Cardiovascular harms from tobacco use and secondhand smoke

GLOBAL GAPS IN AWARENESS AND IMPLICATIONS FOR ACTION

APRIL 2012

WORLD HEART FEDERATION®
World Health Organization
UNIVERSITY OF WATERLOO
itc
International Tobacco Control Policy Evaluation Project

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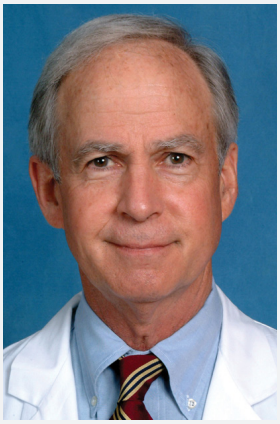

Message

For those of us who specialize in the heart, it's no news that tobacco is a major threat to cardiovascular health: we know that enabling our patients to stop smoking and avoid exposure to secondhand smoke improves their cardiovascular outcomes as much as, or more than, any other single medical treatment that we can offer them. But this knowledge can only have an impact on heart health when it has been heard by the patients, communities, and policymakers who can act upon it to improve heart health.

This report serves as a mirror for our communication on tobacco and cardiovascular disease. It indicates where we have succeeded, where there is still work to do, and how we can go about doing the work needed to change the public perceptions that mute our influence on our patients' behavior and on the policies that can improve health at the population level.

Research findings reported here reveal important discrepancies between popular perceptions and the reality of cardiovascular risk associated with tobacco use and exposure. In China, for example, where the risk of stroke is so high, the large majority of smokers are unaware of the link between tobacco use and stroke. Globally, cardiovascular disease accounts for 18 times more of the deaths caused by secondhand smoke than lung cancer does, yet nearly everywhere in the world far more people realize that secondhand smoke causes cancer than know that it causes heart attacks. Findings like these are a call to action for all organizations and individuals working to better heart health. Information on links between tobacco use or exposure on heart attacks, stroke, peripheral vascular disease and impotence is still news for many populations around the world. This gives it the power of novelty. Heart disease is by far the most widespread of the fatal health effects of tobacco use and exposure, and the one that most people face in their own lives. The immediacy of many cardiovascular effects of tobacco (as well as of the benefits of measures like cessation and smokefree policy) adds to these other factors to invest evidence on cardiovascular risks of tobacco with a unique power to catch attention, stimulate reflection, and motivate action.

The World Heart Federation has made *advancing a tobacco-free world* a core pillar of its 2010-2015 institutional strategy, and recognizes the Framework Convention on Tobacco Control (FCTC) as a key achievement in a decade of extraordinary progress improving heart health. About two years ago I spoke at a cardiology conference in Montevideo and had the chance to see FCTC outcomes up close: not only has Uruguay shown that comprehensive tobacco control was feasible in the "South", but it has registered one of the steepest declines in smoking ever recorded, showing that the FCTC roadmap for strong tobacco control works. As some 170 nations who are Parties to the FCTC were preparing to meet just an hour away in Punta del Este, South American Cardiology Societies banded together to call on the governments of the world to support decisions that would strengthen global tobacco control and defend Uruguay's best practice policy from legal attacks by the tobacco industry. For the cardiologists who devoted their time to driving Uruguay's progress in tobacco control, the outcomes have been documented: hospital admissions for myocardial infarctions have declined by more than 20% since Uruguay implemented its comprehensive smokefree law – echoing findings in other locations in Europe and North America.

The Political Declaration of the UN High-level Meeting on NCDs held last year puts lowering prevalence of tobacco use and FCTC implementation high on the agenda of health advocacy for the coming decade. Through our pivotal position in NCD alliances, our membership has new mechanisms for supporting strong tobacco control at national and international levels. I hope this report will help our network of heart health experts and champions to develop an even stronger voice in support of tobacco control, leveraging the unique power of our expertise to help reduce the impact of tobacco on global health, development, and social inequity.

Sidney C. Smith, Jr. MD FACC, FAHA, FESC
Professor of Medicine, University of North Carolina
President, World Heart Federation

Message

Tobacco smoke—from smoking and secondhand smoke—endangers the health of 900 million people in China. If we ban smoking in public places and actively promote quitting, within a year we could expect a dramatic reduction in heart attacks. If the Chinese people and government really realized how big and how close this threat is, they would be much more committed to protecting themselves and their families.

Every day in our practice we cardiologists confront people who do not understand how their smoking endangers their heart health. Although the risk of stroke in China is high, research shows that fully two-thirds of all Chinese smokers do not realize that they are increasing their risk of stroke. Secondhand smoke exposure remains very common in China, but only half of all Chinese smokers understand that their smoke could cause a heart attack in those around them.

We are using cardiology events and World Heart Day to raise public awareness on tobacco and heart health. Nearly a third of all Chinese cardiologists still smoke, so we encourage them to quit and ensure that their units are smoke free. We work closely with the Chinese Association on Tobacco Control to help advance tobacco control in China. This report gives us evidence to use as we continue our struggle to reduce the enormous damage that tobacco causes in the cardiovascular system.

Dayi Hu, MD FACC, FESC
Chief, Heart Center, People's Hospital of Peking University
President, Chinese Society of Cardiology (CSC)

Dayi Hu

Message

This important report is nothing less than a wake-up call to the cardiovascular community across the globe.

It reminds us that smoking, whether active or passive, is a major cause of heart, stroke and blood vessel disease, accounting for around 10% of all cardiovascular deaths.

It also reminds us that the damage done by secondhand smoke – more than 400,000 adult deaths a year – is almost entirely cardiovascular, with 87% of these deaths attributed to cardiovascular disease.

These statistics are disturbing. But far more disturbing is the fact that vast numbers of smokers across the globe are ignorant about the impact smoking has on the heart.

Almost one in two Chinese smokers are unaware or don't believe that smoking causes heart disease and a similar number of Indian smokers don't know, or don't believe, smoking causes stroke.

There are other wake-up calls. We know that brief counselling by doctors can increase a smoker's chance of quitting. But in some countries, less than 10% of medical students receive formal training in smoking cessation. This must change.

This report is not only a wake-up call. It's also a call to action.

If we are to fulfil our goal of cutting death and suffering caused by cardiovascular disease, we must also re-double our efforts to take on the tobacco companies and complacent governments and cut the carnage caused by smoking.

Dr. Lyn Roberts, AM
Immediate Past Vice President, World Heart Federation
CEO, National Heart Foundation of Australia

Message

Few reports provide as clear a picture of the urgent need for action as this report. Even while tobacco use is declining in developed nations, tobacco use continues to grow in low- and middle-income countries. China and India already have over 40% of the world's tobacco users and account for two million of the more than five million deaths caused by tobacco annually.

As long as one-half of all Chinese tobacco users and one-third of Indian tobacco users are unaware that smoking causes heart disease and an even greater number don't know that smoking causes stroke, this trend will not be reversed.

Experience has demonstrated that it is not enough for people to have a general awareness that tobacco use is hazardous unless they realize how dangerous tobacco use is and the nature and extent of their own personal risk; and that does not occur unless they possess the type of disease specific information that this report shows conclusively is currently missing.

It should also not be a surprise that the greatest gaps in knowledge exist in countries that have not adopted the scientifically proven population-based solutions called for by the Framework Convention on Tobacco Control, such as strong graphic warning labels or sustained comprehensive public education campaigns, including mass media. While it is vital that physicians do more to educate their patients, given the magnitude of the problem and the number of people at risk, this is a problem that will be overcome only if physicians and health care professionals demand that these population-based solutions be implemented.

Matthew L. Myers
President, Campaign for Tobacco-Free Kids

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Executive Summary

This report brings together data from two ongoing major global tobacco research and surveillance studies – the International Tobacco Control Policy Evaluation Project (the ITC Project) and the Global Tobacco Surveillance System (GTSS) – to examine people's awareness of the cardiovascular risks of tobacco use, and secondhand smoke exposure. The World Heart Federation led this initiative in pursuit of its commitment to help people achieve longer and better lives through prevention and control of heart disease and stroke, with a focus on low- and middle-income countries.

Cardiovascular disease is the world's leading cause of death, killing over 17 million people a year, with nearly 80% of these deaths occurring in low- and middle-income countries. Tobacco use and secondhand smoke exposure are major causes of cardiovascular disease, contributing to approximately 10% of all cardiovascular deaths globally.

Despite the known harms of tobacco to cardiovascular health, this report found that there are large gaps in smokers' knowledge of the cardiovascular disease risks of tobacco use — and in many countries, the knowledge gap is substantial.

- In **China**, about **half** of smokers do NOT know that smoking causes heart disease.
- In **India** and **Viet Nam**, **more than one-third** of smokers do NOT know smoking causes heart disease.
- In **China**, **more than two-thirds** of smokers do NOT know that smoking causes stroke.
- In **India**, **more than half** of smokers do NOT know that smoking causes stroke.
- In **Uruguay**, **South Korea**, and **Poland almost half** of smokers do NOT know that smoking causes stroke.

The implementation of comprehensive smoke-free laws in all indoor public places and workplaces significantly lowers hospital admissions for heart attacks. Making sure people understand the risks of secondhand smoke and that smoke-free laws can protect people from harm is important for the public support of these laws and their successful implementation. Across the countries surveyed, awareness of the risks of secondhand smoke exposure to cardiovascular health is alarmingly low, even in areas with relatively high levels of awareness about the cardiovascular effects of tobacco use. For example:

- In **Viet Nam** and **China**, **more than half** of smokers do NOT know that secondhand smoke causes heart disease.
- In high income countries such as **Canada**, **United Kingdom**, **United States**, and **Australia**, **almost half** of smokers do not recognize how their smoking can endanger the heart health of those who breathe secondhand smoke.

Quitting smoking greatly reduces the risk of cardiovascular disease, and research demonstrates that even brief counselling by a health professional can increase a smoker's chance of quitting. However, surveys of medical students reveal that training in cessation counselling is rarely included in the medical school curriculum.

- Across **17 countries** surveyed, **more than three-quarters** of students do NOT receive training in smoking cessation counselling.
- The majority of smokers from the countries surveyed **did NOT receive advice to quit when they visited a health professional**; Less than 10% of smokers in the **Netherlands** to **just over half** of smokers in the **United States** reported receiving advice to quit smoking the last time they visited a health professional.

