

Strategic priorities in tobacco control for governments and international agencies

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Any review of strategic priorities in tobacco control will tend to be simplistic, given the variation in factors affecting policy at the local level. The key goal of comprehensive tobacco-control programs is to improve health, but correcting market failures and reducing inequality are other important goals. For short-term progress in reducing mortality, programs need to be focused both on reducing the uptake of smoking by children and on helping adults to quit. Most tobacco-control programs will be a combination of price, information, and regulation interventions, but the relative importance of each of these three components will vary across countries by income level and administrative capacity. Where such combined control programs have been evaluated, they appear to be effective, and they can be implemented at low per capita costs. We examine some responsibilities of the international agencies reviewing their own policies and programs, acting regionally on specific control instruments, and sponsoring research. Finally, the political economy of tobacco control is discussed.

19.1 Introduction

While the health arguments for acting against tobacco are largely beyond dispute, there is substantial debate on the economics of tobacco control. Many believe that smoking is a sovereign choice made by informed adults, and that, as such, the state has no business intervening (*The Economist* 1995, 1997). The tobacco industry has argued that measures to reduce tobacco demand would reduce tax revenues, cause massive and sudden unemployment, and increase smuggling. Finally, some in the public health community have doubted the efficacy of price interventions (Pierce *et al.* 1998).

The preceding chapters of this volume address some of these economic questions. While much more research is required, several clear conclusions emerge. First, in addition to health reasons, governments are justified in intervening to correct the evident failures in the tobacco market. These failures, which result in inefficient allocation of resources, are: a lack of information about the health consequences of tobacco use; a lack of information about the risks of addiction; and the costs imposed on non-smokers. Government intervention is also justified to reduce inequalities between rich and poor. A second key conclusion is that if tobacco taxes were increased, tax revenues would not fall in the short- to medium-term but rather would rise. A third conclusion is that measures to reduce tobacco demand would cause few, if any, net job losses in most economies around the world. Fourth, tobacco smuggling, although a serious and

growing concern for some countries, is best addressed by tackling crime and not by lowering tax rates. Fifth, there are several effective and cost-effective interventions including price increases, information measures and greater access to nicotine replacement therapies (NRT).

This chapter describes key issues faced by countries and international developmental agencies in applying these interventions. Societies take into account many factors, and not only economics, in deciding on and implementing policies. The determination of suitable tobacco-control policies is a complex matter and policies must be tailored to each country. We do not aim to provide a blueprint for action at country level, but rather to provide a general framework, which various governments and international agencies may consider when reviewing their tobacco control policies.

We first discuss comprehensive national tobacco-control programs, focusing on their goals, targets, and instruments, relevance to different countries, effectiveness, and costs. Next, we outline some major challenges that require international action. Third, we suggest an agenda for research and development (R&D) in tobacco control. Finally, we discuss the political economy of implementing control programs.

19.2 National, comprehensive tobacco-control programs

Comprehensive control programs need to be based on multiple interventions, and they should include coordination and evaluation functions. The goals, targets, and instruments of such programs are briefly reviewed, as well as their costs and outcomes. We also ask how well such programs transfer between countries.

19.2.1 Goals, targets and instruments

The chief goal of a tobacco-control program is to improve health. In addition, such programs can address market failures by deterring children from smoking, protecting non-smokers, and providing all smokers with information about the effects of tobacco. As governments increasingly turn their attention to health inequalities (World Bank 1993), the reduction of inequalities in tobacco-attributable deaths between poor and non-poor groups becomes an additional goal. Table 19.1 shows the degree to which each of the three goals is met by a range of effective instruments.

Many societies might consider that the strongest reason for acting to control tobacco is to deter children and adolescents from smoking. The public health community has often focused on reducing the uptake of smoking by children (see, for example, Institute of Medicine (1994)). A group of economists also concluded that the strongest rationale for increasing tobacco taxes was to deter children from smoking (Warner *et al.* 1995).

However, interventions that specifically target only children and adolescents, such as youth information or restrictions on sales to young people, are unlikely to have the desired effect, especially if done in isolation (Chapter 7, Chapter 8, and Chapter 11). Interventions that *are* effective in dissuading children from smoking, chiefly tax increases, also reduce adult consumption.

