

TOBACCO CONTROL COUNTRY PROFILES

**Second Edition
2003**

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The 12th World Conference on Tobacco or Health

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**Second Edition
2003**

Editors:

Omar Shafey

Suzanne Dolwick

G. Emmanuel Guindon

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Foreword

John R. Seffrin

The American Cancer Society and its editorial partners were extremely gratified at the enthusiastic reception received by the first edition of *Tobacco Control Country Profiles* in Chicago at the 11th World Conference on Tobacco OR Health. In the intervening three years, we have received a continuous stream of requests for additional copies and updates. It is apparent that this first attempt to comprehensively chronicle the tobacco epidemic has filled a serious vacuum in the world's tobacco control armamentarium. Now, we are pleased to offer this revised and updated second edition of the *Tobacco Control Country Profiles*.

The *Tobacco Control Country Profiles* features a comprehensive compilation of statistical information about the world's most significant cancer risk factor: tobacco use. In the United States, tobacco causes 30% of cancer deaths among men and women. As the tobacco industry intensifies its marketing strategies in developing countries, the proportion of tobacco-attributed deaths worldwide continues to increase. The *Tobacco Control Country Profiles* is one element in a growing global information system to monitor the pandemic and support international tobacco control efforts.

The *Tobacco Control Country Profiles* reflects a high degree of cooperation and collaboration between hundreds

of tobacco control advocates around the world who contributed time, expertise, and information to revise this reference book and further develop emerging global information systems for tobacco control. We are grateful to the many dedicated advocates worldwide who share the American Cancer Society's commitment to fighting the global smoking pandemic.

It is our hope that momentum against tobacco use will continue to grow as a result of the partnerships formed at the 12th World Conference on Tobacco or Health and that this resource will aid all countries in vigorously pursuing the global tobacco policy recommendations set forth in the Framework Convention on Tobacco Control. Progress in decreasing tobacco-related morbidity and mortality worldwide will require people of every nation to look beyond geographic borders to support a global alliance against the predations of the tobacco industry.



John R. Seffrin, PhD
Chief Executive Officer
American Cancer Society

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Dr. Elizabeth Ward, Dr. Vilma Cokkinides, and Dr. Ahmedin Jemal provided technical advice and consultation in epidemiologic and statistical analyses. Mr. Taylor Murray calculated estimated tobacco-related mortality rates from data provided in the World Health Organization (WHO) Mortality Database, as well as providing vital assistance with overall *Profiles* database management. Ms. Lisa Marie Morgan, Ms. Katherine Carter Wheeler, and Ms. Sampada S. Deshpande contributed invaluable support in data abstraction, data entry, data verification, manuscript review and document management. Mr. Jayson Crump and Mr. Jeff Clements provided computer and library support, respectively. Ms. April Still, Ms. Kathryn O'Brien and Ms. Cheryl Cardinez assisted with proofreading the final manuscript. Ms. Susan Summers and Ms. Dana Russotto provided oversight for monograph design, typesetting, and production. Ms. Janet Weaver of JMW Graphic Design, Inc. provided typesetting services.

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Group. The Tobacco Free Initiative (WHO), managed by Ms. Vera Luiza da Costa e Silva, and the Office on Smoking and Health (CDC) directed by Dr. Rosemarie Henson, provided in-kind data and personnel support to the project. Mr. G. Emmanuel Guindon of the Tobacco Free Initiative prepared all sociodemographic, economic, agricultural, and trade data included in the *Profiles* and he served as the liaison between the American Cancer Society and WHO Regional Offices. Dr. Kate Strong and Ms. Jaclynn Lippe shared smoking prevalence data from the WHO Non-Communicable Disease (NCD) Database. Review and verification of country data, as well as the preparation of regional summaries, was supervised by Dr. Charles Maringo, Ms. Karen Klimowski, Dr. Armando Peruga, R. Jaime Perez-Martin, Ms. Heather Selin, Dr. Fatimah M S El-Awa, Dr. Haik Nikogosian, Ms. Ionela Petrea, Dr. Sawat Ramaboot, Dr. Khalilur Rahman, Dr. Harley Stanton, and Dr. Annette David, Tobacco Free Initiative advisors with the six WHO Regional Offices.