Preventing cardiovascular disease deaths caused by tobacco requires a comprehensive multi-sectorial approach, including the engagement of health systems. Heart health specialists and organizations have unique credibility and capability to convey vital information on the impact of tobacco use and secondhand smoke to their patients, to the public, and to policymakers. By integrating training in tobacco cessation counselling in medical school curricula, residencies, and fellowship programs, cardiologists and other health professionals will be better prepared to increase awareness of the risks of tobacco to cardiovascular health, to help smokers to quit, and to recognize the importance of advocating for stronger evidence-based tobacco control policies.

CLOSING THE GLOBAL GAPS IN AWARENESS OF THE CVD HARMS FROM TOBACCO:

RECOMMENDATIONS FOR ACTION

In clinical practice and medical training:

- Model **tobacco-free living** by not smoking and by helping patients and health professionals who do smoke to quit.
- Ensure that clear, comprehensive **smoke-free policies** are established and enforced in all health facilities, events, organizations, and training facilities (including universities and conferences).
- Implement programs and protocols to ensure that **cessation support and advice** on eliminating secondhand smoke exposure are provided systematically. Non-smokers should also be advised to eliminate secondhand smoke exposure.
- Support the inclusion of **tobacco cessation counselling** into the medical undergraduate and graduate curriculum.
- Increase the visibility of tobacco control issues at major clinical cardiology meetings, and include information about the harms of smoking and secondhand smoke on cardiovascular health in continuing education programs.

In the policy domain:

- Advocate for **comprehensive tobacco control policies** as outlined in the World Health Organization's Framework Convention on Tobacco Control (FCTC).
- Support the political declaration of the United Nations (UN) High-Level Meeting on Prevention and Control of Non-communicable Diseases held in New York in September 2011; this UN meeting marked the second time in history the UN General Assembly met on a health issue, and was held to set an agenda to deal with the socio-economic and developmental impacts of non-communicable diseases worldwide, including cardiovascular disease.
- Support the implementation and enforcement of **smoke-free laws** in all public places and workplaces, including offices, restaurants, bars, casinos, hospitals, and clinics to protect people from the harmful effects of secondhand smoke.
- Support the implementation of **pictorial health warning labels** on all tobacco products as a cost-effective method to inform smokers about the health risks of smoking. Promote the adoption of warning labels that inform people about the cardiovascular disease risks of tobacco and secondhand smoke according to the FCTC Guidelines for health warnings.
- Support the implementation of policies to provide **systematic access to smoking cessation advice and pharmacotherapy**.
- Promote the use of evidence-based **mass media campaigns** to raise awareness about the cardiovascular disease risks of tobacco use and secondhand smoke exposure.

INTRODUCTION

Cardiovascular Disease and Tobacco

Cardiovascular disease is the world's leading cause of death, killing over 17 million people a year, with nearly 80% of these deaths occurring in low- and middle-income countries.[1-3] Tobacco use and secondhand smoke exposure are major causes of cardiovascular disease.[4,5] Even smokers who smoke less than five cigarettes a day have been shown to be at a greater risk of developing coronary heart disease.[4] Tobacco use kills 5.1 million people per year.[6] Another 600,000 non-smokers die from secondhand smoke exposure.[7]

Tobacco use is responsible for 10% of all global deaths from cardiovascular diseases.[8] The percentage of smoking related deaths attributable to cardiovascular disease varies by region and gender. For example, in the year 2004, 15% of cardiovascular deaths were attributable to tobacco in Europe, 9% were attributable to tobacco in South-East Asia, and 6% were attributable to tobacco in the Western Pacific.[8] Differences in smoking related deaths attributable to cardiovascular disease are reflective of differences in smoking prevalence rates across countries and by gender.[3] Cardiovascular disease is by far the greatest cause of deaths from secondhand smoke; over 87% of the estimated 430,000 worldwide adult deaths caused by secondhand smoke in 2004 were attributed to ischaemic heart disease.[7]

87% of the estimated 430,000 worldwide adult deaths caused by secondhand smoke in 2004 were due to ischaemic heart disease.

Cardiovascular disease and smokeless tobacco

Smokeless tobacco use is increasing in many parts of the world, and in some countries (e.g., Bangladesh, India) it is more common than the use of smoked tobacco. The type of smokeless tobacco used and the prevalence of use vary across countries and regions. Examples of smokeless tobacco products include snus, snuff, chewing tobacco, and gutkha. Reviews of studies have found associations between smokeless tobacco use and fatal myocardial infarction and stroke.[10-12] One study estimated that smokeless tobacco users are 1.13 times more likely than non-users to experience a fatal myocardial infarction, and 1.40 times more likely to experience a fatal stroke.[12] Measures to reduce smokeless tobacco use should be included in efforts to reduce the effects of tobacco on cardiovascular disease.

Addressing the tobacco epidemic with the comprehensive policies of the WHO FCTC

In response to the global tobacco epidemic, governments negotiated and adopted the Framework Convention on Tobacco Control (FCTC) under the leadership of the World Health Organization (WHO) in 2003.[9] The WHO FCTC and elaborated guidelines that have been developed and adopted since 2003 obligate the 174 Parties of the WHO FCTC to implement a comprehensive set of tobacco control policies such as more prominent health warnings that include graphic images on tobacco packaging, increasing the price of tobacco through price and tax measures, bans or restrictions on tobacco advertising and promotion, and smoke-free laws. Countries that have implemented comprehensive tobacco control policies over the last couple of decades have seen reductions in tobacco/smoking prevalence.

Cardiovascular disease and secondhand smoke exposure

Secondhand smoke exposure causes coronary heart disease in adults, increasing the risk of disease by approximately 25–30%.[4,5] The implementation of comprehensive smoke-free laws in work and public places reduces the incidence of acute coronary events.[5,13,14] A review of research studies estimated that implementation of strong smoke-free laws are followed by a 15% reduction in acute myocardial infarctions.[13]

Cardiovascular disease and smoking cessation

Quitting smoking reduces smokers' risk of myocardial infarction and stroke.[4] In patients with coronary heart disease who smoke, quitting smoking has been found to reduce the risk of mortality by approximately 36%, and the risk of a non-fatal myocardial infarction by 32%.[15] The risk of stroke for smokers is approximately 1.5 times higher than non-smokers; smokers' risk of stroke has been found to reach non-smokers' level of risk approximately 5 years after quitting.[4,16]

Tobacco control is cost-effective

Tobacco control policies are extremely cost-effective for preventing deaths from non-communicable diseases, including cardiovascular disease. A recent report on cost-effective measures for reducing non-communicable diseases identified four very cost-effective policies to reduce the burden of tobacco on health at the population level.[17] These four key cost-effective policies include:

- Tax increases on tobacco products
- Smoke-free indoor workplaces and public places
- Health information and warnings about tobacco
- Bans on tobacco advertising and promotion

Although these four measures are cost-effective, tax increases on tobacco products have been consistently identified as the most cost-effective policy to reduce tobacco use because it leads to increases in revenue at the same time as it lowers consumption and prevalence.[18] In a recent WHO analysis of the cost-effectiveness of measures that could be used to reduce noncommunicable diseases, offering counselling to smokers was identified as a "quite cost-effective" measure.[19]

Purpose of the report

This report examines people's knowledge about the cardiovascular disease risks of tobacco use, and secondhand smoke exposure, and explores the implications for tobacco control and cardiovascular disease prevention.

To do this, this report answers the following questions:

- Are people aware that tobacco use and secondhand smoke cause cardiovascular disease? How does the level of awareness differ across countries?
- Are heart health professionals enabled and prepared to help their patients quit smoking and avoid secondhand smoke exposure?
- What can be done to raise people's awareness of the cardiovascular disease risks of tobacco use, and secondhand smoke exposure?
- What actions should be taken in clinical practice and in the policy domain to help prevent tobacco-related cardiovascular disease deaths?

Evidence Base

To answer these questions, this report presents data from two major ongoing global tobacco research and surveillance initiatives: the International Tobacco Control Policy Evaluation Project (the ITC Project) and the Global Tobacco Surveillance System (GTSS).

The ITC Project is an international cohort survey of tobacco use evaluating the effectiveness of national level tobacco policies. The ITC Project is currently conducting approximately annual parallel surveys of nationally representative samples of smokers, ex-smokers, (and also non-smokers in some countries) in 20 countries. This report presents data from surveys of smokers who were asked about their knowledge of the cardiovascular disease risks of tobacco use and secondhand smoke exposure. Data drawn from the ITC Project are from adult smokers only.

GTSS was initiated in 1998 by the World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), and other partners to assist countries in establishing tobacco control surveillance and monitoring programs. GTSS includes collection of data through three school-based surveys: the Global Youth Tobacco Survey (GYTS), the Global School Personnel Survey (GSPS), and the Global Health Professions Student Survey (GHPSS), and one household survey: the Global Adult Tobacco Survey (GATS). GTSS provides a consistent framework for surveillance including standard sampling procedures, core questionnaire items, training in field procedures, data analysis, and consistent reporting across all participating countries. Data in this report were drawn from two GTSS surveys: the GATS – a nationally representative household survey of non-institutionalized, men and women age 15 years and older conducted in 14 countries (including smokers and non-smokers); and the GHPSS – a survey of third-year health professional students conducted in more than 50 WHO member states. Data presented in this report from the GTSS are restricted to those countries where datasets have been publicly released. Data drawn from the GHPSS was for medical students, and only includes 17 countries which were of interest. GATS data are presented for adult smokers who were asked about their knowledge of the cardiovascular disease risks of tobacco use, and for adult smokers and non-smokers who were asked about their knowledge of the cardiovascular disease risks of secondhand smoke exposure.

Data from the ITC Project Surveys and the GATS were collected using different survey and sampling methods and the estimates should not be directly compared. Further details on the methods of these two surveys are provided in Appendix A.

FINDINGS

Awareness of the Cardiovascular Risks of Smoking

Awareness of risks is key to changing behavior

Warning people about the dangers of tobacco is one of the key measures recommended by the WHO for reducing the demand for tobacco.[20] Additionally, concerns about the health effects of smoking are one of the primary reasons that smokers think about quitting and say they quit.[21-23] However, surveys of smokers conducted by the ITC Project and GATS provide evidence of gaps in awareness of the cardiovascular disease risks of tobacco use.

