

THE IMPACT OF TOBACCO-CONTROL POLICY ON SMOKING IN THE EUROPEAN UNION

Luk Joossens, Martin Raw, Fiona Godfrey.

I. INTRODUCTION

In this chapter we examine the evidence of the impact of tobacco-control policies on smoking prevalence in Europe. Although this is a complex process and it is difficult to state precisely what worked and why in any individual country at any particular time, there are international data on what works and so it is possible to relate policies to consumption/prevalence change in a broad way. However as we will emphasise in the discussion, one characteristic of the tobacco-control field in many countries is the failure systematically to collect data on smoking prevalence and attitudes so that the effectiveness of tobacco-control programmes can be evaluated. Since such programmes are supported by tax payers' money they should be properly evaluated. Both governments and the people who pay for them need to know if the programmes are effective, if they provide good value for money and how they can be improved. In Europe we cannot compare smoking prevalence directly in different countries, since most countries use different methodologies to measure smoking. We have approached this problem in this chapter by looking at the percentage fall in smoking in individual countries since at least this measure masks differences between the prevalence measures used.

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2. WHAT TOBACCO-CONTROL POLICIES ARE EFFECTIVE?

The World Bank fact sheet “Tobacco control at a glance” describes six cost-effective tobacco-control interventions¹:

- Price increases through higher taxation on cigarettes and other tobacco products.
- Comprehensive advertising and promotion bans of all tobacco products, logos and brand names.
- Bans/restrictions on smoking in public and workplaces.
- Better consumer information including counter advertising (public information campaigns), media coverage, publicising research findings.
- Large, direct health warning labels on cigarette boxes and other tobacco products.
- Treatment to help dependent smokers stop including increased access to medications.

International experience strongly suggests that the best results are achieved when a comprehensive set of measures are implemented together and this seems to be borne out by observing that many countries have succeeded in reducing smoking prevalence dramatically.

2.1. Price increases through higher taxation

Price increases through higher taxation are the most effective and cost-effective tobacco-control strategy according to the World Bank, especially for young people and others on low incomes, who must, of necessity, be highly price responsive. A price rise of 10% decreases consumption by about 4% in high-income countries. Price rises have the additional political advantage for governments of raising tax income².

2.2. Comprehensive advertising and promotion bans

Comprehensive advertising and promotion bans have also been shown to reduce smoking. Empirical evidence shows that a fully comprehensive advertising ban covering all media and all forms of direct and indirect advertising reduces tobacco consumption. A comprehensive advertising ban also lessens the social desirability of smoking, in particular among young people. Along with the promotion of a smoke-free environment, the regulation of advertising contributes to making non-smoking an accepted social norm. The World Bank estimates that comprehensive bans can reduce tobacco consumption by around 7%².

However as other types of tobacco advertising and promotion are curbed, package displays and adverts at the point of sale (POS) have become increasingly important in the marketing strategies of tobacco companies. The industry pays retailers for prominent display space, including displays behind the counter facing customers (“power walls”) and counter top displays. POS promotions increase overall tobacco industry sales, in part by increasing the social acceptability of tobacco products.

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POS promotions stimulate impulse purchases among ex-smokers struggling to resist craving, teenage experimenters and occasional, non-daily smokers.

In Canada, where information on marketing expenditure is reported to government, in 2002 the tobacco industry spent CAN\$77 million (€47 million) on payments to retailers for displays. This compares to the CAN\$60 million (€37 million) that the industry spent in 1996 on sponsorship, when sponsorship was the other major form of marketing expenditure (R. Cunningham, Canadian Cancer Society, personal communication). The tobacco industry sometimes claims that it does not want children to be exposed to tobacco promotion. Yet it opposes legislation prohibiting POS promotion in premises where children have access. Governments increasingly recognise the need to ban POS tobacco promotion, while the tobacco industry is responding with lobbying and legal challenges to prevent action in this crucial area.

Iceland has banned visible POS package displays since 2001. A British American Tobacco (BAT) legal challenge to the Icelandic legislation was dismissed on technical grounds but has been reintroduced and will be heard in the autumn of 2004. In Ireland a ban on POS displays is included in legislation but has not yet been implemented^a. The tobacco industry has filed a legal challenge to this provision, including a claim that the provision is an unreasonable infringement of freedom of expression. In the UK existing legislation includes regulatory

^a Public Health (Tobacco) Act, 2002, as amended in 2004. The Act includes regulatory authority to prescribe exemptions to the ban on POS displays, but no such regulations have been adopted. The 2004 amendments re-enact the provision adopted in 2002 but not proclaimed into force. The tobacco industry had initiated a legal challenge to the 2002 provision arguing in part that Ireland had not given the notice required by the European Community.

authority to ban POS displays³ but no regulations have yet been adopted. Regarding POS signage, UK regulations permit a maximum of one sign, approximately no larger than A5. The tobacco industry has filed a legal challenge to this regulation, claiming that it is unreasonably restrictive. In Canada numerous provinces and territories have either adopted legislation to curb POS promotion or are considering legislation.

2.3. Bans/restrictions on smoking in public and workplaces

Bans/restrictions on smoking in public and workplaces do not just protect non-smokers. They also create an environment that encourages smokers to cut down or stop. Furthermore, as many public places are workplaces, a ban on smoking in workplaces will actually ban smoking in most public places. Clean indoor air laws may also prohibit smoking in public places and on public transport. The most extensive laws also include restaurants, bars and private workplaces. A review from the USA of 26 studies on the effect of smoke-free workplaces concluded that totally smoke-free workplaces are associated with reduction in smoking prevalence of almost 4%, when compared with no smoke-free workplaces at all⁴. Clean indoor air laws may also make smoking less attractive by reducing opportunities to smoke and by reinforcing nonsmoking social norms. A less-than-total ban is predicted to have half the effectiveness of a strict ban⁵. A large increase in the tax on cigarettes and a ban on smoking in bars and restaurants, which came into effect on 30 March 2003, are being credited with contributing to an 11% decline in the number of adult smokers in New York City from 2002 to 2003, one of the steepest short-term declines ever measured, according to surveys commissioned by the city. The surveys show that the number of regular smokers, after holding steady for a decade, dropped by more than 100,000 over the period. It is estimated that 19% of adults in New York smoked in 2003, down from 22% in 2002⁶.

In Europe complete bans on smoking in the workplace (including bars and restaurants) have been introduced in Ireland (since 29 March 2004), in Norway (1 June 2004) and will be introduced in Sweden on 1 June 2005. The Netherlands introduced a workplace ban excluding bars and restaurants on 1 January 2004.

2.4. Better consumer information/public information campaigns

There is convincing evidence from several countries that sustained and well-funded public information campaigns can reduce smoking prevalence substantially. All such data need to be interpreted carefully as the factors pushing prevalence reduction are so complex and it is not possible to do controlled experiments in the real world. With these caveats there is still impressive evidence of the effectiveness of education/information campaigns albeit in the context of a comprehensive approach to tobacco control. Per capita cigarette sales in Massachusetts and California, two USA states that have invested heavily in tobacco control, have fallen impressively since 1990. The reductions in these two states are about double that in the USA as a whole over the same period. Smoking prevalence is down to about 17% in California and 19% in Massachusetts. Although there is some evidence of possible confounding variables that may have contributed to (but not accounted solely for) the reductions in prevalence, these are still impressive reductions, testifying to the effectiveness of tobacco-control programmes.

2.5. Large, direct health warning labels

Large, direct health warning labels are an effective way both of informing smokers of the hazards of smoking (thus encouraging smokers to stop), and of discouraging non-smokers from starting to smoke. Evaluations of health warnings conclude that they are effective only if they contain multiple strong and direct messages that are prominently displayed. Evidence from Canada, Brazil, Australia⁷, the Netherlands⁸ and Belgium⁹ shows that the large warnings introduced recently are effective in discouraging smoking and increasing public awareness of the health effects of smoking.

2.6. Treatment to help dependent smokers stop

Treatment to help dependent smokers stop is effective and cost effective¹⁰. Many smokers want to stop but need help to do so because they are dependent. Quit rates can be substantially increased through help from healthcare providers, telephone “quitlines”, behavioural support and medications including nicotine-replacement (NRT) and bupropion. Some governments now provide treatment through their healthcare systems. Although treatment policies will have a relatively small effect on prevalence reductions (about 1-2%) this effect may grow over time and may be important in helping those heavier smokers who have the most difficulty cutting back or quitting smoking¹⁰.