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Introduction and Overview of Global Tobacco Surveillance

Michael J. Thun, Vera Luiza da Costa e Silva

This second edition of *Tobacco Control Country Profiles* (the *Profiles*) provides updated information on tobacco production, trade, consumption, legislation, and disease burden for each of 196 countries and territories worldwide. Collectively these country profiles present a composite picture of the status of the tobacco pandemic in the early 21st century. They also illustrate strengths of the current system of global tobacco surveillance and future challenges that must be confronted to improve this system. An important strength in compiling the national profiles has been the collaborative efforts of the American Cancer Society and the World Health Organization (WHO Headquarters and regional offices) together with the activities in international tobacco surveillance of the Centers for Disease Control and Prevention (CDC), World Bank, and numerous tobacco control advocates worldwide. The *Profiles* represent the collective work of many people who contribute to global tobacco surveillance. The monograph will be disseminated in hard copy at the 12th World Conference in Helsinki and electronically through GLOBALink in conjunction with the International Union for the Control of Cancer (UICC).

The future challenge of global tobacco surveillance is to develop systems that will provide timely, reliable, and readily analyzable information on key indices of the tobacco problem to health workers in countries and regions worldwide. Much progress is being made in creating a decentralized surveillance system with greater capacity in the WHO regional offices, as discussed below. This is critical to improve the quality and availability of national and regional surveillance data on tobacco. Ultimately, such systems must provide timely and relevant evidence to support control programs that are truly effective in reducing tobacco use.

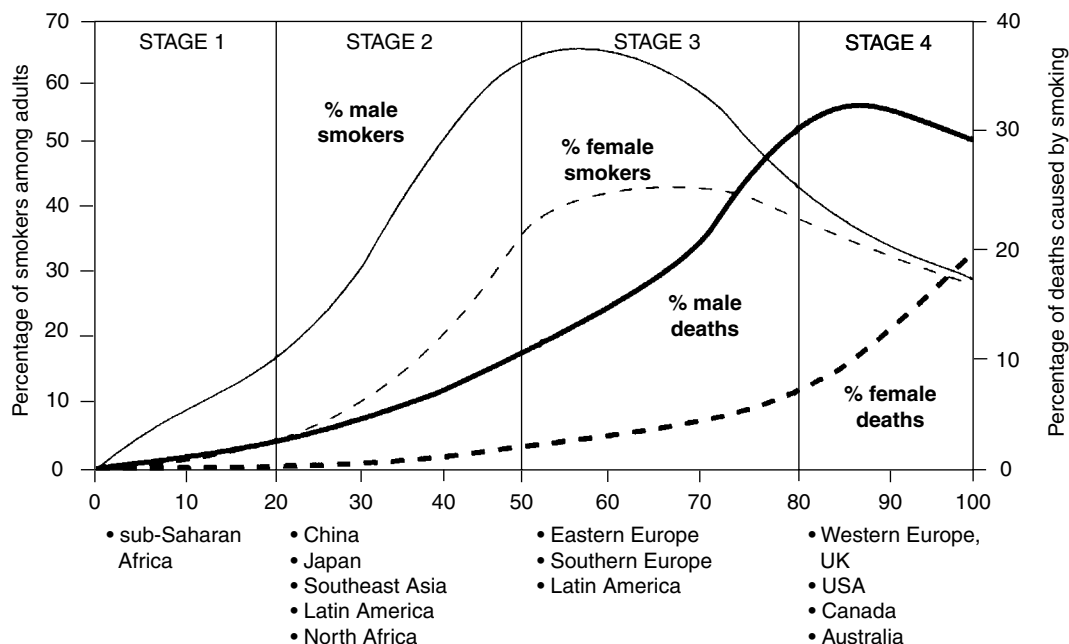
Magnitude of the pandemic: The profiles for individual countries are best understood within the larger context of the evolving global pandemic of tobacco dependence and resultant diseases. More data are currently available on the use of cigarettes and other smoked products than on smokeless tobacco. Worldwide, approximately 1.3 billion people currently smoke cigarettes or other products (almost one billion men, 250 million women).¹ With the decline in tobacco use in many industrialized countries, the geography of smoking continues to shift from the developed to the developing world. In 1995, more smokers lived in low- and middle-income countries (933 million) than in high-income countries (209 million).² About 35% of men in developed