Figure 1 (ITC Project) and Figure 2 (GATS) present cross-country comparisons of the percentage of smokers who do not know that smoking causes heart disease, stroke, and lung cancer. Figure 3 presents data from the ITC Project on the percentage of smokers who **do not** know that smoking causes peripheral vascular diseases, i.e., gangrene, poor blood flow to the limbs.

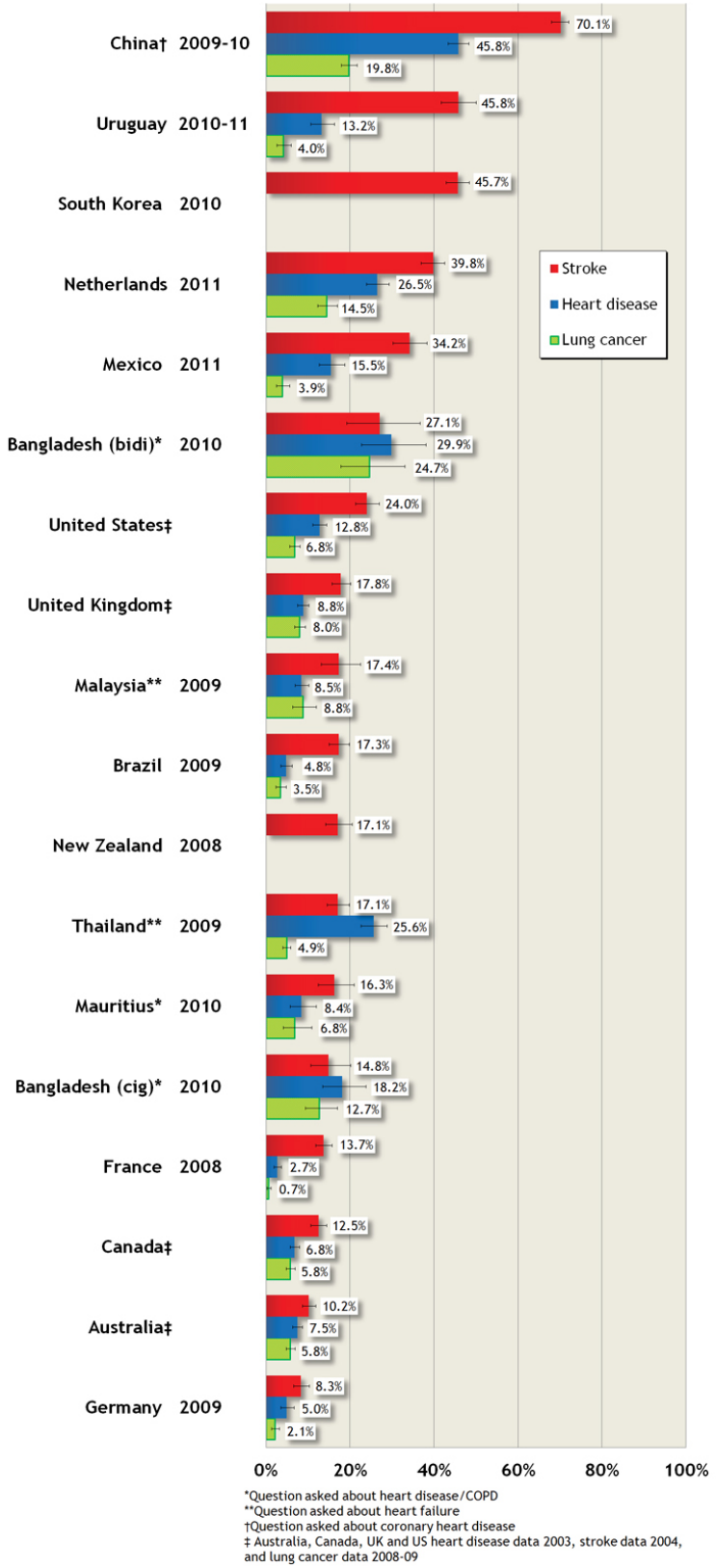
Awareness of tobacco use as a cause of heart disease

Data from the ITC Project and GATS both showed that many smokers are not aware that smoking causes heart disease. Findings from the ITC Project showed that the percentage of smokers who did not know or believe that smoking causes heart disease ranged from 46% of smokers in China to 3% of smokers in France (see Figure 1). A high proportion of smokers in other countries, including 26% of smokers in Thailand also reported not knowing or believing that smoking causes heart disease.

Data from GATS showed that the percentage of smokers who did not believe or who did not know that smoking causes heart attacks ranged from 62% of smokers in China to 3% of smokers in Egypt (see Figure 2). A high proportion of smokers in other countries, such as Viet Nam (42%), India (38%), and the Russian Federation (32%), also reported not knowing or believing that smoking caused heart attacks.

NOTE: The names of two countries in this report vary from the names used by WHO. Accordingly, please note that "South Korea" = Republic of Korea, and "United Kingdom" = United Kingdom of Great Britain and Northern Ireland.

Figure 1. Adult smokers who do not believe, or do not know that smoking causes specific diseases, by country (ITC)



*Question asked about heart disease/COPD
**Question asked about heart failure
†Question asked about coronary heart disease
‡ Australia, Canada, UK and US heart disease data 2003, stroke data 2004, and lung cancer data 2008-09

"South Korea" = Republic of Korea
"United Kingdom" = United Kingdom of Great Britain and Northern Ireland

Awareness of tobacco use as a cause of stroke

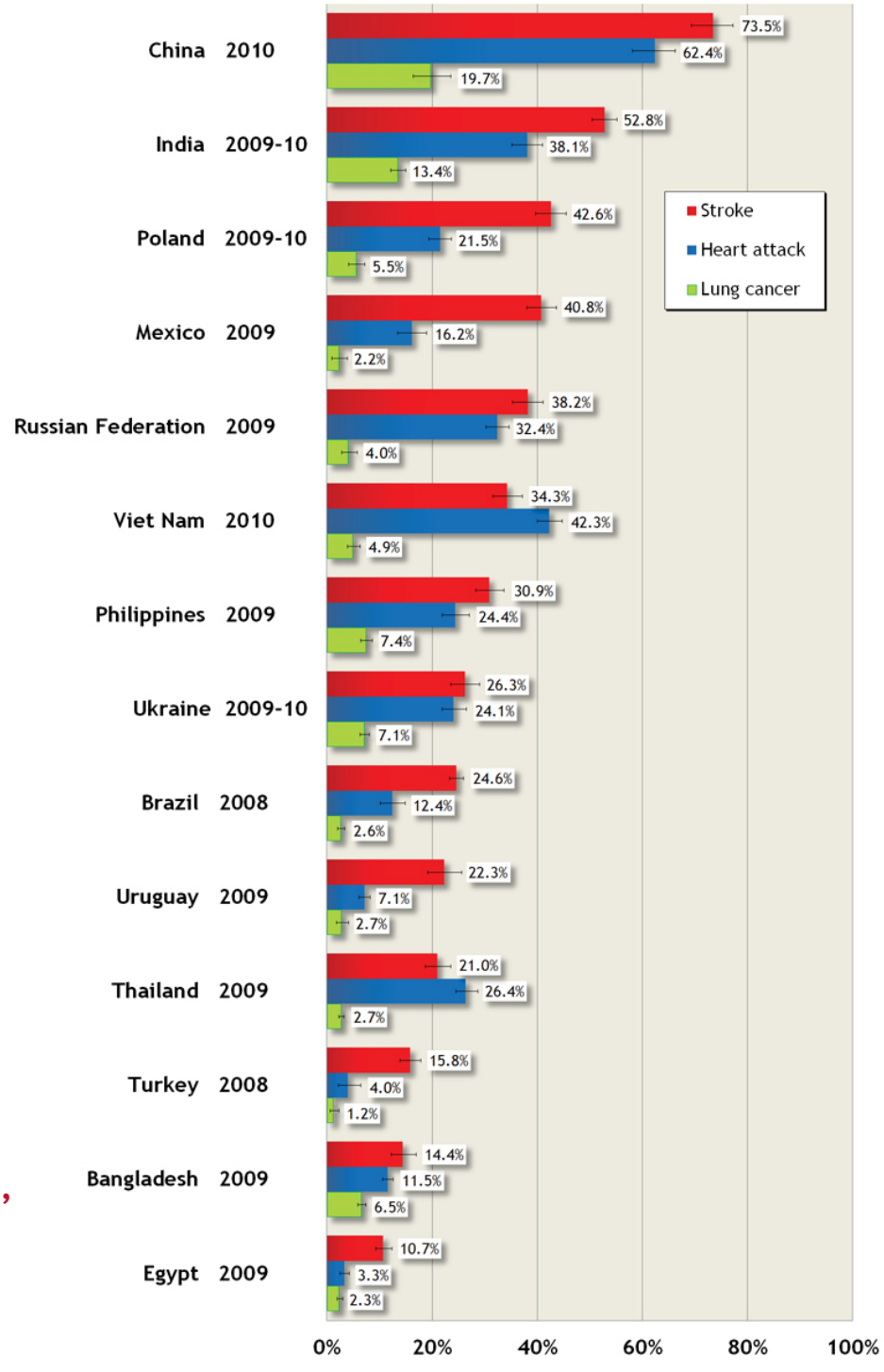
Data from the ITC Project and GATS shows that overall, smokers were less aware that smoking causes stroke than they were that smoking causes heart disease. Findings from the ITC Project showed that the percentage of smokers who did not know or believe that smoking causes stroke ranged from a high of 70% in China to a low of 8% in Germany (see Figure 1). A high proportion of smokers in other countries including Uruguay (46%), South Korea (46%), and Mexico (34%) also reported not knowing or believing that smoking causes stroke. Data from GATS showed that the percentage of smokers who did not believe or did not know that smoking causes stroke ranged from 74% of smokers in China to a low of 11% of smokers in Egypt (see Figure 2). A high proportion of smokers in other countries also reported not knowing that smoking causes stroke, including, India (53%), Poland (43%), and Mexico (41%).