In any case, tobacco-control policies with the sole effect of deterring children from

Table 19.1 Goals for tobacco control: policy and instruments

Policy instrument		Improve health	Correct market failures			Reduce inequalities in health outcomes
			Protect children	Protect non-smokers	Inform adults	
Demand side						
Taxation	Raise tax.	3	3	1	1	3
Information	Research causes, consequences and costs.	2	1	2	3	1
	Mass information, prominent warning labels.	2	2	2	2	2
Regulation	Ban advertising and promotion.	2	3	1	2	2
	Restrict public and workplace smoking.	2	1	3	1	1
	De-regulate nicotine replacement products.	1	0	1	2	2
Supply side						
	Control smuggling.	1	2	0	0	1

Source: authors' calculations, based on a survey of 23 economists and tobacco-control experts during a technical review meeting for this volume held in Lausanne, Switzerland, in November 1998.

3 = highly relevant, 2 = relevant, 1 = somewhat relevant, 0 = not relevant.

starting to smoke would have minimal impact on global smoking deaths for many decades, since most of the projected deaths for the first-half of the next century are those of existing smokers (see Fig. 19.1). There are, therefore, as we have seen, strong practical reasons for adopting control measures that affect adults as well as children.

Next, we discuss the optimal levels of control interventions. These levels will, of course, depend on each society's particular goals and willingness to accept the different control instruments. Take the complex question of the optimal tax on tobacco products. As Chaloupka *et al.* discussed in Chapter 10, any attempt to determine the optimal tax on cigarettes depends on empirical facts that are often difficult to measure, such as the scale of the costs to non-smokers, and the differing costs to smokers of different income levels. It also depends on varying societal values, such as the extent to which children should be protected, and the specific goal that the tax seeks to achieve, such as a specific gain in revenue or a specific reduction in disease burden. Townsend (1993), for example, suggests that a 64% increase in cigarette price by the year 2000 in the United Kingdom would have reduced cigarette use per adult by about 34%.

The optimal level of another major tobacco-control intervention, the provision of information to consumers, is equally dependent on each society's specific goals. If the

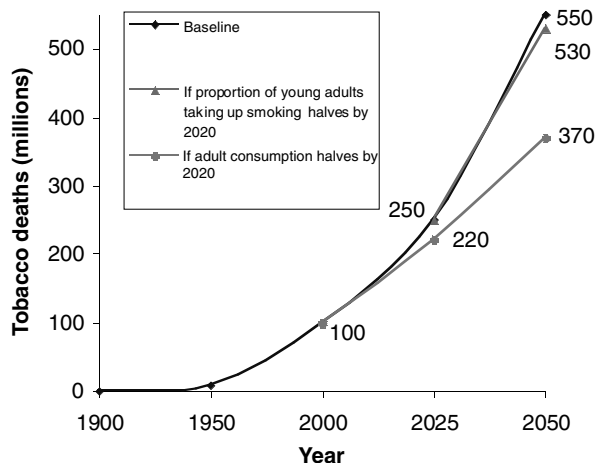


Fig. 19.1 Unless current smokers quit, tobacco deaths will rise steeply in the next 50 years. Estimated cumulative tobacco deaths 1900–2050 with different intervention strategies.

Note: Peto and others estimate that there were 60 million smoking-related deaths between 1950 and 2000 in the high-income countries and former socialist economies. Based on recent data from China and India, it appears likely that there were between 15 and 30 million deaths from tobacco use over the same time period in developing countries. We estimate an additional 5–15 million deaths worldwide between 1900 and 1950. Projections for deaths from 2000–2050 are based on Peto and Lopez (in press).

Source: Peto *et al.* (1994) and Peto and Lopez (in press).

goal is to ensure widespread awareness of the health risks of smoking then, as a minimum, local studies of the health consequences of tobacco are required. As Kenkel and Chen have discussed in Chapter 8, independent scientific reviews, such as reports by the United States Surgeon General and the United Kingdom Royal College of Physicians, were milestones in declines in consumption in high-income countries. Two major studies have recently published data on tobacco mortality in China (Liu *et al.* 1998; Niu *et al.* 1998) and smoking trends there will be carefully watched to see whether a comparable effect is seen.