3. FUNDING OF TOBACCO-CONTROL PROGRAMMES

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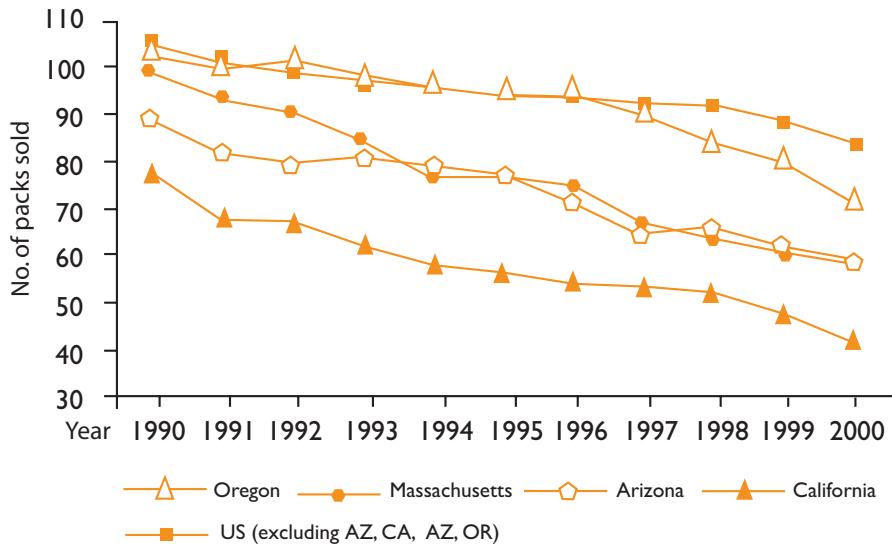
Experience from the USA and Australia shows that increased funding for tobacco-control programmes reduces tobacco use¹¹.

In the USA several states have invested in large-scale comprehensive, tobacco-control programmes and include components such as media campaigns, school-based tobacco-prevention programmes, smoking-cessation support including telephone “quitlines”, and enforcement of smoking restrictions. Analysis of the data in the USA indicates a consistent pattern that tobacco-control expenditures impact cigarette sales¹². The effectiveness of mass media campaigns will depend on their scale and duration. Expenditures have to be at a high enough level to reach smokers a sufficient number of times and of sufficient duration.

In Massachusetts a tobacco-control programme was created in 1992 with funding from an increase in state cigarette tax, with additional funding from the “master settlement agreement” reached with the tobacco industry in 1998. Over this period the annual budget has been in the region of €28 to €49 million with an additional €11 to €15 million from the master settlement agreement. Smoking prevalence fell from 23.5% in 1990 to just over 19% in 1999, a decline about 4 times greater than in other USA states (excluding California). Figure 1 shows the decline in per capita sales during the 1990s.

The Centers for Disease Control and Prevention (CDC) in the USA estimates that states need to spend between \$1 and \$3 per capita per year over a sufficient period of time (e.g. 3 years) to be fully effective. They have also recommended optimum tobacco policy expenditure, suggesting high and low estimates on the basis of population, smoking prevalence, and so on. For California they recommended a high expenditure of \$442 million and a low of \$165 million. California's actual tobacco policy spending in 2001 was \$116,448,610, about \$3.44 per capita.

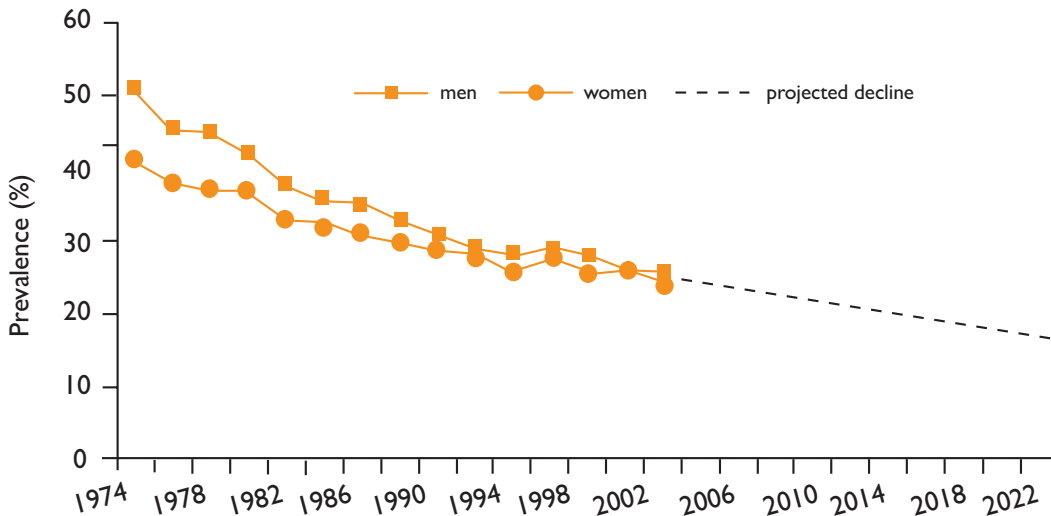
Fig. 1- Changes in per capita cigarette sales in states with large, comprehensive tobacco-control campaigns versus the rest of the USA



Reproduced with permission from Farrelly et al ¹².

The fall in smoking prevalence in the UK from 1970 to the 1990s was the largest fall in the world over that period, but it has now slowed considerably and the current rate of decline is very slow. Figure 2 shows this, with a levelling out at around 27% in 1994 (it should be noted that these data only show cigarette smoking prevalence; real prevalence, including other tobacco products, is higher)¹⁴. This graph is based on General Household Survey (GHS) data, which show prevalence of 26% in 2000. Office for National Statistics Omnibus survey data, which are more frequent and up-to-date than GHS, and appear to be comparable, suggest that smoking prevalence is again in decline, but a rather slow decline on a trend of about 0.4% per year. The graph projects the current decline and shows that to reach Californian levels will take another 20 years, which ought to be unacceptably slow progress considering the number of deaths that would mean.

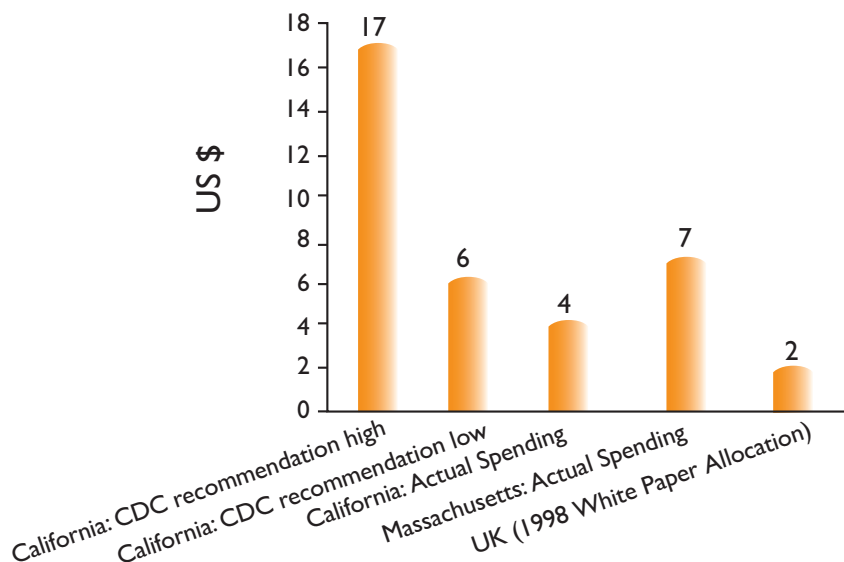
Fig. 2 - Prevalence of smoking of manufactured cigarettes in Great Britain 1974-2022



Source: ASH London.

The per capita tobacco-control spending data are even more sobering when it is realised that the UK is the highest spender in the European Union (EU) on tobacco control. Only the Netherlands, at just under €1 approaches the UK spending levels. Thus we are under-spending on tobacco control in the EU (Fig. 3).

Fig. 3 - Annual per capita tobacco-control spending in US \$



It is also important for civil society to invest more in tobacco control where it can. The major health charities in the USA spend vastly more on all aspects of tobacco control than their European counterparts. Clearly, there is a great difference in available income levels but European health organisations must also ensure that their tobacco control efforts are commensurate with the scale of the tobacco epidemic within their financial limits.

4. THE IMPACT OF POLICY ON SMOKING PREVALENCE

Table 1, from a report by the European Network for Smoking Prevention (ENSP)¹⁵, shows smoking prevalence in the 25 EU Member States and three European Free Trade Association (EFTA) countries (Iceland, Norway and Switzerland) from 1985 to 2003. Since each country used its own methods for measuring prevalence the countries cannot be compared with each other using these data. However within countries the data give an idea of what has been happening to prevalence over this period, and in Table 2, each country has been classified by the amount of decline in prevalence, thus giving a measure by which the countries can be compared.