countries smoke, compared with almost 50% of men in developing nations and almost two-thirds of Chinese men. The global burden of deaths from smoking, which lags behind trends in cigarette consumption by 30-60 years, is also increasing even more rapidly in economically developing than in developed countries. An estimated 4.9 million premature deaths from smoking occurred in the year 2000,³ approximately evenly divided between the industrialized and developing world.³ More than 600,000 of these smoking-attributable deaths occur in China alone. If current smoking patterns continue, deaths from smoking in Asia – home to a third of the world's population – are expected to increase by 2020 to 4.9 million annually.⁴ In 2020 the global burden is expected to exceed nine million deaths annually,⁴ with seven million of these occurring in economically developing countries.⁵ Global estimates of the number of deaths from smokeless tobacco products are less secure, but are approaching 100,000 deaths annually from oral cancer in southern Asia.⁶ Of everyone alive today, an estimated 500 million people will eventually be killed by tobacco.⁴

Conceptual framework of the evolving epidemic: With respect to cigarette smoking, the conceptual framework that links the various stages of the tobacco epidemic into a continuum, rather than a series of isolated events is the WHO model of the four stages of the evolving epidemic (Figure 1). The power of this model, originally proposed by Lopez, et al.,⁷ is that it allows virtually every country to find itself in relation to the larger pandemic. It also illustrates the connection between the indices used to monitor the epidemic in a particular country and the natural evolution involving tobacco marketing, dependence on manufactured cigarettes, and ultimately the disease burden caused by these products within and across countries.

Stage 1 of the WHO paradigm is characterized by a low prevalence (below 20%) of cigarette smoking, principally limited to males, with as yet no apparent increase in lung cancer or other chronic diseases caused by smoking. This stage encompasses many countries in sub-Saharan Africa that have not yet been drawn into the global tobacco economy, but that are vulnerable to the growth and changing strategic initiatives of transnational tobacco companies. Stage 2 of the epidemic is characterized by increases in smoking prevalence to above 50% in men, early increases in cigarette smoking among women, a shift towards smoking initiation at younger ages, and an increasing burden of lung

Figure 1. Four Stages of the Tobacco Epidemic



Source: Lopez AD, Collishaw NE, and Piha T. (1994). A descriptive model of the cigarette epidemic in developed countries. *Tobacco Control* 3: 242-247. Reproduced by permission of BMJ Publishing Group.

cancer and other tobacco-attributable disease in men. Many countries in Asia, North Africa, and Latin America fit this pattern. Tobacco control activities are usually not well developed, the health risks of tobacco are not well understood, and there is relatively low public and political support for the implementation of effective tobacco control policies.

Stage 3 of the epidemic is characterized by a marked downturn in smoking prevalence among men, a more gradual decline in women, and convergence of male and female smoking prevalence. Paradoxically, the burden of smoking-attributable disease and death continues to increase. At this stage, smoking attributable deaths comprise 10% to 30% of all deaths, about three quarters of these being in men. Many countries in Eastern and Southern Europe are currently at this stage of the epidemic. Health education about the diseases caused by smoking begins to decrease public acceptance of smoking, especially among more educated subgroups of the population.

Stage 4 of the epidemic is characterized by a marked downturn in smoking prevalence in both men and women. Deaths attributable to smoking among men peak at 30% to 35% of all deaths (40% to 45% of deaths in middle aged men) and subsequently decline. Among women, smoking-attributable deaths rise to about 20 to 25% of all deaths. Industrialized countries in Northern and Western Europe, North America, and the Western Pacific region are generally in or approaching this stage. However, even these countries

vary considerably in their progress against tobacco and in their ability to sustain national commitment to reduce tobacco use.

Not all countries in the world follow the WHO model of the tobacco epidemic in every detail. In China, for example, the prevalence of smoking among women has remained below 5% despite a high prevalence of cigarette smoking among men for several decades. In Thailand, per capita cigarette consumption decreased by over 30% from 1996 to 2000, due to national policies that ban cigarette marketing and discourage smoking. Nonetheless, the WHO paradigm is useful in characterizing the progression of the epidemic in most countries and in illustrating its deadly and protracted course, if not interrupted by effective national and international tobacco control policies.

