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Legislating for smoke-free workplaces

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EUROPEAN TOBACCO CONTROL POLICY SERIES

No. 3



Legislating for smoke-free workplaces

ABSTRACT

This document aims to provide guidelines and support to the Member States of the WHO European Region in strengthening protection from exposure to tobacco smoke at the workplace. It is the third publication in the series of policy documents following the adoption of the European Strategy for Tobacco Control.

Its overall objective is to provide national policy-makers, health system administrators, professionals and nongovernmental organizations with easily accessible arguments and with a review of legislative tools and options in support of smoke-free workplaces, including the hospitality sector. The document also aims to provide a cross-country analysis of legislation that, in itself, is expected to help raise awareness and motivation for stronger policies and actions.

Keywords

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Executive summary

This document aims to provide guidelines and support to the Member States of the WHO European Region in strengthening protection from exposure to tobacco smoke at the workplace. It is one of the main components of a comprehensive tobacco control policy that contributes to reducing average tobacco consumption, as stated by the European Strategy for Tobacco Control. The WHO Framework Convention on Tobacco Control obligates the Parties to the Convention to provide protection from exposure to tobacco smoke in indoor workplaces, public transport, indoor public places, and other public places as appropriate.

This document aims to provide guidelines and support to the Member States of the WHO European Region in strengthening protection from exposure to tobacco smoke at the workplace. It is the third publication in the series of policy documents following the adoption of the European Strategy for Tobacco Control. Its overall objective is to provide national policy-makers, health system administrators, professionals and nongovernmental organizations with easily accessible arguments and with a review of legislative tools and options in support of smoke-free workplaces, including the hospitality sector. The document also aims to provide a cross-country analysis of legislation that, in itself, is expected to help raise awareness and motivation for stronger policies and actions.

Though the major focus of the paper is legislating for smoke-free workplaces, it also briefly covers some related issues such as the health effects of passive smoking, the cost of smoking at work, the impact of banning smoking on business in the hospitality sector, and lessons learnt from different countries. Finally, the experience of Finland, a country with one of the longest traditions in this area, is presented as a case study.

It is recognized that the definition of what is meant by a “ban on smoking” varies. In this document, a complete ban provides effective protection from ETS by imposing a total ban on smoking while a ban establishes physically separated areas for smoking.

This document takes into consideration existing knowledge and the latest developments in the field. The first draft of this document was developed by the Finnish Institute of Occupational Health and the WHO Regional Office for Europe. A group of experts was then requested to review the draft, and a second draft was distributed to the network of WHO European national counterparts for their comments.

1. Introduction

This document aims to provide guidelines and support to the Member States of the WHO European Region in strengthening protection from exposure to tobacco smoke at the workplace. Protection from exposure to tobacco smoke is one of the main components of a comprehensive tobacco control policy that contributes to reducing average tobacco consumption, as stated by the European Strategy for Tobacco Control (1). The WHO Framework Convention on Tobacco Control obliges the Parties to the Convention to provide protection from exposure to tobacco smoke in indoor workplaces, public transport, indoor public places, and other public places as appropriate (2).

This document was prepared as part of a series of policy documents envisaged by the European Strategy, and at the request of the European network of national counterparts for the Strategy. Its overall objective is to provide national policy-makers, health system administrators, professionals and nongovernmental organizations with easily accessible arguments and with a review of legislative tools and options in support of smoke-free workplaces, including the hospitality sector. The document also aims to provide a cross-country analysis of legislation that itself is expected to help raise awareness and motivation for stronger policies and actions.

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This document takes into consideration existing knowledge and the latest developments in the field:

- the provisions of the WHO Framework Convention on Tobacco Control (2);
- the recommendations of the European Strategy for Tobacco Control (1);
- *Why smoking in the workplaces matters: an employer's guide* (3);
- *Tobacco in the workplace: meeting the challenges* (4);
- *The workplace – a key setting for reducing the smoking epidemic* (5);
- *Report on the health effects of environmental tobacco smoke (ETS) in the workplace* (6);
- Draft ILO guidelines on tobacco smoke in the workplace (7);
- *Working paper: a review of national and local practical and regulatory measures* (8);
- *Smoke-free policies* (9);
- *Towards smoke-free public places* (10);
- *Tobacco at work* (11); and
- *Tobacco or health in the European Union* (12).

The first draft of this document was developed by the Finnish Institute of Occupational Health and the WHO Regional Office for Europe. A group of experts was then requested to review the draft, and a second draft was distributed to the network of WHO European national counterparts for their comments.¹

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2. Background and rationale

2.1. Rationale for protection from exposure to tobacco smoke

The Framework Convention on Tobacco Control recognizes that “scientific evidence has unequivocally established that exposure to tobacco smoke causes death, disease and disability” (2). According to the Occupational Safety and Health Convention of the International Labour Organization (13), every person should have the right to a safe and healthy working environment.

In the first half of twentieth century, smoking was banned at places of work only for reasons of safety and security, mainly to prevent fire and explosions. Later, from the 1950s to the 1980s, bans on smoking at work were introduced to protect the health of the most vulnerable groups. In those years, smoking bans were expanded mostly to the educational and health care sectors. Since then, various studies have shown that the population exposed to tobacco smoke at work was large enough to justify full protection and the passing of legislation banning smoking at all workplaces. An important question therefore remains: why leave some sections of the working population without any protection from tobacco smoke at work?

The increasing evidence on the impact on health of exposure to tobacco smoke demands greater protection of non-smokers as well as smokers. There is no safe level of exposure to environmental tobacco smoke (ETS). Thus, increased protection would lead to a change in the perception of smoking and in behaviour vis-à-vis smoking, along with a decrease in the prevalence of smoking itself.

According to the results of a recent study published in the *British Medical Journal*, exposure to tobacco smoke at work is likely to be responsible for the deaths of more than two employed people each working day (14). This means some 617 deaths per year, 54 of them in the hospitality sector. The study concludes that exposure at work may contribute up to one fifth of all deaths from tobacco smoke in the general population aged 20–64 years, and up to half of such deaths among employees in the hospitality industry. Adoption of smoke-free policies in all workplaces and reductions in the general prevalence of

active smoking would lead to a substantial decrease in these avoidable deaths.

Thus, the workplace is a highly appropriate setting to combat environmental tobacco smoke. A large part of the world's population spends most of its time at work, and cannot avoid being there. Prohibition of smoking at workplaces has been shown to lead to lower levels of smoking by individuals and an increase in rates of quitting tobacco use (15). Therefore, a comprehensive smoke-free policy at the workplace can have a strong and positive influence on the behaviour of smoking workers, since they are less exposed to environmental tobacco smoke at work, their attempts to quit smoking will be supported, and the general perception of smoking is changing. Worksite cessation programmes are proving to be effective in reducing smoking prevalence among employees. A meta-analysis of 20 studies of worksite smoking cessation programmes found an average quitting rate after 12 months of 13% – much higher than the national average among all smokers of 2.5% (16). At the same time, non-smoking workers are provided with better protection from exposure to tobacco smoke.

A number of important developments aimed at increasing protection from exposure to tobacco smoke for health reasons have taken place over the last several years. The WHO Framework Convention on Tobacco Control gave a global boost to the movement towards making the non-smoking society the norm. In some countries of the WHO European Region this positive trend has resulted in smoking being banned in all workplaces, including the hospitality sector. Some other countries seem to be following this pioneering trend, and there are signs of increasingly active public debate and support in others.

Some recent opinion polls show that equal numbers of smokers and non-smokers are increasingly supporting a ban on smoking in public places. In Ireland, a survey carried out for the first anniversary of the introduction of the smoke-free workplace legislation shows that public support for the ban has grown steadily (17). According to this survey, 67% of the public supported the introduction of a smoking ban in 2003, whereas just a year later 82% were in favour. In March 2005, as many as 93% of people thought that the introduction of the law was a good idea, including 80% of smokers.

A recent BBC survey (18) revealed that 78% of 34 446 people polled in London would like a ban on smoking in all public places. In Sweden, one month before the introduction of the smoking ban in the hospitality sector in June 2005, 85% of the population was in favour of such a ban.² The trend is also apparent in eastern Europe: according to a Canadian survey carried out in 2001 to assess public support for international efforts to control tobacco use, 90% of Russians supported restrictions on where people can smoke and only 7% were opposed (19). Overall, increasing political awareness, the new international legal framework, and the recent developments in some countries along with large public support in many others create the demand and momentum for strengthening smoke-free policies in Europe. The role of the Regional Office is to support Member States in this process. This document thus addresses the need by providing a comparative review and options for legislation, the most powerful tool in advancing smoke-free workplace policies in the Region.