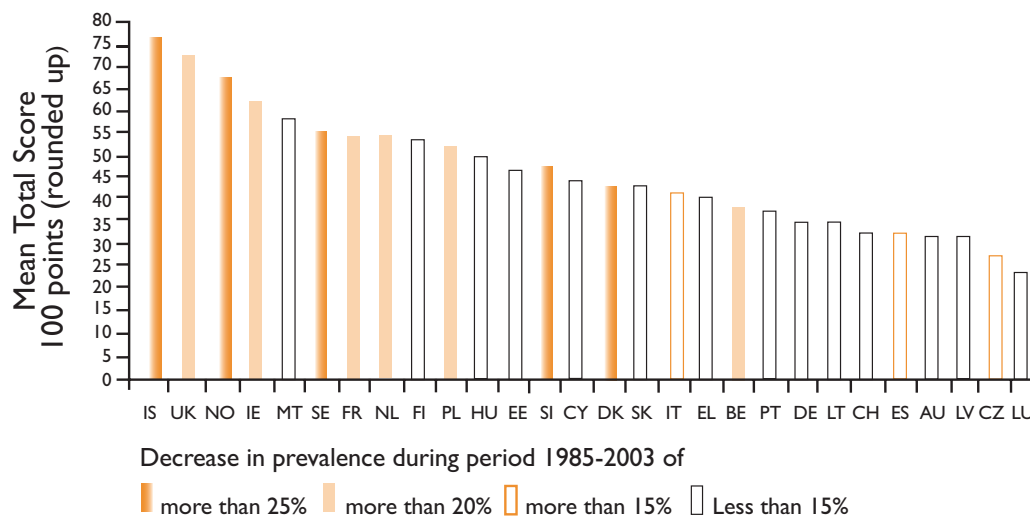
Table 2, also taken from the ENSP report shows the results of rating countries' tobacco-control efforts according to a scale. Tobacco-control experts, from different European regions, rated the various components of tobacco control, allocating a maximum points total to each. The components were: price/taxation policy, workplace/public place smoking bans, overall tobacco-control budget, advertising ban, labelling/health warning, and tobacco-dependence treatment. The maximum potential points score totals 100. Countries are then rated on each component using information supplied by tobacco-control specialists within each country. The last two columns of the table shows each country's total score and then the degree of fall in prevalence since 1985, in three categories. The advantage of this measure of prevalence change is that

it is intra-country and uses the same methodology to measure prevalence each time. Thus between country comparisons are not confounded by different methods of measuring prevalence. The countries' tobacco-control programmes were rated at 1 January 2004, so this does not show policy over the 20 year period. However since most countries have built up a range of tobacco-control policies gradually over many years, policy now reflects policy 20 years ago in the sense that active countries now are likely to be those active in the past and over a long period.

It is important to acknowledge that this is not a precise science. It only gives a general impression of a relationship between tobacco-control policy and smoking behaviour. Nor is it easy to quantify the relative importance of each policy element in each country and since we cannot do controlled trials on real-life interventions, this kind of precision will always be difficult within a country. However if these data are combined with the World Bank analysis described at the beginning of this section, then we can make an informed judgement on the policy components that influence outcomes in the successful countries.

Denmark, however, illustrates the danger of drawing simplistic conclusions based on what worked in a particular country, because it has had a large fall in prevalence and yet not had high cigarette prices, a policy known from scientific analyses to have a powerful and measurable effect on consumption. However prevalence was very high in Denmark 20 years ago and so there was room for a large prevalence fall. There is evidence from the UK that as prevalence falls average consumption rises. This is what would be expected if smokers who stop in response to health education and public information campaigns are lighter smokers. Eventually, when prevalence is low enough, we can expect that all smokers who can stop unaided will have done so. Then those still smoking will be addicted and need help. Thus it will be much easier for a country, like Denmark, to go from a smoking prevalence of 50% to 30%, a 20% reduction, than for the UK to go from 35% to 15%. The data show this. The UK has had a sustained and quite vigorous anti-tobacco campaign since at least the early 1980s, which has included taxation/price increases and relatively (compared to the rest of the EU, not to California or Massachusetts) generous government funding, two components much weaker in Denmark. Fig. 4 just shows countries in rank order by their total tobacco-control score.

Fig. 4. - Countries ranked by “effective tobacco-control policy” scores (out of 100)



Source: Joossens¹⁵.

Table I. - Smoking prevalence % in Europe from 1985 to 2003

COUNTRY	MALE ADULT SMOKING 1985	MALE ADULT SMOKING 1995	MALE ADULT SMOKING 2002-2003	% + OR -	FEMALE ADULT SMOKING 1985	FEMALE ADULT SMOKING 1995	FEMALE ADULT SMOKING 2002 - 2003	% + OR -	REMARKS
AT	40	36 (1997)	32 (2000)	-20	21	23 (1997)	26 (2000)	+24	All smoker; 16 yrs+, statistik Austria, n=60000
BE	45	33	33 (2003)	-27	27	19	22 (2003)	-19	Daily smoker, 18 yrs+, n=2000, 1985-1995 CRIOC, 2003 Flemish Institute for health promotion.
CY	43 (1989)		39 (1997)	-9	7 (1989)		8 (1997)	+14	Daily smoker, 15 yrs+, Cyprus household survey
CZ	46	39	38	-17	26	23	23	-12	All smokers, 15 yrs+, Institute of health information and statistics of the Czech Republic
DK	51	38 (1994 -1996)	30 (2003)	- 41	42	34 (1984 -1986)	24 (2003)	- 43	Daily smoker, 15 yrs+, n=3000, PLS Ramboll, 2003 survey 13 yrs+
EE	46 (1990)	50 (1994 -1996)	45	-2	15 (1990)	23 (1994 -1995)	18	+16	Daily smoker; 16-84 yrs, n=2000
FI	32	29	26	-19	14	19	19 (2003)	+36	Daily smoker; 15-64 yrs, n=5000, KTL
FR	50 (1984 -1986)	42	36	-28	32 (1984 -1986)	31	25	-22	All smoker; 15-75 yrs, n=2000-3000, INPES
DE	42 (only West Germany)	43	39 (2000)	-7	27 (only West Germany)	43	30 (2000)	+11	All smoker; 25-69 yrs n=8000, national health service
EL	54	51 (1993)	51 (2001)	-5	20	31 (1993)	39 (2001)	+95	All smoker; 18-65 yrs, different sample sizes
HU	49 (1986)	44 (1994)	42 (2003)	-14	22 (1986)	27 (1994)	29 (2003)	+24	All smokers, 15 yrs+ (1994), 2003:18 yrs+, National health behaviour survey, n=7000
IS	43	29	27 (2003)	-37	37	29	21 (2003)	-43	Daily smoker; 18-69 yrs, n=1160-1170
IE	37	29 (1993)	28	-24	32 (1993)	28	26	-19	1985-1993: regular cigarette smoker 15 yrs+, n=6539, Market Research Bureau. 2002: regular cigarette smoker; 18 yrs+, n=5992, SLAN
IT	41 (1986)	34	31 (2001)	-24	17 (1986)	17	17 (2001)	-	Regular smoker; 14 yrs+, n=20000 families, Istat
LV		51 (1998)	51	-		19 (1998)	19	-	Daily smoker; 15-64 yrs, Finbalt Health Monitor