Awareness of the risk of cardiovascular disease compared to lung cancer

Data from the ITC Project and GATS both showed that smokers are more aware that smoking causes lung cancer than they are that smoking causes heart disease and stroke (see Figures 1 and 2). This demonstrates that there is a significant gap in smokers' knowledge of the cardiovascular risks of smoking and that it is possible to raise awareness of the cardiovascular risks of smoking.

Despite the known harms of tobacco to cardiovascular health, there are large gaps in smokers' knowledge of the cardiovascular disease risks of tobacco use; in many countries, the knowledge gaps are substantial.

Figure 2. Adult smokers who do not believe, or do not know that smoking causes specific diseases, by country (GATS)



Awareness of tobacco use as a cause of peripheral vascular disease

Data from ITC showed that awareness that smoking causes peripheral vascular disease varied widely across countries (see Figure 3). In Uruguay, Mexico, Thailand, and Malaysia, the percentage of smokers reporting not knowing that smoking causes gangrene ranged from 60% in Uruguay to 28% in Malaysia. In Australia, Canada, the United States, and the United Kingdom, the percentage of smokers who did not know that smoking causes peripheral vascular disease ranged from 44% in the United States to 24% in Australia.

Figure 3. Percentage of smokers who do not believe, or do not know that smoking causes peripheral vascular disease, by country (ITC)

*Question asked about gangrene
**Question asked about poor blood flow/loss of limbs

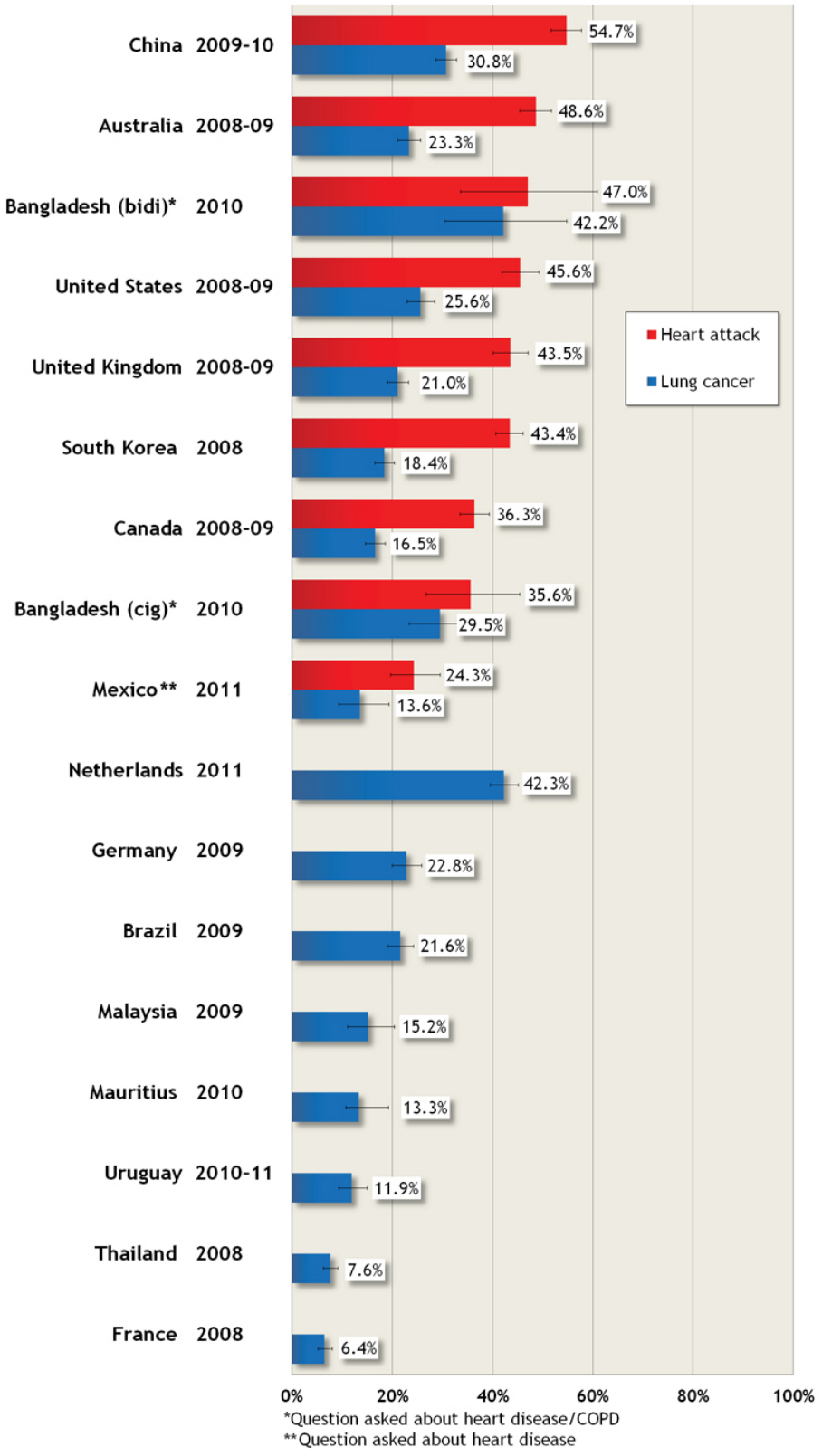
"South Korea" = Republic of Korea
"United Kingdom" = United Kingdom of Great Britain and Northern Ireland

Awareness of Secondhand Smoke as a Cause of Heart Disease

The cardiovascular risks of secondhand smoke exposure are not understood by smokers and non-smokers in all countries

Secondhand smoke exposure causes coronary heart disease in adults, increasing the risk of disease by approximately 25–30%.[4,5] This report provides evidence that these risks are not well known among smokers and non-smokers. Figures 4, 5, and 6 present cross-country comparison data from the ITC Project and GATS of smokers' and non-smokers' knowledge of the risks of secondhand smoke.

Figure 4. Adult smokers who do not believe, or do not know that secondhand smoke causes specific diseases, by country (ITC)



*Question asked about heart disease/COPD
**Question asked about heart disease

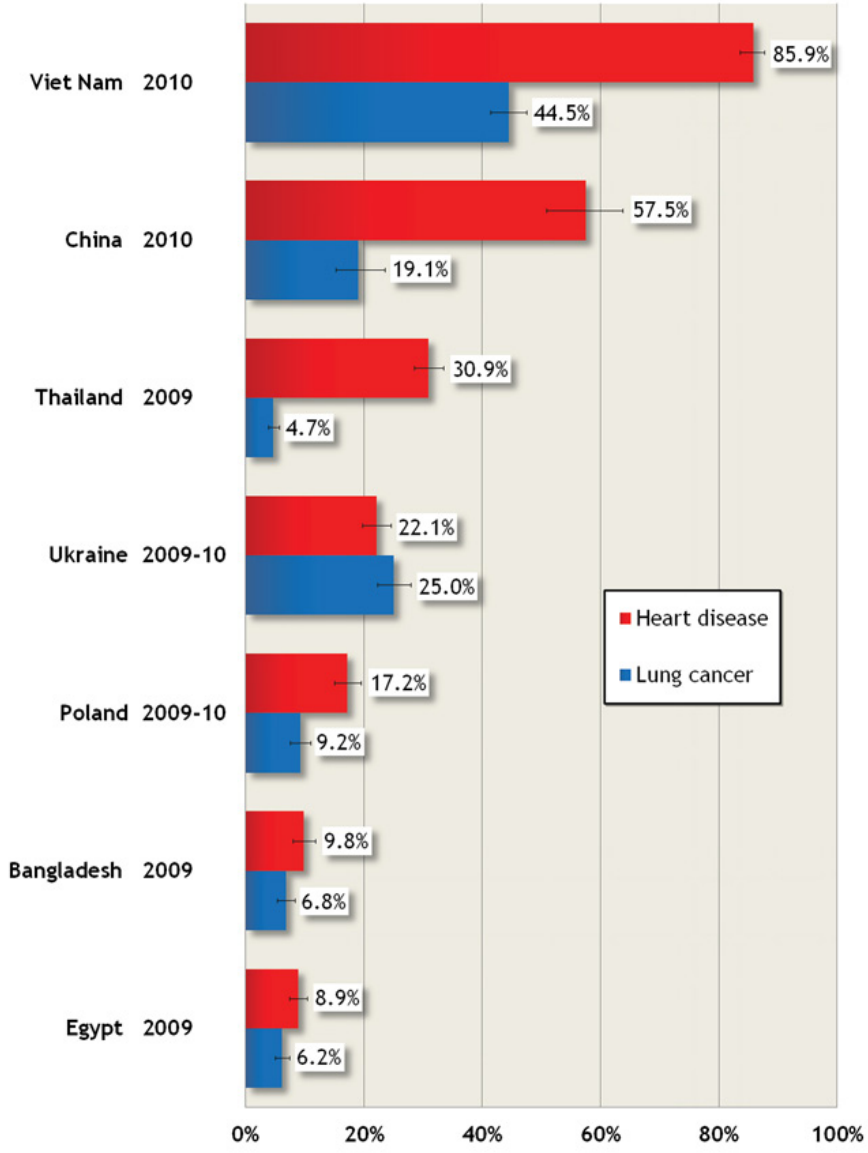
"South Korea" = Republic of Korea
"United Kingdom" = United Kingdom of Great Britain and Northern Ireland

Data from the ITC Project showed that smokers' knowledge that secondhand smoke exposure can cause cardiovascular disease was very low. The percentage of smokers who did not know that secondhand smoke causes heart disease ranged from a high of 55% in China to 24% of smokers in Mexico.

In high income countries such as Canada, the United Kingdom, the United States, and Australia, almost half of smokers do not recognize how their smoking can endanger the heart health of those who breathe secondhand smoke.

