

Tobacco Consumption and Control in Canada, Germany, and the United States

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ABSTRACT

This paper identifies factors related to tobacco use in Canada, Germany, and the United States. Basic epidemiologic data are presented. Tobacco consumption rates are compared. Control measures are examined across the three nations. Non-comprehensive policies and inconsistent implementation and enforcement of laws inhibit maximum health benefits from occurring. Until such consistency occurs, morbidity and mortality from tobacco products will continue to be a public health threat.

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Introduction

Currently, tobacco-related diseases incurred as a result of the use of tobacco products kill one in ten people worldwide. Ten billion cigarettes are sold daily, the equivalent of ten million per minute (WHO Regional Office for the Western Pacific, 2005). Because half of all long-term smokers die from complications related to tobacco use, it is designated as the single most preventable cause of premature death globally (WHO Regional Office for the Western Pacific, 2005). All forms of tobacco use cause health problems that result in disease, disability, or death (Eriksen & MacKay, 2002). Even with the inevitable negative impact upon health, there are more people smoking today than at any other time in human history (Eriksen & MacKay, 2002). This number is most pronounced in the developing world. Over 80% of tobacco related deaths will occur in developing countries by 2030 (WHO, 2008). Compared to the developed countries that are witnessing a decline in tobacco use (WHO Regional Office for the Western Pacific, 2005), tobacco use in developing nations continues to rise dramatically. These trends notwithstanding, tobacco use in developed countries such as Canada, Germany, and the United States still poses major public health changes.

Epidemiology – Canada, Germany, and the U.S.

Canada

The Mortality Attributable to Tobacco Use in Canada and its Regions Study estimated there were 47,581 deaths attributable to smoking in 1998, of which 30,230 men and 17,351 women died, representing a total increase of 9,224 deaths since 1989 (Health Canada, 2007a). The greatest number of deaths occurred in Ontario (16,394), Quebec (13,295), the Prairies (7,593), British Columbia (5,730) and the Atlantic region (4,569) (Health

Canada, 2007a). Lung cancer (13,951), ischemic heart disease (9,289) and chronic airways obstruction (6,457) were the top causes of adult smoking-attributable deaths, with cigarette smoking being responsible for 22% of these deaths (Health Canada, 2007a). Among all tobacco-related deaths (47,581), second-hand smoke (environmental tobacco smoke) was estimated to be responsible for 1,107 of the deaths related to lung cancer or ischemic heart (Health Canada, 2007a). Trends in the increase in smoking-attributable deaths reflect the high prevalence of tobacco consumption in the prior two and three decades (Health Canada, 2007a). Moreover, because males decreased smoking consumption in the mid-1960s where females decreased smoking consumption in the late 1970s, lung cancer rates for males have shown a decline whereas female lung cancer rates should begin to decline in the upcoming years (Health Canada, 2007a).

Germany

According to one report (Neubauer, Welte, Beiche, Koenig, Buesch, & Leidl (2006), 114,647 German deaths and 1.6 million years of productive life lost [YPLL] were attributable to smoking in 2003. Estimated total costs were €21 billion, with €7.5 billion for acute hospital care, inpatient rehabilitation care, ambulatory care and prescribed drugs; €4.7 billion for the mortality-related indirect costs; and €8.8 billion for costs from lost work days and premature retirement from employment. During the ten years between 1993 and 2003, the proportionate mortality attributable to smoking stayed nearly constant (13.0% in 1993 and 13.4% in 2002). Whereas the smoking-attributed deaths among men declined by 13.7%, smoking attributed deaths among women actually rose by 45.3%.

United States

Tobacco use is the leading preventable cause of death in the United States (US Department of Health

and Human Services [USDHHS], 2001). According to the Centers for Disease Control and Prevention [CDC], cigarette smoking is causally related to an estimated 438,000 deaths, or approximately one out of every five U.S. deaths (CDC, 2005, 2006). Included in this figure are the estimated 38,000 deaths annually that can be attributed to exposure to secondhand or “sidestream” smoke (CDC, 2005). Cigarettes kill an estimated 259,500 men and 178,000 women in the United States each year, a ratio of 1.46 men for every woman (CDC, 2005). Whereas Americans also die from human immunodeficiency virus (HIV), illegal drug use, alcohol, motor vehicle injuries, suicides, and homicides, more die as a consequence of tobacco use than all of these other causes combined (CDC, 2005, McGinnis & Foege, 1993). Adults who do *not* smoke have a life expectancy of 14 years longer than that of smokers (CDC, 2002). If current U.S. cigarette consumption patterns persist, approximately 25 million Americans alive today will die prematurely from smoking-related diseases (CDC, 1997).

