# Socio-economic inequalities in smoking in the European Union.

## Applying an equity lens to tobacco control policies

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Reduce Socio-economic Inequalities in Health

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## Table of Contents

## Foreword

Gradients in health associated with the unequal distribution of social, economic and cultural opportunities exist within all European countries. Lower socio-economic groups have been reported to suffer 2 or 3 times more often from disease, disability or premature death. The past two decades have seen the increasing association of smoking (and the corresponding tobacco related diseases and deaths) with markers of social disadvantages. This fact is especially painful as tobacco is one of the leading preventable causes of death and disability among adults in Europe.

The European Commission has recently acknowledged this problem in the “Reflection process on the future EU health policy” launched by European Commissioner for Health and Consumer Protection David Byrne, and on the “Community action in the field of public health (2003-2008)”. In both documents, the Commission has pointed out that there is a strong need to minimise the economic and social consequences of ill health, and to reduce health inequalities. This is a step forward, but inequalities in health and their underlying determinants, particularly tobacco consumption, need to be given priority across all levels of government.

The renowned social epidemiologist George Kaplan stated, *"The main task for health researchers who are interested in this kind of work, is to try and rationalize the health impacts of inequality in a way that it can feed back into the policy process. This is an exciting and controversial area".*

The current report of the Erasmus MC outlines the important findings, controversies and challenges that we encounter with respect to inequalities in smoking. We sincerely hope that this report will stimulate and provide general guidance to tobacco control policies aimed at reducing inequalities.

Paloma Martin
European Network for Smoking Prevention
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**Summary**

Introduction

Increasingly, tobacco smoking is concentrated among men and women with lower education and income. Although socio-economic inequalities in smoking have been recognised for more than a decade, there has yet been little policy response to this issue. The magnitude and persistence of the problem calls for comprehensive action aimed at reducing tobacco consumption among lower socio-economic groups. Action at both local, national and international levels should not only aim to both decrease overall levels in tobacco consumption, but also to prevent or reduce the gap in smoking prevalence between higher and lower groups.

The principal aim of this document is to stimulate and facilitate professionals and policy makers in the field of tobacco control to pay systematic attention to socio-economic inequalities in smoking. We provide an overview of patterns, trends and causes of socio-economic inequalities in smoking in the European Union. In addition, this document outlines ways to make tobacco control and related policies more oriented toward disadvantaged social groups. This document is based on an overview of literature, including a number of empirical studies that we issued in order to fill in some of the gaps in the current knowledge.

## Principal findings

By the year 2000, among men, smoking was more common among lower socio-economic groups in all EU member states. Among women, the same applies for northern Europe, whereas in southern Europe inequalities in smoking were beginning to emerge, especially among young women. In most EU member states, smoking followed the tobacco epidemic model, according to which large inequalities appear in the latest phases of the epidemic. In many of the countries with mature smoking epidemics, smoking was probably the largest single cause of socio-economic inequalities in morbidity and premature mortality.

Poor socio-economic conditions influence smoking across the individual's lifetime through a wide array of factors. During adolescence, individuals with lower levels of education have a higher chance to initiate smoking and become addicted. During adulthood, men and women with low education, low income or living on social welfare have a higher chance of continuing smoking or of relapsing. Poor socio-economic conditions in youth and adolescence influence smoking uptake through a range of mechanisms, including decreased refusal skills and increased psychosocial stress. Less success with smoking cessation attempts is due to higher levels of nicotine addition, but also to other factors such as increased

psychosocial stress and lack of social and instrumental support.

The application of an equity focus could enrich and modify tobacco control policies in several ways. Many tobacco control measures have the potential to reduce overall smoking prevalence, and at the same time achieve the largest reductions among lower socio-economic groups. These include banning of advertisements, rising tobacco prices, work place interventions, free supply of cessation aids, and telephone help lines. Unfortunately, in each European country, some of these tobacco control measures have not been fully implemented. In addition, past measures have often been implemented in such a way as to benefit upper social groups more than lower groups. Thus, there is yet considerable potential to further develop comprehensive strategies aimed at reducing tobacco consumption among disadvantaged social groups.

When implementing specific tobacco control measures, there are several opportunities to target or to tailor these measures according to the needs of lower groups. Examples include strict enforcement of laws and agreements in all settings, removal of financial and other barriers to cessation aids, geographic or social targeting of cessation services, and tailoring of communication approaches towards the needs and experiences of lower social groups.

The effects of traditional tobacco control policies may be enhanced by linking up to policies that aim to improve the living conditions and resources of lower social groups. At local level, tobacco control can be integrated in community-based actions such as support groups and interventions aimed at fostering a safe and healthy living environment. At national and international levels, socio-economic policies such as income support for the poor can be integrated with tobacco control measures such as rising tobacco taxes.

While the available evidence makes a strong case for the development of equity-oriented tobacco control, there are important gaps in the current knowledge that call for further research and development. Trends in different social groups should be monitored as a routine part of tobacco surveillance. The specific situation of lower socio-economic groups should be taken into account when developing, implementing and evaluating tobacco control measures. Finally, international collaboration and exchange is required to optimally learn from the experiences with tobacco control in different parts of Europe.

## Conclusion

Up until the present time, large inequalities in smoking were emerging and widening in Europe. Tobacco control policies should take up the challenge to reverse these unfavourable trends. As smoking is increasingly more concentrated in lower socio-economic groups, reaching these groups is essential to achieve significant reductions in tobacco consumption across Europe. It is primarily among men and women living in socio-economic disadvantage where the fight against tobacco will finally have to be won. To achieve this, comprehensive tobacco control policies should fully implement a broad series of measures, and target or tailor these measures according to the needs of lower socio-economic groups. In addition, these measures should be strengthened by broader policies, at local, national and international levels, aimed at creating supportive environments for lower socio-economic groups.