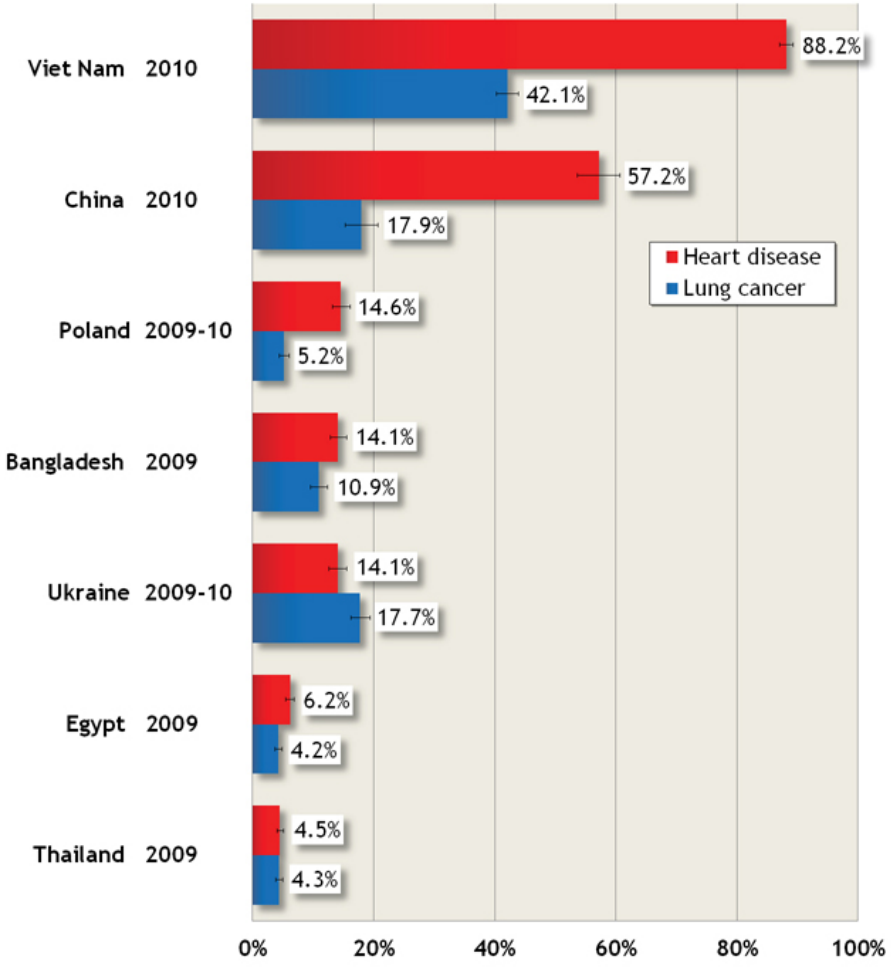
Data from GATS showed that the percentage of smokers who did not believe or did not know that exposure to secondhand smoke could cause heart disease ranged from 86% of smokers in Viet Nam to 9% of smokers in Egypt.

Figure 5. Adult smokers who do not believe, or do not know that secondhand smoke causes specific diseases, by country (GATS)



People's knowledge that breathing secondhand smoke causes cardiovascular disease is alarmingly low compared to their knowledge that secondhand smoke causes lung cancer.

Figure 6. Adult non-smokers who do not believe, or do not know that secondhand smoke causes specific diseases, by country (GATS)



Awareness of secondhand smoke as a cause of heart disease compared to lung disease

In all countries surveyed (with the exception of Ukraine), smokers and non-smokers were less aware of the risks of secondhand smoke to the cardiovascular system than they were about secondhand smoke as a risk for lung cancer. This demonstrates that there is a significant gap in smokers' and nonsmokers' knowledge of the cardiovascular risks of secondhand smoke exposure

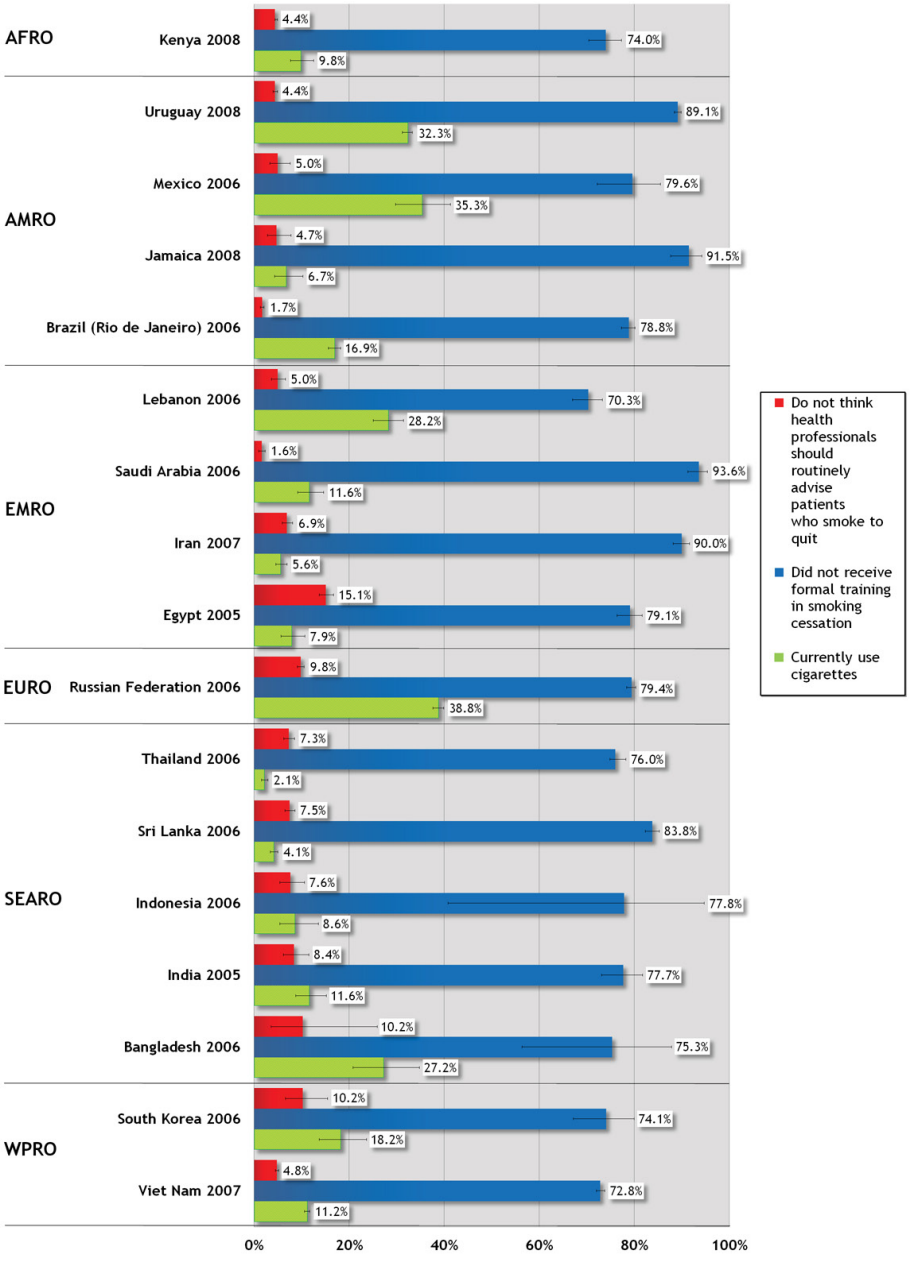
Data from GATS showed that the percentage of non-smokers who did not believe or who did not know that exposure to secondhand smoke could cause heart disease ranged from 88% of non-smokers in Viet Nam to 5% of non-smokers in Thailand.

Training, Attitudes, and Practices of Health Professionals in Cessation

Global Health Professions Student Survey (GHPSS)

Brief advice from a physician can increase a smoker's chance of quitting,[2] and training health professionals in smoking cessation techniques can increase the chance that they will utilize these skills in their practice.[25] However, in most countries, only 10-30% of medical students reported receiving training.

Figure 7. Medical students smoking behavior, beliefs about cessation and training, by region (GHPSS)



"South Korea" = Republic of Korea

Medical students are not trained in tobacco cessation

Data from a select group of countries who have completed the GHPSS and where data is available for public use are presented in Figure 7. However, data for more countries is available through WHO/CDC.

Despite the low percentage of students reporting receiving training in tobacco cessation, the majority believe that health professionals should advise smokers to quit. This suggests that with proper training, and supportive programs in place, these future physicians could play an active role in smoking cessation.

In Jamaica and Saudi Arabia, less than 10% of medical students reported receiving formal training in smoking cessation.

Physicians' smoking status can affect how they treat their patients, their own beliefs about tobacco, and their patients' beliefs about tobacco use and its harm. For example, an international study of physicians in 16 countries found that physicians who smoked were less likely to assess smoking status at each patient visit and less likely to systematically counsel patients to quit or assist patients with a plan to quit.[26] Other studies at the national and regional level have produced similar findings.[27-29]