Annual smoking-related deaths include 124,000 due to lung cancer, 108,000 due to heart disease, and 90,000 from the chronic lung diseases of emphysema, bronchitis, and chronic airway obstruction (CDC, 2005). Compared to *never smokers*, the relative risk of death due to lung cancer is more than 22 times greater among male cigarette smokers and an estimated 12 times greater among female cigarette smokers (Novotny & Giovino, 1998). Since 1950, however, lung cancer deaths for women have increased at least 600%, and since 1987, lung cancer has been the leading cause of cancer-related deaths among women (USDHHS, 2001).

Whereas cigarette smoking is customarily recognized by the public as a cause of lung cancer, it also demonstrates a two- to three-fold greater risk of dying from coronary heart disease (Novotny & Giovino, 1998). Moreover, cigarette smoking is associated with a ten-fold increased risk of dying from chronic obstructive lung disease (CDC, 1997). In addition, on the order of nine out of ten deaths from chronic obstructive lung diseases can be attributed to cigarette smoking (Novotny & Giovino, 1998; USDHHS, 2001).

Cigarette smoking is not alone in its elevation of disease risk. Pipe smoking and cigar smoking also magnify the risk of lung, esophageal, laryngeal, and oral cavity cancer death (USDHHS, 1989). Furthermore, smokeless or “spit” tobacco use increases significantly increases the risk of oral cancer (USDHHS, 1986, 1989).

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Canada

The Canadian Tobacco Use Monitoring Survey (CTUMS) is a survey developed to assist Health Canada in determining the prevalence and trends related to tobacco use among Canadians (Health Canada, 2007b). Findings from the CTUMS conducted in 2007 revealed that 19% (5.2 million) of Canadians aged 15 years and older currently smoke, with more males (20%) currently smoking compared to females (18%) (Health Canada, 2008a). Approximately 15% and 4% of Canadians reported smoking daily and occasionally, respectively, with daily smokers consuming 15.5 cigarettes on average (Health Canada, 2008a). The difference between male and female smoking rates has diminished (6% in 2005 vs. 2% in 2007); however, the overall current smoking rate remains unchanged over the past three years (Health Canada, 2008a). Sixty-two percent of Canadians report ever having smoked a cigarette, with 52% of those smoking their first cigarette by age 15 years (Health Canada, 2008a). The prevalence of smoking varies from 14% in British Columbia to 24% in Saskatchewan, although all provinces remained $\pm 5\%$ from the national average (19%) (Health Canada, 2008a).

Among youth (15-19 years) and young adults (20-24 years), 15% and 25% reported that they currently smoke, respectively (Health Canada, 2008a). Nine percent and 6% of youth reported smoking daily and occasionally, respectively, with daily youth smokers consuming 11.7 cigarettes on average per day (Health Canada, 2008a). Seventeen percent and 9% of young adults reported smoking daily and occasionally, respectively, with the daily young adult smokers consuming 13.0 cigarettes on average per day (Health Canada, 2008a). There were no differences found between male (15%) and female (15%) smoking rates for youth; however, young adult males (28%) have a greater smoking prevalence compared to young adult females (23%) (Health Canada, 2008a).

Among all Canadians (15 years and older), youth (15-19 years) and young adults (20-24 years), 37%, 32% and 46% reported ever smoking little cigars and 4%, 11% and 10% reported smoking a little cigar in the past 30 days, respectively (Health Canada, 2008a). In addition, 4% and 1% of Canadians (15 years and older) reported ever smoking herbal cigarettes and having smoked a herbal cigarette in the past 30 days, respectively (Health Canada, 2008a).

Germany

Currently, 27.2% of Germans over the age of 15 are smokers (WHO, 2008) with more men than women indicating that they are smokers. The number of men who use tobacco is on the decline, whereas the opposite is occurring with German women

(Robert Koch-Institute, 2006). This increase in cigarette use by women is a growing concern and demands analysis of what is motivating German women to “light up.” Tobacco use is one of the most significant health risk factors for Germans (Robert Koch-Institute, 2006). As in Canada and the United States, the high-risk behavior of smoking is costing Germans billions of Euros (Meyer, Nowak, Ruff, & Volmer, 2000).