## 1. Introduction

The prevalence and consumption of tobacco is not evenly distributed within populations in Europe. Many studies have observed that the prevalence and amount of smoking is considerably higher among men and women who have lower education, lower income and lower occupational class [11-19]. In addition, specific disadvantaged social groups, such as lone mothers and the unemployed, smoke more often and in greater quantities [20, 21]. This unequal distribution of tobacco consumption has been observed in all countries where the smoking epidemic is mature, especially in the north of Europe. In other parts of Europe, inequalities in smoking are less pronounced, however they are emerging, especially among younger generations [11-13].

Socio-economic inequalities in smoking are well documented in the international scientific literature. In addition, a number of attempts have been made to take these inequalities into account in the development and implementation of specific tobacco control measures, such as community-based approaches and measures aimed at delivering smoking cessation aids to smokers at national or local levels [22]. However, these efforts are limited given the magnitude of the problem. Comprehensive policies aimed to reduce inequalities in smoking have not yet been formulated. For example, reducing these inequalities has not

been stated as an explicit aim of tobacco control policies in most European countries [23]. The casual treatment of inequalities in smoking was also illustrated at the 12th world conference on Tobacco or Health at Helsinki, August 2003, where socio-economic factors were mentioned in only about 5 percent of all 2200 abstracts presented, while only one-tenth of these abstract covered socio-economic inequalities as the main topic [24].

Without explicit action, socio-economic inequalities in smoking are likely to persist in the future decades and they may even widen, especially among women. Essential for addressing these unfavourable trends is to re-focus tobacco control policies and related research towards the needs, experiences and living conditions of lower socio-economic groups. Applying an equity lens to tobacco control policies may not only help to reduce future inequalities in smoking, but at the same time it may increase the overall effectiveness of these policies. The recognition that smoking is intimately related to the social or economic difficulties that people experience in their daily life may offer new opportunities for smoking prevention. This especially applies to countries with mature smoking epidemics, where the persistency of smoking is not due to a lack of people's knowledge or willingness to quit smoking, but instead to their difficulty in successful quitting.

The principal aim of this document is to stimulate and facilitate professionals and policy makers in the field of tobacco control to pay systematic attention to socio-economic inequalities in smoking. We will not discuss the need for comprehensive tobacco control policies in Europe, but we will concentrate on the question how to make these policies sensitive to the needs of lower socio-economic groups. To this end, we will provide a systematic overview of inequalities in smoking in Europe, we will outline underlying factors that contribute to these inequalities, and we will identify the possibilities for action. In addition, we will discuss the role of traditional tobacco control policies, and the need to link up with broader policies that aim to create supportive environments for lower socio-economic groups.

This document is written for a European audience, with strong emphasis on the European Union before its extension into Eastern Europe in 2004. Possibilities for action are outlined both at local, national and international levels, including policies developed by the European Commission. The suggestions made draw from the experiences with tobacco control in the entire European Union, and examples are given from different EU member states. This document should be read against the background of recent international frameworks for action, such as several legislative efforts made by the European Commission, the

WHO Fourth Action Plan for Tobacco-Free Europe, and the world wide Framework Convention on Tobacco Control [23].

We do not intend to give a blueprint for action that is assumed to be applicable to all national and local situations. Such a blueprint would fail to take into account the large differences that exist between and within European countries, both in terms of smoking epidemiology and tobacco control policy development [11, 16, 23]. In addition, due to rapid changes in tobacco consumption and control, a blueprint for any particular place would soon be outdated. Therefore, instead of giving a standard formula for action, we provide a systematic overview of activities that may be considered in specific situations in order to make tobacco control more equity sensitive.

Similar to the terminology used in the field of socio-economic inequalities in health [25, 26], we will refer to the term "socio-economic inequalities in smoking" or simply "inequalities in smoking" as the systematic difference in tobacco consumption between individuals of higher and lower socio-economic status. Unless stated otherwise, the word "inequalities" refers to the situation that tobacco consumption is higher among people with a lower socio-economic status. The term "socio-economic status" refers to an individual's higher or lower place in the social hierarchy or social stratification system [27]. It is commonly measured

with three core indicators: educational level, position in the labour market (including unemployment), and income level (or other measures of material living standards). These socio-economic indicators are used in a complementary way, as they stress different sorts of social or material resources, and relate to different phases of an individual's life course [28]. The terms "lower socio-economic groups" or "disadvantaged social groups" refer to people occupying lower positions in the social hierarchy, such as those with elementary education, unskilled manual workers, or the poorest 20 or 40 percent of the population. The term "specific disadvantaged groups" will sometimes be used to refer to population groups with specific forms of social or material disadvantage, such as lone mothers, long-term unemployed people and ethnic minorities [29]. Even though the latter groups constitute a particular challenge to tobacco control policies, this document will concentrate on the broader inequalities in smoking as related to people's education, occupation and income.

## 2. A European overview of socio-economic inequalities in smoking

The aim of this chapter is to give an updated overview of socio-economic inequalities in smoking within the European Union up to the year 2000. This overview will show that, among men, socio-economic inequalities in smoking were found throughout the European Union, except for the oldest generations in some countries. The inequalities observed were large, and had been stable during the last decade of the 20th century. Among women, a much more variable pattern was observed. Socio-economic inequalities in smoking were substantial in the north of Europe, where they were still widening, especially among the youngest generations. In the south, these inequalities were small but emerging. As a result of inequalities in smoking, especially among men, the burden of smoking-related disease and mortality fell heavily among lower socio-economic groups in most populations.