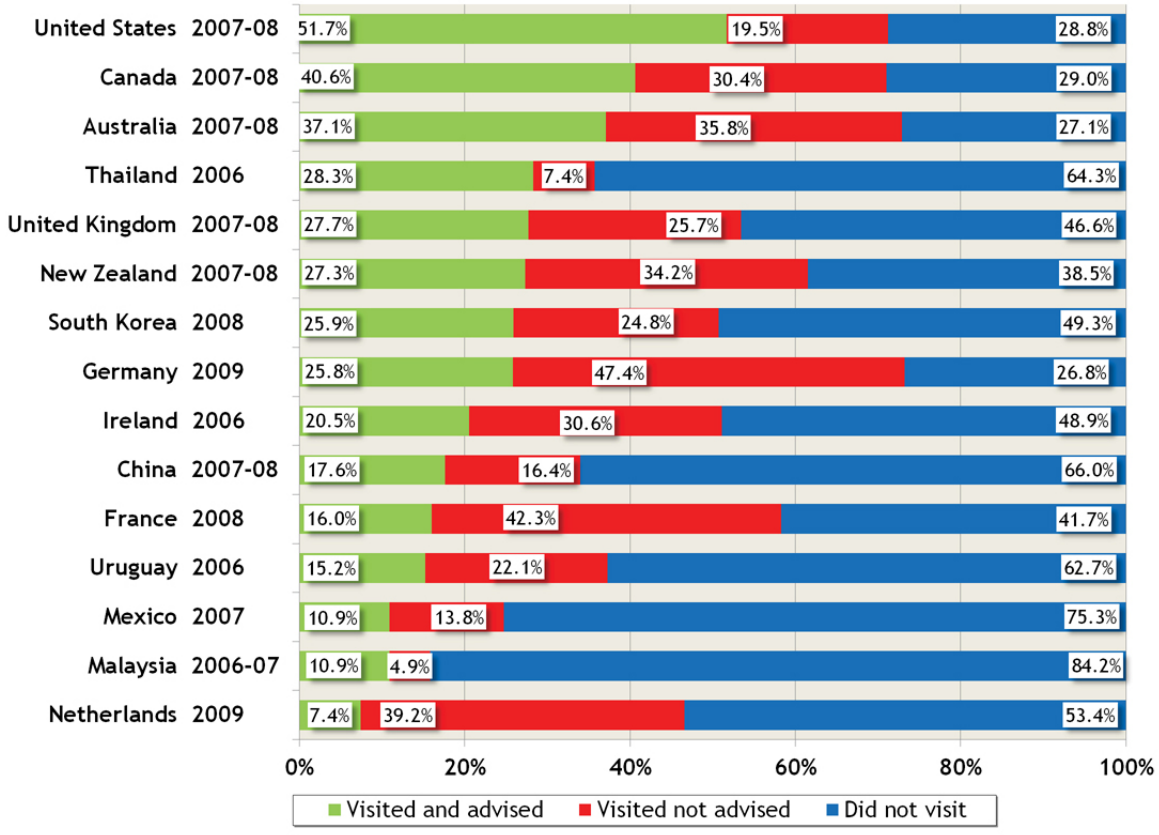
Unfortunately, GHPSS data shows a high proportion of current smoking among medical students. It is expected that these high rates of smoking among medical students will translate to similarly high rates of smoking among physicians in the future.

Smokers' reports of receiving advice to quit from health professionals

Advice from a physician can increase a smoker's chance of quitting, even if it is simple and brief.[24] A study using data from 15 countries from the ITC Project examined whether smokers had visited a health professional in the past six months and if the health professional had given smokers advice to quit smoking during that visit (see Figure 8).

Reports of receiving advice from a health professional at last visit ranged from just 52% of smokers in the United States to less than 10% of smokers in the Netherlands.[30]

Figure 8. Visits to health professionals and provision of cessation advice, by country



"South Korea" = Republic of Korea
"United Kingdom" = United Kingdom of Great Britain and Northern Ireland

Pictorial Health Warnings to Inform People About the Cardiovascular Disease Risks of Tobacco

Pictorial health warning labels on tobacco packages are one of the most effective and cost efficient ways to inform people about the health risks of tobacco.[17, 31-33] Pictorial warning labels also have the potential to reach the majority population, and may be especially useful for informing populations with lower literacy rates about the health risks of tobacco and secondhand smoke.[34, 35]

Analyses of data from GATS found that the majority of smokers from 14 countries reported noticing health warnings.[36] There is also evidence suggesting that in countries with pictorial warnings, there are fewer disparities in knowledge of the health risks of smoking by education level compared to countries with small text-only warnings.[37] Data from GATS in Brazil and Thailand, where both countries have prominent pictorial warnings that have been frequently updated, had the highest percentage of smokers who reported noticing the warnings and thinking about quitting because of them.[36]

Table 1 shows countries that have used or are currently using pictorial health warning labels to inform people about the cardiovascular/vascular disease risks of tobacco, including heart disease, stroke, and peripheral vascular disease (gangrene, poor blood flow to limbs). The year of implementation is indicated. Note that there may have been a new rotation of warning labels since the year the cardiovascular label was implemented that did/does not include a cardiovascular disease label. No country had a label to warn people that secondhand smoke causes heart disease.

No country has used pictorial health warnings to inform smokers about the cardiovascular risks of secondhand smoke exposure.

Table 1: Countries/Jurisdictions with Pictorial Health Warnings with Information about Harms of Tobacco to Cardiovascular Health

Country/ Jurisdiction	Heart Disease	Stroke	Peripheral Vascular Diseases
Australia	2006	2006	2006
Belgium	2007	2007	
Brazil	2002, 2008	2008	2004, 2008
Canada	2001, 2012	2001, 2012	
Cayman Islands	2008	2008	
Cook Islands	2008	2008	
Djibouti	2009	2009	
France	2011	2011	
Guernsey	2011	2011	
Hungary	2012	2012	
Latvia	2010	2010	
Malta	2011	2011	
Mauritius	2009	2009	
New Zealand	2008	2008	2008
Norway	2011	2011	
Peru	2009	2009	
Romania	2008	2008	
Spain	2011	2011	
Thailand	2006, 2009	2006, 2009	2009
Turkey	2010	2010	
The United Kingdom	2008	2008	
Uruguay	2008, 2009, 2010	2009	
Mexico	2010		2010
Mongolia	2010		2010
Panama	2008		2010
Philippines	2010		2010
Venezuela	2009		2004
Singapore		2003	2006
Bolivia	2011		
Chile	2009		
Egypt	2008		
Switzerland	2010		
Taiwan	2009		
Ukraine			
Hong Kong			2007
Iran			2009
Malaysia			2009
Pakistan			
Jordan			
Brunei			
Colombia			
Honduras			
India			

Please note that every effort was made to ensure that the above information was accurate at the time of printing.
Sources: www.tobaccolabels.ca and www.smoke-free.ca/warnings/research.htm

Conclusions and Recommendations

Despite the known risks of tobacco use and secondhand smoke to cardiovascular health, data from the International Tobacco Control (ITC) Project Survey and the Global Adult Tobacco Survey (GATS) provide evidence of gaps in public awareness of these risks to cardiovascular health. The following key findings emerge from the data:

- There are large gaps in knowledge among smokers of the cardiovascular disease risks of tobacco use, particularly in China, Viet Nam, and India where more than one-third of smokers were not aware of these risks.
- Smokers from low- and middle-income countries are generally less likely to know that tobacco use causes cardiovascular disease.
- Across all countries surveyed, smokers are more aware of the risks of lung cancer than they are about the risks of cardiovascular disease.
- Even in high income countries, almost half of smokers are not aware of the harms of secondhand exposure to cardiovascular health.
- People's knowledge that secondhand smoke exposure causes cardiovascular disease is alarmingly low compared to their knowledge that secondhand smoke causes lung cancer.

Quitting smoking greatly reduces the risk of cardiovascular disease, and research demonstrates that even brief counselling by a health professional can motivate smokers to quit. However, data from the Global Health Professions Student Survey showed that very few medical students reported receiving formal training in smoking cessation counselling. Data from the ITC Survey also found that there are wide disparities across countries in smokers' reports of receiving advice to quit when they last visited a health professional. The following key findings provide evidence that the medical community is poorly prepared for playing a key role in supporting cessation.

- In many countries, more than three-quarters of medical students reported not receiving any formal training in tobacco cessation.
- Very few smokers (ranging from less than 10% in the Netherlands to just over 50% in the United States) report being offered cessation advice the last time they visited a health professional.
- High rates of smoking among medical students are likely to translate into similarly high rates of smoking among physicians in future.

Pictorial health warning labels on tobacco products are a highly cost-effective way to warn people about the risks of tobacco use and secondhand smoke exposure. Pictorial warnings that cover at least 50% of the principal display areas are recommended by the WHO Framework Convention on Tobacco Control. This review found that the pack is underutilized as a tool to educate smokers and non-smokers about the risks of tobacco and secondhand smoke to cardiovascular health.

- Few countries have implemented pictorial health warnings to inform smokers about the cardiovascular disease risks of tobacco use to date, and no country has used pictorial health warnings to inform smokers that secondhand smoke causes cardiovascular disease.

Resources for Implementation are listed in Appendix B

The following actions for clinical practice, medical training, and for tobacco control policy advocacy are recommended to 1) raise people's awareness of the cardiovascular risks of tobacco use and secondhand smoke, 2) protect non-smokers from secondhand smoke, and 3) better prepare the medical community to reduce cardiovascular disease deaths caused by smoking:

In clinical practice and medical training:

- Model **tobacco-free living** by not smoking and by helping patient and health professionals who do smoke to quit.
- Ensure that clear, comprehensive **smoke-free policies** are established and enforced in all health facilities, events, organizations, and training facilities (including universities and conferences).
- Implement programs and protocols to ensure that **cessation support and advice** on eliminating secondhand smoke exposure are provided systematically. Non-smokers should also be advised to eliminate secondhand smoke exposure.
- Support the inclusion of **tobacco cessation counselling** into the medical undergraduate, graduate and postdoctoral curriculum. Increase the visibility of tobacco control issues at major clinical cardiology meetings and in continuing education programs, including smoking and secondhand smoke exposure.

In the policy domain:

- Advocate for **comprehensive tobacco control policies** as outlined in the World Health Organization's Framework Convention on Tobacco Control.
- Support the political declaration of the United Nations (UN) High-Level Meeting on Prevention and Control of Non-communicable Diseases held in New York in September 2011; this UN meeting marked the second time in history the UN General Assembly met on a health issue, and was held to set an agenda to deal with the socio-economic and developmental impacts of non-communicable diseases worldwide, including cardiovascular disease.
- Support the implementation and enforcement of **smoke-free laws** in all public places and workplaces, including offices, restaurants, bars, casinos, hospitals, and clinics, to protect people from the harmful effects of secondhand smoke.
- Support the implementation of **pictorial health warnings** on all tobacco products as a cost- effective method to inform smokers about the health risks of smoking. Promote the adoption of labels that warn about the cardiovascular disease risks of tobacco according to the WHO FCTC Guidelines for health warnings.
- Support the implementation of policies to provide **systematic access to smoking cessation advice and pharmacotherapy**.
- Promote the use of evidence-based mass media campaigns to raise awareness about the cardiovascular disease risks of tobacco use and secondhand smoke exposure.

As the tobacco epidemic continues to develop worldwide, tobacco control policies to address the epidemic are changing as well. For example, Australia, a pioneer in many areas of tobacco control, will require tobacco to be sold in standardised plain packages with only the name of brand in a standard typeface. Plain packaging is recommended in the WHO FCTC Guidelines in order to reduce the ability of tobacco companies to advertise their products on their packaging, which has been increasingly important to the tobacco industry as other forms of advertising (e.g., billboards and print and broadcast media ads) are being banned. Plain packaging may also serve to enhance the impact of the health warnings that will remain on the packs after the brand colors and design of the pack are eliminated.

