Tobacco Control 3

Tobacco control efforts in Europe

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Smoking is prevalent across Europe, but the severity and stage of the smoking epidemic, and policy responses to it, vary substantially between countries. Much progress is now being made in prohibition of paid-for advertising and in promotion of smoke-free policies, but mass media campaigns are widely underused, provision of services for smokers trying to quit is generally poor, and price policies are undermined by licit and illicit cheap supplies. Monitoring of prevalence is inadequate in many countries, as is investment in research and capacity to address this largest avoidable cause of death and disability across Europe. However, grounds for optimism are provided by progress in implementation of the WHO Framework Convention on Tobacco Control, and in the development of a new generation of nicotine-containing devices that could enable more widespread adoption of harm-reduction strategies. The effect of commercial vested interests has been and remains a major barrier to progress.

Introduction

Tobacco use in Europe began with a gift of tobacco leaves to Christopher Columbus on his arrival in the New World in 1492. Cigarettes, the most lethal method of tobacco consumption, were a 19th century innovation that made use of scraps of tobacco by hand-rolling them in paper. Philip Morris, like many familiar names in the modern tobacco industry, started out selling hand-made cigarettes in London in the 1840s. The onset of mass production of cigarettes in the late 19th century then transformed the industry, and fuelled the 20th century global epidemic of death and disability from smoking.

In Europe, the smoking epidemic has evolved at different rates and times in different countries. In the UK, one of the first countries affected, smoking prevalence reached around 65% in men in the mid-1940s and more than 40% in women in the late 1960s, and has been decreasing since.[1] In Russia, where the epidemic was exacerbated by the entry of Western tobacco companies after the political and economic transitions of the 1990s,[2–4] smoking prevalence was 53% in men (and 16% in women) in 2010.[5] In the European Union (EU), smoking prevalence seems to have peaked only in the last decade in several countries (Greece, Austria, Spain, Bulgaria, Latvia), and could still be rising in some (Finland, Slovenia, Czech Republic).[6] An estimated 28% of adults in the EU—nearly 120 million people—are smokers, and around 650 000 die from smoking every year.[6,7] In the wider WHO European region, smoking kills about 1·5 million people every year.[8] All these deaths are preventable.

The wide variations in the extent to which smoking prevalence is decreasing in European countries is an indicator of the commitment of national governments to tobacco control policies, particularly those embodied in the Articles of the WHO Framework Convention on Tobacco Control (FCTC),[9] a global treaty to which almost all countries are signatories. This review summarises progress in tobacco control in Europe, in broad relation to key policies summarised under the headings in the FCTC MPOWER policy package.[10] We also discuss harm reduction, which offers a radical additional approach to prevention of death and disability from smoking.

Monitoring of tobacco use and prevention policies

Monitoring of the prevalence of tobacco use is crucial to understanding the progress of the tobacco epidemic, and assessment of the effect of prevention policies. However, although most EU countries undertake nationally representative surveys,[10] most measure prevalence too infrequently to assess policy effects or short-term trends. European Commission surveys have provided near-annual data with use of standardised methods in all EU countries, but the national sample sizes of about 1000 people or fewer preclude detailed breakdown by sex and other demographic characteristics, and in 2006 resulted in discrepancies from larger national survey prevalence estimates of up to 13 percentage points.[11] EU survey data for smoking in young people are also available, but collected infrequently.[12,13] Establishment of comprehensive tobacco surveys in Europe is urgently needed, ideally involving samples of 3000 or more adults (and more for young people, in whom smoking prevalence is lower) and collecting data at least annually in each country,[11] to enable reliable within-country and between-country comparisons.

Protection from tobacco smoke

Passive or second-hand smoking—the inhalation of smoke exhaled by smokers and the more toxic smoke from smouldering tobacco—causes substantial mortality and morbidity. In adults, the predominant risks are of the major diseases caused by active smoking, particularly lung cancer, chronic obstructive airways disease, coronary heart disease, and stroke, all of which are increased by about 25%.[14,15] Maternal smoking during pregnancy causes miscarriage and stillbirth; and passive smoking after birth increases the risks of sudden infant death, lower respiratory infections, wheezing and asthma, middle-ear disease, meningitis, and reduced lung function.[15,16] Living with smokers doubles the risk that children become

regular smokers,[16] so the health risks of passive smoking include those of exposure to smoking behavioural models.