### 2.1. Inequalities in smoking among men

Summary.

- Socio-economic inequalities in smoking among men were substantial, especially in relation to educational level

- As of the year 2000, these inequalities are observed in all EU member states, with small variations in the precise magnitude
- During the 1990s, these inequalities were stable in most countries, with increases in a few countries, but no decreases elsewhere

Among men, the prevalence of smoking and the amount of cigarettes smoked is concentrated among lower socio-economic groups in each EU member state. For example, on the basis of analysis from an EU-wide survey held in 1998 [8], we estimated that two thirds of all male smokers have incomes below the national median. Even larger differences in smoking were observed in relation to educational level. For example, in Finland in 2001, men from a lower educational background were 1.5 times more likely to smoke than men with higher levels of education [7]. Around the year 2000, of all men who smoked, low-educated men smoked on the average about 3 more cigarettes per day than men with high education [4].

Inequalities in smoking were large in most member states of the EU [4, 7, 8]. However, inequalities were slightly larger in some countries than in others, with relatively large inequalities in the United Kingdom and relatively small inequalities in Italy and Spain. However, even among the latter countries, low educated men were 2 to 3 times more

likely to smoke than highly educated men. Similarly, when inequalities in smoking were expressed in absolute terms (i.e. as absolute differences instead of relative ratios) the magnitude of inequalities varied between countries but was considerable everywhere [4, 7, 8].

Between about 1985 and 2000, educational differences in smoking prevalence among men persisted at similar levels in most countries [4]. In a few countries, however, these inequalities tended to widen over time. For example, smoking declines were slightly greater among high-educated men in Sweden and Denmark though the differences were not significant. In most countries, however, the prevalence of smoking declined among men from all education levels. However, the number of cigarettes smoked per smoker did not decrease, especially among low-educated men. A positive case is presented by the UK, which presented greater declines among low-educated men compared to men with higher education levels. These favourable trends were also observed among Italian men [4].

### 2.2. Inequalities in smoking among women

Summary.

- By the end of the 20$^{th}$ century, smoking was more common among disadvantaged women in northern

Europe, while no inequalities or an opposite gradient was observed in the south.

- Since the late 1980s, smoking inequalities were widening in most northern countries, and emerging in southern countries.
- Among the youngest female generations, inequalities in smoking are observed in nearly all countries, except the very south

By the end of the 20th century, in the northern part of the European Union, including Ireland, the United Kingdom, the Netherlands and the Scandinavian countries, smoking was more common among disadvantaged women [4, 7, 8]. In these countries, inequalities in smoking were approximately as large among women as among men. In contrast, no such inequalities or even reverse social gradients in smoking were observed in the southern fringe of the European Union, including southern Italy, Greece and Portugal. In-between the north and the very south of the EU was a zone of countries such as Belgium, Germany, Austria and northern Italy, where inequalities in smoking among women existed but were small around the year 2000.

Between 1985 and 2000, substantial changes occurred in the pattern of inequalities in smoking among women [4]. In the north of the EU, inequalities in smoking were small in the 1980s, but they considerably widened in the subsequent

15 years. In more southern populations, inverse social gradients were observed during the 1980s, with smoking being more common among highly educated women. During the 1990s, however, this pattern reversed and inequalities in smoking emerged in for example Spain and most of Italy. In most countries, socio-economic inequalities in smoking prevalence emerged or widened due to much more favourable trends in smoking among high-educated women (who usually experienced a decrease in smoking rates) than among low educated women (with increasing rates) [4].

As with variations over time, patterns of inequalities in smoking among women varied according to generation [2, 7]. In the youngest generations (those who were between about 18 and 30 years of age in 2000), substantial inequalities were observed in almost all populations except Greece, Portugal and southern Italy. In contrast, in the oldest generations (those about 60 years and older in 2000), socio-economic inequalities in smoking were observed in only a few northern countries, especially the United Kingdom.

Studies from several countries identified lone mothers with dependent children as being at particular risk of smoking. This risk was further enhanced for lone mothers who are living on social welfare. Similarly, studies among pregnant women observed that those without a partner had higher

prevalence rates during early pregnancy and in addition were less like to succeed in quitting smoking during pregnancy. In Sweden, these differences in prevalence and cessation rates were found to persist over time, despite considerable decrease in the prevalence of smoking in the total population of pregnant women [9, 20, 21].

### 2.3. Smoking inequalities in relationship to the smoking epidemic

Summary

- Trends in inequalities in smoking followed the predictions based on the four-stage smoking epidemic model
- This epidemic followed a common path in most countries, with a north-south difference in the timing of its phases
- The parallel trends stress that, despite major regional and national variations, inequalities in smoking constitute a problem whose roots are common to all European countries

According to the four-stage smoking epidemic model, smoking was more common in upper social groups during the first stages [11, 16, 30]. In later stages prevalence rates started to decline, firstly among upper social groups, but not among the lower groups. As a consequence, while smoking

was initially more common in upper groups, during the third stage of the smoking epidemic it became more concentrated among lower groups. Smoking inequalities further widened and persisted during the fourth stage of the smoking epidemic. According to this model, the reversal of the smoking gradient firstly occurs among men during the second or third stages, and women follow the trends among men with a delay of one or two decades.