LT		43 (1994)	44	+2		6 (1994)	12	+100	Daily smoker, 20–64 yrs, Finbalt Health Monitor
LU	41 (1987)	32 (1993)	39 (2003)	-5	25 (1987)	26 (1993)	26 (2003)	4	All smokers, 15 yrs+, n=2600–3800, Luxembourg foundation against cancer
MT		26	30 (2003)	+15		11%	21 (2003)	+91	1995: all smoker, 25–5 yrs, census of population, n=324386, 2003: daily smok- er, 18–64 yrs, n=528, lifestyle survey
NL	46	40	33 (2003)	-28	35	32	27 (2003)	-23	All smoker, 18 yrs+, n=20000, TNS NIPO
NO	44	34	28 (2003)	-36	32	32	26 (2003)	-19	Daily smoker, 18–74 yrs, n=2400–5000, statistics Norway.
PL	54 (1996)	47	39	-28	27 (1996)	23	23	-15	All smoker, 15 yrs+, n=1000–1500, Cancer centre Warsaw
PT	44 (1988)	27	31 (1999)	-29	14 (1988)	8? (proba- bly around 15%)	9? (1999) (proba- bly around 15%)	?	Daily cigarette smoker, 1988 and 1993 CECP 15 yrs+, 1995 and 1999 INS 10 yrs+ based on household survey which may underestimate female smoking
SK	-	43 (1994 -1996: male and female)	48	+12		43 (1994 -1996: male and female)	32	-26	All smoker, 18 yrs+, n=1334, Markant-market research
SI	42 (1988)	35 (1994)	28 (2001)	-33%	27 (1988)	23 (1994)	20 (2001)	-26	Regular smoker, 1988, 1994: 18–64 yrs, Slovenian public opinion survey, 2001, 25–64 yrs, CINDI
ES	55	48 (1993)	39	-29%	23	25 (1995)	25	+8	Daily cigarette smoker, 16 yrs+, Encuesta nacional de salud
SE	30	22	16	-46%	27	24	19	-30	Daily smoker 16–84 yrs n=7500, Statistics Sweden
CH	40 (1987)	37 (1992)	36	-10%	28 (1987)	24 (1992)	26	-7	All smoker, 1987: 15 yrs+, n=8000, Swiss Health study, 1992–2002, 15–74 yrs, n=10000, SFA
UK	35	29 (1984 -1986)	26	-26%	31 (1984 -1986)	27	24	-23	Cigarette smoker, 16 yrs+, 3000 families, General household survey.

Data are presented as %. The decrease in prevalence (5th and 9th columns) has been calculated by subtracting the difference between the % in the first reported year and the most recent reported year, multiplied by 100 and then divided by the % in the first reported year, for example in Sweden in males: $(30-16) \times 100 / 30 = 46\%$. The increase in prevalence has been calculated by subtracting the difference between the % in the first reported year and the most recent reported year, multiplied by 100 and then divided by the % in the most recent reported year, for example: Malta, females: $(11-21) \times 100 / 21 = +47\%$. CRIOC: Centre for Research and Information of the Consumer Organizations; CECP: Centro de Estudos de Cardiologia Prevenção [Centre for Studies of Preventative Cardiology]; CINDI: Countrywide Integrated Noncommunicable Disease Intervention; SFA: Swiss Institute for Alcohol and Drugs; ISTAT: National Institute of Statistics. Source: Joossens¹⁵.

Table 2. - Tobacco-control policy components in place on 1 January 2004 and prevalence change from 1985-2003 in Europe: countries ranked by total tobacco-control scores

COUNTRY	PRICE (30)	PUBLIC AND WORKPLACE SMOKING BAN (22)	TC BUDGET (15)	ADVERT- ISING BAN (13)	LABELLING / HEALTH WARNING (10)	CESSATION TREAT- MENT (10)	TOTAL (100)	DECREASE IN PREVA- LENCE
IS	24	16	15	13	6	2	76	XXX
UK	26	3-6	14	11	6	10	72	XX
NO	23	16	6	12.5	6	3	67	XXX
IE	20	15	4	10-11	6	6-7	62	XX
MT	23	12	0	9.5	7	6	58	
SE	15	15	3	11-12	6	3-5	55	XXX
NL	12	12	7	11.5	6	5	54	XX
FR	20	6-7	4	11.5	6	5-6	54	XX
FI	13	16	2	12.5	7	2	53	
PL	13	15	0	11.5-12	5	7	52	XX
HU	14	7-11	1	10	6	9	49	
EE	16	16	2	9.5	1	2	47	
SI	12	15	0	8-10	6	4-5	47	XXX
CY	23	3-4	0	11-12	3	3	44	
SK	14	10-12	0	11	3	4	43	
DK	13	2	3	10	6	6-7	41	XXX
IT	11	7	2	10.5	6	4-5	41	X
EL	15	7	-	4-5	6	7	40	
BE	13	6	0	10	7	1-2	38	XX
PT	13	6-7	-	9	6	2	37	?
DE	15	2	0	3-4	6	8	35	
LT	12	4-6	0	11.5	6	0	35	
CH	13	5-7	5	3.5-5	3	4	35	
ES	14	2	-	3-4	6	6-7	32	X
LV	11	7	1	6	6	0	31	
AT	11	7	-	3.5-5	6	3	31	
CZ	11	6	1	4-5	2	2	27	X
LU	7	4	-	6.5	3	2	23	

The last two columns show the maximum points achievable out of 100 and the decrease in prevalence. X = a decrease in prevalence of more than 15% from 1985-2003; XX = decrease of more than 20%; XXX = decrease of more than 25%; ? = used different prevalence measures during the period so do not know prevalence change. In order to make the table easier to read halves have been round up in the total score column, but scores for the individual components have been left unaltered so that readers can see the actual totals. Source: Joossens¹⁵.

Table 3^{16,17,18} shows that smoking prevalence from 1993 to 2002 has only fallen in 15-year-old females in Denmark and Scotland, and in males of the same age only in Austria, Belgium, Finland, Latvia, Scotland, Sweden and Wales. Very poor progress indeed and a worrying picture.

Table 3. - Percentage of 15 year olds who smoke at least once a week

COUNTRY	FEMALES			MALES		
	1993-94	1997-98	2001-2002	1993-94	1997-98	2001-2002
AT	31	36	37	29	30	26
BE (Flemish)	18	28	23	32	28	23
BE (French)	21		24	23		22
CZ	12	18	31	16	22	29
DK	24	28	21	14	20	17
England		33	28		25	21
EE	6	12	18	22	24	30
FI	26	29	32	30	25	28
FR	25	31	27	23	28	26
DE	29	33	34	21	28	32
EL		19	14		18	14
HU	19	28	26	25	36	28
IE		25	21		25	20
IT			25			22
LV	14	19	21	33	37	29
LT	4	10	18	15	24	35
MT			17			17
NL			24			23
N. Ireland	25	28		23	20	
NO	21	28	27	20	23	20
PL	13	20	17	23	27	26
PT		14	26		19	18
Scotland	26	28	23	21	22	16
SK	5	18		19	28	
SI			30			30
ES	27		32	20		24
CH	18	25	24	17	25	25
SE	19	24	19	15	18	11
Wales	27	29	27	18	22	16

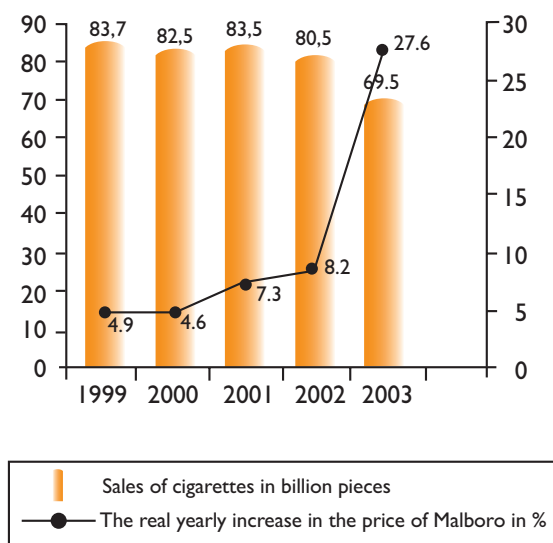
Sources^{16,17,18}.

5. EUROPEAN EVIDENCE OF THE IMPACT OF SOME SPECIFIC POLICY ELEMENTS

5.1. Price

According to two surveys, undertaken among 3,000 people aged 15-75 years in November and December 1999 and 2003, the number of smokers in France has decreased from 15,300,000 in 1999 to 13,500,000 in 2003 (a decrease of 12% in smoking prevalence). More smokers wished to stop smoking in 2003 (58% in 1999 and 66% in 2003) and in 2003 the price became the top reason why smokers said they wished to stop smoking (compared to fourth place in 1999). In 2003 sales of cigarettes decreased by 13.5%¹⁹. In 2003 there was a real increase in the price of Marlboro of almost 28% (fig. 5)²⁰.