In 2004, Ireland became the first country to introduce comprehensive legislation prohibiting smoking in enclosed workplaces. Most EU countries have followed suit, latterly in line with Council Recommendation 2009/C 296/02, which proposed comprehensive smoking bans in accordance with Article 8 of the FCTC in all Member States by the end of 2012.[8,17] However, compliance with and enforcement of smoke-free policies varies substantially. With reported exposure to smoking in bars as a marker of successful implementation, 2012 survey data indicate that high levels of compliance have been achieved in Sweden, the UK, Lithuania, Ireland, and Finland, but less so in Greece, Bulgaria, and Luxembourg.[6] In Luxembourg this failure might have been a result of weak policy, which has since changed, but in Greece probably relates to poor compliance and enforcement, because Greek smoke-free laws are, on paper, among the most comprehensive.[18] Implementation is also variable but rapidly changing in the wider European region as countries begin to meet FCTC requirements.[17] In Russia, where tobacco control policy has historically been particularly lax, an extensive package of measures including comprehensive smoke-free policies, set out in 2010,[19] is reported to have been approved for implementation from June, 2013.

Successful smoke-free policies lead to marked reductions in workplace exposure[20,21] and to reduced exposure in the home,[22,23] generating substantial reductions in morbidity and mortality from cardiovascular disease[24,25] and respiratory disease in children.[26] They also stimulate attempts to stop smoking,[27] although early findings that smoke-free policies lead to marked reductions in smoking prevalence[28] have not been repeated in more recent studies.[29,30] Tobacco industry predictions of economic doom for the hospitality industry have not been realised.[20] All European countries should now implement and enforce FCTC smoke-free policies, close the exemptions and concessions that many provide, and explore extensions that will reduce exposure of children to behavioural models, as, for example, in New York, where smoking is now prohibited in parks and other outdoor public areas. Exposure of children to smoke in private vehicles remains a problem and can be addressed through media campaigns and legislation; prevention of smoking in the home is more challenging and needs further research.

Provision of help to quit tobacco use

Interventions to help smokers to stop smoking are among the most cost effective in medicine. After roughly 35 years of age, every year of smoking reduces life expectancy by about 3 months, and stopping smoking avoids most of this loss.[31] All smokers should be advised to stop smoking, or to adopt strategies to reduce harm,[32] and be provided with information about the treatment choices available to help them to do so. Although mass media campaigns are by far the most effective means to achieve this aim, smoking should also be addressed at an individual level in all contact with health professionals, who should then provide or ensure delivery of regular behavioural support and pharmacotherapy.[33]

Through the development of the UK National Health Service (NHS)Stop Smoking Services (SSS) since the late 1990s, the UK has become an international leader in providing evidence-based support to all smokers seeking help to stop smoking. In England, more than 6 million smokers have used NHS SSS since 2000, and more than 2 million have achieved validated abstinence from smoking at 4 weeks.[34] However, SSS uptake remains low, at less than 10% of all smokers each year,[35] showing that much more could be done to promote service use, and adapt services to smokers' needs and perceptions.