2.2. Composition of ETS

ETS, sidestream smoke and mainstream smoke are complex mixtures of over 4000 identified compounds, and approximately 400 compounds have been measured quantitatively in both mainstream and sidestream smoke. It has been estimated that the total number of constituents in smoke may actually be 10–20 times the number of those identified, meaning that tobacco smoke may contain over 100 000 constituents.

More than 50 known or suspected human carcinogens (nitrosamines, heavy metals, irritant chemicals, radionuclides and substances known as reproductive toxicants, such as carbon monoxide) have been found in mainstream tobacco smoke, including nine chemical agents classified as human carcinogens by the International Agency for Research on Cancer (IARC). Some of these are formed not only during processing but also while a person is smoking. IARC has classified tobacco smoke as a Group 1 carcinogen (known to be carcinogenic in humans). The irritant components have also been associated with emphysema. Nicotine, carbon monoxide and nitrogen monoxide have cardiovascular effects, while nicotine is responsible for the addictive properties of tobacco and its smoke.

² National Institute of Public Health press release, 2 May 2005.

Measurement and assessment of exposure

Exposure assessments can be carried out by measuring suitable ETS indicator components in the air, by means of biomarkers of exposure, and often through epidemiological studies using surveys and questionnaires.

The marker compounds most widely used for assessing the presence and concentration of ETS in indoor air are vapour-phase nicotine and respirable suspended particle (RSP) mass. Airborne nicotine and 3-ethenylpyridine (used by some researchers) are specific to tobacco combustion, while respirable suspended particles are present in large quantities but are not unique to ETS. Carbon monoxide may also be used as a marker for ETS; there are, however, many sources of carbon monoxide in addition to tobacco smoke.

Health effects

It is estimated that in 2001, in the European Union (EU) alone, exposure to ETS accounted for between 50 000 and 100 000 deaths each year, while more than seven million people are regularly exposed at work (10). A large number of studies on the health risks to non-smokers of exposure to ETS have been published since the mid-1980s.

Cancer

Passive smoking exposes people to the same numerous carcinogens and toxic substances as active smoking. The risk of developing lung cancer by people who have never smoked but who are exposed to ETS at the workplace has been shown to be 16–19% higher than for those not occupationally exposed to ETS (20).

More than 50 studies on passive smoking and lung cancer risk in people who have never smoked, especially spouses of smokers, have been conducted during the last 25 years. Most of these showed an increased risk, especially for persons with higher exposures. To evaluate the information collectively, meta-analyses have been carried out in which the relative risk estimates from the individual studies are pooled together and thus provide a more precise estimate of the risk (as compared to studies with a limited number of cases). Most published meta-analyses show that there is a statistically significant and consistent association between lung cancer risk in spouses of smokers and exposure to tobacco smoke from the smoker. The excess

risk is some 20% for women and 30% for men and remains in this order of magnitude after controlling for some potential sources of bias and confounding (e.g. misclassification of smokers as having never smoked, background exposure to second-hand smoke, adjusting for fruit and vegetable consumption, etc.) (21–25).

Meta-analyses of lung cancer in those who have never smoked exposed to second-hand tobacco smoke at the workplace show a statistically significant increase in risk of 12–19% (23,26,27).

The evidence for an association between the risk of developing some other types of cancer and exposure to tobacco smoke in those who have never smoked is insufficient and in some cases inconsistent. Nevertheless, several case control studies have found a statistically significant increased risk, particularly for breast cancer.

Cardiovascular and respiratory diseases

Exposure to ETS is associated with an increased risk of coronary heart disease (28,29). It has been shown that passive smoking increases the risk of an acute cardiovascular event by 25–30% (20).

Each year, exposure to ETS causes between 30 000 and 60 000 deaths and between 90 000 and 180 000 nonfatal cardiovascular events in the United States (30, 31), and between 50 000 and 100 000 deaths and between 200 000 and 400 000 nonfatal cardiovascular events in the EU (32). ETS is also major cause of asthma, chronic obstructive pulmonary disease and other respiratory symptoms. Many of the substances contained in tobacco smoke lead to defects in mucociliary clearance of the airways and to an impairment of immunological defence mechanisms, which increases susceptibility to respiratory infections. Repeated respiratory infections predispose to the development of chronic obstructive pulmonary disease (33,34). An association and dose–response relationship has been shown between occupational ETS exposure and respiratory symptoms such as cough, phlegm production, shortness of breath and common cold symptoms (35).

Reproductive health

There is some evidence to suggest that exposure to ETS is associated with an increased risk of sexual impotence in men. The scientific evidence shows that active smoking by women during pregnancy reduces the average birth weight by 150–200 grams and doubles the

risk of low birth weight. Some evidence suggests that women who are exposed to ETS during pregnancy are at higher risk of giving birth prematurely (36).

2.3. The cost of smoking at work

Strong economic incentives exist for the adoption of smoke-free workplace policies. The cost to governments and private industry associated with the development and implementation of policies preventing exposure to ETS at places of work and public places have been shown to be far lower than the resulting economic gains. The economic benefits derived from improved health and increased productivity have been well documented for both workers and employers.

In Canada, the increased absenteeism due to smoking resulted in an annual cost of about Can\$ 230 (approximately US\$ 192) per smoking employee in 1995 (37). This amount reflected the cost to the employer of the nearly two days of additional leave taken by each employee who smoked. The average cost to employers of the reduced productivity of employees smoking in non-break periods was estimated to be Can\$ 2175 (approximately US\$ 1812) per smoking employee per year (37). This amount reflected the cost to the employer when smoking took place in company time.

In Scotland, the costs imposed on employers by employees who smoked were estimated to be £450 million (about US\$ 900 million) as a result of lost productivity, £40 million (about US\$ 80 million) from higher rates of absenteeism and £4 million (about US\$ 8 million) as a result of fire damage (38). The total number of smoking employees in Scotland was calculated to be 0.55 million, giving an estimated cost of £898 (about US\$ 1796) per smoking employee (38). These estimates exclude other possible costs such as cleaning, redecoration and repairs to machinery.

The additional annual cost to employers per smoking employee has been estimated at US\$ 1226 in Germany, US\$ 1025 in the Netherlands and US\$ 2258 in Sweden (5).

Employers are becoming increasingly aware of the need to maximize the productivity of their workforce, and the effective management of

sickness absenteeism is gaining in importance. Smoking has a negative impact on productivity by contributing to increased morbidity and absenteeism, early retirement and loss of time due to smoking breaks. The employer faces higher maintenance and cleaning costs and higher risks of fire and explosion due to smoking at work. Tobacco-related illnesses have an impact on retirement and health care issues as well as on insurance costs.

The concern about the possibility of legal action being taken by an employee affected by ETS may also be one of the “modern” forces motivating employers to introduce smoke-free policies. Thus the direct and indirect benefits of making a workplace smoke-free are clearly greater than the costs.

The issues surrounding the economic effects of banning smoking in restaurants and bars continue to be debated. Nevertheless, various studies have revealed that bans do not damage trade and therefore do not have a negative impact on the hospitality sector. According to the World Bank, the fears of the hospitality industry that smoking bans may damage business interests are largely unfounded (16). A recent study compared the quality of evidence and conclusions about the economic impact of smoke-free legislation on the hospitality industry, based on the type of data used, how the studies were designed, analysed and interpreted, and the source of funding (39). The authors concluded that all of the best designed studies reported either no effect or a positive effect on sales and employment of bans on smoking in restaurants and bars.

Recent retail sales figures from Ireland show a minuscule decline in the volume of bar sales since 2001 (17). Bar sales declined in volume by 4.2% in 2003 and 4.4% in 2004. However, economic analysts suggest that this continuing downward trend is due to a number of factors including high prices, changing lifestyles and shifting demographic patterns.

A report published in February 2004 by the Centres for Disease Control and Prevention in the United States concludes that revenues of bars and restaurants had not been affected since the introduction of a well-enforced ban on smoking in El Paso, Texas in 2002 (40).

A review released in March 2004, one year after comprehensive smoke-free legislation took effect in New York, revealed that business tax receipts in restaurants and bars had risen by 8.7%, that employment in the sector had increased by 10 600 jobs, and that there was strong public support for the measures (41).

3. International legislation

The right of human beings not to be exposed to ETS in public places, including workplaces, has increasingly been recognized. Over the last 20–30 years, regulations on smoking in public places have increasingly become more restrictive. The main driving force for these developments has been the increasing solid evidence on the health effects of ETS and wide public support, from non-smokers as well as smokers, for stricter regulation. However, according to *The European report on tobacco control policy* (42), the workplace seems to be a less regulated public environment in terms of protecting the rights of non-smokers.