Fig. 5. - Sales of cigarettes and the real yearly price increase of Marlboro in France



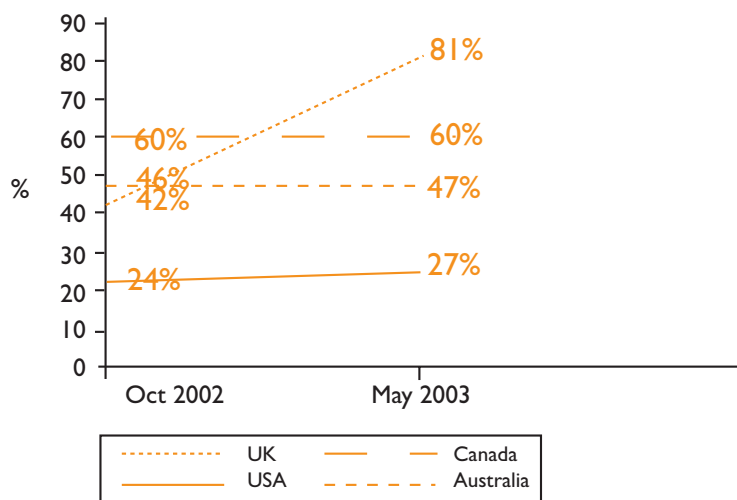
Source: Joossens²⁰.

5.2. Health warnings

5.2.1. UK

Emerging evidence from the UK indicates that the enhancement of the health warnings substantially increased their salience: smokers thinking about warning labels, reports of smokers forgoing a cigarette because of the labels, perceived effectiveness of the warning labels, and smokers considering warning labels as a motivation to quit²¹ compared with reactions to warnings in countries outside Europe. Large health warnings on cigarette packs were introduced in the UK from 1 January 2003 (Fig. 6)²². The percentage of respondents noticing the warning labels increased from just over 40% in 2002 to just over 80% in 2003, compared with no change in Australia, Canada and the USA.

Fig. 6. - Percentage of respondents noticing the warning labels on cigarette packs “often” or “very often” in last month



Source: Fong ²².

5.2.2. The Netherlands

In November 2002, a Dutch tobacco-control organisation, Defacto, presented the results of studies on the effects of the new health warnings. These studies indicated that some adult smokers said that they smoked less and were more motivated to quit by the new health warnings. They found an even stronger effect among those aged 13-18 years: 28% said that they smoked less because of the new health warnings⁸.

Another study in the Netherlands found that that the inclusion of the quitline number on the packs increased calls to the quitline. They also found that whereas previously the quitline had helped motivated smokers from middle income groups, when telephone numbers were included on the pack, lower income groups in particular called²³.

5.2.3. Belgium

A Belgian study released in May 2004 confirmed the Dutch findings and found that bigger, clearer warnings motivated smokers to stop smoking and made cigarette packs less attractive to youngsters⁹. Warnings on cigarettes have been compulsory in Belgium since 30 September 2003, and cover an average of 55% of the front and back of the package, making them the largest in the world. The Flemish Institute of Public Health, in collaboration with the Belgian Federation against Cancer has conducted research among 608 smokers over 15 years of age in Belgium in December 2003 and January 2004 regarding the effects of the health warnings. Amongst the findings were the following:

- Warnings were particularly effective amongst young people between 15-24 years of age and amongst those who wished to stop smoking within the year.
- Young people found it easier to remember the messages than other age groups. Fifty-six per cent of the age group 15-24 years agreed with the statement that they had discussed

the new health warnings with family or friends. Forty per cent of all smokers felt the packaging was becoming less attractive to youngsters.

- Twenty-nine per cent of all smokers felt that warnings were an additional motivation to stop smoking. Amongst those who declared that they wished to stop smoking within a year, the percentage was even 46%.
- As a result of the new warnings 8% of those questioned smoked less, 2% more and 88% as much as before.

5.2.4. Poland

Large health warnings have been found to be strongly linked with smokers' decisions to stop or reduce their smoking. Among Polish male smokers, 3% said they had quit following the introduction of new very large warnings, an additional 16% said they had tried quitting, and a further 14% said they understood the health effects of smoking better because of the warnings².

Outside Europe, according to the World Bank, evidence from Australia and Canada suggests that cigarette pack warning labels can be effective provided that they are large, prominent, and contain hard-hitting and specific factual information².

The regulations in Australia provide that from 1 January 1995 all tobacco products must comply with a system of health warnings which require warnings printed in black and white background occupying the top 25% of the front of the pack and detailed health information on 33% of the back of the pack. Based on research among 500 smokers and 500 non-smokers in 1994-1995, surveyed before and after the implementation of the new Australian warnings covering not less than 25% of the top of the pack: "the results suggest the new (Australian) health warnings are resulting in better informed smokers and thus suggest that informative health warnings can play an important role in better informing consumers. More than a third of smokers reported being affected by the warnings, with reductions in consumption and talking about warnings being the most salient feature."²⁴

A nationwide telephone survey among 2,000 Australians in 1996 found that the new health warnings had some direct effects on the smoking population including:

- Six out of 10 smokers believed that warnings and health information had improved their knowledge of the health effects of tobacco.
- Seventy-eight per cent believed that they had some effect on their behaviour.
- Thirty-three per cent of smokers believe the labels have helped them smoke less.
- Forty-five per cent of recent ex-smokers believe that the warnings have helped them give up smoking²⁵.

According to a EuroBarometer survey among 16,230 EU citizens in the autumn of 2002, 38% believe that the addition of colour photographs to cigarette packages would be useful in persuading people either not to smoke, to smoke less or to stop smoking²⁶.

Canada, in 2001, was the first country in the world to introduce health warnings accompanied by pictures, occupying 50% of the front and the back of the packs. The current Canadian warnings include 16 rotating messages with pictures in full colour. A study in 1999 found that warning messages with pictures were, on average, 60 times more encouraging to stop/not start smoking than messages without pictures²⁷.

An evaluation of the new colour picture health warnings has shown they have an amazing impact on the smokers in Canada. According to a study among 2,031 Canadian adults, which was conducted after the introduction of the messages with pictures during the second semester of 2001, 90% of smokers and 49% of non-smokers had noticed changes to cigarette package warnings²⁸.

5.3. Tobacco advertising bans

Tobacco advertising bans are effective according to the World Bank: "Since 1972 most high-income countries have introduced stronger restrictions (on tobacco advertising) across more media and on various forms of sponsorship. A study of 22 high-income countries based on data from 1970 to 1992 concluded that comprehensive bans on cigarette advertising and promotion can reduce smoking, but more limited partial bans have little or no effect. If the most comprehensive restrictions were in place, the study concluded, tobacco consumption would fall by more than 6 percent in high income countries. Modelling based on these estimates suggests that the European Union's (annulled) ban on advertising could reduce cigarette consumption within the European Union by nearly 7 percent"².

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However an advertising ban alone will not necessarily lead to a drop in consumption as the effect could be overridden or neutralised by tobacco becoming cheaper, as a result of income growth for example. In a *British Journal of Addiction* editorial Murray Laugesen pointed out: "for Finns, real per capita incomes after the ban (1978-1996) rose 36%, Norwegian incomes (1975-1986) rose 50%, while Icelandic incomes (1971-1986), rose 56%. Tobacco taxation was raised more than once, but not often enough to keep up with both inflation and income."²⁹. In order to maintain a downward trend an advertising ban must be part of a comprehensive tobacco-control policy.

Norway, Finland, New Zealand and France enforced an advertising ban that was part of a comprehensive tobacco-control strategy. Their strategies included price increases and the promotion of smoke-free places. All exhibited substantial falls in per capita sales (table 4)³⁰.

Table 4. - Date of advertising ban and fall in consumption in four countries

COUNTRY	DATE OF ADVERTISING BAN	DROP IN SALES UP TO 1999 %
Norway	1 July 1975	-31
Finland	1 March 1978	-34
New Zealand	17 December 1990	-33
France	1 January 1993	-15

5.4. Action against smuggling

EU action against smuggling has also had an impact on smuggling at member state level. Spain is one of the few countries in the world to have tackled smuggling successfully. It did not do so by reducing tobacco tax, which is what the tobacco industry has lobbied governments to do. Despite Spanish cigarettes being among the cheapest in the EU, smuggled cigarettes in Spain had a market share of 16% in 1993¹.

According to the EU lawsuit against Philip Morris, RJ Reynolds and Japan Tobacco, filed in November 2000 in New York under the US Racketeering Influenced and Corrupt Organization Act (RICO), Spain has been a primary destination for smuggled Winston cigarettes for so long that the smugglers are known as “Winstoneiros”. The EU lawsuit alleges that the Defendants, jointly and as individual corporations, control, direct, encourage, support, promote, and facilitate the smuggling of cigarettes into the European Community in a variety of way³². Smuggled cigarettes in Spain were mainly introduced through harbours and the border with Andorra.