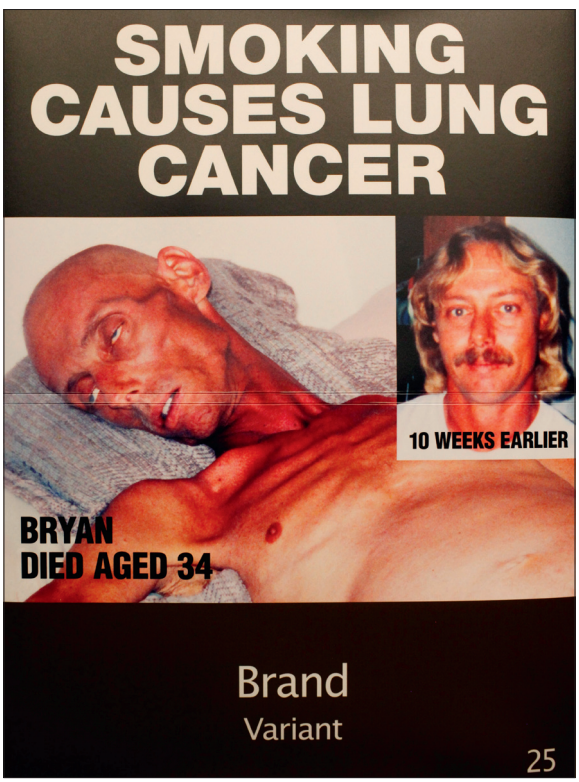
Elsewhere in Europe, service provision is much less comprehensive. In 2010, only a few countries in the wider European region (Belgium, France, Israel, Romania, and Turkey) provided a national quit-line and covered the costs of cessation support and pharmacotherapy,[36] although almost all provided some level of service. Sustained failure to initiate and support smokers to stop smoking results in a massive toll of avoidable death and disability.

Warning of tobacco dangers

Warnings on packs

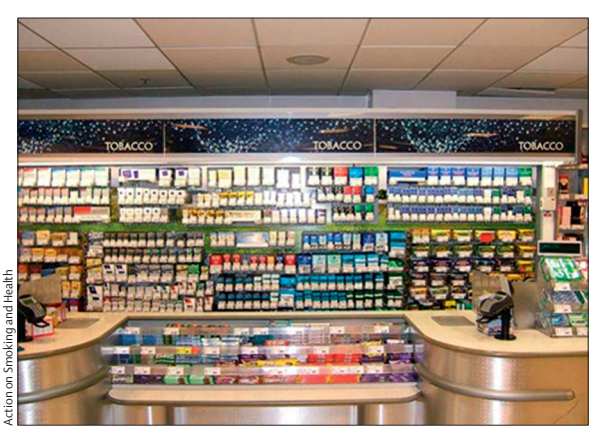
Health warnings on packs, especially those combining written and pictorial components, communicate directly to smokers and potential smokers.[36] Article 11 of the FCTC requires, among other things, that health warnings combine text and pictorial warnings, covering at least 30% and preferably 50% of the pack surface, at the top of the pack.[37] In 2010, no European country fully met FCTC requirements.[36] Written health warnings have been required in all EU countries since 2001,[38] but the optional pictorial warnings[38] have been adopted only by a few (Belgium, France, Hungary, Latvia, Malta, Romania, Spain, UK). A proposed revision of the EU Tobacco Products Directive published in December, 2012,[39] requires health warnings to combine written and pictorial warnings and cover 75% of the pack, and replaces labels listing tar, nicotine, and carbon monoxide concentrations in smoke with more accessible constituent descriptors. It also allows member states to introduce standardised packaging.

In December, 2012, Australia became the first country to introduce standardised tobacco packaging, comprising large and graphic health warnings and limiting brand information to a name and descriptor in standardised font on a plain background (figure 1). A systematic review commissioned by the UK Government to inform its own consultation on standardised packaging, launched in April, 2012, concluded that standardised packaging reduces the attractiveness and appeal of tobacco products, increases the noticeability and effectiveness of health warnings and messages, and reduces use of designs that mislead consumers about the harmfulness of



Corbis

Figure 1: **Example of Australian generic tobacco pack design.**



Action on Smoking and Health

Figure 2: **Example of point of sale tobacco display in an English large retailer before 2012 legislation.**

tobacco products.[40] However, standardised packaging also prevents use of the pack to promote brand equities for marketing, such as the red colour of Marlboro packs, which is associated with the Ferrari Formula 1 team,[41] and the creation of brand identity and loyalty to discourage downtrading in response to price increases.

