys conducted in the US between 2002 and 2010-11 took place during the implementation of activities mandated as a result of the Master Settlement Agreement. The activities restricted additional elements of tobacco product marketing (i.e., billboards, print advertising, sponsorships, and sampling) while also providing resources to support a nationwide paid anti-smoking campaign directed at youth (i.e., the truth® campaign). The period between 2002 and 2010-11 also included a time when many states and localities adopted comprehensive clean indoor air laws, raised taxes on cigarettes, and sponsored dedicated tobacco control initiatives. Nationally, 2002 to 2010-11 also included a period which saw the creation of a national network of telephone helplines, aggressive marketing of alternative nicotine delivery products and electronic cigarettes (e-cigarettes), and in 2009 a federal excise tax hike of $0.61 per pack and the beginning of the FDA’s authority to regulate tobacco products.

After the tragedy of 9-11, governmental support for tobacco control was reduced, and the media's interest in the tobacco issue began to fade after the cigarette industry acknowledged that smoking was harmful in the late 1990’s. Results from the ITC US Project show that between 2002 and 2010-11, smokers reported seeing fewer and fewer anti-tobacco news stories. Thus, despite the enormous and continuing health and economic burden of tobacco, its relevance as a societal problem appears to have decreased over the last decade.

The data reveal that smokers are motivated to quit and are trying to stop smoking, but most relapsed back to smoking, unable to sustain abstinence for an extended time. Assessed over the entire study period, virtually all smokers (>95%) reported having made at least one quit attempt. The use of medications to help smokers quit did increase, although a large percentage of smokers still make quit attempts without any form of assistance. On a positive note, the average number of cigarettes consumed daily by smokers has decreased, although this trend was offset by increased use of other tobacco products, especially cigars. Perhaps the most interesting recent development has been the rapid growth of e-cigarettes, reportedly used by 15% of smokers in our 2010-11 Survey.

Smokers in the US appear to have accepted and adjusted to clean indoor air laws at work. However, the implementation of smoke-free laws in restaurants and bars in the US is lagging behind other countries such as Canada, Australia, and France where smoking has nearly been eliminated in these venues. In addition, most current smokers still permit smoking in their homes. Smokers indicated that they would be motivated to try to stop smoking if the prices of cigarettes were dramatically increased. Unfortunately, the inflation-adjusted price of a package of cigarettes remained stable throughout most of the study period, owing in large measure to the success of the cigarette industry in nullifying tax hikes by offering price discounts and less expensive cigarette brands. Following the 2009 Federal excise tax increase, many smokers did report paying more to purchase their cigarettes, but we also observed an increase in the use of tax avoidance strategies and switching to discount brand cigarettes.
Not surprisingly, the majority of adult smokers believed that smoking is a cause of cancer and heart disease. However, fewer smokers were aware of the many dangerous chemicals found in cigarette smoke, and various health harms that are not described on cigarette pack warnings such as blindness and impotence.

In summary, the past decade has been a struggle for adult smokers in the US. The focus and attention on the tobacco problem has decreased even though smoking continues its status as the number one killer in America. Despite increased quit attempts made in response to exposure to clean indoor air policies, higher cigarette taxes, and anti-smoking messages, the average annual quit rate among adult smokers in the US is low and has not changed much over the past decade. If the Healthy People 2020 objective of reducing cigarette use to less than 12% by 2020 is to be achieved, it will be necessary to adopt more aggressive tobacco control policies, regulations, treatment approaches in line with what is recommended in the World Health Organization's Framework Convention on Tobacco Control.

**RECOMMENDATIONS**

The 50th anniversary Surgeon General’s report released earlier this year appropriately documents and celebrates the tremendous public health success of the “War on Tobacco.” What has been accomplished in the last 50 years is nothing short of astounding. Since 1964 the adult smoking rate has been cut by 55%, from 42% in 1965 to about 18% in 2012. Per capita consumption of cigarettes has fallen 72%. The smoking rate among high school seniors has fallen from over 36% in 1997 to 16% last year. In 1964 smoking was permitted virtually everywhere. Today, about half the US population is protected by laws requiring smoke-free restaurants, bars, and other workplaces. This fundamental change has had a profound impact on the health of Americans. Lung cancer rates are falling after climbing for decades and reductions in smoking have also contributed to the dramatic drop in heart disease and respiratory disease.

And yet, today tobacco still kills over 400,000 Americans every year. 44 million adults and 3.6 million children still smoke in our country. Unlike so many problems we face in society today, we know how to end the tobacco epidemic. We have the tools. We know what policies and programs work. The only remaining question is now, 50 years later, whether our government officials will implement the kind of strong public health policies that the public supports and that the tobacco company executives were so afraid of 50 years ago.

Below are 12 recommendations that if implemented today would dramatically reduce tobacco use in the US and allow us a chance to meet the public goal of reducing smoking prevalence below 12% by 2020.
The first recommendation urges the US to ratify the WHO Framework Convention on Tobacco Control (WHO FCTC). The FCTC provides an evidence-based roadmap to guide the implementation of effective tobacco control policies and obligates Parties to undertake measures to reduce the prevalence of tobacco use and exposure to tobacco smoke. Since the FCTC was adopted by the World Health Assembly in 2003, more than 175 countries around the world have ratified the Treaty. The 11 recommendations that follow this overarching recommendation are organized according to the major policy domains of the FCTC.

**WHO Framework Convention on Tobacco Control**

1. Ratify and aggressively implement the WHO Framework Convention on Tobacco Control.

**Protection of public health policies with respect to tobacco control from the interests of the tobacco industry (Article 5.3)**

2. Support Malaysia's proposal to “carve out” tobacco from the Trans Pacific Partnership (TPP) Agreement to prevent the tobacco companies from using the TPP to fight tobacco control measures here and around the world.

**Price and tax measures (Article 6)**

3. Raise the federal tax on cigarettes to a level to recoup the health care costs from smoking.

**Protection from exposure to tobacco smoke (Article 8)**

4. All indoor public areas including workplaces, restaurants, bars, and casinos should be 100% smoke-free.

**Regulation of tobacco products (Articles 9 and 10)**

5. Prohibit the use of additives in all combustible tobacco products.

**Packaging and labeling (Article 11)**

6. Require large graphic warning labels on all combustible tobacco products.
Packaging and labeling (Article 11)/Tobacco advertising, promotion, and sponsorship (Article 13)

7. Standardize all cigarettes so they are not allowed to vary by weight, length, circumference, and color of the wrapping and tipping paper.
8. Prohibit cigarette brand line extensions.

Public education and awareness (Article 12)

9. Fully fund a paid mass media campaign on the dangers of smoking until the national smoking rate drops below 10%.

Tobacco advertising, promotion, and sponsorship (Article 13)

10. Ban the sale of tobacco products in all licensed pharmacies.

Tobacco dependence and cessation (Article 14)

11. Increase consumer access to affordable, low harm, consumer acceptable nicotine products as an alternative to combustible tobacco.

Sales to minors (Article 16)

12. Raise the minimum purchase age of tobacco products to 21 years.
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The International Tobacco Control Policy Evaluation Project

The ITC Project
Evaluating the Impact of FCTC Policies in...

20+ countries • 50% of the world’s population
60% of the world’s smokers • 70% of the world’s tobacco users

Australia
Bangladesh
Bhutan
Brazil
Canada
China (Mainland)
France
Germany
India
Ireland
Kenya
Malaysia
Mauritius
Mexico
Netherlands
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