In 1997-1998 there was concerted action at national and European levels to reduce the supply of contraband cigarettes. Close collaboration between the authorities in Spain, France, Britain, Ireland and Andorra and the European Anti Fraud Office (OLAF) reduced the supply of smuggled cigarettes from Andorra. Actions included sealing the Andorran border, civil guard brigades patrolling valleys and hills to make smuggling more difficult. OLAF led a first mission to Andorra in March 1998, accompanied by representatives from neighbouring countries (Spain and France) and from cigarette-exporting countries (Ireland and the UK). The enquiries revealed inadequate laws in Andorra to prevent and combat fraud. In November 1998 European Commission services visited the Andorran government and found that attitudes had changed fundamentally. The laws on customs fraud and the control of sensitive goods, and the law amending the criminal code and making smuggling a crime were published respectively in the Andorran Official journal on 4 March 1999 and 7 July 1999³³.

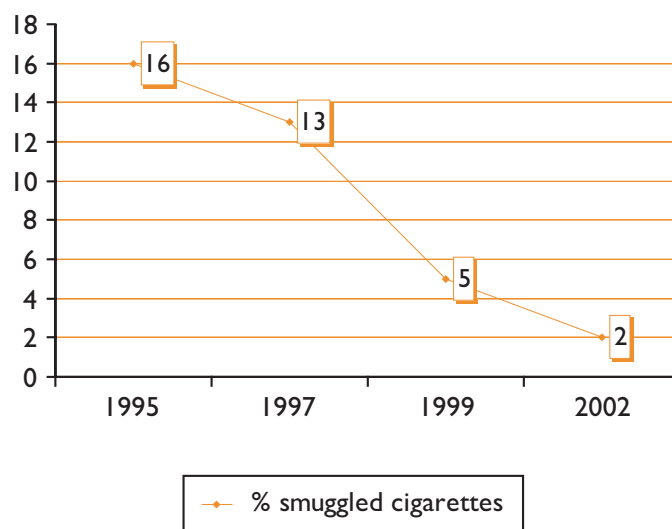
As a result of this cooperation between the EU and member states, contraband cigarettes, which had accounted for 16% of the Spanish market in 1995, are estimated by the Spanish customs authorities to have fallen to less than 2% of the market in 2002. According to the Spanish customs authorities, their success was not due to controlling distribution at street level, which is almost impossible, but to reducing the supply into the country at “container level” through intelligence, customs activity and cooperation, and technology (I. Garcia, Customs and Excise, Madrid, personal communication).

The EU legal actions on smuggling have now resulted in an agreement between the EU and Philip Morris International to reduce smuggling and counterfeiting (fig. 7³⁴, see also Chapter 2).

5.5. The UK tobacco dependence treatment programme

In 1999 the government in England introduced new treatment services for dependent smokers through the publicly-funded National Health Service (NHS), free to smokers at the point of use, on an initial “pilot” basis. Over the next few years these services were extended to the entire country and nicotine-replacement therapy and bupropion were made available through NHS prescription. Thus any smoker, anywhere in the country, had access to treatment to help them stop smoking. Furthermore it was an explicit goal of these services

Fig. 7. - Percentage of smuggled cigarettes in Spain 1995-2002



Source: Bonvilla Penvela³⁴.

that they should make a special effort to reach deprived smokers and so help to reduce inequalities in health. The story of the establishment of these services is told in more detail elsewhere in a World Health Organization (WHO) “best practice” paper³⁵. The government also invested in a national evaluation of these services, conducted by a research team of about 10 experts and researchers over 4 years from 2001. Although the research is still being written some results are published and they are encouraging. Early results show that during 2000-2001 more than 132,000 smokers attended the services and set a quit date and that 53% were abstinent at 4 week follow-up (longer term follow-up is being conducted). Perhaps more importantly, treatment services in more deprived areas were reaching more smokers than those in more affluent areas. In other words the services were succeeding in reaching deprived smokers, although overall cessation rates were lower in these smokers. This initiative shows that treatment services can be developed fairly quickly and that they can successfully reach smokers from all social strata. However we would not know the results had there not been substantial investment in research to evaluate the services and so this serves also as an example of the value of well-funded and planned research to underpin policy initiatives.

5.6. The impact of tobacco-control interventions on health inequalities

Smoking is more common in lower socioeconomic groups in nearly all EU member states. As part of an ENSP project, Mackenbach and Kunst³⁷ created a data set with information on smoking behaviour by socioeconomic status, between 1985 and 2000, in eight European countries (Finland, Sweden, Norway, Denmark, the UK, the Netherlands, Germany, Italy and Spain). Using these data the authors reviewed socioeconomic inequalities in smoking in the eight countries as a whole and in some individual countries. In recent years, large socioeconomic inequalities in smoking were observed in all countries, except among older females in southern countries. Socioeconomic inequalities in smoking have emerged or widened among females in nearly all countries, while these inequalities have been stable among males during the last 15 years.

The report also assessed the extent to which tobacco-control policies may differentially effect smokers in lower socioeconomic groups. Five tobacco-control measures were found to have the potential to reduce inequalities (by having the greatest effect among lower socioeconomic groups). The five were: banning tobacco advertising, increasing the price of tobacco, restricting smoking in workplaces, providing cessation treatment and medications like NRT free, and providing telephone helplines³⁷.

Mackenbach and Kunst³⁷ found that these tobacco-control measures were not fully implemented in Europe. For example few countries had a comprehensive tobacco advertising ban, and indirect forms of promotion persisted in most countries. Tobacco taxation rates vary greatly, with room for large price increases in many countries by the year. Workplace smoking bans and restrictions are voluntary in many countries, and commoner in professional and white-collar settings than in the manufacturing industry and other blue-collar settings. By 2002 NRT was only available free of cost at a national level in the UK and France (and bupropion in the UK). Finally, many countries do not have free, proactive national telephone quitlines.

One of the recommendations of the report was that socioeconomic inequalities in tobacco consumption should be monitored, with special attention paid to disadvantaged groups such as lone mothers and ethnic minority groups. Such a system could also be used to monitor the effects of new tobacco-control measures, such as price increases³⁷.

6. OTHER POLICY INTERVENTIONS NEEDED IN EUROPE

6.1. Internet and vending machine sales

The previous sections outline proven smoking-prevention interventions. However the tobacco industry is one of the most innovative of industries and is keen to embrace new forms of doing business³⁸. On past experience therefore it is reasonable to assume that it will do all it can to take advantage of new platforms for sales and marketing. It has already made great use of vending machines to increase sales (see below) and the internet also provides the manufacturers with great potential to attract new smokers and sell more products. European research on interventions is limited but on new forms of selling such as the internet, it is non-existent. We therefore have to rely on evidence from the USA to assess the possible impact of internet sales. Nevertheless, given the predicted increase in internet use over the next 10 years and previous tobacco industry use of new media, we have included a discussion of internet sales research and policy interventions for the sake of completeness.

In 2002 the value of e-commerce in the EU was almost €100 billion³⁹. We do not know what percentage of this was accounted for by tobacco product sales but according to recent reports the tobacco industry is leading the way in internet-based marketing⁴⁰. Internet sales pose problems for tobacco control because they can undermine price and tax policies, advertising bans and youth access laws. They also hinder efforts to make smoking less socially acceptable and can interfere with cessation attempts if buyers attempting to quit are subjected to e-mail alerts about the latest offers and promotions from online cigarette retailers.

There is little or no European research on efforts by minors to purchase cigarettes but studies in the USA have found that children as young as 9 years were able to purchase

cigarettes online. A majority of the online cigarette retailers allowed purchase by money order and did not require evidence of age or other identification at point of delivery. Almost all sites permitted self-verification of age simply by submitting an order⁴¹.

Sales of tobacco products from vending machines encourage spontaneous and time-saving purchases of cigarettes⁴² and make it easier for minors to evade youth access laws. For this reason, several member states have banned the sale of cigarettes in vending machines but many more continue to allow their use.

Germany has the highest number of vending machines in the world, almost 800,000. The vast majority of these sell cigarettes. They are weakly regulated and are frequently located within a few metres of school entrances, often placed next to vending machines selling sweets and soft drinks which attract children⁴³. Spain also has a large vending machine sector with cigarette sales accounting for 89% of all retail vending machine sales in 2002. The sector is growing and increased by 34% between 1998 and 2002⁴².

A number of member states have entered into voluntary agreements with the vending machine industry aimed at preventing tobacco purchases by minors. These agreements often stipulate that vending machines should be located in shops, bars and restaurants in sight of staff who can check the age of potential purchasers. However, such guidelines are often ignored, enforcement is lax and it is easy for minors to evade notice. In response to criticisms the vending industry has sought to introduce machines which require smart cards available only to those of a minimum legal age to purchase cigarettes. All vending machines in Spain must be equipped with such technology as of 2004 but industry commentators believe that such cards will be duplicated and the effect on sales will be minimal⁴². Voluntary agreements aimed at restricting cigarette purchases by minors from vending machines have not worked and so it is recommended that member states ban the sale of cigarettes in vending machines as soon as possible.