Mass media campaigns

Media campaigns are powerfully effective methods to motivate attempts to stop smoking,[42] prevent relapse,[43] and reduce smoking prevalence.[42] WHO recommends that media campaigns are planned and delivered as part of a comprehensive tobacco control programme, contain pretested messages and materials, are monitored and evaluated, and use editorial and other media coverage as an adjunct.[36] However, systematic review data indicate that television is the most effective means to achieve wide population reach, particularly among disadvantaged smokers; and that the most effective campaigns emphasise negative health messages,[42] and are sustained and shown at sufficient intensity to achieve at least 1200 gross rating points per quarter for adults, or 300 per quarter for young people.[42]

Few, if any, European countries run campaigns that sustain this level of population reach and intensity. In 2010, only nine countries in the wider European region—Denmark, Greece, Ireland, the Netherlands, Russia, Serbia, Sweden, Turkey, and the UK—met even the WHO recommendations.[36] Mass media campaigns are thus a much underexploited opportunity for smoking prevention in Europe.

Enforcement of bans on advertising, promotion, and sponsorship

Restrictions on tobacco advertising were first introduced in Italy in 1962, and television advertising prohibited throughout the EU in 1989. The 2003 Tobacco Advertising Directive[44] progressively prohibited advertising through print media, radio broadcasting, the internet, and finally, in 2005, sponsorship of sports or events involving more than one EU Member State. Most EU countries have added national laws prohibiting billboard advertising, with the exception of Germany, although advertising through social and other new media continues. Countries in the wider European region, including Ukraine and Russia, are also implementing advertising and sponsorship bans in line with the FCTC, although with variable exemptions.[8,17]

Compliance with EU prohibitions has been good, but with exceptions. A particularly egregious example is the continued sponsorship, after 2005, of the Ferrari Formula 1 motor racing team by Philip Morris, whose trademark Marlboro logo on cars and livery was replaced by a barcode image that evolved over time until its removal in response to complaints in 2010. Philip Morris is still the first-named sponsor listed on the Scuderia Ferrari website[45] in apparent contravention of Article 5 of the 2003 Directive.[44] The tobacco industry has also exploited remaining legal means of promotion, such as at the point of sale (PoS). In the UK for example, large PoS displays became de-facto advertisements for tobacco products (figure 2); PoS displays also enable promotion of price discounts.[46] Iceland prohibited PoS displays in 2001, and Ireland in 2009; Norway and Finland have followed suit. In England, PoS displays in large retailers were prohibited in April, 2012, and will be in small retailers in April, 2015; similar legislation is being implemented in other UK jurisdictions. Evidence

from Ireland suggests that removal of the displays increased perceived ease of stopping smoking among adults, and of the prevalence (and hence normality) of peer smoking among young people.[47] It did not cause substantial revenue losses or closures of small retailers.[48]

Smoking portrayals in the media, particularly films and television programming (which includes a substantial proportion of films), have a significant effect on smoking uptake among young people,[17] and as such represent advertisements for the behaviour, even if brands are not visible. The tobacco industry has a long record of close involvement with the film industry,[49] and although paid-for product placement is now illegal in the EU, the inclusion of smoking in films targeting youth audiences such as Skyfall, Remember Me, and Avatar, raises the question of whether this involvement has ended, and shows the inadequacy of current age classification approaches.[50]

Raising of taxes

Increasing of tobacco prices through tax is one of the more effective tobacco control policies.[51] WHO estimates that 10% increases in tobacco price in high-income countries reduce consumption by about 4%, and smoking prevalence by about 2%.[36] Young people and other smokers with low incomes are particularly sensitive to price changes.[51] However, the effects of price increases are substantially reduced by the availability of lower-price options including budget cigarettes, hand-rolling tobacco, and illicit tobacco.