United States

In the United States there are an estimated 20.8% of adults that smoke cigarettes, just over 45 million adults (CDC, 2007a), with the highest percentage being adults ages 18 to 24 (CDC, 2007a). As the trend line in Figure 1 shows, the prevalence of smoking among U.S. adults stayed virtually static at around 23% between 1990 and 2002, despite scores of initiatives to diminish tobacco use. Smoking is higher among adults in ethnic minority groups, with lower education, and with people who live below the poverty level (CDC 2007a). Among youth in the U.S. in grades 9 through 12, although there appears to have been a statistically significant decline in the proportion of recent smokers (previous 30 days) between 1991 and 2005, the overlap of the 95% confidence intervals suggests that this apparent decline might be attributable to measurement error (Table 1).

Figure 1. Smoking Prevalence among U.S. Adults ≥ 18 years old – 1990-2002.

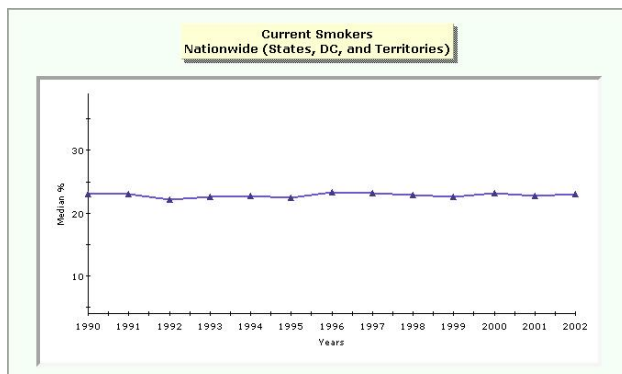


Table 1. Percentage of U.S. Students in Grades 9-12 Smoking Cigarettes on ≥ 1 Days in the Past 30

United States	1991		2005		P =
	Percent	95% CI	Percent	95% CI	
	27.5%	±2.7	23.0%	±2.3	0.02

Source: CDC Youth Risk Behavior Survey Data

Tobacco Control Measures – Canada, Germany, and the U.S.

Canada

The Framework Convention on Tobacco Control (FCTC), is led by the World Health Organization and serves as the “world’s first international public health treaty” (Health Canada, 2007e). The FCTC utilizes an international framework to decrease “health, social, environmental and economic consequences” related to tobacco by controlling tobacco supply and consumption (Health Canada, 2007e). Tobacco control measures in Canada are typically more stringent than those of the FCTC; however, three Canadian regulations must be enforced to reach full FCTC compliance (Health Canada, 2007e). First, Canada must include health warning on *all* tobacco products sold, not just on the already enforced health warning found on cigarette packages (Health Canada, 2007e). Second, tobacco advertisements and promotions must also include health warning messages (Health Canada, 2007e). Third, all tobacco products must be labeled for domestic or export markets to assist in decreasing illicit tobacco trade (Health Canada, 2007e).

Nationally, Canada has implemented a comprehensive approach, the Federal Tobacco Control Strategy (FTCS), to assist in decreasing tobacco-related morbidity and mortality by focusing on “prevention, protection, cessation and product regulation” (Health Canada, 2007a). The FTCS’s progress has been significant with many of the ten-year objectives already achieved (Health Canada, 2007a). Selected successes of the FTCS include the following: graphic health warning on cigarette packages; required reporting by tobacco manufactures (sales data, research/promotion activities, listing of ingredients, etc.); smoking bans in public places; majority (81%) of retailers refusing to sell tobacco products to youth; and serving as the first country to reduce fire risk due to cigarettes through a national standard (Health Canada, 2007a). Canada was also the first country to utilize graphics health warnings on tobacco product packaging (became law in June 2000) which display messages related to tobacco diseases or tips on tobacco cessation, further demonstrating Canada’s strong tobacco control measures (Health Canada, 2008b). In January 2001, pictorial health warning labels were displayed on cigarette packages (cover the top 50% of the both sides of cigarette packages) and both youth and adult smokers report such warnings influence their smoking behaviors (Health Canada, 2007c).