In the high-income countries, research on the causes, the consequences, and the costs of tobacco use has contributed to a social climate where effective tobacco control can occur. The lack of such information in most low-income and middle-income countries may hinder control efforts. For example, in many of the countries where tobacco-attributable mortality will be highest in absolute numbers in the next few decades, there is a lack of direct evidence on the absolute and relative health risks from tobacco use in those regions (Chapter 2; Jha *et al.* 1998). Awareness of the health consequences of smoking appears to be a key determinant of the success of some other interventions. For example, high awareness of the consequences of environmental tobacco smoke helps to make clean-air laws 'self-enforcing', and awareness of the benefits of smoking cessation is likely to increase demand for NRTs.

There is widespread evidence that total bans on tobacco advertising and promotion

are effective. Partial restrictions on advertising, in contrast, allow the tobacco industry to exploit other media and alternative promotional tactics (Chapter 9). Thus, unlike other interventions, the optimal level is always going to be the same: a total ban. In 1983, cigarette companies spent about \$1.4 billion (in 1993 US dollars) on promotion and an equal amount on advertising in the United States. By 1993, they spent \$5.5 billion on promotion and only \$0.8 billion on advertising (Federal Trade Commission 1995). The European Union is moving towards a complete ban on tobacco advertising and promotion by 2006.

19.2.2 Policy instruments and their relevance in different countries

While current smoking patterns in low-income and middle-income countries are expected to cause unprecedented loss of life, it is clear from the analyses presented in the preceding chapters that mortality and disability can be substantially reduced with effective action. The experience of the industrialized countries shows that rising incomes in the earlier decades of the twentieth century initially led to increased consumption of tobacco, but that with increased information and education about the hazards of smoking, consumption is now in steady overall decline. Similar patterns might be expected to emerge in low-income and middle-income countries as information is made more widely available (Jha *et al.* 1998). Consumers in low-income and middle-income countries appear to be particularly responsive to price (Chapter 10). Table 19.2 assesses the relevance of the various policy instruments we have discussed to countries of different income levels. Clearly, this table has an heuristic value only, and individual countries would need to make their own assessments in the light of the evidence.

Many low-income countries could gain health benefits and higher revenues from taxing tobacco more heavily, particularly with modest investments in improved tax administration and with overall tax reform (Chapter 17; Stotsky 1995). World Bank data reveal that in high-income countries, the average percentage of all government revenue derived from tobacco tax is 0.63%, whereas in middle-income countries the average is 0.51%, and in low-income countries it is 0.42%.

Table 19.2 Relevance of tobacco control policies to countries of different income levels

Policy instrument	Low-income	Middle-income	High-income
Raise tax	3	3	3
Research causes, consequences and costs	2	2	2
Mass information, prominent warning labels	3	3	2
Ban advertising and promotion	3	3	3
Restrict public and workplace smoking	2	2	3
De-regulate nicotine replacement products	1	2	3
Control smuggling	3	3	2

Source: authors' calculations, based on a survey of 23 economists and tobacco control experts during a technical review meeting for this volume held in Lausanne, Switzerland, in November 1998.

3 = highly relevant, 2 = relevant, 1 = somewhat relevant, 0 = not relevant.

In order to conduct local research on the consequences of tobacco use, and then disseminate the results of that research, some countries would require increased capacity in R&D. Many would also require improved record-keeping in their health systems, e.g. in making systematic ascertainment of the cause of each death. Because such vital statistics provide information on tobacco-attributable diseases, as well as other diseases, they are a strategic priority for low-income and middle-income countries (Lopez 1998). Mass information campaigns would probably need to be integrated with other health promotion efforts, although this might lessen the specificity and effectiveness of tobacco control messages (Goldman and Glantz 1998). In the immediate term complete bans on advertising and promotion could be relatively attractive measures in low-income countries, as they would be comparatively easy to enforce. Smoking restrictions in public and working places are likely to be more difficult to enforce, partly because of a smaller formal labor sector.