Trends in smoking inequalities within the European Union during the 1990s largely agreed with the predictions based on the smoking epidemic model [2, 4, 7]. According to the most recent data, northern countries were in the most advanced stage of the smoking epidemic, with the United Kingdom leading other northern countries. Southern countries followed the trends predicted for stages 3 and 4, with the least advanced populations to be found in the southern fringe of the EU, including Greece, Portugal and southern Italy. In-between countries such as Germany had already entered stage 4, but inequalities in smoking had not yet become as large as those in more northern countries.

This agreement with the smoking epidemic model implies that smoking inequalities in EU member states followed a long-term trend that is common to all countries, with the main difference between countries being the timing of these trends. The generalised nature of these trends should

however not be overemphasized, as there are many variations on this common theme. For example, there are important variations between northern European countries in terms of both overall levels of smoking, the magnitude of inequalities, and time trends in these inequalities [4, 7]. Despite these variations, inequalities in smoking appear to constitute a problem whose roots are common to all European countries. This implies that there is much scope for mutual learning, especially from the experiences of countries that are in more advanced stages.

The emergence and widening of inequalities in smoking during the smoking epidemic may be, in part, the unintended consequence of tobacco control policies implemented in the past. Widespread publicity and awareness of the health hazards of smoking contributed to the decline in smoking since the 1960s in many countries, and upper socio-economic groups were most likely to have benefited from this (see section 4.2). However, the emergence of inequalities in smoking may also be due to other factors, such as smoking becoming a sign and consequence of the emancipation of women, with lower-educated women following the models set by women with higher education [31, 32]. In addition, the commercialisation of tobacco may have contributed to these developments, as there is evidence that the tobacco industry re-directed part

of its marketing efforts to lower social groups and disadvantaged communities [33, 34].

### 2.4. Inequalities in smoking and inequalities in health

Summary

- The mortality and morbidity burden of smoking falls disproportionately on men from lower socio-economic groups
- In many countries, smoking is probably the largest single determinant of socio-economic inequalities in morbidity and premature mortality
- Tackling inequalities in smoking is a key element to policies aimed at reducing socio-economic inequalities in health

Several epidemiological studies have shown that men from lower socio-economic groups have a much higher risk of dying from smoking-related diseases than men from upper groups [35]. For example, in England and Wales, lung cancer mortality rates were about 4 times higher among unskilled manual workers than among professionals and senior managers [36]. Among men, large inequalities in lung cancer mortality were also observed in an international overview including eight countries in both northern and southern Europe [37]. Studies from many countries also documented that men from lower socio-economic groups

had higher chances to die from other smoking related diseases, such as chronic obstructive lung disease (COPD) [38]. Similarly, the prevalence of smoking-related diseases within the living male population was much higher among lower as compared to upper social groups [39]. Although a more variable pattern has been observed for women than for men, educational inequalities in mortality from both lung cancer and COPD were also found among women from many countries, except some southern populations such as Madrid [37].

In many western countries, smoking is probably the largest single contributor to socio-economic inequalities in premature mortality, especially among men [35]. In an overview that applied the Peto method to eight European countries, it was estimated that smoking contributed to about 30 percent of the educational differences in premature mortality among men [37]. Similar results were obtained in large-scale epidemiological studies that performed multivariate analyses using detailed data on mortality, socio-economic indicators, smoking and other risk factors [40]. These studies concluded that approximately one third of the socio-economic differences in mortality can be explained by inequalities in smoking. Given the widening of inequalities in smoking in recent years [4], the future burden of smoking-related diseases may become increasingly more

concentrated among men and women from lower socio-economic groups.

These findings imply that reducing smoking prevalence in lower socio-economic groups is of key importance to policies that aim to decrease the disease burden of these groups, and to reduce the health gap between lower and higher socio-economic groups [41-43]. In countries with mature smoking epidemics, tackling inequalities in smoking is a key element of comprehensive policies that aim to reduce socio-economic disparities in health. In populations where the smoking epidemic is yet less advanced, equity-oriented tobacco control policies are urgently required to prevent the emergence of large inequalities in smoking-related disease in the near future.

## 3. Understanding socio-economic inequalities in smoking

Comprehensive policies aimed at tackling socio-economic inequalities in smoking need to be based on, and informed by, insights into the mechanisms that are causing these inequalities. Although explanatory research is still in progress, and many of the underlying mechanisms are not yet fully understood, several studies have yielded scientific evidence that is relevant to tobacco control policies. The purpose of this chapter is to provide a short overview of the mechanisms that have contributed to the increasing concentration of tobacco consumption among lower socio-economic groups.

Inequalities in smoking should be understood from a life course perspective, in which an individual's social trajectory constantly influences his or her smoking trajectory. One critical period in this development is adolescence, when the risk of smoking uptake and nicotine addiction is closely related to family background and a person's educational development. Another critical period is early adult life, when smokers from lower social groups have an increased risk to fail with cessation attempts and to become long-term persistent smokers. Poor socio-economic conditions in youth and adolescence influence smoking uptake through a range of mechanisms, including poorer refusal skills and increased

psychosocial stress. Lower rates of success with smoking cessation attempts cannot only be explained by higher levels of nicotine addition but are also due to, among other factors, increased psychosocial stress and lack of social and instrumental support.

Together, the emerging evidence shows that higher rates of smoking initiation and continuation by lower socio-economic groups are not simply due to 'irresponsible' behaviour. Here too, scientific evidence does not support victim blaming.