The existing international legislation is certainly offering some tools and, in some cases, providing legal obligations for regulating smoking at work. Three sources of international law are dealt with in this chapter: the WHO Framework Convention on Tobacco Control, existing EU legislation and the various legal tools provided by the International Labour Organization (ILO).

3.1. The WHO Framework Convention on Tobacco Control

The WHO Framework Convention on Tobacco Control, the world's first public health treaty, was adopted unanimously by WHO's 192 Member States on 21 May 2003 during the 56th World Health Assembly. This treaty is the first international legal instrument designed to reduce tobacco-related death and disease around the world. The Convention entered into force on 27 February 2005.

Preamble

The primary aim of any preamble is to introduce the background and purpose of the treaty. According to the Vienna Convention on the Law of Treaties (43), the preamble is part of the context of the treaty for

purposes of interpretation. Though it is not considered to be part of the legally binding text of the treaty, it still provides internationally agreed arguments for the countries. The Preamble of the Convention notes “the concern of the international community about the devastating worldwide health, social, economic and environmental consequences of tobacco consumption and exposure to tobacco smoke”. The treaty also recognizes in its Preamble “that scientific evidence has unequivocally established that tobacco consumption and exposure to tobacco smoke cause death, disease and disability, and that there is a time lag between the exposure to smoking and the other uses of tobacco products and the onset of tobacco-related diseases”.

Article 3

Article 3 of the Convention lays down the objective of the Convention: “to protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco consumption and exposure to tobacco smoke by providing a framework for tobacco control measures to be implemented by the Parties at the national, regional and international levels in order to reduce continually and substantially the prevalence of tobacco use and exposure to tobacco smoke”. Hereby the Convention not only emphasizes the reduction of tobacco use but also a reduction in exposure to tobacco smoke, and hence an explicit recognition of the importance of smoke-free workplaces as a key factor in achieving the objectives of the Convention.

Article 4

Article 4 includes the guiding principles of the treaty. Traditionally, guiding principles are not obligations but rather concepts providing guidance to countries in implementing the treaty. It is important to notice that in Article 4 the Convention goes beyond the classical idea of protecting non-smokers by asserting that *everybody* has the right not to be exposed to tobacco smoke: “Strong political commitment is necessary to develop and support, at the national, regional and international levels, comprehensive multisectoral measures and coordinated responses, taking into consideration: (a) the need to take measures to protect all persons from exposure to tobacco smoke ...”.

Article 5

Article 5 sets out general obligations for countries in respect of the implementation of the treaty. However, in order to provide a certain measure of flexibility for the countries, it does not specify what types of domestic legal measure are expected. In most cases, the general obligations are followed by provisions requiring concrete measures at country level. Despite the general nature of this article, it obliges countries to take legal action in respect of smoking at work. Member States that have ratified the treaty and become Parties shall “adopt and implement effective legislative, executive, administrative and/or other measures and cooperate, as appropriate, with other Parties in developing appropriate policies for preventing and reducing tobacco consumption, nicotine addiction and exposure to tobacco smoke”.

Article 8

As mentioned above, general obligations in the treaty are followed by provisions requiring concrete measures. In the case of protection from exposure to tobacco smoke, Article 8 states that:

Each Party shall adopt and implement in areas of existing national jurisdiction as determined by national law and actively promote at other jurisdictional levels the adoption and implementation of effective legislative, executive, administrative and/or other measures, providing for protection from exposure to tobacco smoke in indoor workplaces, public transport, indoor public places and, as appropriate, other public places.

Article 8 leaves to it the country to determine the types of measure needed to implement this provision. It also states that there is an obligation not only to adopt but also to implement those measures; thus the mechanism for actual implementation has to be put in place.

Article 12

Article 12 provides for education, communication, training and public awareness. Each Party is required to promote and strengthen public awareness on tobacco control issues, including awareness on exposure to tobacco smoke, using all available communication tools.

Article 14

Indirectly, Article 14 dealing with tobacco dependence and cessation also addresses the obligations of the Parties in the area of protection

from exposure to tobacco smoke at work. The Article states that “...each Party shall endeavour to: (a) design and implement effective programmes aimed at promoting the cessation of tobacco use, in such locations as educational institutions, health care facilities, workplaces and sporting environments ...”.

During the years that it took to negotiate the Framework Convention, countries became increasingly inspired to initiate or strengthen their work in ensuring better protection from exposure to tobacco smoke. For those countries that have ratified the Convention and become Parties, the Convention place further legal obligations concerning protection from exposure to tobacco smoke at workplaces. Countries that have not yet ratified it can use the Convention as a source of internationally agreed, evidence-based arguments for regulating smoking at workplaces. While considering the treaty as a valuable source of such arguments, however, it is important to consider all relevant parts of the Convention, including the Preamble and the various articles.

The first session of the Conference of the Parties (CoP) to the WHO FCTC that was held in Geneva on 6 – 17 February 2006 decided, among other things, to start developing guidelines for protection from exposure to tobacco smoke (Article 8 of the FCTC). These guidelines or at least a progress report should be presented to the second CoP foreseen to be convened in the first half of 2007.

3.2. Legislation in the EU

Tobacco control legislation at the EU level consists of legally binding directives and nonbinding resolutions and recommendations. EU legislation is particularly relevant for its Member States, which are legally obliged to comply with and implement certain legal acts of the European Communities in their national legislation. This may encourage other countries, too, to develop and strengthen their legislation in the field of protection from tobacco smoke at workplaces.

At the EU level, there are eight occupational health and safety directives, legally binding on Member States, concerning the regulation of the smoking at work. Some of those directives are more far-reaching than others, and provide protection from exposure to

tobacco smoke at workplaces. One of these, for example, is the Directive concerning the minimum safety and health requirements for the workplace (89/391/EEC) (44). The deadline for the start of its implementation at national level was the end of 1992. It requires a health assessment of employees to be carried out, which should include exposure to tobacco smoke in the workplace. Another directive (92/85/EEC) concerns measures to improve the conditions at work of pregnant and breastfeeding women (45). Here, the deadline for the start of implementation was the end of 1994. The directive states that workers should not be exposed to a variety of chemical agents known to pose a health risk, including carbon monoxide.

Other relevant EU directives related to occupational health and safety are summarized in Table 1.

Table 1. EU directives related to occupational health and safety

Scope	Number	Main requirement(s)
Minimum safety and health requirements for the workplace	89/654/EEC	Requires that employers ensure that workers are protected against the discomfort caused by tobacco smoke
Implementation of minimum safety and health requirements at temporary or mobile construction sites	92/57/EEC	Requires that employers ensure that workers are protected against the discomfort caused by tobacco smoke
Minimum requirements for improving the safety and health protection of workers in the mineral-extracting industries through drilling	92/91/EEC	Requires that employers ensure that workers are protected against the discomfort caused by tobacco smoke
Minimum requirements for improving the safety and health protection of workers in surface and underground mineral-extracting industries	92/104/EEC	Requires that employers ensure that workers are protected against the discomfort caused by tobacco smoke
Protection of workers from the risks related to exposure to asbestos at work	83/477/EC	Prohibits smoking in areas where asbestos is handled

These EU directives are complemented by some nonbinding recommendations and resolutions that encourage greater protection from exposure to tobacco smoke. The most recent recommendation is from 2002 (46) calling on Member States to implement legislation that provides protection from exposure to ETS in indoor workplaces, enclosed public places and public transport, giving priority to educational and health care facilities and places providing services for children. The European Commission is planning to launch a Green Paper on smoke-free environments in autumn 2006. An informal consultation paper on this was sent to EU Member States and key stakeholders in May 2006.

Although EU legislation is applicable to the 25 Member States, it remains a valuable source of reference for countries outside the EU. In the light of recent developments in some countries of the WHO European Region and the EU's continuing commitment to them, it may be expected that the EU will oversee their existing legislation in this area.

3.3. International Labour Organization (ILO)

Smoking at work can be a serious health and safety hazard. Promotion and implementation of a smoke-free environment therefore falls under ILO's mandate to create safe and healthy workplaces (8).

Under the auspices of ILO, several international conventions and recommendations have been adopted that state the right to a safe and healthy working environment. Several countries of the WHO European Region have ratified these conventions and are therefore legally bound to take the required action at national level by providing a healthy environment at workplaces.