One of the most serious problems with internet sales is their capacity to undermine effective high price and tax policies. Online purchasers are able to shop around for the cheapest cigarettes and to purchase tobacco products at below normal retail rates, either by bulk purchase or by purchasing cigarettes from a retailer located in a country with lower tobacco tax rates.

The extent to which purchases from lower tax countries poses a problem in the EU may be reduced by a ruling from the European Court of Justice in 1998 which declared that individual purchasers of tobacco products in the UK from a firm in Luxembourg were obliged to pay the full rate of UK excise duty, notwithstanding the fact that they had paid the lower rate of duty applicable in Luxembourg. The Court ruled that they could only take advantage of the Luxembourg rates if they purchased the cigarettes and transported them to the UK themselves. If they used an intermediary or agent to deliver the cigarettes they were not entitled to take advantage of the exemption from the higher UK tax rate provided in Directive 92/12/EEC⁴⁴. However, some commentators have predicted that online tobacco sales could account for as much as 20% of all tobacco sales by 2010. If this happens, bulk buying at below conventional tobacco outlet prices could present a growing problem for smoking prevention strategies.

Directive 2000/31/EC⁴⁵ on e-commerce came into effect in January 2002 but does not include a prohibition on internet sales of tobacco products, and no EU member state currently bans the sale of tobacco products over the internet. In the USA, New York and Alaska have done so. In New York, which introduced a ban on non-face-to-face retail tobacco sales in 2000, shippers delivering cigarettes from internet vending companies to individual consumers can be fined under the statute. Other states have passed legislation restricting internet sales to minors including provisions such as a requirement for an adult signature at the point of delivery^b. The 2002 Council recommendation on the prevention of smoking recommended that member states take action to restrict internet sales to adults only⁴⁶. Given the ease with which provisions intended to restrict sales to adults can be evaded, it is recommended that member states follow the examples of New York and Alaska and ban all internet sales of tobacco products to individuals.

6.2. Advertising and promotion of smoking on the internet

Comprehensive advertising bans will be compulsory once member states have ratified the Framework Convention on Tobacco Control (FCTC)⁴⁷. Such bans will have to include internet advertising under Article 3 of Directive 2003/33/EC⁴⁸, which prohibits internet tobacco advertising in the Community with effect from 31 July 2005. However EU internet users will still be able to access smoking promotion internet sites located outside the Community in countries which have not ratified the FCTC.

7. RESEARCH SPENDING AND CAPACITY

Much of the evidence cited at the beginning of this chapter for the effectiveness of tobacco control comes from the USA, Canada and Australia and the key evidence linking level of expenditure with falls in prevalence comes from the USA. As the ENSP report cited above confirms, there are no standardised prevalence data available for the 28 European countries covered by this report. Thus we have difficulties in understanding what works in the EU because we do not collect and publish standardised prevalence or attitude data (either nationally or at European Community level) regularly. We therefore argue for the need not just to spend larger sums on tobacco control itself but to support our tobacco control efforts with research that underpins it by providing information for those developing policy. There are many areas where research is needed to inform policy development.

The workshop on tobacco research held at the High Level Irish Presidency and European Commission Conference on Tobacco Control in June 2004 found that:

- Regulators at national and EU level do not have the evidence they need to adequately assess the health and other effects of existing and new tobacco products. In many cases the evidence will not be available for many years to come.
- Current research capacity at national and European Community level is inadequate, fragmented and under-resourced.
- There is a need for a more strategic approach to research, from the limited funds available.
- More EU and nationally-funded research is needed to support policy initiatives and product regulation.

^b Maine, California, Nevada, Rhode Island, Idaho, Virginia, Indiana, Texas.

- Research is needed to provide a better understanding of the socioeconomic impact of tobacco use and how best to reduce it.
- Strategic thinking is required on how best to spend the remaining money available from the Tobacco Research and Information Fund.

In preparation for this report a questionnaire was sent to the national counterparts to establish which European countries had national tobacco research strategies or a national coordinator, and/or had a high-level scientific advisory committee for tobacco and government-funded research into tobacco and tobacco control. According to the replies received it would appear that Ireland is the only EU country with a national tobacco research institute (Fig. 8) and that only four countries, Ireland, Iceland, Poland and Sweden, have a tobacco research strategy. Sixteen countries said that there was no existing tobacco research strategy in their country and no information was received from the remaining eight respondents. Only seven countries said that they had high-level advisory committees that looked at tobacco issues^c. Nine countries replied that their countries had no government-funded research body carrying out tobacco research. Thirteen countries replied that they did^d. National public health institutes carried out most of this research. In the UK and the Netherlands this included research carried out by private tobacco-control organisations such as Action on Smoking and Health (ASH) and STIVORO.

It was not possible within the time available to establish national funding levels for tobacco control for any of the 28 countries but informal approaches to some Ministries of Health indicated that such information is not easily available. This lack of information on the part of government officials, researchers who are members of the expert advisory panel for this report and national counterparts could be an indication that the funding available is small, spread between several agencies and not easily accessed.

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Thus, few countries appear to have formal coordinated tobacco research strategies, or budgets.

Fig. 8. - Research Institute for a Tobacco Free Society (Ireland)

Limited partnership between the Office of Tobacco Control, ASH Ireland, Irish Heart Foundation and the Irish Cancer Society

Aims to form a multi-disciplinary academic community to support the development of a tobacco free society by engaging in research in all public health aspects of tobacco

Researchers drawn from chemistry, biochemistry, economics, law, behavioural sciences including advertising and marketing, education, actuarial, epidemiology, medicine

The report also surveyed individual researchers in an effort to gain an overview of national research funding and activity for tobacco control. A detailed research questionnaire was sent out to approximately 6000 members of the European Respiratory Society (ERS) based in over 90 countries, including all 28 countries covered by this report. The response rate was extremely low but replies received indicate that Europe's respiratory health specialists are prioritising research into

^c Iceland, Malta, Norway, Poland, Slovak Republic, The Netherlands and the UK.

^d Finland, France, Iceland, Ireland, Italy, Latvia, Norway, Poland, Slovak Republic, Slovenia, Sweden, The Netherlands, the UK.

the epidemiology and public health effects of smoking, risk assessment and disease prediction from second-hand smoke exposure, the effectiveness of smoking-cessation interventions and therapies, and prevention strategies. Some research is also being carried out into genetic factors and host susceptibility. There was far less evidence of research into tobacco product characteristics, emissions, human exposure measures (other than cotinine), biomarkers of biologically effective dose and potential harmful effects. This would suggest that our ability to properly evaluate the health risks of novel tobacco products is some way off and that current research activity is not reflecting the full range of regulatory requirements (see also Chapter 5).

Few of the researchers who replied to the questionnaire could identify any national tobacco research strategy, although it was indicated that the Health Research Council of the Netherlands (ZON) was consulting on the subject. Almost all of them identified the implementation of such a strategy as a priority. They were also in favour of the establishment of some sort of European coordinating tobacco research body. There was strong support for a European regulatory agency covering all tobacco and nicotine products (see also Chapter 5).

The researchers in this questionnaire were mainly funded by government bodies, including Ministries of Health and national research councils. Charities such as national cancer and asthma organisations were also contributing to funding, sometimes in partnership with the pharmaceutical industry.

Finally, we were able to identify some European research into smoker behaviour in response to advertising restrictions and increased label warning labels. The ITC (International Tobacco Control Policy Evaluation project) is currently assessing the impact of the 2003 tobacco advertising legislation and the introduction of new warning labels in the UK, as well as the impact of the workplace smoking ban introduced in March 2004 in Ireland. Other evidence from the Netherlands and Poland is also presented (see above).

At European level research is funded largely through the European Commission Research Framework Programmes (FP 4, 5, 6 etc.). Framework Programme 4 for research (1994-1998) had a total budget of €13.1 million and included funding for biomedicine and health (the Biomed programmes). Some tobacco research projects were funded under this budget line. The current sixth Framework Programme (FP6, 2002-2006) has a total budget of 17.5 billion. Life sciences is a thematic priority and includes funding for research into major diseases such as cardiovascular disease and cancer but the focus of the programme is on genetic and biotechnological applications rather than public health projects. The extent of funding for tobacco-related research is not clear. A budget line exists for all health determinants research and has a maximum budget over the lifetime of the programme of €6 million. Public health projects are also funded under the Policy orientated research strand. Within this, smoking or tobacco-related research is included under heading 2.1. on health determinants. The indicative budget for smoking-related actions is €1-2 million. However, a search of the relevant website did not reveal any projects directly funded on smoking or tobacco^e,⁴⁹.