### 3.1. Inequalities in smoking initiation and smoking cessation

Summary

- In the most recent phases of the smoking epidemic, men and women from lower socio-economic groups have a higher risk of initiating smoking and become addicted during adolescence
- Men and women from lower socio-economic groups have lower rates of smoking cessation, especially during early adult age
- Inequalities in both initiation and cessation produce large socio-economic differences in the life-time exposure to smoking

In many countries, the rate of uptake of smoking by the age of about 16 years varied according to the socio-economic position of adolescents [19]. There are important differences between countries and between generations, with small inequalities in some countries or generations compared to large inequalities elsewhere [7]. For example, in Italy, smoking initiation was more common among highly educated men in older generations (i.e. those born before the 1950s) while it had become more common among low-educated men in younger generations. Similar variations between older and younger generations were observed among Italian women [3]. Also, studies from other countries such as Spain showed that in the youngest generations smoking uptake and nicotine addiction was more common among those with lower education [44]. A European overview for the year 1998 showed that smoking at ages 16 to 24 years was more common among men and women with low education in each member state of the EU, except for women in Portugal and Greece [7].

Several studies on smoking cessation found that men and women with lower socio-economic positions were less successful in quitting. For example, in Italy, among both men and women, lower rates of successful smoking cessation were observed for lower groups compared to upper socio-economic groups [3]. These inequalities were largest among younger generations. Also, in the United

Kingdom, where cessation rates doubled from 25 percent in 1973 to 50 percent in 1996 among the highest social groups, the rates of the lowest groups remained virtually unchanged at about 10 percent [43]. Higher cessation rates among smokers from upper social groups were observed in many other countries as well. These inequalities are reflected in the almost universal finding that quit ratios (i.e. number of ex - smokers divided by the number of ever smokers as observed at one single point in time) were highest for upper socio-economic groups [11-19].

When socio-economic inequalities exist simultaneously in initiation and cessation rates, they together produce large inequalities in long-term persistent smoking. For example, among men born in Italy between 1960 and 1969, large inequalities in both starting and stopping with smoking resulted in large differences in the average number of years that men had been smokers between their $10^{th}$ and $50^{th}$ birthdays: 14 years of smoking by low educated men as compared to 9 years by men with higher education [3].

These results emphasize that explanations of inequalities in smoking should focus on both smoking initiation and nicotine addiction during adolescence, and on smoking cessation or continuation during adulthood. Even though the relative importance of smoking initiation versus smoking cessation varies according to gender, generation and country,

substantial inequalities are often observed during both phases of the life course, especially in more recent generations.

### 3.2. Social trajectories and the smoking trajectory

Summary

- Uptake of smoking during adolescence is related to both education attainment and socio-economic position in childhood
- Failure to stop smoking in later life is in addition related to the experience of social and material deprivation in adulthood
- An individual's smoking trajectory is related to the accumulation of social disadvantage over the entire life course

Especially within the youngest generations, adolescent men and women who are attending lower levels of education had higher risks to start smoking and become addicted. The association between education and smoking initiation is in part related to the lasting influence of socio-economic conditions of the family from which the adolescents originated. An English study observed that the chance of persisting smoking up to the age of 41 years was related to both childhood and adulthood circumstances, with the highest chances for those who experienced poor socio-

economic circumstances throughout their entire life [45, 46]. A poor socio-economic background in early life appeared to have an independent effect on the opportunities to start smoking and become addicted.

Similarly, the socio-economic determinants of smoking cessation in later adult life are multi-faceted. Education level has been found to be a strong predictor of cessation rates among the adult population, especially at relatively young ages. But education does not act alone. There is compelling evidence that exposure to material or social deprivation during adulthood acts to reduce chances for men and women to quit smoking and remain smoke free. A European overview showed that smoking prevalence at ages 40 years and over was related to income level independently from the association with education [8]. An in-depth study from Scotland observed that smoking prevalence rates were high among population groups suffering specific forms of disadvantage, including community-housing tenants, the long-term unemployed, and those living on social welfare [10].

Different types of socio-economic disadvantage act in a cumulative way to influence smoking. For example, a German study showed that quit rates were lowest in population groups that were characterised by a combination of disadvantages, including low education, low income and

unemployment [47, 48]. A British study identified four socio-economic factors to be independent predictors of smoking status, and observed a smoking prevalence of 73 percent among women who experience each form of disadvantage, compared to 46 percent when low education was the only predictor used [49]. Thus, multiple disadvantages work cumulatively to increase the risk of smoking.

This complex influence of socio-economic factors on smoking can best be understood from a life course perspective [50, 51]. From this perspective, the socio-economic position of a person is a “social trajectory” in which disadvantages during early life (poor background, low education) increase the risk of experiencing more disadvantages in later life (unemployment, low-paid jobs, no accumulated wealth). What happens in childhood sets the pathways through adolescence into adult life. While the social trajectory evolves, it constantly exerts influences on the smoking trajectory [45, 46]. In this co-evolution, critical periods are adolescence and early adult life, and persons who experience multiple disadvantages during these phases may run the greatest risk for becoming addicted and remaining exposed to tobacco for many years on.

### 3.3. Determinants of inequalities in smoking among adolescents

Summary

- Inequalities in smoking initiation can be understood from a greater exposure of disadvantaged adolescents to factors that increase the risk to become a dependent smoker. These include:
  - poor perceptions of smoking risk
  - parental influences
  - poor resistance to peer pressures
  - psychological problems
  - problems at home and school
  - targeted marketing by the tobacco industry.

For most persistent smokers, their smoking dependence started with the initiation and continuation of smoking during adolescence. During this phase of life, persistent smokers have followed a trajectory that starts with the first puff and first cigarettes, then a period of daily smoking, and finally smoking dependence. Cessation attempts are made frequently by dependent adolescent smokers, but are often unsuccessful [52]. At least in the youngest generations, adolescents of lower socio-economic status are at a higher risk of experimenting with smoking and ending up with nicotine addiction (see section 3.1).