Middle-income countries, whose tax infrastructure tends to be more robust, and for which there are often better processes for monitoring restrictions and a stronger R&D capacity, could introduce a wider range of instruments. For example, middle-income countries may also be in a stronger position to deregulate NRTs. They might also be able to control smuggling more effectively, given stronger customs infrastructure.

In all countries, successful programs are likely to have certain common features. One is enabling policy makers to gain 'ownership' of the chosen interventions by providing them with the research findings on which the interventions are based. As for other disease-control programs, clear objectives, management plans, sound information, and regular review, are also essential. Programs would need to be sensitive to cultural values and the historical experiences of the country. For example, bans on smoking in public places may currently be unacceptable in some of the former socialist economies of Europe, simply because the memory of totalitarian governments is too fresh (Makara 1994).

Finally, a critical feature of a successful tobacco-control program is its ability to engage many different sectors of government. Table 19.3 illustrates some of the links between government ministries that would facilitate effective action. Effective tobacco control involves several disciplines, and the staffing and skill mix is likely to be determined by each country's specific needs at the time.

19.2.3 Effectiveness of tobacco-control programs

There have been few attempts to evaluate tobacco-control programs. As shown by Ranson *et al.* (Chapter 18), individual interventions are capable of preventing millions of deaths globally, but whether a package of measures would save even more lives than the sum of each individual intervention is as yet unknown.

A limited number of evaluations of comprehensive tobacco-control programs in high-income countries suggest that they can be successful. In the United States, the States of California and Massachusetts have been funding their comprehensive tobacco programs using state excise taxes since 1989 and 1993, respectively. The key components of both programs were excise tax increases between 25 and 50 cents per

Table 19.3 Inter-ministerial action required for tobacco control

Issue	Agency or ministry
Taxation	Finance, Trade, Customs, Social Security
Research on causes, consequences and costs of tobacco use	National Statistics Offices (for smoking on death certificates) Industry, Commerce, Trade, Agriculture, Health
Mass information	Education, Telecommunication, Health
Ban advertising and promotion	Commerce, Finance, Telecommunication
Deregulate nicotine replacement markets	Commerce, Trade, Drug Controller, Health
Restrict public and workplace smoking	Commerce, Tourism, Hotels
Control smuggling	Trade, Customs, Finance
Employment and agricultural issues	Agricultural, Labor, Commerce

Source: authors.

pack, a proportion of which was used for counter-advertising, and local community programs to increase cessation, promote smoke-free workplaces, and educate young people (CDC 1999a).

From 1989 to 1993, Californian's decline in per capita annual cigarette consumption was 52% greater than for the rest of the United States, i.e. a decline of 0.64 packs per person per year in California versus 0.42 packs per person per year in other states (Pierce *et al.* 1998). An econometric analysis estimates that 78% of the reduction in Californian cigarette sales from 1990 to 1992 was attributable to tax increases, and that the remaining 22% was attributable to information campaigns (Hu *et al.* 1995). Pierce *et al.* (1998) suggest that from 1994 to 1996 California continued to have greater declines in per capita consumption than the rest of the United States, but that declines in smoking prevalence were no greater. The authors attribute this to the industry's pricing and political activities. Industry spending on advertising and promotion increased markedly during this time. In addition, it should be noted that the tax increase occurred only in 1989, while real disposable incomes have increased substantially in California over the period. An independent evaluation of the Massachusetts program found that per capita consumption declined by 31% in that state and by 8% in the rest of the United States from 1992 to 1997 (Abt Associates 1998). In Massachusetts, the decline in per capita consumption was more consistent than that in California (CDC 1996). At the time of writing, there were no data available on the impact of the 1996 excise tax increase in Massachusetts.

Other econometric studies have examined changes in consumption in countries, and not specific programs. The United Kingdom experienced a 23% decline in cigarettes consumed per adult from 1976 to 1988. Regression analysis suggest that real price increases lowered consumption by about 17%, while rising income increased consumption by about 12%; the residual reduction of 18% (i.e. 23 – 17 + 12) has been attributed to increased health promotion campaigns and lower advertising and tobacco promotion (Townsend 1993). A retrospective analysis of 22 high-income countries from 1960 to 1986 suggests that if tobacco advertising and promotion had been banned

and if real prices had been raised by 36%, then consumption would have fallen by 13.5% by 1986 (Laugesen and Meads 1991).