The ILO Convention on occupational safety and health (C 155) (13) is legally binding on the 26 countries in the WHO European Region that have ratified it to date. As of January 2006 these countries are Albania (2004), Belarus (2000), Bosnia and Herzegovina (1993), Croatia (1991), Cyprus (1989), the Czech Republic (1993), Denmark (1995), Finland (1985), Hungary (1994), Iceland (1991), Ireland (1995), Kazakhstan (1996), Latvia (1994), Luxembourg (2001), the Netherlands (1991), Norway (1982), Portugal (1985), the Republic of Moldova (2000), the Russian Federation (1998), Serbia and

Montenegro (2000), Slovakia (1993), Slovenia (1992), Spain (1985), Sweden (1982), The former Yugoslav Republic of Macedonia (1991) and Turkey (2005). The Convention states that the working environment should be healthy and safe, in the light of national conditions and practices, for all concerned parties.

As of January 2006, the ILO Convention on the working environment (C 148) (47) has been ratified by 28 Member States of the WHO European Region: Azerbaijan (1992), Belgium (1994), Bosnia and Herzegovina (1993), Croatia (1991), the Czech Republic (1993), Denmark (1988), Finland (1979), France (1985), Germany (1993), Hungary (1994), Italy (1985), Kazakhstan (1996), Kyrgyzstan (1992), Latvia (1993), Malta (1988), Norway (1979), Poland (2004), Portugal (1981), the Russian Federation (1988), San Marino (1988), Serbia and Montenegro (2000), Slovakia (1993), Slovenia (1992), Spain (1980), Sweden (1978), Tajikistan (1993), The former Yugoslav Republic of Macedonia (1991) and the United Kingdom (1979). They are legally obliged to respect the right of all workers to breathe clean air. Article 4 of the Convention requires that national legislations prescribe measures for the prevention and control of, and protection against, occupational hazards in the working environment due to air pollution, noise and vibration. Here the term “air pollution” covers a wide range of substances that are harmful to health and thus includes tobacco smoke.

The ILO Convention on occupational cancer (C 139) (48) was adopted as early as 1974. As of January 2006, 20 countries in the WHO European Region have ratified it and thus are legally bound by its requirements. These countries are Belgium (1996), Bosnia and Herzegovina (1993), Croatia (1991), the Czech Republic (1993), Denmark (1978), Finland (1977), France (1994), Germany (1976), Hungary (1975), Iceland (1991), Ireland (1995), Italy (1981), Norway (1977), Portugal (1999), Serbia and Montenegro (2000), Slovakia (1993), Slovenia (1992), Sweden (1975), Switzerland (1976) and The former Yugoslav Republic of Macedonia (1991). This Convention states that the Parties “shall prescribe the measures to be taken to protect workers against the risks of exposure to carcinogenic substances or agents and shall ensure the establishment of an appropriate system of records”. The Convention also applies to tobacco, since tobacco is classified IARC as a carcinogen.

In conclusion, as stated by ILO (7), tobacco-related problems should be considered as health problems and dealt with in the same way as any other health problem at work. ILO certainly provides some tools through its international conventions and recommendations to solve this health problem at national level.

Table 2 gives an overview of the status of countries of the WHO European Region vis-à-vis the main sources of international legislation in the area of protection from exposure to tobacco smoke (as of January 2006).

Table 2. Status of WHO European Member States in terms of international legislation on protection from exposure to tobacco smoke

Country	WHO Framework Convention	EU Directives	ILO Conventions
Albania		Not applicable	C155
Andorra		Not applicable	
Armenia	X	Not applicable	
Austria	X	X	
Azerbaijan	X	Not applicable	C148
Belarus	X	Not applicable	C155
Belgium	X	X	C148, C139
Bosnia and Herzegovina		Not applicable	C139, C148, C155
Bulgaria	X	Not applicable	
Croatia		Not applicable	C139, C148, C155
Cyprus	X	X	C155
Czech Republic		X	C139, C148, C155
Denmark	X	X	C139, C148, C155
Estonia	X	X	
Finland	X	X	C139, C148, C155

Country	WHO Framework Convention	EU Directives	ILO Conventions
France	X	X	C139, C148
Georgia	X	Not applicable	
Germany	X	X	C139, C148
Greece	X	X	
Hungary	X	X	C139, C148, C155
Iceland	X	Not applicable	C139 C155
Ireland	X	X	C139 C155
Israel	X	Not applicable	
Italy		X	C139 C148
Kazakhstan		Not applicable	C148 C155
Kyrgyzstan		Not applicable	C148
Latvia	X	X	C148 C155
Lithuania	X	X	
Luxembourg	X	X	C155
Malta	X	X	C148
Monaco			
Netherlands	X	X	C155
Norway	X	Not applicable	C139, C148, C155
Poland		X	C148
Portugal	X	X	C139, C148, C155
Republic of Moldova		Not applicable	
Romania	X	Not applicable	

Country	WHO Framework Convention	EU Directives	ILO Conventions
Russian Federation		Not applicable	C148, C155
San Marino	X	Not applicable	C148
Serbia and Montenegro	X	Not applicable	C139, C148 C155
Slovakia	X	X	C139, C148, C155
Slovenia	X	X	C139, C148, C155
Spain	X	X	C148, C155
Sweden	X	X	C139, C148, C155
Switzerland		Not applicable	C139
Tajikistan		Not applicable	C148
The former Yugoslav Republic of Macedonia		Not applicable	C139, C148, C155
Turkey	X	Not applicable	C155
Turkmenistan		Not applicable	
Ukraine		Not applicable	
United Kingdom	X	X	C148
Uzbekistan		Not applicable	

In addition to international law, the role of non-binding international instruments such as the recommendations, resolutions and strategies of various international organizations should not be underestimated. It has to be acknowledged that most of the recommendations and principles contained in these legally nonbinding documents are in many instances even stronger than the legally binding international legislation. Article 2 of the WHO Framework Convention (2), for example, encourages countries to implement measures beyond those required by the Convention in order to better protect human health.

One of the international tools available to countries is the WHO European Strategy for Tobacco Control (1). This Strategy goes beyond the minimum set of measures required by the Convention and thereby complements it. In the area of protection from exposure to tobacco smoke, the Strategy calls upon countries to:

- introduce or strengthen legislation in order to make all public places smoke-free, including public transport and workplaces;
- ban or severely restrict smoking in restaurants and bars, to protect owners, employees and clients; and
- classify ETS as a carcinogen in order to protect the rights of workers and to hasten the banning of smoking at all workplaces.

4. National legislation

For some decades, regulation of smoking in public places has generally become more restrictive in the WHO European Region. As public places include workplaces, restricting smoking in public places also protects some employees, while regulating smoking at workplaces may also protect people in other public places. The trend in the Region has moved from restrictions on smoking in specific institutions such as schools and hospitals, to separating smokers and non-smokers in a larger number of places, to legislation banning or strictly restricting smoking in major public places, including workplaces. The main reasons for these developments are the increasing evidence on the risks of ETS and growing public support for regulation among both smokers and non-smokers. Table 3 summarizes the current situation in the WHO European Region.

Table 3. The status of smoking regulation in the Member States of the WHO European Region

Country	Health care facilities	Educational facilities	Government facilities	Restaurants	Pubs and bars	Indoor workplaces and offices	Theatres and cinemas
Albania	Ban	Ban	Ban	No restriction	No restriction	No restriction	Ban
Andorra	Ban	Ban	Restriction	Restriction	Restriction	Restriction	Restriction
Armenia	Ban	Ban	Ban	Voluntary agreement	Voluntary agreement	Ban	Ban
Austria	Ban	Ban	Restriction	Restriction	Restriction	Restriction	Ban
Azerbaijan	Restriction	Restriction	Restriction	Restriction	Restriction	No restriction	Restriction
Belarus	Ban	Ban	Ban	Restriction	Restriction	Ban	Ban
Belgium	Ban	Ban	Ban	Ban	Restriction	Ban	Ban
Bosnia and Herzegovina	Ban	Ban	Ban	Partial restriction	Partial restriction	Ban	Ban
Bulgaria	Ban	Ban	Ban	No restriction	No restriction	No restriction	Ban
Croatia	Ban	Ban	Ban	Restriction	Restriction	Ban	Ban
Cyprus	Ban	Ban	Partial restriction	Partial restriction	Partial restriction	Partial restriction	Ban
Czech Republic	Ban	Ban	Ban	Restriction	Restriction	Ban	Ban
Denmark	Restriction	Restriction	Restriction	No restriction	No restriction	Restriction	Restriction