Evidence of some progress in tobacco control: Despite the bleak statistics of the global tobacco pandemic, some surveillance measures reflect encouraging trends in international tobacco control. Per capita cigarette consumption continues to decrease in many industrialized countries, especially in countries at Stage 3 or 4 of the epidemic where tobacco control efforts have strengthened over several decades. Figure 2 illustrates that the average per capita consumption (estimated as (production + imports – exports) ÷ population age > 15 years) in the WHO Pan-American region has approximately halved during the interval 1975 to 2000. Much of this decline occurred in the United States and

Canada, where popular support for clean indoor air laws, increases in cigarette excise taxes, counter-advertising, and other components of comprehensive tobacco control have discouraged smoking initiation by adolescents and reduced consumption among addicted smokers.

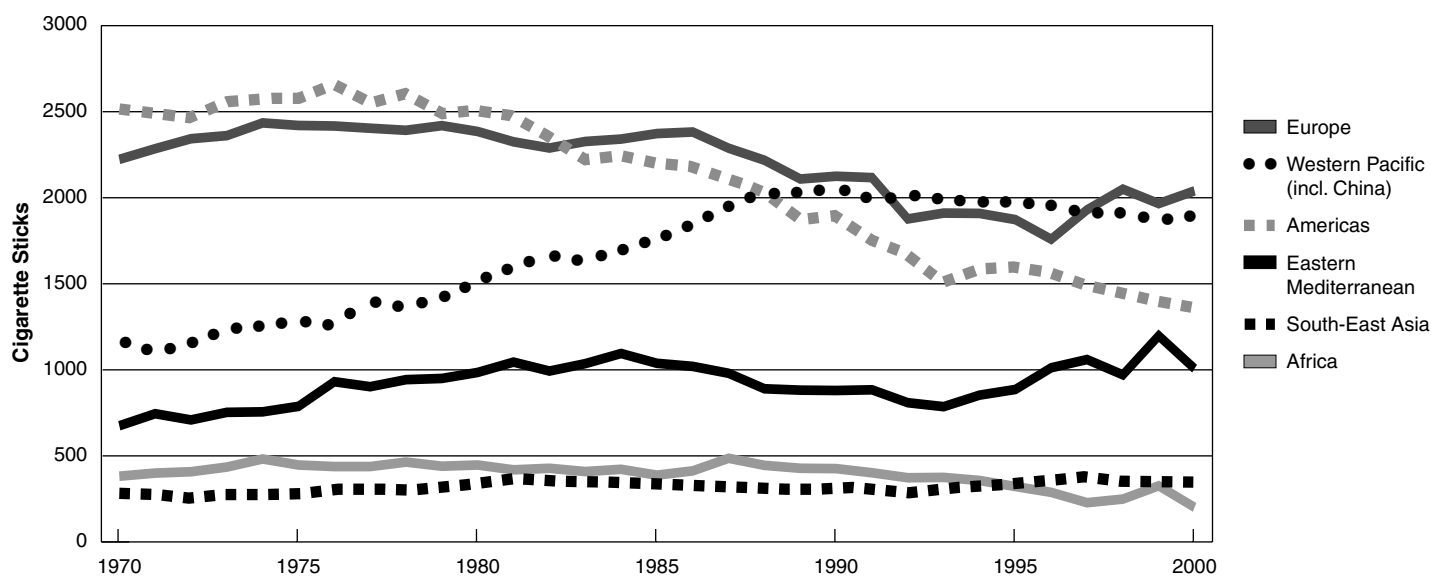
Per capita cigarette consumption has also decreased gradually in the Western Pacific region since 1987, reflecting continuing long-term decreases in Australia and New Zealand and more recent declines in China and the Republic of Korea. Recent trends show a decrease in consumption in some European countries (Austria, Croatia, France, Greece, Iceland, Poland, Slovenia, and the United Kingdom) but an increase in others (Bulgaria, Italy, Netherlands, Serbia and Montenegro, Spain, and the Russian Federation). The upturn in average per capita consumption that occurred after 1996 in the European Region occurred not only because of increases in smoking and improvements in measuring smoking in Eastern European countries but also because of increasing consumption in several Western European countries. Per capita consumption varies widely across Western Europe. In the year 2000, the highest per capita consumption estimates in the world were from Bulgaria, Japan, Greece and the Netherlands, followed closely by the Russian Federation, Spain and Switzerland. In contrast, the per capita consumption estimates for Azerbaijan, Norway, and Uzbekistan were in the lowest decile of countries for which these data are available.