The 1997 Tobacco Act is another federal legislative initiative that “regulates the manufacture, sale, labeling and promotion of tobacco products”

with the overall aim of protecting Canadians and enhancing their awareness regarding the health hazards of tobacco products (Health Canada, 2007f). Key actions of the Tobacco Act include enforcing manufactures to provide information about their product to the Minister of Health, prohibiting tobacco products to be given to youth in public places; and prohibiting the promotion of a tobacco product-related brand or manufacturer in association with a person, event, or facility (Health Canada, 2007f). Among the respondents who worked at a job/business in the past 12 months (94%), 88% reported that smoking was restricted in the workplace; however, 5% reported that smoking was not restricted in the workplace (Health Canada, 2008a).

Germany

Seventy years ago, during the era of National Socialism, Germany had what was arguably the most comprehensive anti-tobacco public health program of all time (McDermott & McCormack Brown, 2001; Proctor, 1996, 1997, 1999). Ironically, the control on tobacco imposed by the Nazis may have contributed to the suspicion about attempted governmental controls today. Since the 1950s, implementing tobacco control measures has traditionally been more problematic in Germany than other countries in Europe (Joossens & Raw, 2007).

Since September 2007 smoking has been prohibited in all federal government office buildings. Smoking has been banned on public transportation and restricted in train stations to designated areas. Fines for violations range from €5 to €1,000.

Whereas the ban on smoking in public places is now nationwide in Germany, and has been extended to bars and restaurants, it is up to the individual states (Länder)) to define the specifications of these laws. Therefore, the “teeth” of these laws vary across the different German states, as does how they are operationalized (e.g., from complete indoor bans to designated areas for smoking, and even to blatant non-compliance).

The federal regulations do ban minors from smoking in public and prohibit sales of tobacco products to minors. Even into the 21st century, sales from cigarette machines in public areas, including on street corners, were accessible to any child with coins. Today, cigarette machines have been fitted with a scanning device that necessitates insertion of either a driver’s license or a bankcard a sale can occur.

Germany still has limited advertising restrictions, versus 44 European countries with complete bans (WHO, 2007). Germany has however put into place taxation on tobacco products. As well, Germany provides anti-tobacco education and public awareness campaigns (WHO, 2007). Regional promotional and

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educational cessation programs are available; however smoking cessation is not part of Germany’s national health and health care programs (WHO, 2007). Germany does protect against the sale of tobacco products to minors and has a minimum age of 16; however, it is a voluntary agreement for vending machines and there is no licensing of retail sales (WHO, 2007).

United States

The Centers for Disease Control and Prevention (CDC) created the National Tobacco Control Program (NTCP) to coordinate national efforts against tobacco consumption to reduce tobacco-related deaths and diseases (CDC, 2007b). The four main goals of this program are: to eliminate exposure to tobacco smoke; promote smoking cessation amongst adults and youth; prevent the commencement of smoking among youth; identify and eliminate any disparities among different population groups (CDC, 2007b). To target these goals the CDC has laid out four components of community-based interventions, counter-marketing, program policy and regulation, and surveillance and evaluation (CDC, 2007b).

The United States have invested more, have sustained comprehensive tobacco control measurements, and have realized larger successes compared to others. The states that have invested more fully have seen a drop in cigarette sales that is more than twice that of other states (CDC, 2007b). California is one state that has been successful in reducing tobacco consumption. The percentage of smokers dropped from 22.7% in 1988 to 13.3% in 2006 (CDC, 2007a).

Summary

The three developed countries examined in this profile share many commonalities with respect to the consumption of tobacco products and the disease-related outcomes from persistent use of tobacco. Canada and the U.S., and to a lesser extent, Germany, have developed programs to control tobacco consumption. However, until programs are comprehensive, consistent, and thoroughly enforced, morbidity and mortality related to tobacco use will continue to be a major threat to the public’s health.

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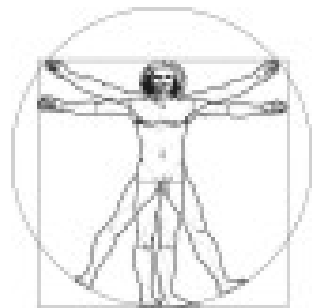
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