Country	Health care facilities	Educational facilities	Government facilities	Restaurants	Pubs and bars	Indoor workplaces and offices	Theatres and cinemas
Estonia	Ban	Ban	Ban	Restriction	Restriction	Ban	Ban
Finland	Ban	Ban	Ban	Restriction	Restriction	Ban	Ban
France	Ban	Ban	Ban	Restriction	Restriction	Restriction	Ban
Georgia	Restriction	Restriction	Restriction	Restriction	Restriction	Restriction	Restriction
Germany	Restriction	Restriction	Restriction	Restriction	Restriction	Restriction	Restriction
Greece	Ban	Ban	Ban	Restriction	Restriction	Ban	Ban
Hungary	Ban	Ban	Ban	Restriction	Restriction	Ban	Ban ^a
Iceland	Ban	Ban	Ban	Restriction	Restriction	Ban	Ban
Ireland	Ban ^b	Ban	Ban	Ban	Ban	Ban	Ban
Israel	Ban	Ban	Ban	Restriction	Restriction	Ban	Restriction
Italy ^c	Ban	Ban	Ban	Ban	Ban	Ban	Ban
Kazakhstan	Restriction	Restriction	Restriction	Restriction	Restriction	Restriction	Restriction
Kyrgyzstan	No restriction	No restriction	No restriction	No restriction	No restriction	No restriction	No restriction
Latvia	Restriction	Ban	Restriction	Restriction	Restriction	Restriction	Restriction
Lithuania	Ban	Ban	Ban	Restriction	Restriction	Restriction	Ban
Luxembourg	Ban	Ban	No restriction	No restriction	No restriction	No restriction	Ban
Malta ^c	Ban	Ban	Ban	Ban	Ban	Ban	Ban

Country	Health care facilities	Educational facilities	Government facilities	Restaurants	Pubs and bars	Indoor workplaces and offices	Theatres and cinemas
Monaco	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Netherlands	Ban	Ban	Ban	Voluntary agreement	Voluntary agreement	Ban	Ban
Norway	Ban	Ban	Ban	Ban	Ban	Ban	Ban
Poland	Restriction	Restriction	Restriction	Restriction	Restriction	Restriction	Restriction
Portugal	Ban	Ban	Ban	Voluntary agreement	Voluntary agreement	Ban	Ban
Republic of Moldova	Ban	Ban	Restriction	No restriction	No restriction	Restriction	Restriction
Romania ^d	Ban	Ban	Ban	Ban	Ban	Ban	Ban
Russian Federation	Restriction	Restriction	Restriction	No restriction	No restriction	Restriction	Restriction
San Marino	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Serbia and Montenegro	Ban	Ban	Ban	Restriction	Restriction	Ban	Ban
Slovakia	Ban	Ban	Ban	Restriction	Restriction	Ban	Ban
Slovenia	Ban	Ban	Restriction	Restriction	Restriction	Ban	Restriction
Spain ^e	Ban	Ban	Ban	Ban	Ban	Ban	Ban
Sweden ^c	Ban	Ban	Ban	Ban	Ban	Ban	Ban

Country	Health care facilities	Educational facilities	Government facilities	Restaurants	Pubs and bars	Indoor workplaces and offices	Theatres and cinemas
Switzerland	Voluntary agreement	Voluntary agreement	Restriction	Voluntary agreement	Voluntary agreement	Restriction	Voluntary agreement
Tajikistan	No restriction	No restriction	No restriction	No restriction	No restriction	No restriction	No restriction
The former Yugoslav Republic of Macedonia	Ban	Ban	Ban	Ban	Restriction	Ban	Ban
Turkey	Restriction	Restriction	Restriction	No restriction	No restriction	Restriction	Restriction
Turkmenistan	Ban	Ban	Ban	No restriction	No restriction	Ban	Ban
Ukraine	Restriction	Restriction	Restriction	No restriction	No restriction	No restriction	Restriction
United Kingdom ^f	Voluntary agreement	Voluntary agreement	Voluntary agreement	Voluntary agreement	Voluntary agreement	Voluntary agreement	Voluntary agreement

^a with the exception of the bar

^b with the exception of psychiatric hospitals and homes for the elderly

^c physically separated areas for smoking are provided in bars and restaurants

^d a physically separated area for smoking which must comply with specific technical requirements is provided in bars and restaurants

^e the ban in hospitality sector is only partial since bars and restaurants under 100m² are exempted

^f ban entered into force Mar 06 in Scotland will enter into force in N. Ireland and England Apr and Aug 07 respectively. Wales, law being drafted.

As of the beginning of 2006, the majority (70%) of countries in the European Region have enforced bans on smoking³ in health care, educational and government facilities. Smoking in other public places such as workplaces and cultural institutions is also banned to a lesser extent (60%). Throughout the Region, however, the exception is the hospitality sector, comprising mainly restaurants and bars; only six countries ban smoking in these establishments. This means that the great majority of countries have either introduces non-smoking areas or do not restrict smoking in restaurants and bars at all. It has to be recognized, however, that several countries in the Region have an ongoing political and public debate on banning smoking in the hospitality sector. A closer look is taken at these recent developments and possible changes in the future in the end of this chapter.³

Although the majority of countries in the European Region regulate smoking in public places, (except the hospitality sector), either through legislation or by voluntary agreements, the level of enforcement varies between countries.

Different countries use different types of legislation to provide protection from exposure to tobacco smoke. Exposure can be regulated by using public health legislation or health and safety legislation. Public health legislation, aimed at protecting the general public, would also cover workers in public areas in offices and transport. Health and safety legislation covers workers either indirectly (e.g. risk of explosion) or directly (e.g. classification of ETS as a carcinogen).

Finland is a good example of the use of health and safety legislation to control ETS. Up to March 1995, smoking restrictions at workplaces were voluntary. Following the revision of the Tobacco Control Act (49) in 1995, smoking is prohibited in all common and public places, including all workplaces. A partial smoking ban with a long transition period was introduced in restaurants in 2000, but it seems that it has not been effective in protecting workers. The need for stronger

³ A ban provides effective protection from ETS by imposing a total ban on smoking. In some exceptional cases the term ban has been applied to describe the situation where physically separated areas for smoking are still provided. These exceptions are highlighted and accompanied by footnotes.

protection is obvious, and a complete smoking ban in Finland is currently under discussion.

Various legislative interventions are employed in different countries. In most countries, tobacco control policies are generally the result of national legislation. In some countries, such as United Kingdom, however, legislation is less comprehensive, involving voluntary agreements rather than legally binding obligations. Nevertheless, it seems that voluntary agreements are generally losing ground in the Region and are gradually being replaced by legislation, as exemplified by recent developments in the United Kingdom.

A voluntary agreement is a written record of unilateral or mutual commitment. In unilateral agreements, one party expresses its desire to self-regulate its behaviour (50). These are generally legally non-binding. In some countries, voluntary agreements are used to precede legislation. Existing evidence, however, indicates that voluntary agreements are not an effective option and should therefore be avoided as a general rule, and should certainly not be considered as a substitute for legislation (see also Chapter 5).

As an evidence-based example, a Finnish study found that in terms of reducing smoking and the nicotine concentration in indoor air, legislation has achieved better results than voluntary agreements (51). Nevertheless, restaurants and bars in Finland are still exempt from this smoke-free provision. The only requirement is that 50% of the total seating capacity should be smoke-free. Finland is currently revising its legislation towards a ban on smoking in all restaurants, in the light of the fact that previous efforts to regulate smoking have not been effective in protecting workers. The two main options under consideration are either to ban smoking in restaurants and bars entirely, or to allow smoking in separate, closed rooms with their own ventilation and without any waiter service.

It should be also noted that in a small number of countries, administrative legislation such as decrees, orders and regulations have the full force of the law and can therefore be successfully used for tobacco control. Issued by government agencies, these regulatory measures can be the principal legislation or may specify the means of implementing the principal legislation. Depending on the country, bylaws may be adopted faster and more easily than laws, and can

therefore be considered an alternative to legislation. In Spain and, outside the European Region, the United States, subnational legislation has proved effective in regulating the use of tobacco. Nevertheless, it is important to weigh the advantages and disadvantages of the subnational approach. While a national law provides state-wide uniformity and consistency, enforcement of a subnational law could be more vigorous since the control mechanisms are closer to the community and the level of awareness may be higher.

4.1. Recent developments

Many countries in the European Region are gradually strengthening their legislation restricting smoking in workplaces. The most outstanding developments have taken place in Ireland, Italy, Malta, Norway and Sweden. In these countries smoking is banned at all workplaces, either totally or confined to the separate rooms in a way that nobody is involuntarily exposed to tobacco smoke.