Estimates of per capita tobacco consumption are a useful component of tobacco surveillance in that they reflect historical trends in smoking over a longer time period and in more

countries than do prevalence surveys. Limitations of the sales-weighted estimates of tobacco consumption are that they do not indicate who is smoking the cigarettes and may be distorted by cigarette smuggling or other trade anomalies. However, anomalous trends in per capita consumption, cigarette sales, imports, and/or exports may draw attention to problems of cigarette smuggling.⁸ For example, countries such as Bosnia and Herzegovina, Brunei, Croatia, Cyprus, Lebanon, Republic of Korea, and the United Arab Emirates report cigarette imports that far exceed the combination of exports and plausible domestic consumption, suggesting the need for controls to ensure that these products are not shipped illegally to other markets.

Measures of smoking initiation among adolescents: Much progress has been made in collecting standardized data on tobacco use among adolescents, a critical indicator of the initiation of tobacco use and harbinger of future trends in the prevalence of tobacco dependence among adults. In most countries the great majority of smokers begin to use tobacco before age 18 years.^{9,10} Therefore, the prevalence of smoking and other forms of tobacco use among adolescents provides a sensitive measure of the initiation of tobacco dependence, provided that the survey methods are standardized to allow valid comparisons over time. A major initiative by the Global Youth Tobacco Survey (GYTS) Collaborative Group¹⁰ is administering confidential, self-administered school-based questionnaires to monitor tobacco use by adolescents, age 13-15 years in approximately 150 countries. More than one million students have already completed GYTS surveys, which provide the data on tobacco use among adolescents

Figure 2. Average per capita cigarette consumption in persons age ≥15 years by WHO region



Source: United Nations Statistics Division. (2003). Commodity Trade Statistics Database.

for 51 countries in this monograph. Surveillance using GYTS promises to be a relatively inexpensive and effective approach for measuring youth tobacco exposure.¹⁰

Currently, longitudinal data on tobacco use among adolescents are available for only a few economically developed countries. An encouraging decrease in cigarette smoking among adolescents occurred in the United States between 1997 and 2001 (Figure 3), based on nationally representative surveys of high school students participating in the Youth Risk Behavioral Surveillance System (YRBSS).¹¹ The prevalence of smoking during the preceding 30 days decreased between 1997 and 2001 among males and females in each of the three largest racial and ethnic subgroups. This decrease occurred despite major increases in expenditures on tobacco promotion by the tobacco industry. This encouraging trend indicates that it is possible to reduce smoking initiation by adolescents if tobacco control measures that are known to be effective are actually implemented.

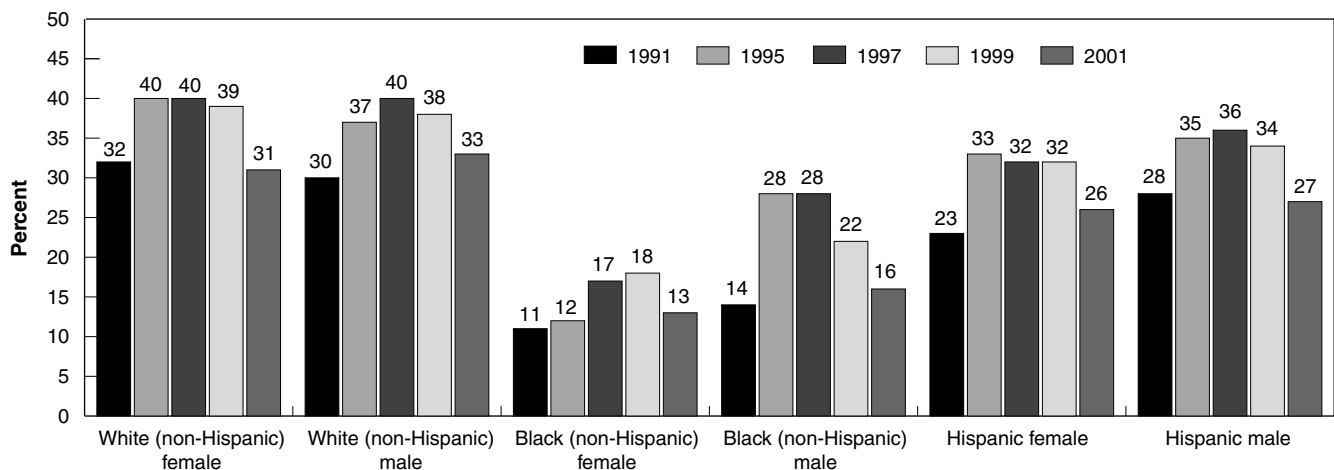
In contrast, Figure 4 illustrates that lifetime smoking prevalence among 15-16 year olds increased significantly from 1995 to 1999 in ten of the 23 countries that participated in the European School Survey Project on Alcohol and Other Drugs (ESPAD)¹² in both years. Lifetime prevalence was defined as reporting the use of cigarettes at least 40 times. Tobacco use among adolescents is believed to be increasing in many other countries. Over the next five years, countries that periodically measure various forms of tobacco use among adolescents through GYTS will be able to evaluate longitudinal trends.