19.2.4 Costs and financing of comprehensive tobacco-control programs

There are only rudimentary estimates of the costs of implementing a comprehensive tobacco-control program. The evidence from high-income countries suggests that such comprehensive programs can be delivered for a relatively small sum of money. Currently, for different states in the United States, annual funding for tobacco-control programs ranges from \$2.5 to \$10 per capita. The US Centers for Disease Control and Prevention (1999a) recommends \$6–16 per capita for the US. This is equal to spending between 0.3% and 0.9% of US public spending per capita on health. In 1996, Canada spent US\$1.65 per capita on tobacco-control activities, the equivalent of 0.1% of its public spending per capita on health (Pechmann *et al.* 1998).

In this context, tobacco control in middle-income and low-income countries is likely to be affordable, even in countries where per capita public expenditure is extremely low. The World Bank's 1993 *World Development Report 1993: Investing in Health* estimated that to deliver an essential package of public interventions that includes tobacco control, governments would need to spend \$4 per capita in low-income countries and \$7 in middle-income countries (World Bank 1993). As a fraction of the total, the cost of tobacco control would be small.

19.3 Strategic priorities for international agencies

Certain activities for tobacco control may be beyond the reach of national governments. For example, strong international law to establish the legal framework for tobacco control cannot be achieved by single countries. In such cases, there is likely to be a role for international agencies, such as the World Health Organization (WHO), the World Bank, and the International Monetary Fund (IMF), as well as for regional political entities, such as the European Union. A key to effective international action is vigorous leadership on tobacco control. The WHO has recently launched its Tobacco Free Initiative (TFI). A detailed description of the TFI can be found on the WHO website (<http://www.who.int/toh>). One of the chief goals of the TFI is to implement the Framework Convention on Tobacco Control—a new international legal instrument that aims to address issues as diverse as tobacco advertising and promotion, smuggling, taxes, and subsidies.

International activities could be classified in three broad categories: review of programs and policies; regional or international action on specific control instruments; and research. We briefly discuss the first two. A more detailed discussion on research follows.

19.3.1 Review of international programs and policies

Most international bodies lack clear policies and effective instruments for tobacco control. On the supply side, the World Bank adopted a policy in 1991 of not lending

directly for, investing in, or guaranteeing investment or loans for tobacco production, processing, or marketing. More recently, the United States Agency for International Development has adopted a similar position of not supporting tobacco production. In contrast, the European Union continues to subsidize its tobacco farmers to the extent of about \$1.2 billion a year through its Common Agricultural Policy (Joossens and Raw 1996). As discussed in Chapter 13, such supply-side policies are important politically, but are likely to have a minimal impact on consumption.

Where demand-side policies have been adopted, they have sometimes been implemented with the least effective instruments. For example, in the past, the World Bank has supported some school education programs against tobacco, but their effectiveness is questionable. Equally, while public funds can be used in a relatively straightforward way to control certain diseases, such as infectious vaccine-preventable diseases of childhood, it is more difficult to develop public policy instruments against tobacco, since its control depends more heavily on regulation and information than on the direct treatment of individuals. Thus, for development agencies that lend or grant funds to low-income and middle-income countries, new lending tools, such as loans or credits that disburse against specific monitorable policies, are required.

Table 19.4 describes some ways in which the international agencies might provide external support for countries' tobacco-control activities. To some extent, adjustment lending by multilateral agencies offers this possibility, particularly when short-term revenue collection and stabilization are important (Chapter 17). Yet most structural

Table 19.4 Objectives and modalities for external support for tobacco control

Objectives and modalities	Program implementation	Capacity building
Service delivery	Generally limited (mass information campaigns or NRT finance for the poor are possibilities).	Improve capacity in counter-advertising, mass information, smuggling control, and NRT regulation. Analyze possible subsidies for NRTs for the poor.
Policy implementation	Conditionality as part of financial package (e.g. tax increases or advertising and promotion bans). Policy advice.	Analytic units within public sectors (e.g. investing in Ministries of Finance to build tobacco taxation policies).
Research on causes, consequences and costs of tobacco use	Analyses, including policy-based lending/aid instruments	Economic and health policy research within countries to inform and guide control programs (e.g. University of Cape Town project supported by Canada's International Development and Research Centre).