Ireland

A voluntary code on smoking at the workplace was agreed between the Irish Government and social partners and published in 1994. Enclosed workplaces became smoke-free by law in Ireland on 29 March 2004 under the provisions of the Public Health (Tobacco) Acts 2002 and 2004. Since then, offices, shops, factories, bars, restaurants and other enclosed workplaces have been smoke-free. The primary aim of the Irish legislation is to protect third parties, particularly workers, from exposure to the harmful effects of second-hand smoke. Ireland became the first country in Europe to enforce a complete ban on smoking in all workplaces, with some minor exceptions such as prisons, hotel rooms and psychiatric hospitals. These were exempted based on the principle of private residency. The maximum penalty for violating the ban is a fine of €3000.

Italy

In 2003, Italy adopted a law prohibiting smoking in all indoor workplaces. Smoking was allowed only in special smoking rooms. In restaurants, the smoking area could cover up to half of the total space. Fines for violating the law lay between €25 and €250. As of 10 January 2005, smoking is banned in all indoor premises, including restaurants and bars. The Ministry of Health's strong stand was instrumental in bringing the ban into force, despite lobbying for a

delay. Smoking is still allowed in special closed smoking rooms but only a few restaurants have established such a room, preferring to ban smoking completely. The maximum penalty for violating the ban is a fine of €2200.

Malta

In Malta, a smoking ban in public places, including bars and restaurants, took effect on 5 April 2004. The actual entry into force of the ban in bars and restaurants was postponed by six months after the adoption of the law. Smoking is allowed only in separate, enclosed smoking rooms and employees have no obligation to enter this room to carry out their duties.

Norway

Norway introduced legislation on exposure to tobacco smoke as early as 1988. Norway was the first country in the European Region to pass legislation completely banning smoking in restaurants, pubs and bars, although its implementation started after that of Ireland. The legislation entered into force in June 2004. The main purpose of the Norwegian legislation is to protect employees and customers from passive smoking.

Sweden

Following a decision of Parliament in May 2004, restaurants and bars in Sweden became smoke-free in June 2005. A first attempt had been made some years before to ban smoking in restaurants and bars on a voluntary basis but the approach did not work. The new legislation bans smoking but allows special smoking rooms under certain conditions, one being that there will be no waiter service in such rooms in order to protect the employees.

Countries that have legislated to ban smoking in all workplaces, including bars and restaurants, are listed in Table 4.

Table 4. Countries in the WHO European Region that have banned smoking in all bars and restaurants

Country	Date of the ban	Nature of the ban
Ireland	29 March 2004	Complete ban on smoking with exemptions based on the principle of private residence. These include prisons, hotel rooms and psychiatric hospitals.
Italy	10 January 2005	Separate smoking areas with continuous floor-to-ceiling walls and ventilation system complying to specific technical requirements.
Malta	5 April 2004	Specially designated enclosed smoking rooms. Employees are not required to enter these rooms to carry out their duties.
Norway	1 June 2004	Complete ban on smoking with no special smoking rooms.
Sweden	1 June 2005	Separate smoking rooms in line with special conditions: the room can occupy only a small area; nobody must have to pass through the room; there is no waiter service in the room; no food or drinks can be taken into the room; and detailed technical requirements can be announced by the Government.

Although a ban on smoking in all restaurants and pubs has been introduced in several states in the United States, Ireland, Italy, Malta, Norway and Sweden are among the first countries in the world to have a nationwide ban on smoking in all workplaces, including restaurants, pubs and bars.

In Spain, from January 2006, smoking is prohibited in bars and restaurants larger than 100 m². Small smoking rooms sealed off from the main area may be set up. Despite these recent major developments in Spain, however, further progress could be made by also regulating those bars and restaurants of less than 100 m².

A number of smoking bans have recently been adopted in some other countries of the European Region but have not yet entered into force. In January 2007, Belgium is to introduce measures that will allow smoking in restaurants only in separate rooms that are completely closed off from the rest of the building and where no food is served. Bars and cafes will be exempt from the ban, though they must have adequate ventilation and a non-smoking area. Smoking is already banned in all enclosed workplaces under the employer's authority and to which workers have access (working areas and social facilities) from January 2006. The smoking ban also applies to spaces used by self-employed persons working together with the employees, to which such employees have access. Smoking will only be allowed in premises exclusively and solely intended for smoking. The employer has no obligation to provide these, however.

In the United Kingdom, an active public debate on banning smoking in the hospitality sector has taken place over the last few years. The debate was backed up by strong public opinion in favour of a smoking ban. In November 2004, the Public Health White Paper (52) prepared by the Department of Health was published. This White Paper sets out the key principles for supporting the public to make more healthier and informed choices as regards their health. Chapter 4 of the White Paper sets out the Government's intention to make most enclosed public areas, including workplaces, smoke-free through a staged approach by the end of 2008. On 14 February 2006, however, the British Parliament voted for a ban on smoking in all enclosed public spaces. This total ban will extend to all enclosed areas except private homes, residential care homes, hospitals, prisons and hotel bedrooms, and will come into force in the summer of 2007.

In Estonia, Parliament adopted the new Tobacco Act in May 2005, banning smoking in all restaurants and bars from May 2007. Smoking will, however, be allowed in enclosed separate rooms without any services and with a separate ventilation system.

Finland has been discussing for some time a ban on smoking in all restaurants in the light of the fact that the previous efforts to regulate the smoking have not been effective in protecting workers. In December 2005 the Finnish Government submitted a bill to Parliament that would require restaurateurs to build smoking booths,

where no food or drink would be served, to prevent tobacco smoke from passing into non-smoking areas. The Government plans to have the new law in force by June 2007.

In the Netherlands, smoke-free workplaces became a reality at the beginning of 2004. Smoking is allowed only in enclosed smoking rooms. A temporary exception was made, however, in the case of the hospitality industry, encouraging them to ban smoking on a voluntary basis for the time being. The Government regards the current voluntary measures taken by the hospitality industry as a transitional phase towards smoke-free bars and restaurants.

In Denmark, the Minister of Health announced a public debate throughout the year 2005. This debate will serve as a basis for decisions on the need for further restrictions on smoking in public places. The level of restriction will be determined by the results of the debate and by public opinion in 2006.

Developments in the same direction can be also noted in the eastern part of the European Region. Recently, several countries such as Armenia, Belarus, Bulgaria and Kazakhstan have strengthened their legislation in order to provide better protection from tobacco smoke at workplaces.

On a global scale, countries in Northern Europe and North America, together with Australia and New Zealand, have the longest experience in developing legislation on smoke-free environments. It should be noted, however, that some of the advanced smoke-free workplace legislation has been adopted at subnational level, thus avoiding the difficulties that may occur in enacting national legislation. California, for example, introduced a total ban on smoking in restaurants as early as 1994, expanding the ban to all public places serving food in 1998. By the beginning of 2005, six other states – Connecticut, Delaware, Maine, Massachusetts, New York and Rhode Island – and hundreds of cities have passed smoke-free legislation that encompasses restaurants and bars. In December 2004, New Zealand became the world's fourth country to pass smoke-free workplace legislation that includes bars and restaurants, following Bhutan, Ireland and Norway. Major developments have also taken place in Canada, India, Singapore and South Africa in the last few years.

5. Effectiveness of different regulatory measures

5.1. Different approaches to regulating exposure to tobacco smoke and their effectiveness

Traditionally, two standard approaches are used to reduce exposure to tobacco smoke: legislation and voluntary agreements. The latter has proved to be the less efficient of the two.

Despite voluntary agreements, less than 1% of British pubs are smoke-free according to a recent publication of the British Medical Association (53). A recent study has also shown that, although smoke-free areas are increasing, seven out of ten pubs in Scotland still allow smoking throughout their premises despite the voluntary agreement (54).

In that light, a debate on replacing the voluntary agreements by legal requirements banning smoking in public places is continuing in the United Kingdom. The “Big Smoke Debate” (18) organized recently by the London Health Commission involving over 30 000 respondents indicated that the vast majority (67%), both smokers and non-smokers, wanted completely smoke-free public places (55). A survey by the National Health Service Smoking Helpline discovered that almost 50% of respondents were considering giving up smoking within the next 12 months (56).

5.2. Effectiveness of legislation

There are normally two ways of regulating exposure to tobacco smoke through legislation: a complete smoke-free environment or the provision of special smoking areas, which are often required to be equipped with ventilation. For the latter, it is well established that there is no known safe “threshold” of exposure to tobacco smoke, and that the mere separation of smokers and non-smokers within the same airspace does not protect non-smokers from harm, regardless of the ventilation system used (50).