Elsewhere, the Institute for Health and Consumer Protection in the Joint Research Centre, a specialised Directorate-General of the European Commission, provides research support to the European Commission and conducts research to support EU policy initiatives. In recent years it has carried out research into the effectiveness of ventilation in removing tobacco smoke

^e So far, there have been three calls for tender since 2002. For more information see: Scientific support to policies, October 10, 2003. http://fp6.cordis.lu/fp6/call_details.cfm?CALL_ID=83#infopack

from the indoor environment and is currently carrying out studies on levels of benzene in indoor air. It also has the capacity to develop and validate testing methodologies and carry out total human exposure assessment studies.

Financing for tobacco research is also available from the Tobacco Research and Information Fund. Council Regulation 2182/2002 provides for the funding of information programmes and data collection projects. The Fund will end in 2008 with the phasing out of the tobacco subsidies regime but the annual budget until then is estimated on current subsidy levels to be 25 million to €30 million per year. However, the Commission has recently published a call for tender for a second media campaign to be financed by the Tobacco Fund and run over the next 4 years. The maximum budget for this campaign has been set at €72 million⁵⁰. The remaining budget for other types of tobacco research permitted under the Fund is not known.

The tobacco research picture in Europe is extremely fragmented. For the purposes of this report it has only been possible to achieve the vaguest overview of the existence of research strategies, funding mechanisms and actual research carried out. Many of the expert contributors to this report are engaged in research and pointed out the paucity of information, funding and research during discussions on research in the product regulation workshop in Brussels, Belgium and the research workshop held in Limerick, Ireland. Similar research and evidence gaps were also identified by the Chapter Coordinators, particularly for Chapters 1 and 2.

These findings on the lack of European researchers and the lack of policy-related research are reflected elsewhere. Since 2001, only 12% of research papers accepted in the BMJ Journals publication *Tobacco Control* came from European authors (S. Chapman, Editor, to A. McNeill, European Regional Editor of *Tobacco Control*, personal communication). In an unpublished study into published research into nicotine, cigarettes and smoking, J.R. Hughes, K. Fagerstrom and P. Callas surveyed 309 publications from around the world on smoking and nicotine between 2000 and 2002. They found that for all the publications, smoking consequences (34%) and non-human research (32%) were the most common types of research followed by intervention research (23%) and human behavioural research (11%).

If we look at research spending and activity in the USA the picture is somewhat clearer and provides a potential benchmark for Europe. The principal health research body, the National Institutes for Health (NIH) had a total budget for all tobacco- and smoking-related research in the 2004 fiscal year of \$552 million (C. Backinger, NIH, personal communication). Of this, \$90 million was allocated to research into smoking behaviour and interventions, amounting to \$1.84 for each USA citizen. NIH funding was supplemented by private foundations and charities in the USA, such as the Robert Wood Johnson Foundation, the American Cancer Society, the American Heart Association and others.

If European (Community and Member State) spending matched 2004 NIH levels per capita the EU would be spending €680 million per year^f.

Against this background, this report makes a number of recommendations on research and suggests the following blueprint for an EU research strategy:

^f Calculation based on exchange rate of 1 Euro equals \$1.23 and a US population of 300 million and a EU population of 455 million

1. A strong science base for tobacco-control policy and interventions should be developed.
2. This will require the creation of national bodies to develop tobacco-control research strategies and oversee implementation. Research should be coordinated in conjunction with national tobacco task forces and existing national research bodies.
3. The European Commission should convene an international research seminar to assess EU and international tobacco research capacity, coordination, funding and development of a coordinated EU tobacco research strategy.
4. An increase in tobacco-control research funding will be required.
5. At EU level tobacco research should be given a dedicated budget line in the next Research Framework Programme (FP7: 2006-2010); funding should match that given by the NIH in the USA (currently €450 million per year); this should be in addition to increased funding at Member State level.
6. Tobacco-control research networks and research training networks should be developed across Europe.
7. In the short term, the remaining sums available in the Tobacco Fund (see also Chapter 3) should be used to fund the following research priorities: improved surveillance data, harmonised methodologies research (e.g. collection of prevalence and mortality data) and regular measurement of individual smoke exposure across populations, and measuring the impact of tobacco-control policies and interventions on gender and inequalities. Other existing research funding mechanisms such as the emerging priority budget line in DG Research could also be used to fund this research.

A tobacco-control research strategy should conduct research designed to provide the answers to questions which policy makers need, and an EU strategy might support research needed at national as well as pan European level

8. DISCUSSION AND CONCLUSIONS

Measuring the impact of tobacco-control policies is complex and difficult. Single policies can rarely be evaluated in the absence of other policy changes crucial to success in reducing prevalence so that we can normally only speculate on the exact impact of a specific policy element. We must do so however. Worldwide millions of euros are now spent on tobacco-control policy and it is essential to understand, as far as possible, how effective these policies are overall, and which elements of them appear to have most impact. Otherwise it will be impossible to know if we are getting value for money, and not only will this be unacceptable for governments anxious to spend taxpayers money effectively and efficiently, but it may well deter other governments from taking action against tobacco at all.

Thus the lack of Europe-wide data collection on smoking prevalence, using a standard methodology, urgently needs addressing and should, we believe, be a very high priority. If standardised monitoring is not introduced we will not be able to measure the impact of policies within countries and within the EU as a whole nor be able to compare countries. Thus an urgent priority for the new EU of 25 countries is to agree standard questions for the measurement of tobacco use, start regular surveys across the EU as soon as possible, and repeat these surveys regularly, ideally annually, not less than once every 2 years. In addition, the results should be published so that European citizens can see the effect of these policies. Exactly what survey questions are used can be determined by survey experts across the EU but there is at least a case for examining the

EuroBarometer questions²⁶, improving them where necessary and perhaps using them, or using them in an adapted form, in all 25 countries.

As smoking is increasingly concentrated among lower socioeconomic groups, reaching these groups with tobacco-control interventions is essential if tobacco consumption is to be reduced across Europe. To meet this challenge, comprehensive tobacco-control policies should fully implement measures tailored to the needs of lower socioeconomic groups. Future smoking prevalence surveys should include data broken down by socioeconomic status³⁷.

Taking a broader overview of tobacco-control policy it does seem, as we have shown at the beginning of this chapter, that a core of tobacco-control policies are crucial in reducing tobacco use and that progress in reducing prevalence is broadly proportional to per capita tobacco-control expenditure.

The following interventions are core and should be prioritised in all tobacco-control programmes: price increases through higher taxation; comprehensive advertising and promotion bans of all tobacco products, logos and brand names; bans/restrictions on smoking in workplaces; better consumer information including counter advertising (public information campaigns), media coverage, and publicising research findings; large, direct health warning labels on cigarette boxes and other tobacco products; treatment to help dependent smokers stop, including increased access to medications.

On tobacco-control spending, the CDC in the USA estimates that states need to spend between \$1 and \$3 per capita per year over a sufficient period of time (e.g. 3 years) to be fully effective. They have also recommended optimum tobacco-policy expenditure, suggesting high and low estimates on the basis of population, smoking prevalence, and so on.

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For California they recommended a high expenditure of \$17 per capita per year and a low of \$6. The actual figure is \$4. For Massachusetts the actual figure was \$7 and the current figure in the UK is just under €2 per year, still three times less than the recommended California minimum. Within the EU the UK is the top spender, and only the Netherlands, at just under €1, approaches UK levels. In the EU the actual Massachusetts figure would mean €5.7 per capita (\$1.23 = €1 Euro, August 2004) or €2,600 million a year. The actual California figure would mean €1,500 million a year in the EU and the UK figure would translate at EU level to €740 million being spent per year on tobacco control, still only about one third of the annual total cost of smoking to the health system of one member state, the UK. Thus we are underspending on tobacco control in the EU and we have argued that we also underspend on research to underpin policy development.

The evidence from Spain, where the proportion of cigarettes sold on the contraband market has fallen dramatically, shows that when the real causes of smuggling are tackled, tobacco smuggling can be controlled. There is thus a sound basis for developing policy to combat smuggling, which at its peak accounted for a third of global exports and thus had a huge distorting effect on the price of cigarettes and thence on consumption, and from that on public health. Because smuggling is by its nature a global problem, crossing national borders, arguably it will have to be dealt with at global as well as national level and this is a policy area where the EU could contribute significantly.

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