Premium brand cigarette prices in Europe are among the highest in the world. In February, 2013, according to the Irish Tobacco Manufacturers Advisory Committee, 20 premium brand cigarettes cost €9·03 in the UK, €9·30 in Ireland, and €10·45 in Norway.[52] Prices are much lower in southern and eastern EU countries, and more so in the wider European region, at €1·74 in Russia, €1·33 in the Ukraine, and €0·92 in Belarus. However, these headline premium brand prices are misleading since, in the UK at least, most cigarettes retail for much less. In Nottingham in 2010, for example, when the official UK Most Popular Price Category of cigarettes was £6·29, retail prices clustered around modes of £6·30, £5·30, and £4·70.[53] Smokers of relatively expensive brands therefore have the option, when faced with price increases, of trading down to lower cost brands, to packs of ten cigarettes (retailing at about half the price of 20), or to hand-rolling tobacco, 25 g of which tends to be priced similarly to a pack of 20 manufactured cigarettes but typically makes 40 or more cigarettes. Furthermore, tobacco companies seem to have kept the lowest cigarette prices down by absorbing tax increases, and cross-subsidising these with real price increases on higher price cigarettes at the time of tax increases.[54] Practices such as these might partly account for the absence of strong association between tobacco prices and prevalence trends across the EU.[55] Thus a case exists for full disclosure of tobacco pricing policy to be required,[56] to ensure that tax increases are passed on to the consumer, and for more radical solutions, including minimum pricing and pack sizes, and imposition of price controls in the tobacco industry.[57]

Illicit trade is another source of cheaper tobacco, typically selling at roughly 50% of the price of licit equivalents. The European illicit tobacco trade has changed substantially in recent decades; whereas 20 years ago the tobacco companies themselves were the main suppliers of illicitly traded cigarettes,[3,58] counterfeit products and brands manufactured specifically for illegal export to another market are now increasingly prevalent.[59] Reliable data for the extent of illicit supply are scarce, but tax differentials are only one determinant of the trade; other factors include the degree of criminal organisation, the effectiveness of policing, judicial penalties (which are typically lax in relation to other illicit drug trading), and corruption.[60] Some European countries—Italy, Spain, and the UK—have successfully reduced illicit market share through monitoring and policing of supply,[61] but the illicit tobacco trade is a global problem that needs strong internationally coordinated responses.[62]

Harm reduction

Harm reduction is a controversial but potentially powerful tobacco control policy that has so far been omitted from the FCTC, and attracted scepticism from some leading tobacco control advocacy and public health organisations. The underlying principle of harm reduction is that smokers smoke mainly for nicotine, but are harmed primarily by other tobacco smoke constituents. The concept of substitution of smoked tobacco with medicinal nicotine (known as nicotine replacement therapy or NRT) has been central to smoking cessation interventions for decades, but is intended as a short-term step towards ending all nicotine use. NRT is produced by pharmaceutical companies, marketed as a therapy with strong medical connotations, distributed through different retail channels to cigarettes, provides nicotine in lower doses and more slowly than cigarettes, and seems expensive relative to cigarettes at the point of sale. Although effective, few smokers find NRT products as satisfying as cigarettes.[63] For these and other reasons NRT is not widely perceived by smokers as an effective, affordable, or satisfying alternative to smoking.

The rationale of tobacco harm reduction is to make nicotine products that are more satisfying as a smoking substitute available to smokers at least as easily as cigarettes, and at competitive prices, hence providing all smokers with an easily obtainable lower-risk alternative to smoking.[63] Proof of concept is provided by Swedish snus, an oral smokeless tobacco product that delivers high doses of nicotine, is culturally accepted in Sweden and freely available alongside cigarettes in tobacco retailers, and has been used increasingly during recent decades as an alternative to cigarettes by existing smokers and new tobacco users. Sweden has the lowest prevalence

of smoking in the EU,[6] and, in 2008, a European Commission expert committee concluded that the availability of snus has contributed to that.[64] Legitimate concerns exist that snus might be a gateway into smoking for some people, and that it sustains nicotine addiction and could perpetuate smoking in dual users. However, the low health risk of the product compared with smoked tobacco, and predominant use as a gateway from smoking, indicate that at population level wider availability of this product would reduce harm to society from tobacco use.[65] Supply of snus in the EU outside Sweden is prohibited.