Tobacco use among women: The global prevalence of tobacco use is substantially higher in men (47%) than in women (12%),¹³ reflecting the traditionally low prevalence of

female smoking in many developing countries. However, the tobacco industry has targeted women in promotional strategies,¹⁴ calculating that the large population of women who do not use tobacco represent a vast untapped market for tobacco.¹⁵ The themes of tobacco marketing to women typically associate smoking with feminism, sophistication, weight control, and Western-style independence.¹⁴ The rapid increase in smoking prevalence that occurred among women in Spain, Italy, and Greece since the 1970s,¹⁶ decades after the increase in female smoking in other Western countries, demonstrates that cultural prohibitions against tobacco use by women can be eclipsed by social change and aggressive tobacco marketing aimed at women. Recent increases in female smoking prevalence have been reported from Cambodia and Malaysia¹⁷ and Bangladesh.¹⁸ Adult smoking prevalence is actually higher in women than men in five countries: the Cook Islands, Nauru, Norway, Papua New Guinea, and Sweden. In the 1999 ESPAD survey of 15-16 year old school children, girls were more likely than boys to report having smoked at least 40 times in their lifetime in eight countries (Bulgaria, Denmark, Ireland, Italy, Malta, Norway, Slovenia, and the United Kingdom) of the 23 participating.¹² A more typical pattern among adults has been the convergence of male and female smoking prevalence occurring in many countries in Europe and North America.¹⁶

Other leading indicators in tobacco surveillance: Other leading indices that reflect critical transitions in tobacco usage or expansion of the tobacco economy in particular countries concern patterns of tobacco use among health professionals and trends in tobacco cultivation, processing, and/or manufacture. Doctors and other health professionals are generally quick to initiate regular cigarette

Figure 3. Prevalence of cigarette smoking in the last 30 days among high school students in the US, 1991-2001



Source: Youth Risk Behavior Surveillance System, 1991, 1995, 1997, 1999, 2001, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention.

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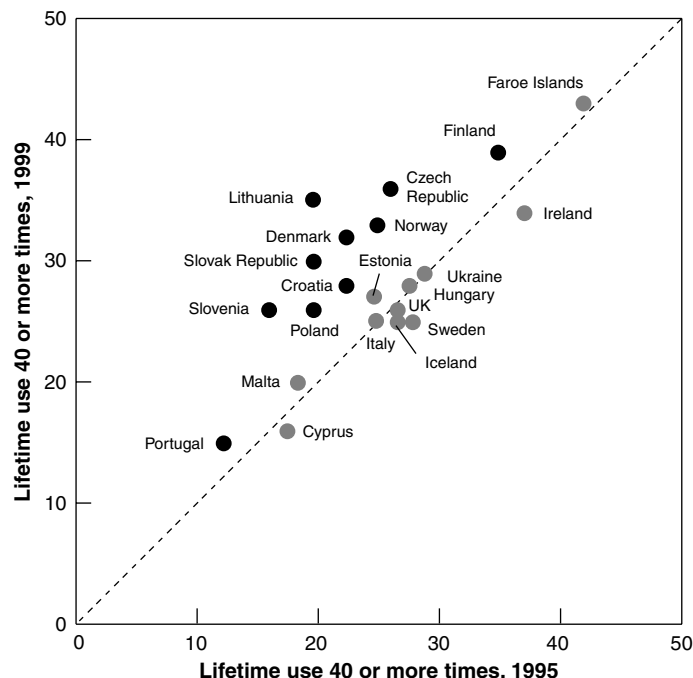
smoking in Stage 1 or 2 of the epidemic, but later become leaders in smoking cessation and in the dissemination of information about the adverse health effects of tobacco use. Through the Tobacco Free Initiative and with the support of the CDC, WHO has collaborated with the World Medical Association and the International Council of Nurses to develop a standardized survey instrument that monitors the prevalence of tobacco use and the knowledge, attitudes, and behaviors of health professionals (especially general practitioners) regarding tobacco. The survey is intended to guide the development of appropriate control strategies for both caregivers and their patients. Initial data collection has been completed in Bahrain, Iran, Kuwait, Oman, and the Republic of Korea. In three countries, Kuwait, Republic of Korea, and Bahrain, analyses have been completed and the reports are being disseminated and publicized through mass media.