A report published in 2001 (57) identified nine studies on reductions in ETS exposure in workplaces that had smoking bans or restrictions.

Reductions in exposure to ETS were greater in workplaces that had smoking bans than in those with smoking restrictions only.

The high rate of compliance with smoke-free legislation in Ireland is translating into better air quality in workplaces. A recent study of 40 pubs in Dublin assessed the levels of air pollution before and after the introduction of the smoke-free law by measuring airborne particles (17). The analysis shows that there has been a significant reduction in levels of particulates in pubs following the entry into force of the law. The most remarkable results are for the smaller particles (PM_{2.5}), which show a reduction of 87.6%, while the average levels of PM₁₀ have fallen by 53%.

A study commissioned by the Massachusetts Coalition for a Healthy Future measured air quality at six Boston bars in April 2003 and again the following October, after the smoking ban had been in place for about six months (58). This study found that levels of carcinogenic air pollutants in bars had fallen by up to 95%.

Also, the claim that smoke-free legislation is unenforceable proves to be incorrect in the light of the latest evidence. The Office of Tobacco Control in Ireland reported that, one year after the smoke-free legislation was introduced in March 2004, over 94% of premises inspected were complying with the law (17). During the first year, prosecutions were brought against the proprietors of only 12 premises throughout Ireland.

Banning smoking at workplaces through legislation reduces exposure to ETS, changes the attitudes of smokers and increases attempts to quit, and challenges the perception of smoking. A review of 26 studies on the effectiveness of smoke-free workplaces concluded that totally smoke-free workplaces are associated with a reduction in smoking prevalence of 3.8% and with 3.1 fewer cigarettes smoked per day per continuing smoker (59). A study by the University of Toronto's Ontario Tobacco Research Unit indicated that restricting smoking in public places and workplaces leads to a decline in the number of smokers and, for those who do not quit, a decline in the amount smoked daily (60). Among daily smokers, for example, the amount smoked daily was 30% more if there were no restriction on smoking at work compared to a complete ban. Even more importantly, this

association between smoking behaviour and workplace restriction seem to be independent of age, gender, level of education and income.

Evidence of a reduction in smoking prevalence related to both long-standing and more recent smoking bans in workplaces is relatively well-documented and stems from various parts of the world. Studies conducted in Australia and the United States, as well as internal tobacco industry studies, have attributed between 13% and 22% of the decline in tobacco consumption in these countries in recent years to the impact of legislation (50).

The preliminary results from the Norwegian smoking ban show a general willingness to comply among both employees and customers (61). It appears that a total ban is easier to enforce and comply with compared to the earlier situation that legislated for with smoke-free zones. Among the general public, support for the smoking ban increased after implementation. Health problems dropped significantly among employees after the ban came into force, and customers report better air quality in bars.

At the same time, New York City Department of Health and Mental Hygiene reports one of the sharpest short-term declines in the number of adult smokers ever measured – 11% from 2002 to 2003 (62). It is estimated that 19% of adults in New York smoked in 2003 compared to 22% in 2002. Two major factors are thought to have contributed to the fall: a large increase in the tax on cigarettes and the ban on smoking in bars and restaurants.

In conclusion, by legislating for smoke-free workplaces, not only will non-smokers will be protected but also an environment will be created that will encourage smokers to reduce consumption or quit smoking, hopefully leading to a decrease of smoking prevalence.

6. Litigation

The last two decades have been witnessing a major change in tobacco litigation. In the 1976 landmark case of *Shimp vs New Jersey Bell Telephone Co.*⁴ it was ruled that the right of an individual to risk his or her health does not include the right to jeopardize the health of those who must remain around him or her in order to perform properly the duties of their jobs. This ruling came ten years before the US Surgeon General issued his 1986 report *The health consequences of involuntary smoking (63)*, which concluding that simple separation of non-smokers and smokers within the same air space may reduce but not eliminate exposure of non-smokers to ETS. While the trend in tobacco litigation in general, including exposure to tobacco smoke, was set in the United States, a number of other countries have successfully followed suit.

Recent court cases have shown that the protection of workers from exposure to tobacco smoke at their workplaces is becoming an important occupational health issue. In 1997, an American flight attendant won a settlement in a class action lawsuit on behalf of flight attendants harmed by tobacco smoke. A year earlier in Germany a stewardess sued her employer, Lufthansa. The court ruled that, although a company must protect non-smokers, as long as smoking flights exist, an individual employee cannot request smoke-free flights. Since that time, eight EU Member States and Norway have experienced litigation to protect the rights of non-smokers.

In 2000 in the Netherlands, a court upheld a postal worker's complaint that her exposure to tobacco smoke in the workplace violated her right to work in a smoke-free environment. The same year, the Norwegian Supreme Court found a causal connection between the hazardous effects of a working environment (a smoke-polluted nightclub) and the poor health of the plaintiff. The court concluded that exposure to tobacco smoke contributed 40% of the cause, while the plaintiff's own active smoking constituted 60%. In 2002, two bank managers in Italy were found guilty following the death of an employee exposed to tobacco smoke at the bank. Although there was no law against passive smoking in Italy at the time, the Constitutional Court ruled that

⁴ *Shimp vs New Jersey Bell Telephone Co.*, 368 A2d 408 (New Jersey Supreme Court 1976).

smoking can be allowed only in specially designated rooms. In Italy, the Constitutional Court has several times followed the principle established in 1991 that the constitutional right to health protection prevails over the freedom to smoke. In 2003, a casino worker in London who developed asthma was awarded compensation after 14 years of being exposed to smoke at work because the premises were not properly ventilated. In France, a bar owner was found guilty of dismissing his bartender, arguing that the worker could not fulfil his duties because of exposure to tobacco smoke and inadequate provisions for dealing with smoke in the bar.

In conclusion, successful legal cases in which exposure to tobacco smoke is a pivotal factor benefit other litigants and persuade employers to make their premises smoke-free. The WHO Framework Convention on Tobacco Control, through Article 19 on liability, could serve as an additional vehicle for expanding tobacco litigation globally and, most importantly, in the WHO European Region.

7. Exposure to ETS at work – Finland as a case study

7.1. ETS and tobacco legislation in Finland

The first tobacco control legislation in Finland was launched in 1977, the Tobacco Act restricting smoking in public buildings but not in workplaces. In 1992, the Ministry of Social Affairs and Health began preparing for a reform of the Tobacco Act. One of the most important improvements was the protection of individuals against the risks of exposure to ETS, especially at work. In 1995 the legislation came into force and including all workplaces with the exception of restaurants.

The second amendment of the Tobacco Act was prepared by the Ministry of Social Affairs and Health in association with the trade unions. It passed through the Parliament in early 1999 and took effect in March 2000. In the new legislation, ETS was recognized as a carcinogen, the first time this had been done in national legislation. The new legislation restricted smoking to limited areas in restaurants and tobacco smoke was not allowed to spread to other areas. The non-smoking area had to cover at least 30% (later 50%) of the total area reserved for clients in restaurants larger than 50 m².

7.2. Exposure to ETS after the Tobacco Act

As a result of legislation, exposure to ETS has significantly declined in Finnish workplaces since 1995. Questionnaire surveys and measurements of nicotine in the air were carried out in workplaces employing over 1400 workers before the Tobacco Act was launched and again 1–3 years after it came into force (64). The results showed that between 1994 and 1998 the concentration of nicotine in the air fell from $5.7 \pm 14.1 \mu\text{g}/\text{m}^3$ to $<0.1 \pm 0.1 \mu\text{g}/\text{m}^3$ in industrial workplaces, from $3.0 \pm 5.1 \mu\text{g}/\text{m}^3$ to $0.2 \pm 0.1 \mu\text{g}/\text{m}^3$ in the service sector, and from $0.6 \pm 0.5 \mu\text{g}/\text{m}^3$ to $<0.1 \pm 0.1 \mu\text{g}/\text{m}^3$ in offices (53). The prevalence of workers exposed to ETS for more than four hours daily decreased from 32.9% to 3.4%, while the proportion of those not exposed to smoke increased from 20.7% in 1994 to 70.7% in 1998 (51). Unfortunately, workers in small-scale industries report a higher prevalence of exposure owing to insufficient implementation of the Tobacco Act in these workplaces.