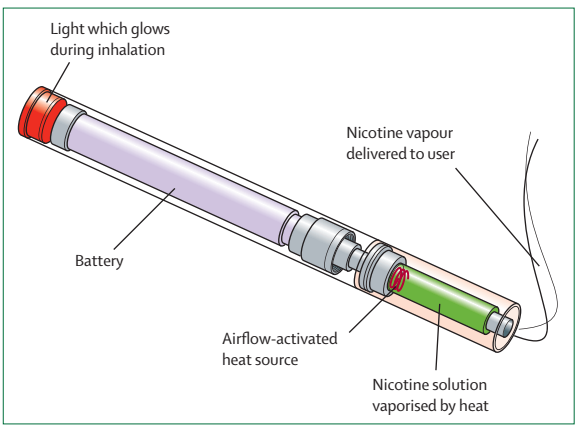


Figure 3: **Schematic design of an electronic cigarette**[66]

2010 rank	Country	2007 rank	Change in rank	Price (30)	Public place bans (22)	Public information campaign spending (15)	Advertising bans (13)	Health warnings (10)	Treatment (10)	Total (100)
1	UK	1	..	26	21	8	9	4	9	77
2	Ireland	2=	..	27	21	1	12	2	6	69
3	Norway	4	↑1	25	17	2	12	1	5	62
4=	Turkey	..	..	25	21	..	7	5	3	61
4=	Iceland	2=	↓2	20	17	9	12	1	2	61
6	France	7	↑1	21	17	1	9	1	6	55
7=	Finland	8=	↑1	17	17	2	10	2	4	52
7=	Malta	5	↓2	19	17	..	9	1	6	52
9	Sweden	6	↓3	17	15	2	10	1	6	51
10	Belgium	8=	↓2	17	13	2	8	4	6	50
11	Switzerland	18	↑7	15	11	9	2	5	6	48
12	Italy	10	↓2	16	17	..	8	1	5	47
13=	Spain	12	↓1	14	17	1	9	1	4	46
13=	Denmark	20	↑7	16	11	3	8	1	7	46
13=	Netherlands	14=	↑1	16	13	1	9	1	6	46
16=	Romania	14=	↓2	21	7	..	7	3	7	45
17=	Slovenia	25=	↑8	13	15	..	9	1	6	44
17=	Latvia	24	↑7	18	14	..	9	3	0	44
19=	Portugal	23	↑4	18	11	..	8	1	5	43
19=	Estonia	11	↓8	14	12	..	10	1	6	43
19=	Poland	14=	↓5	15	11	..	9	1	7	43
22=	Slovakia	17	↓5	15	10	..	9	1	6	41
22=	Lithuania	21	↓1	17	12	..	8	1	3	41
24=	Cyprus	19	↓5	14	11	..	10	1	4	40
24=	Bulgaria	13	↓11	21	6	..	10	1	2	40
26	Germany	27	↑1	17	11	..	4	1	4	37
27=	Hungary	22	↓5	15	6	..	7	1	5	34
27=	Czech Republic	25=	↓2	14	7	..	8	1	4	34
29	Luxembourg	28=	↓1	5	11	..	9	1	7	33
30=	Austria	30	..	13	7	..	7	1	4	32
30=	Greece	28=	↓2	15	7	..	6	1	3	32

Figure 4: **Status of tobacco control policy implementation in selected European countries in 2010, and change since 2007, as measured by the Tobacco Control Score over six domains**
Reproduced from Joossens and Raw[72] with permission.