Another indicator that reflects strategic initiatives by the transnational tobacco companies, in conjunction with national and local governments, involves trends in tobacco cultivation, processing, and/or manufacture. Table 1 lists countries in which the acreage devoted to tobacco cultivation increased by more than 20% between 1970 to 2000. Although investments in tobacco production may be seen by local political leaders as providing a short term economic benefit, such investments ultimately displace other, less destructive economic activities, and strengthen and entrench the political base for a tobacco economy.

Table 1. Countries in which the number of hectares devoted to tobacco cultivation increased by more than 20% from 1970 to 2000

	1970	2000
<i>Africa:</i>		
Zimbabwe	43,668	90,769
Malawi	41,354	118,752
Tanzania	17,500	44,000
Ghana	1,630	4,500
Rwanda	1,100	2,800
Niger	720	6,200
Kenya	500	14,160
Mali	87	372
Chad	12	145
<i>America Region:</i>		
Brazil	245,207	309,989
Honduras	4,493	11,214
Guatemala	4,150	8,374
Panama	730	1,100
Uruguay	481	830
Haiti	150	400
<i>Other:</i>		
China	394,053	1,441,537
Malaysia	3,237	9,129
Syrian Arab Republic	10,212	16,726

Figure 4. Comparison of cigarette smoking among students age 15-16 years in 1995 and 1999 in selected countries. Countries above the dotted line experienced increases in smoking prevalence.



Source: European School Survey Project on Alcohol and Other Drugs. <http://www.ipdt.pt/investigacao/esp99/indice.htm>

Future directions of global tobacco surveillance: Article 20 of the draft WHO Framework Convention on Tobacco Control specifies that parties are obligated to establish, as appropriate, programs for national, regional, and global surveillance of the magnitude, patterns, determinants, and consequences of tobacco consumption and exposure to tobacco smoke. This involves the development of effective national and regional systems for the epidemiological surveillance of tobacco. It also involves the integration of such programs into global efforts to facilitate the exchange of information, and to analyze and disseminate surveillance data regarding tobacco.

Substantial efforts are underway to strengthen the infrastructure of global tobacco surveillance through the regional WHO offices. Local tobacco control advocates at the grassroots level provide the underlying momentum for this work. Training programs led by the CDC and WHO have greatly improved the quality, standardization, and potential availability of data on tobacco use by adolescents. The expertise developed to collect, analyze, and report data on youth tobacco use will facilitate the collection and analysis of other kinds of surveillance data. The development of strong and effective partnerships within countries will strengthen the local capacity for tobacco control. Passage of the draft WHO Framework Convention on Tobacco Control will provide continuing opportunities for grassroots involvement in monitoring overt and covert violations of the convention regarding tobacco marketing.

It is also essential that current surveillance data on tobacco consumption and trade continue to be available electronically for broad use. The first edition of this monograph was posted online through the National Tobacco Information Online System (NATIONS), previously maintained by the CDC. Possibilities are being explored by WHO to integrate NATIONS into the WHO Statistical Information System (WHOSIS). The international data will become increasingly useful as standardized and longitudinal information become available from more countries, allowing the analysis of time trends within countries and valid regional comparisons. The electronic database could also be enhanced by providing more timely economic data on tobacco cultivation, manufacture, imports, and exports, thus alerting tobacco control workers to problems from smuggling, investments in the tobacco economy, and trends in cigarette consumption.

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