References

1. World Health Organization. Global health risks: mortality and burden of disease attributable to selected major risks. Geneva (CH): World Health Organization. 2009 [cited 2011 Nov 30]. Available from: http://www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf

2. World Health Organization. Global status report on noncommunicable diseases 2010. Geneva (CH): World Health Organization. 2010 [cited 2011 Nov 30]. Available from: http://www.who.int/nmh/publications/ncd_report_full_en.pdf

3. Mendis S, Puska P, Norrving B, editors. World Health Organization. Global atlas on cardiovascular disease prevention and control. Geneva (CH): World Health Organization. 2011 [cited 2012 Jan 12]. Available from: http://whqlibdoc.who.int/publications/2011/9789241564373_eng.pdf

4. U.S. Department of Health and Human Services. How tobacco smoke causes disease: the biology and behavioral basis for smoking-attributable disease: a report of the Surgeon General. Rockville (MD): U.S. Department of Health and Human Services, Public Health Service, Office of Surgeon General. 2010 [cited 2011 Nov 30]. Available from: http://www.surgeongeneral.gov/library/tobaccosmoke/report/full_report.pdf

5. Institute of Medicine. Committee on Secondhand Smoke Exposure and Acute Coronary Events. Secondhand smoke exposure and cardiovascular effects: making sense of the evidence. Washington (DC): The National Academies Press; 2010.

6. Mathers CD, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. PLoS Med. 2006;3(11):e442.

7. Öberg M, Jaakkola MS, Woodward A, Peruga A, Prüss-Ustün A, Prüss-Ustün, A. Worldwide burden of disease from exposure to second-hand smoke: a retrospective analysis of data from 192 countries. Lancet. 2011;377(9760):139-46.

8. World Health Organization. WHO global report: mortality attributable to tobacco. Geneva (CH): World Health Organization. 2012 [cited 16 March 2012]. Available at: http://whqlibdoc.who.int/publications/2012/9789241564434_eng.pdf

9. World Health Organization. WHO Framework Convention on Tobacco Control. Geneva (CH): World Health Organization. 2003 [cited 2011 Nov 20]. Available from: http://whqlibdoc.who.int/publications/2003/9241591013.pdf

10. Piano MR, Benowitz NL, Fitzgerald GA, Corbridge S, Heath J, Hahn E, Pechacek TF, Howard G., and on behalf of the American Heart Association Council on Cardiovascular Nursing. Impact of smokeless tobacco products on cardiovascular disease: implications for policy, prevention, and treatment: a policy statement from the American Heart Association. Circ. 2010;122(15):1520–44.

11. Zhang L-N, Yang Y-M, Xu Z-R, Gui Q-F, Hu Q-Q. Chewing substances with or without tobacco and risk of cardiovascular disease in Asia: a meta-analysis. J Zhejiang Univ Sci B. 2010;11(9):681–9.

12. Boffetta P, Straif K. Use of smokeless tobacco and risk of myocardial infarction and stroke: systematic review with meta-analysis. BMJ. 2009;339:b3060.

13. Lightwood JM, Glantz SA. Declines in acute myocardial infarction after smoke-free laws and individual risk attributable to secondhand smoke. Circ. 2009;120(14):1373–9.

14. Mackay DF, Irfan MO, Haw S, Pell JP. Meta-analysis of the effect of comprehensive smoke-free legislation on acute coronary events. Heart. 2010 [cited 2012 Mar 6];96(19):1525–30.

15. Critchley JA, Capewell S. Smoking cessation for the secondary prevention of coronary heart disease. Cochrane Database Syst Rev. 2004;(4):CD003041.

16. Shinton R, Beevers G. Meta-analysis of relation between cigarette smoking and stroke. BMJ. 1989;298(6676):789–94.

17. World Economic Forum. From burden to “best buys”: reducing the economic impact of non-communicable diseases in low-and middle-income countries. Geneva (CH): World Health Organization. 2011 [cited 2011 Nov 30]. Available from: http://www.who.int/nmh/publications/best_buys_summary.pdf

18. World Health Organization. WHO report on the global tobacco epidemic, 2008: the MPOWER package. Geneva (CH): World Health Organization. 2008 [cited 21 March 2012]. Available from: http://whqlibdoc.who.int/publications/2008/9789241596282_eng.pdf

19. World Health Organization. Scaling up action against noncommunicable diseases: how much will it cost? Geneva (CH): World Health Organization. 2011 [cited 2011 Nov 30]. Available from: http://whqlibdoc.who.int/publications/2011/9789241502313_eng.pdf

20. World Health Organization. WHO report on the global tobacco epidemic, 2011: warning about the dangers of tobacco. Geneva (CH): World Health Organization; 2011 [cited 2011 Dec 12]. Available from: http://whqlibdoc.who.int/publications/2011/9789240687813_eng.pdf

21. Hyland A, Li Q, Bauer JE, Giovino GA, Steger C, Cummings KM. Predictors of cessation in a cohort of current and former smokers followed over 13 years. Nicotine Tob Res. 2004; 6 Suppl 3:S363–9.

22. Jiang Y, Elton-Marshall T, Fong GT, Li Q. Quitting smoking in China: findings from the ITC China Survey. Tob Control. 2010;19 Suppl 2:i12–7.

23. Yang J, Hammond D, Driezen P, Fong GT, Jiang Y. Health knowledge and perception of risks among Chinese smokers and non-smokers: findings from the Wave 1 ITC China Survey. Tob Control. 2010;19 Suppl 2:i18–23.

24. Stead LF, Bergson G, Lancaster T. Physician advice for smoking cessation. Cochrane Database Syst Rev. 2008;16(2):CD000165.

25. Lancaster T, Silagy C, Fowler G. Training health professionals in smoking cessation. Cochrane Database of Syst Rev. 2000;(3):CD000214.

26. Pipe A, Sorensen M, Reid R. Physician smoking status , attitudes toward smoking, and cessation advice to patients: an international survey. Patient Educ Couns. 2009;74(1):118–23.

27. Aboyans V, Pinet P, Lacroix P, Laskar M. Knowledge and management of smoking-cessation strategies among cardiologists in France: a nationwide survey. Arch Cardiovasc Dis. 2009;102(3):193–9.

28. Tong EK, Strouse R, Hall J, Kovac M, Schroeder SA. National survey of U.S. health professionals' smoking prevalence, cessation practices, and beliefs. Nicotine Tob Res. 2010;12(7):724–33.

29. Yao T, Ong M, Lee A, Jiang Y, Mao Z. Smoking knowledge, attitudes, behavior, and associated factors among Chinese male surgeons. World J Surg. 2009;33(5):910–7.

30. Borland R, Li L, Driezen P, Wilson N, Hammond D, Thompson ME, Fong GT, Mons U, Willemsen MC, McNeill A, Thrasher JF, Cummings KM. Cessation assistance reported by smokers in 15 countries participating in the International Tobacco Control (ITC) policy evaluation surveys. Addiction. 2011;107(1):197-205.

31. Fong GT, Hammond D, Hitchman SC. The impact of pictures on the effectiveness of tobacco warnings. Bull World Health Organ. 2009;87(8):640–3.

32. Hammond D, Fong GT, McNeill A, Borland R, Cummings KM. Effectiveness of cigarette warning labels in informing smokers about the risks of smoking: findings from the International Tobacco Control (ITC) Four Country survey. Tob control. 2006; 15 Suppl 3:iii19–25.

33. Hammond D. Health warning messages on tobacco products: a review. Tob Control. 2011;327-337.

34. CRÉATEC + Market Studies. Effectiveness of health warning messages on cigarette packages in informing less-literate smokers, final report. Prepared for Communications Canada (CA). 2003;64.

35. Millar WJ. Reaching smokers with lower educational attainment. Health Reports. Ottawa (ON), Statistics Canada (CA). 1996;8(2):11-19.

36. Centers for Disease Control and Prevention. Cigarette package health warnings and interest in quitting smoking – 14 countries, 2008 – 2010. Morbidity and Mortality Weekly Report. Atlanta (GA), Centers for Disease Control and Prevention (US). 2011;60(20):646-685.

37. Siahpush M, McNeill A, Hammond D, Fong GT. Socioeconomic and country variations in knowledge of health risks of tobacco smoking and toxic constituents of smoke: results from the 2002 International Tobacco Control (ITC) Four Country Survey. Tob Control. 2006; 15(Suppl III): iii65–iii70.

APPENDICES

Appendix A: Methods

International Tobacco Control Policy Evaluation Project Survey (ITC)

The ITC Project is an international cohort survey of tobacco use evaluating the effectiveness of national level tobacco policies. The ITC Project is unique in its longitudinal design using nationally representative samples of smokers and in its use of a common set of survey questions across multiple countries. Using rigorous survey research methods and policy evaluation designs, the ITC Project is evaluating the impact of WHO FCTC policies as they are being implemented throughout countries. The ITC Project is currently conducting approximately annual parallel surveys of nationally representative samples of smokers, ex-smokers, (and also non-smokers in some countries) in 20 countries.

Table 2 lists basic information about the methodology used in each ITC Country Survey for the data presented in this report. More information on the methods of the ITC Surveys (technical reports describing survey methods and copies of the surveys) are available online at:

www.itcproject.org

Global Adult Tobacco Survey (GATS)

The Global Adult Tobacco Survey (GATS) is a nationally representative household survey, of all non-institutionalized, men and women age 15 years and older. It aims to assist countries to fulfill their obligations under the WHO FCTC to generate comparable data within and across countries. GATS uses a standard and consistent core questionnaire and protocol, which enables cross-country and change-over-time comparisons for countries that repeat the survey.

GATS collects information on respondents' background characteristics, tobacco use (smoking and smokeless), cessation, second-hand smoke, economics, media, and knowledge, attitudes and perceptions towards tobacco use and secondhand smoking. GATS uses standard best practices such as pretesting questionnaires; reviewing survey proposals; technical assistance and training on data collection and management; conducting workshops and orientations; and providing consultation and technical feedback on data analysis and reporting. Fourteen high tobacco burden countries have completed GATS during 2008-2010.