Source: authors.

lending efforts have not consistently examined tobacco tax increases. Similarly, there has been little consideration of how to integrate tobacco-control policies within 'sector-wide approaches' (Cassels and Janovsky 1998). Beyond program implementation, all agencies could adopt policies to strengthen capacity within countries in service delivery, policy analysis, and research, often using existing loans or grants.

19.3.2 Regional or international action on specific control instruments

Beyond reviewing their own programs and policies, there is much more that the international agencies could do. They could help governments to achieve regional and multilateral agreements on smuggling controls and taxation, for example. Price differentials between countries represent a clear incentive for smuggling and legal cross-border shopping. Smuggling reduces government revenue and, in the long term, may increase cigarette consumption, because illegal cigarettes are usually cheap and the availability of such cigarettes in a country is often used as an argument in favor of lower tax rates. Policy responses to tobacco smuggling have been the subject of insufficient methodological work or field testing. However, in addition to measures to reduce demand, common customs programs, strict enforcement, active research, and new measures, such as warning labels in local language and tax stamps inside plastic wrappings, can help to reduce smuggling.

With the globalization of broadcasting, telecommunications, and Internet media, it is also increasingly likely that international agencies will be needed to play a role in banning advertising and promotion. International agencies may also have a role to play in devising and monitoring very limited crop-diversification programs for farmers in the small minority of countries that are heavily dependent on tobacco, such as Zimbabwe and Malawi. The World Bank has a policy of supporting diversification in agrarian countries that are heavily dependent on tobacco as a source of income and of foreign exchange earnings.

19.4 Strategic priorities in research and development

While a detailed discussion of the enormously wide-ranging interdisciplinary research agenda required on tobacco control is beyond the scope of this chapter, we mention a few key principles.

19.4.1 The current situation

Currently, investment in tobacco research is relatively modest compared with investment in research on other health problems of a comparable scale. In recent years, for every death due to tobacco (based on 1990 estimates), governments and public agencies spent about \$50 on tobacco research (a total in the range of \$148–164 million). In comparison, they spent \$3000 for every HIV death in the same year (a total of \$919–985 million) (WHO 1996). The vast majority of research and development in tobacco control, as for HIV/AIDS, has been taking place in high-income countries. For

example, more than 80% of the papers presented at the 9th World Conference on Tobacco and Health in Paris in 1994 were studies done in high-income countries (Slama 1995). Detailed biological and physiopathological research findings are likely to be transferable from high-income, to low-income and middle-income countries. But epidemiological research and applied research may be less transferable.

A key problem is the overall lack of standardized and comparable data. The WHO, the US Centers for Disease Control and Prevention, the World Bank, and the International Union Against Cancer are actively developing a global surveillance system that will improve standardization (CDC 1999b). The World Bank has commissioned a series of price-elasticity studies. With new international interest in tobacco control, it is likely that there will be improvements in the quality of research data (Samet *et al.* 1998; Baris 1999). The International Research and Development Centre in Canada has launched an initiative called Research for International Tobacco Control (<http://www.idrc.ca/ritc/Aboutus.htm>). More recently, more than 35 million tobacco industry documents have become available as a result of litigation in the United States (<http://www.docd.gov/tobacco/industrydocs/index.htm>), but have not yet been fully researched.

19.4.2 Future options

Research in tobacco control aims mainly to spur the application of existing effective instruments to control tobacco use. The Institute of Medicine (1998) suggested five criteria could help to set priorities for broader research in control of cardiovascular disease. These apply also to tobacco control. First, the research should have a large-scale population impact. Second, it should use methods and processes (but not necessarily provide results) that are broadly transferable to other low-income and middle-income countries. Third, investments should yield results within a reasonable timeframe: say, up to 10 years. Fourth, research should be clearly linked to potential action plans, programs, and policies. Fifth, investments should focus on studies that produce measurable data and, for the most part, use established methodologies in epidemiology, health policy, economics, and social behavioral sciences.