In 1997, two years after the reform of the Tobacco Act, approximately 340 000 Finnish workers (16% of the employed population) were exposed to ETS at work, 10% of them continuously (65). Most of them worked in restaurants and bars. Among restaurant workers in 1999, 32% of women and 45% of men smoked daily and 45% of women and 49% of men reported that they were exposed to ETS for more than four hours a day. The percentages decreased slightly after 2000 when new legislation covering restaurants came into force. In 2001, one year after the new legislation, the percentages of those exposed for more than four hours a day decreased among women to 36% and among men to 42%, and in 2003 to 29% and 35%, respectively (66). Between 1999 and 2003, the proportion of waiters exposed to smoke for more than four hours a day fell from 73% to 49% and among bartenders from 93% to 78%. Thus the impact of the Finnish tobacco legislation in restaurants has not been sufficient. Approximately one third of all people and one fifth of smokers expressed the wish to have their workplace completely smoke-free. Approximately 50% of people would allow smoking in specifically designated facilities, while only 3% would not restrict smoking in at all restaurants.

7.3. KymCAREX: an information system for exposure assessment

Effective prevention of occupational cancer on the regional level requires knowledge on the occurrence and amount of exposure to carcinogens. The Ministry of Social Affairs and Health asked the Institute of Occupational Health to construct an information system to support the activities of the occupational safety office in the Kymi region in Eastern Finland. An information system called KymCAREX was constructed on the basis of data available from the carcinogen exposure database (CAREX) of the European Union, the Finnish Register of Exposure to Carcinogens (ASA), Finnish job exposure matrix (FINJEM), the exposure measurement database of the Institute of Occupational Health and labour force statistics. KymCAREX provides municipal and national estimates of numbers of exposed workers, by level of exposure, for 151 physical or chemical carcinogens and 95 industrial classes, which enables the local labour safety authorities to target their advisory and control activities.

According to the KymCAREX, the estimated total number of workers in Finland in 2000 exposed to ETS was about 102 000. This makes ETS the second most commonly occurring carcinogen at Finnish workplaces after solar radiation (130 000 exposed workers), followed by crystalline silica (76 000), wood dust (56 000), radon (50 000) and diesel exhaust (37 000) out of a total labour force of 2.4 million. The highest numbers of workers estimated to be exposed to ETS (36% of 102 000) work in hotels and restaurants. These workers are those with either the highest or the second highest exposure to nicotine.

The KymCAREX database can be used in other countries for exposure assessment at regional or even national level.

7.4. Control of ETS exposure

The most effective measure for reducing exposure to tobacco smoke in Finland has proven to be strict tobacco legislation. The Tobacco Act has been most effective in public buildings and workplaces other than restaurants. In principle all workers, with the exception of employees in restaurants, are now protected against exposure to tobacco smoke. According to Finnish tobacco legislation, restaurants and bars can reserve up to 50% of their service area for smokers. The

spreading of ETS into non-smoking areas has to be prevented and the working areas of bar counters have to be smoke-free.

Altogether, 16 restaurants and bars participated in a field study carried out before and after the reform of the Tobacco Act in 2000 (66,67). The average airborne nicotine concentration, adjusted for the number of cigarettes smoked, was lower in 9 out of 16 bars and restaurants after the introduction of the Act. At bar counters, nicotine concentration was lower in 10 establishments. In these restaurants, the mean concentration of nicotine in the air was $15 \mu\text{g}/\text{m}^3$ after the Tobacco Act took effect, compared to $19.5 \mu\text{g}/\text{m}^3$ previously.

According to the same study, 4 out of 16 lunch and dining restaurants had relatively low nicotine concentrations ($2.6 \mu\text{g}/\text{m}^3$) in non-smoking areas even before the reform of the Tobacco Act. After the reform, the mean nicotine concentration was $0.4 \mu\text{g}/\text{m}^3$ in non-smoking sections and $7.5 \mu\text{g}/\text{m}^3$ in smoking sections.

In bars and taverns, the mean nicotine concentration in air samples was $31 \mu\text{g}/\text{m}^3$ before the service area was divided into smoking and non-smoking areas. After the reform of the tobacco legislation, the mean concentration of nicotine in non-smoking sections was $10 \mu\text{g}/\text{m}^3$ and in smoking sections $27 \mu\text{g}/\text{m}^3$. At the same time, in nightclubs and discotheques the mean concentration of nicotine was $17 \mu\text{g}/\text{m}^3$ before the Tobacco Act reform, while afterwards it was $17 \mu\text{g}/\text{m}^3$ in smoking sections and $14 \mu\text{g}/\text{m}^3$ in non-smoking sections.

The best improvements in ETS levels were seen in restaurants that had constructed a wall between the smoking and non-smoking areas and introduced changes to the ventilation system. Nicotine concentrations at bar counters, however, did not differ significantly before and after the change in legislation, except where the bar counter was in the non-smoking section. These results suggest that partial smoking restrictions reduce ETS concentrations in non-smoking areas but do not totally eliminate the exposure of workers to ETS.

In restaurants, partial smoking restrictions appear not to be sufficiently effective, even where ventilation rates meet the requirements of the building regulations ($10 \text{ dm}^3/\text{s}$ per person). Smoking in bars and nightclubs is more common than in other types of establishment; according to recent studies the concentration of nicotine in bars and

nightclubs was nearly 10 times higher than in restaurants (66,67). Moreover, the exposure of workers to ETS did not diminish as much as was expected.

A necessary precondition for low ETS concentrations is separate rooms for smokers and non-smokers and an effective ventilation system. The air flow rate stipulated in existing Finnish building regulations (10 dm³/s per person) has not been shown to be sufficient to achieve good indoor air quality in bars, taverns and nightclubs. In new building regulations, valid since October 2003, the requirements for smoking areas are twice as high at 20 dm³/s per person. However, it is important to note that, no matter how high the general airflow rate is, the general ventilation is not capable of coping with local conditions close to the source of contamination.

As a result, there is public pressure for a further reform of tobacco legislation. Finland is thus carrying out a revision of the Tobacco Act that will most likely result in a total ban on smoking in all restaurants, bars, taverns and night clubs.

Diminishing exposure to tobacco smoke also affects the prevalence of daily smoking and diseases related to tobacco. According to a recent study, the Finnish Tobacco Act has been effective in reducing the prevalence of daily smoking (68). Among Finnish men, smoking prevalence has decreased continuously, from 58% to 28% between 1960 and 2000. Between 1965 and 1971, lung cancer incidence among men was still on the increase, but has since fallen from 80 to 32 per 100 000 men. Mortality from respiratory disease among men also declined steeply during the study period. From 1960 to 1973, smoking prevalence among women increased from 12% to 20%. After the adoption of the Tobacco Act in 1975, the increase levelled off and female smoking prevalence slightly decreased, only to rise again after 1985 to remain at 20%. Lung cancer incidence among women increased throughout the study period, but the gradient of the curve was less steep in the 1980s.

8. Conclusions

- The health consequences of passive smoking are well-known, and there is widespread acceptance of and legislation for a ban on smoking in public places. The question therefore remains: why should workplaces, which are also public places, be an exception?
- ETS at workplaces is a real health hazard in the indoor environment. There are no safe levels of exposure, and employers have to provide a safe environment for their employees.
- Governments should be encouraged to classify ETS as a human carcinogen. The Finnish example makes a good case for it.
- In most countries, public opinion in favour of banning smoking at workplaces is substantial and increasing, and there is therefore a need for an opportunity to capitalize on it.
- The recent developments in some countries of the Region put the issue high on the political agenda in Europe, and it is therefore the right time to encourage and support other countries to follow.
- The WHO Framework Convention on Tobacco Control creates legal environment for action and empowers national legislation. The use of other international legislation such as relevant EU directives and ILO conventions is also important and should be encouraged.
- Evidence shows that legislation is the only effective tool for protecting people from tobacco smoke. Legislation should be clear and unambiguous, including the date of entry into force, the responsible authority and penalties, and draw on the experience of successful policies in other countries. Evidence indicates that voluntary agreements are not an effective option.
- A total ban on smoking, without exemptions, is the most preferred option for public health and seems to be the easiest to enforce.
- A successful smoking ban is possible after proper preparations, consultation through public and political debate, and awareness-raising.
- The clear and documented success of the adoption and implementation of smoke-free legislation in Norway, Ireland, Italy

and some other countries can provide a convincing argument in the political debate.

- Recent studies indicate that smoking bans do not have an adverse economic effect on trade in the hospitality sector. Such studies should be promoted further to make the economic arguments as convincing and widely known as those concerning public health.
- According to the available evidence, ventilation technology is not sufficiently effective at removing the risk of ETS to health, and therefore cannot be recommended as a Europe-wide measure.
- Although the main aim of smoking legislation is to protect non-smokers, it also reinforces the motivation of smokers to quit and therefore the issue is relevant for both smokers and non-smokers.

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