Table 3 lists basic information about the methodology used in each GATS survey for the data presented in this report. More information on the methods of GATS including technical survey reports describing survey methods and results in detail for each country are available online at:

http://www.who.int/tobacco/surveillance/survey/gats/en/index.html

Global Health Professions Student Survey (GHPSS)

The GHPSS is a school-based survey of third-year students pursuing advanced degrees in dentistry, medicine, nursing and pharmacy. The GHPSS uses a core questionnaire on demographics, prevalence of cigarette smoking and other tobacco use, knowledge and attitudes about tobacco use, exposure to secondhand tobacco, willingness to stop smoking, and training received regarding patient counseling on smoking cessation techniques. The GHPSS has a standardized methodology for selecting participating schools and classes and has uniform data processing procedures. For more information on the GHPSS see:

http://apps.nccd.cdc.gov/gtssdata/Ancillary/Documentation.aspx?SUID=3&DOCT=1

Table 2: Methods of the ITC Project Surveys

Country	Wave	Year	Data Collection Mode	Representativeness	Sampling Design	Smokers (N)	
						Men	Women
Canada	2	2003	Telephone	National	Stratified	985	1230
	3	2004	Telephone			927	1181
	7	2008-2009	Telephone, Web			837	1005
	8	2010-2011	Telephone, Web			706	861
United States	2	2003	Telephone	National	Stratified	883	1137
	3	2004	Telephone			873	1213
	7	2008-2009	Telephone, Web			797	961
	8	2010-2011	Telephone, Web			713	799
United Kingdom	2	2003	Telephone	National	Stratified	932	1186
	3	2004	Telephone			914	1165
	7	2008-2009	Telephone, Web			811	1009
	8	2010-2011	Telephone, Web			595	724
Australia	2	2003	Telephone	National	Stratified	1001	1129
	3	2004	Telephone			985	1116
	7	2008-2009	Telephone, Web			799	972
	8	2010-2011	Telephone, Web			700	807
New Zealand	2	2008-2009	Face-to-face	National	Multi-stage	351	563
Malaysia	3	2008	Face-to-face & telephone	National	Multi-stage	1909	27
	4	2009	Telephone			2019	24
Thailand	3	2008	Face-to-face	National	Multi-stage	2262	203
	4	2009	Face-to-face			2064	212
Republic of Korea	2	2008	Telephone	National	Stratified	1741	71
	3	2010	Telephone			1566	83
Mainland China	3	2009-2010	Face-to-face	Seven cities: Beijing, Changsha, Guangzhou, Shanghai, Shenyang, Yinchua, and Kunming,	Multi-stage	5235	293
France	2	2008	Telephone	National	Simple random sample	794	910
The Netherlands	5	2011	Web	National	Stratified	1086	1015
Germany	2	2009	Telephone	National	Stratified	490	547
Mexico	5	2011	Face-to-face	Seven cities: Mexico City, Guadalajara, Tijuana, Ciudad Juárez, Monterrey, Puebla, and Mérida.	Multi-stage	1341	792
Uruguay	3	2010-2011	Face-to-face	Four cities: Montevideo, Salto, Maldonado, Durazno, and Rivera	Multi-stage	692	719
Brazil	1	2009	Telephone	Three cities: Rio de Janeiro, São Paulo, and Porto Alegre.	Stratified	519	695
Bangladesh	2	2010	Face-to-face	National	Multi-stage	487 (bidi) 1926 (cig)	55 (bidi) 29 (cig)
Mauritius	2	2010	Face-to-face	National	Multi-stage	568	33

Table 3: Methods of the Global Adult Tobacco Survey

Country	Year of Survey	Smokers* (N)		Non-Smokers* (N)	
		Men	Women	Men	Women
Bangladesh	2009	2,157	76	2,311	5,085
Brazil	2008	4,037	2,966	14,002	18,420
China	2010	3,772	238	2,831	6,513
Egypt	2009	4,093	62	5,969	10,800
India	2009-2010	10,248	1,348	23,519	34,181
Mexico	2009	1,398	423	4,762	7,034
Philippines	2009	2,307	462	2,433	4,499
Poland	2009-2010	1,425	991	2,442	2,982
Russian Federation	2009	3,786	1,021	2,431	4,168
Thailand	2009	4,475	432	5,577	10,082
Turkey	2008	2,036	665	2,233	4,096
Ukraine	2009-2010	2,034	363	2,042	3,719
Uruguay	2009	811	583	1,823	2,364
Viet Nam	2010	2,171	89	2,185	5,480

* Current smoking status at the time of the interview.

All GATS surveys are nationally representative and involve face-to-face interviews using hand-held data collection devices.

Interpretation of the data presented from the ITC Project and GATS

Because GATS and the ITC Project differ in their methodology, the results must be interpreted with an understanding of these differences and the implications for the data presented. Data from the two surveys should not be directly compared. Three main differences in the survey methods are discussed below:

Survey mode

All GATS surveys are conducted face-to-face with hand-held collection devices, whereas the survey mode used for the ITC Project Surveys differs across countries depending on national circumstances (face-to-face, telephone, online). Survey mode may affect how questions are answered.

Representativeness

All GATS surveys are nationally representative. The majority of the ITC Project Surveys are nationally representative; however, the ITC Surveys in Brazil, China, Mexico, and Uruguay are representative of the cities in which the survey was conducted.

Measures used

GATS only asks respondents who believe that tobacco use/exposure to tobacco smoke causes serious disease if tobacco use/exposure to tobacco smoke causes specific diseases, i.e., if a respondent does not believe that tobacco causes serious diseases she/he is not asked if tobacco causes heart disease. Thus, a small subset of respondents are not asked the questions about the specific diseases in GATS.

The ITC Project Survey asks all respondents if they believe tobacco use/tobacco smoke causes each specific disease.

Appendix B: Resources for Implementation and Further Information

Cardiovascular Oriented Reports

Secondhand Smoke Exposure and Cardiovascular Effects: Making Sense of the Evidence: **http://www.iom.edu/Reports/2009/Secondhand-Smoke-Exposure-and-Cardiovascular-Effects-Making-Sense-of-the-Evidence.aspx**

Promoting Cardiovascular Health in the Developing World: A Critical Challenge to Achieve Global Health: **http://www.iom.edu/Reports/2010/Promoting-Cardiovascular-Health-in-the-Developing-World-A-Critical-Challenge-to-Achieve-Global-Health.aspx**

Cessation Programs for Health Services, and Training Tools for Health Professionals

Ottawa Model for Smoking Cessation: **http://www.ottawamodel.ca/en_main.php**

Rx for Change, Clinician-Assisted Tobacco Cessation: **http://rxforchange.ucsf.edu**, 'Cardiology Rx for Change offers a packaged training tool for improving treatment of tobacco use and SHS exposure in cardiology care.'

WHO FCTC Guidelines for Implementation

The World Health Organization's Framework Convention on Tobacco Control: **http://www.who.int/fctc/en/**

WHO Framework Convention on Tobacco Control: Guidelines for implementation of Article 8. Guidelines on the protection from exposure to tobacco smoke: **http://www.who.int/tobacco/mpower/protect/en/index2.html**

WHO Framework Convention on Tobacco Control: Guidelines for implementation of Article 11. Packaging and labelling of tobacco products: **http://www.who.int/fctc/protocol/guidelines/adopted/article_11/en/**

WHO Framework Convention on Tobacco Control: Guidelines for implementation of Article 12, Education, communication, training, and public awareness: **http://www.who.int/fctc/protocol/guidelines/adopted/article_12/en/index.html**

WHO Framework Convention on Tobacco Control: Guidelines for implementation of Article 14, Demand reduction measures concerning tobacco dependence and cessation: **http://www.who.int/fctc/protocol/guidelines/adopted/article_14/en/index.html**

Health Warning Labels

Tobacco Labelling Resource Centre: **http://www.tobaccolabels.ca/**
WHO FCTC Health Warnings Database: **http://www.who.int/tobacco/healthwarningsdatabase/**

Organizations

The World Heart Federation: **http://www.world-heart-federation.org/**
The Non-Communicable Disease Alliance: **http://www.ncdalliance.org/**
Global Network for Tobacco Free Health Services: **http://www.ensh.eu/**
Global Smoke Free Partnership: **http://www.globalsmokefreepartnership.org/**

Tobacco Control Surveys

The International Tobacco Control Policy Evaluation Project Survey: **http://www.itcproject.org**
The Global Adult Tobacco Survey: **http://www.who.int/tobacco/surveillance/survey/gats/en/index.html**
Global Health Professions Student Survey: **http://www.who.int/tobacco/surveillance/ghps/en/index.html**

Tobacco Control Reports

A Report of the Surgeon General: How Tobacco Smoke Causes Disease: The Biology and Behavioral Basis for Smoking-Attributable Disease: **http://www.surgeongeneral.gov/library/tobaccosmoke/**

Eriksen M, Mackay J, Ross H. The Tobacco Atlas (4th ed). American Cancer Society and World Lung Foundation, 2012. **http://www.TobaccoAtlas.org/**

From Burden to "Best Buys": Reducing the Economic Impact of Non-Communicable Diseases in Low- and Middle-Income Countries: **http://www.who.int/nmh/publications/best_buys_summary.pdf**

Warren CW, Asma S, Lee J, Lea V, Mackay J. Global Tobacco Surveillance System: The GTSS Atlas. CDC Foundation, 2009.

WHO Reports on the Global Tobacco Epidemic 2008, 2009, 2011: **http://www.who.int/tobacco/global_report/en/**

WHO Global Atlas on Cardiovascular Disease Prevention and Control, 2011: **http://www.who.int/cardiovascular_diseases/publications/atlas_cvd/en/**

WHO Global Report: Mortality Attributable to Tobacco. 2012. **http://whqlibdoc.who.int/publications/2012/9789241564434_eng.pdf**

This report is available at the following websites:

World Heart Federation: www.worldheart.org/tobacco-control

World Health Organization: www.who.int/tobacco

International Tobacco Control (ITC) Policy Evaluation Project: www.itcproject.org

V2