Few studies have attempted to explain the causes of socio-economic inequalities in smoking trajectories during adolescence. Many social, psychological and environmental factors have been identified as predictors of smoking behaviour of adolescents [53-55]. However, it has not been documented systematically whether these factors prevail more among lower socio-economic groups. Nonetheless, the evidence from some studies indicate that several factors may have contributed to inequalities in smoking among adolescence [56-58].

Below, we will discuss a series of possible factors. We will start with “proximate” determinants of smoking initiation and addiction, and we will end with discussing the more “distal” determinants that act upon these proximate determinants.

1. Perceptions of smoking and prevention. Lower socio-economic groups have often been described as being sceptical to preventive activities, and less receptive to health education messages [59]. Adults and adolescents from lower socio-economic groups may more frequently disregard or underestimate the risk of smoking. In addition, they may be less convinced of the possibilities to prevent smoking-related disease, and may less often have plans to remain smoke free in the future. Individuals who do not hold strong anti-smoking attitudes and who are less knowledgeable about the

risks of smoking may be more likely to become persistent smokers.

2. Parental smoking and attitudes. Parents and siblings serve as key role models for adolescents [53-55]. Uptake of smoking among adolescents is associated with parents' smoking behaviour and attitudes towards smoking. Smoking and permissive attitudes are likely to be more frequent among parents from lower socio-economic backgrounds, at least for the youngest generations of adolescents. Of special concern are the high tobacco consumption levels among lone mothers who often live on social welfare, and who may provide a smokers' model to their children and especially their daughters [20].

3. Peer pressure and resistance skills. Friends and peers are important socialising agents during adolescence. Their use of cigarettes is a strong predictor of adolescents' smoking behaviour – especially influencing the risk to continue smoking after first experimentation [53-55]. Skills for resisting cigarettes and social pressures may counteract peer pressure to smoke. Resistance skills are closely related to adolescents' social competence and self-confidence [60]. To the extent that these personal attributes are generally weaker among adolescents with low education or poor socio-economic backgrounds, these adolescents are more likely to be influenced by smoking peers.

4. Psychological and psychiatric factors. Several studies suggested that intra-personal factors are fundamental to adolescents' smoking behaviour. Optimism is related to lower rates of smoking while a sense of strong engagement stimulates preventive behaviour. Similarly, a higher perceived control over one's life is found to reduce the risk of becoming a dependent smoker [52]. Epidemiological studies among adults also observed an association between smoking and psychiatric disorders such as major depression, anxiety and disruptive behaviours such as ADHD [61]. Socio-economic inequalities in the prevalence of psychological and psychiatric factors have been found to be large during adolescence [62], and thus contribute to inequalities in smoking dependence among adolescents and young adults.

5. Problems with family, friends and school. Continued stress associated with poor socio-economic conditions has negative effects on the life of adolescents and may increase their risk of using smoking as a way of coping. Social and financial problems may also undermine their resistance skills and willingness to engage in preventive behaviours. According to several studies, when adolescents have been persistently affected by troubles at home and at school, their risk of taking up smoking increases [56, 58]. This risk may further be increased when adolescents lack adequate financial,

social and personal resources to cope with the problems that they experience.

6. Advertisement influences. Direct and indirect forms of promotion by the tobacco industry can be particularly potent in glamorising smoking and stimulating adolescents to start smoking [63]. Adolescents without strong non-smoking attitudes or resistance skills may be particularly susceptible to the tobacco industry's efforts. Lower socio-economic groups may be at particular risk. For example, extensive cigarette advertising targeted at women was found to result in a greater uptake of smoking among women with lower levels of education [33]. Some studies found that tobacco companies target deprived neighbourhoods in their marketing strategies, and concentrate these efforts especially on attracting adolescents [34].

### 3.4. Determinants of inequalities in smoking cessation among adults

Summary

- Inequalities in smoking cessation rates are mainly due to the greater difficulties that disadvantaged people experience in succeeding with attempts to quit.
- Difficulties to quit not only arise from high levels of nicotine dependence, but also from lack of social

support, perceived barriers, and lower confidence in the ability to quit.

- Men and women who have to face material and social deprivation have particular difficulties with quitting smoking

Smokers from lower socio-economic groups have been found to succeed less often in stopping smoking and remaining smoke-free. Socio-economic inequalities in smoking cessation have been observed in several countries, and have been increasing over time (see section 3.1). These inequalities are particularly visible in studies among pregnant women [9, 20, 21]. A first pregnancy can strongly increase a woman's commitment to quit. However, chances of success appear to be significantly influenced by social conditions. A British study observed that the chance to succeed was more than 60 percent among women in higher occupations, compared to less than 30 percent among women who never worked, and about 40 percent among teenage mothers [22]. About equally large inequalities were observed in Sweden in relation to the education level, age and marital status of pregnant women [9].

It has been suggested that men and women from lower socio-economic groups less often make attempts to quit. Incentives to stop smoking may be lower due to several factors. A study among deprived neighbourhoods in England

observed that smoking was seen to be normal – a norm that was reinforced by high levels of smoking among family and friends [64]. There was no established culture of quitting, little awareness of the methods available to aid smoking cessation, and more distrust with the quality of services available. In addition, smoking-related deaths and diseases rarely prompted individuals to quit, as fatalistic attitudes prevailed.