The emergence onto the market of electronic cigarettes in the past 5 years provides a radical new harm reduction option. Electronic cigarettes generate vaporised nicotine for inhalation in a formulation that mimics smoking (figure 3),[66] and, although of variable performance, can be effective substitutes for cigarettes if used correctly.[67] Electronic cigarettes are not classed or regulated as drugs, and are increasingly widely and easily available as affordable alternatives to smoking. Their use is increasing rapidly; although in early 2012, only 7% of smokers in the EU had ever tried an electronic cigarette and around 2% were regular or occasional users, in England, for example, the proportion of regular or occasional users rose from 2% to more than 8% between November, 2011, and November, 2012.[68] The growing popularity of these products, and the promise of others in development, indicates that they might offer the potential health gains from harm reduction that snus has generated in Sweden without the health risks or legislative obstacles to use associated with a smokeless tobacco product. However, electronic cigarettes are proving almost as controversial as snus, raising concerns that they will be marketed to children, provide a gateway into smoking, sustain smoking in people who might otherwise stop, undermine denormalisation of smoking, and other issues. In what is by international comparison a liberal approach, the UK Medicines and Healthcare products Regulatory Agency is reportedly proposing to address these concerns by classifying all nicotine-containing devices as drugs, but to apply this regulation permissively to ensure quality and protect against marketing abuse while endorsing widespread market access and hence competition with cigarettes. The UK National Institute for Health and Clinical Excellence has consulted on clinical guidance that will incorporate these and other licensed nicotine products into harm reduction strategies for smokers[32] with use of NHS services; full guidance will be published in May, 2013. At EU level, however, the proposed revision of the Tobacco Products Directive offers unrestricted market access only to products that deliver very low doses of nicotine, while imposing potentially exclusive levels of drug regulation on higher-dose products.[39] Paradoxically, the low-dose devices will be required to carry a health warning, although higher-dose products will not. We hope that common sense will prevail, and that regulation that promotes harm reduction while preventing marketing abuse will emerge.

Young people and tobacco

Young people are more likely to become smokers if they see others smoking. This tenet is particularly true if family members or friends smoke, which additionally creates opportunities to obtain tobacco products, but also applies to smoking imagery in the media and in remaining legal promotional options. The most effective

way to prevent smoking uptake by young people is probably to reduce this exposure by driving down smoking prevalence in adults, and removing all advertising and unnecessary smoking imagery from children's lives through general tobacco control policies.

However, measures to restrict supply are also effective. Raising the minimum age for purchase of tobacco from 16 years to 18 years in England in 2007, probably contributed, along with smoke-free legislation earlier in 2007, and advertising restrictions introduced from 2003, to a 30% reduction in smoking prevalence in people younger than 16 years in England in 2008.[69,70] All European countries now prohibit sale or distribution of tobacco to people younger than 18 years, but many still permit sale from vending machines.[17] Other measures to make cigarettes less available to young people, including mandatory minimum pack sizes and prohibition of proxy purchasing, are needed.

Governments, public health, and the tobacco industry

Tobacco smoking is a commercially driven behaviour, and policies that prevent smoking have been identified for decades.[71] As always in public health, the most effective of these policies operate at population level, and in this case cost almost nothing (price rises, promotion bans, smoke-free policy) or very little (media campaigns) to implement. However, implementation of these policies, as measured across Europe using the Joosens and Raw Tobacco Control Scale[72] remains far from comprehensive (figure 4). The sustained failure of so many governments to introduce simple policies to prevent smoking in so many European countries, to the detriment of the health and wellbeing of millions of people represents a massive failure of political, and medical, leadership. The failure also bodes badly for the likelihood of success in addressing other commercially driven disease epidemics.

In medicine, there has been a failure to prioritise investment in research and development in tobacco addiction, treatment, and prevention to a degree remotely proportional to the scale of the public health problem that smoking causes. Greater investment in tobacco control research and practice capacity[73] and prioritisation of tobacco and comparable industrial epidemics by funding agencies is therefore needed. In politics the failure shows partly the power of a wealthy and influential industry acting, for example, to undermine tobacco control policy and the policy-making process in the EU[74–76] and wider European region,[3,4,77,78] manipulate scientific and public opinion,[79] and to undermine the FCTC, particularly in relation to Article 5.3, which specifies the need to protect tobacco control policies from the effect of the commercial and other vested interests of the tobacco industry.[79] However, it also reflects the susceptibility of governments and policy makers to these vested interests; in 2008, the prevalence of smoking in EU Member States was directly related to public sector corruption.[80] As the 1997 Ecclestone affair in the UK shows,[81] money talks, and money is something that a global industry with a turnover larger than that of most of the world's countries[82] has plenty of. Smoking kills more Europeans than any other avoidable factor, and prevention is achievable. All that is needed is political will.

Conflicts of interest

We declare that we have no conflicts of interest.

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