Table 19.5 provides a matrix of research on the causes, consequences and costs of tobacco use, in relation to key demand-side instruments of price rises (through tax increases), information, and regulation and to the supply-side instrument of smuggling control. Research on causes refers to understanding the determinants of smoking uptake and persistence. Consequences refer to the health and non-health impacts of tobacco use and of tobacco-control policies. Cost refers to the costs of consumption borne by smokers and non-smokers or costs of control policies imposed on individuals. The grouping is by no means watertight. Research findings, such as price-elasticity, will influence all types of research as well as instruments. Obviously the table is simplistic and needs to be tailored to individual countries. For an expanded discussion of research priorities, see Baris (1999) and Samet *et al.* (1998). This table suggests that a key research priority is to continue monitoring and analyzing information on the health consequences of smoking. Other priorities include refinement of the data on price-elasticities for tobacco, especially in low-income countries, and more detailed analyses of how different forms of health information are used by different consumers.

Table 19.5 Priorities for research on tobacco control policies in low-income and middle-income countries

Intervention or R&D type	Causes	Consequences	Costs
Price	<ul style="list-style-type: none"> • Price elasticities, including by age group, income status. • Substitutability of different tobacco products (e.g. <i>bidis</i>). 	<ul style="list-style-type: none"> • Price effects of switching to cheaper cigarettes or decreased amounts, and on mortality and morbidity. 	<ul style="list-style-type: none"> • Tax burden on poor and non-poor. • Health care and pension costs of smokers.
Information	<ul style="list-style-type: none"> • Poor, non-poor differences in uptake. • Degree to which information is internalized by smokers. • Peer influences on smoking uptake. 	<ul style="list-style-type: none"> • Estimates of tobacco-attributable mortality and disability from different tobacco products, and amounts. • Health effects of environmental tobacco smoke. 	<ul style="list-style-type: none"> • Information search costs with advertising and promotion bans.
Regulation	<ul style="list-style-type: none"> • NRT impact on tobacco demand. • Advertising and promotion expenditures. • NRT product research (e.g. nicotine/tar content, delivery system, additives, taste, size, etc.). 	<ul style="list-style-type: none"> • Impact of lower-tar and lower-nicotine cigarettes on health risk. 	<ul style="list-style-type: none"> • Health insurance and government subsidies of NRTs. • Local cost-effectiveness and incidence-subsidy studies about use of NRTs by poor and non-poor groups.
Supply	<ul style="list-style-type: none"> • Determinants of smuggling, including influence of corruption, border and customs policy and product tracking. • Industry influences on control policies and political process. 	<ul style="list-style-type: none"> • Impact on tax revenue from smuggling. • Research on trade policy, impact of new trade agreements. 	<ul style="list-style-type: none"> • Dynamic and static models of employment impacts of reduced consumption.

Source: authors.

The table does not mention the tracking of tobacco-related deaths, which obviously are critical in monitoring the impact of control efforts. Thus, at the level of individual countries, the key long-term indicator of tobacco control is mortality reduction. Shorter-term indicators are likely to include total cigarette sales (to capture initiation), and ex-smoking rates (to capture quitting). Thus, for example, in the United Kingdom, annual tobacco deaths at ages 35–69 fell from 80 000 to 40 000 over the past three decades (Peto *et al.* 1994), and total cigarette sales fell from 130 billion to 80 billion. Over the same period, the ‘ex-smoker’ proportion of the population has roughly doubled (Wald and Nicolaides-Bouman 1988). In contrast, there have been recent increases in smoking rates among younger British age groups (UK Department of Health 1998).

Research and development efforts cannot be implemented without building the appropriate capacity. Effective tobacco control needs competent and well-informed personnel working in settings aimed to support their efforts. Therefore, investments must be made in both institutional and human capacity development. Key areas of work include enhancing local capacity, including identifying a focal point within a government agency, assessing research capacity, education efforts for physicians and academics on tobacco, and networking and communications.