Despite the lack of incentives, smokers from lower socio-economic groups frequently do attempt to stop smoking. In England, the number of quit attempts per smoker is about the same for smokers from different social classes [22, 65]. Similar patterns are reported for other European countries [13]. Although smokers in lower socio-economic groups often make attempts to quit, they are less successful in their attempts than smokers in upper groups [65]. This pattern is also observed in smoking cessation trials, which consistently find that men and women with lower socio-economic status are less successful in quitting despite similar levels of reported motivation [66, 67].

The principal explanation is therefore that smokers from lower socio-economic classes face more problems when they attempt to quit smoking and remain abstinent. Their greater difficulties may in part be attributed to higher levels of nicotine dependence. Some studies have observed higher

dependence levels among smokers from lower groups [68]. This greater dependence may be due to the higher average number of cigarettes smoked in lower groups and in some cases an earlier age of the onset of persistent smoking.

However, stronger nicotine dependence may not fully explain lower rates of success in quitting with smoking. A study from Spain found that differences in nicotine dependence could hardly explain socio-economic inequalities in quit rates among clients of a smoking cessation clinic [1]. This suggested that inequalities in smoking cessation rates are not simply a function of inequalities in levels of motivation or addiction, but that other factors exert an additional effect. For example, smokers with lower socio-economic status report less confidence in their abilities to quit. In addition, they more often perceive barriers or negative consequences such as weight gain [22]. Finally, poor smokers may receive less support for their quit attempts, due to less supportive social networks and due to social norms that are permissive to smoking [69-71].

These factors should be viewed against the background of greater problems in the daily lives of men and women who face poverty and unemployment. An in-depth qualitative study of lone mothers in the United Kingdom portrayed in detail the greater difficulties that smokers from disadvantaged social groups experience [20]. A higher

percentage of mothers that were heavy smokers were unable to pay for the necessities of their family. High levels of tobacco consumption persisted especially among women with additional caring responsibilities but few material resources, and who had developed strong feelings of stress and low self-efficacy.

## 4. Reducing inequalities through tobacco control policies

Traditional tobacco control policies employ a large number of specific measures to effectively curb the smoking epidemic, including increases in the price of tobacco, bans on direct and indirect forms of promotion, and supply of smoking cessation services to those who desire to quit. These measures are implemented in increasingly more European countries, under the stimulus of international developments such as legislation of the European Commission on the banning of tobacco marketing, and the Framework Convention on Tobacco Control [23]. These developments foster the hope that reinforced tobacco control policies will contribute towards a substantial decrease in the tobacco consumption in Europe. However, it is uncertain whether these policies will at the same time succeed in facing the challenge of reducing inequalities in smoking. The purpose of this chapter is to outline how tobacco control policies can meet this challenge.

We will show that the application of an equity focus could enrich and modify tobacco control policies in several ways. A number of tobacco control measures have a great potential to target lower socio-economic groups. Unfortunately, past tobacco control measures do not seem to have been very effective in reaching the disadvantaged social groups. Future

strategies of tobacco control should aim to choose the optimal mix of tobacco control measures. When implementing these measures, there are several possibilities to target lower socio-economic groups, and to tailor these measures to their needs. Equity is also relevant to more general policy issues such as target setting, monitoring of tobacco consumption patterns, advocacy, and recruitment of professionals and workers for tobacco control.

### 4.1. Identification of relevant tobacco control measures

Summary

- Five tobacco control measures have been shown to have a large potential to reduce inequalities in smoking between socio-economic groups by having the greatest effects among lower groups. These include
  - banning of marketing
  - rising tobacco prices
  - work place interventions
  - free supply of Nicotine Replacement Therapy (NRT) and similar cessation aids
  - counselling, especially telephone help lines
- Some other specific measures should also be considered as part of comprehensive tobacco control strategies, but will generally be less effective in reducing inequalities in smoking.

There is a large body of scientific evidence on the effectiveness of different tobacco control measures [53, 72]. However, the differential impact of these measures among different socio-economic groups has not been assessed systematically. An exception is a recent review by Platt and colleagues [73]. Building upon this review, we made an additional literature review with the aim to identify tobacco control measures that (a) have shown to be effective in decreasing the prevalence or amount of smoking in the general population, and (b) whose impact may substantially differ between socio-economic groups [6]. We obtained evidence from experimental studies and from observational studies that used either qualitative or quantitative methods. Even though the effectiveness of many tobacco control measures may differ according to socio-economic group, we identified five measures for which these differential effects were most likely to be substantial [6].

1. Banning of advertisement and promotion of tobacco products. There is little doubt that marketing of tobacco products influences the uptake of smoking, especially among adolescents. Additionally, most of the tobacco industry's efforts appear to be targeted towards deprived areas and lower socio-economic groups, who are more susceptible to tobacco advertising and promotion [63]. The success of the industry is likely to continue, unless the freedom of the

tobacco industry is curtailed by a strict banning of advertisement and promotion. Lower socio-economic groups are likely to benefit most from a strict application of new far-reaching legislation.

2. Rising tobacco taxation. The extent to which smokers can afford to purchase cigarettes has a major impact on their consumption, especially during adolescence. There is some evidence that, as compared to upper socio-economic groups, lower groups are more likely to decrease their amount of cigarettes consumed in response to rising tobacco prices [5, 74-77]. Therefore, in many settings, increasing the price of tobacco products through taxation might be one of the most effective measures to reduce levels of tobacco consumption in the population at large, and in lower income groups in particular.

3. Banning smoking from the workplace. The workplace is an appropriate setting to encourage and support cessation of smoking, and to promote a smoke-free environment. Workplace smoking bans have been shown to be particularly effective in reducing environmental tobacco smoke (ETS) exposure, smoking prevalence and the amount of cigarettes consumed by workers [78, 79]. However, until recently, smoking bans have generally been applied more successfully in professional and white-collar settings rather than in the manufacturing industry or some service sectors [6, 80-82].