As discussed in more detail elsewhere, much of the information generated from research is an international public good (WHO 1996). Thus, there is a strong argument for international finance for this research.

19.5 Political-economy issues in tobacco control

To be effective, any government that decides to implement tobacco controls must do so in a context in which the decision has broad popular support. Governments alone cannot achieve success without the involvement of civil society, the private sector, and interest groups. Programs are more likely to succeed if there is collective agreement on, and ownership of, them across a broad coalition of social interests with the power to implement and sustain change. There are few useful methodologies on how to work with such other agencies. Historically, in the United States, tobacco control started as a medical issue, moved into advocacy, and has now proceeded toward a focus on legal and policy issues (Gorovitz *et al.* 1998).

Governments contemplating action to control tobacco face major political obstacles to change. Yet, by identifying the key stakeholders on both the supply and demand sides in each country, policy-makers can assess the size of each constituency, whether it is dispersed or concentrated, and other factors that may affect the constituency’s response to change. Careful planning and political mapping would be essential to achieve a smooth transition from reliance on tobacco to independence from it, whatever the nature of the economy and the national political framework. Such mapping exercises have been conducted, for example, in Vietnam (Efroymsen *et al.* 1996).

In low-income countries, opposition to tobacco control from the supply side would tend to come from farmers. However, as Jacobs *et al.* discuss (Chapter 13), only a handful of countries are highly dependent on tobacco for foreign exchange earnings.

World Bank data suggest that the average foreign exchange earnings from tobacco (as a percentage of GDP) are 0.16% in low-income countries, 0.06–0.10% in middle-income countries, and 0.06% in high-income countries. Supply-side objections in middle-income countries are more likely to come from arguments about tax revenue and the size of the tobacco industry than they are from arguments about farming.

One intervention that has received widespread support from advocates of tobacco control is the earmarked tobacco tax: that is, a proportion of tax revenue collected from cigarettes that must be devoted to a specific activity, such as health education or healthcare. Earmarking introduces clear restrictions and inefficiencies on public finance (Stotsky 1995). For this reason alone, most macro-economists do not favor earmarking, no matter how worthy the cause. Analysis does suggest, however, that the efficiency or dead-weight losses from earmarking tobacco taxes are minimal (Hu *et al.* 1998). Earmarking could be justified if governments used these funds for services that would not have been otherwise used. However, earmarked taxes also have a political function, in that they help to concentrate political winners of tobacco control, and thus influence policy. Earmarked funds that support broad health and social services (such as other disease programs) broaden the political and civil-society support base for tobacco control. In Australia, broad political support among Ministries of Sports and Education helped to convince the Ministry of Finance that raising tobacco taxes was possible. Indeed, once an earmarked tax was passed, the Ministry of Finance went on to raise tobacco taxes further without earmarking them (Galbally 1997).

In theory, there may be efficiency gains with combinations of earmarking and government finance for services targeted at the poorest socio-economic groups (World Bank 1993). This would provide double health gains—reducing tobacco consumption and improving access to core public health and clinical services. In China, for example, conservative estimates suggest that a 10% increase in cigarette tax would decrease consumption by 5%, increase revenue by 5%, and that the increase would be sufficient to finance a package of essential health services for one-third of China's poorest 100 million citizens (Saxenian and McGreevey 1996).

19.6 Conclusion

There is convincing evidence that, even on conservative assumptions, millions of deaths could be prevented over the next few decades by implementing modest, cost-effective tobacco-control policies. These policies include higher taxes, comprehensive bans on the promotion and advertising of tobacco, better and more widely publicized research into the consequences of smoking, prominent warning labels, de-regulated access to NRTs, and tight controls on smuggling. Investing in these policies represents an unprecedented opportunity for governments to improve their nations' health. It is likely that the optimal mix of strategic priorities for tobacco control will differ for different countries, depending on their economic, cultural, and political circumstances. Ultimately, globalization requires that international agencies such as WHO, the World Bank and the IMF play a role in enabling countries to achieve effective tobacco control. Decisive, collaborative, and focused action over the next few years will be

critical in curbing a global epidemic that will otherwise claim one billion lives in the twenty-first century.

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