Therefore, new workplace interventions may have the potential to decrease smoking inequalities, provided that they are implemented more effectively in blue-collar settings.

4. Provision of nicotine-replacement therapies (NRT) and similar cessation aids. Meta-analyses of controlled trials have demonstrated that the use of NRT increased the likelihood of abstaining from smoking among the general population [83]. Because smokers from low socio-economic backgrounds are less likely to be successful quitters [15, 67, 84], their success rates may considerably be increased by full access to, and adequate use of, NRT. Where the poor experience financial and other barriers to the use of NRT, provision of free or subsidised NRT to this group may help them to overcome these barriers and achieve higher quit rates [85].

5. Counselling, especially telephone help lines. Guidance and counselling by general practitioners has been shown to be effective in getting smokers to quit or reduce their consumption, but may be less effective in reaching large numbers of smokers, especially among lower socio-economic groups [86]. Telephone-based quit lines have been shown to be more effective in reaching disadvantaged social groups and in promoting smoking cessation [87, 88]. Such help lines may be more effective among lower groups when they

are promoted by national campaigns, given proactively, and are provided free of charge [75, 87].

Given the potential of these five tobacco control measures to reach lower socio-economic groups, they are all recommended for inclusion within a comprehensive strategy to reduce inequalities in smoking. Of course, their selection does not preclude the consideration of other tobacco control measures as part of such strategies. For example, school based interventions may in some settings be considered to be effective in reducing the uptake of smoking by adolescents from lower socio-economic backgrounds [89, 90]. Similarly, supply-based measures such as tax harmonisation and tackling smuggling may have the largest effects on smoking in lower socio-economic groups, as illegal tobacco sales may occur more frequently in disadvantaged neighbourhoods [73].

Even though health publicity campaigns alone may not be very effective in reducing tobacco consumption, they serve to enhance support for other tobacco control measures. Equity-sensitive campaigns may not only directly aid smokers who want to quit, but also provide the 'raining water' that nurtures all other tobacco control measures aimed to help lower socio-economic groups. Anti-smoking campaigns may increase their impact by tailoring their messages toward their specific needs and experiences of

disadvantaged social groups [91]. For example, campaigns should encourage rather than blame poor smokers, and aim to stimulate a culture of quitting in deprived communities [22].

### 4.2. Implementation and effects of tobacco control measures in recent decades

Summary

- Until recently, no European country had adopted the full range of tobacco control measures available to reduce socio-economic inequalities in smoking
- In recent decades, tobacco control policies generally have had more effect on trends in smoking among upper socio-economic groups than on trends among lower groups.

The five tobacco control measures that may be most effective in reducing inequalities in smoking (see section 4.1) have not yet been fully implemented in European countries during the past decades [23]. A more detailed overview that we made of developments in six countries showed that, even though most countries implemented at least some of these tobacco control measures, these measures were often implemented partially and not fully to the benefit of lower socio-economic groups [6]. Despite considerable progress made in this field, banning or control

of advertisement was not complete in most countries, and indirect forms of tobacco promotion persisted is most countries. Tobacco taxation rates greatly varied between countries, with much room for large price increases in many European countries. Bans on smoking in working place were voluntary in many countries, with greater rates of implementation in professional and white collar settings than in the manufacturing industry and other blue collar places. By the year 2002, NRT were made available free of charge on a national level only in the United Kingdom and France. Finally, many countries lacked national quit lines that were proactive and free of charge. Thus, in each European country, there is still a great potential to further develop tobacco control strategies that are maximally effective among lower socio-economic groups [6].

The tobacco control policies that have been implemented in European countries thus far seem to have had more effects on trends in smoking among upper socio-economic groups than on trends among lower groups. This is not an exclusively European phenomenon. A paper from New Zealand discussed in detail how (the absence of) tobacco control policies during the 1980s and 1990s contributed to a widening of inequalities in smoking in relation to income and ethnicity [92]. Below, we briefly discuss the role of some of the most important tobacco control policies.

In the earlier stages of the smoking epidemic, when much could still be gained from information and motivational approaches, anti-smoking publicity campaigns may have had a large direct effect on smoking rates [93]. It is generally acknowledged that these earlier campaigns probably have had the largest effects among higher socio-economic groups, because their messages (e.g. with an emphasis on long-term effects of prevention) and modes of delivery (e.g. written materials) were more directed towards upper and middle social classes. For example, a time series study of the effect of incidental health publicity campaigns carried out in England and Wales between 1975 and 1990 observed substantial effects on tobacco consumption levels in the upper social classes, compared to almost no effect in the lowest classes [74]. On the other hand, more recent campaigns, for example a national campaign in the Netherlands at the turn of the millennium, seems to have reached lower groups equally well as upper socio-economic groups [94].

Similarly, the supply of NRT and other smoking cessation services is likely to have increased rates of smoking cessation among upper social classes to a larger degree than among lower social classes. For example, the likelihood of successful quit attempts by clients of a smoking cessation clinic in Barcelona was considerably larger among smokers with a higher educational level or higher occupational class

[1]. The greater success of upper socio-economic groups was achieved despite (or perhaps due to) the fact that the same services were provided to all smokers. Experiences with smoking cessation clinics or trials in other places also show higher success rates of upper socio-economic groups, which in some cases coincided with a better quality of the services delivered to the more advantaged social groups [66, 67]. These experiences indicate that future policies for the provision of smoking cessation services should take into account the particular difficulties that lower groups have experienced in the past with using these services.

In the past years, increases in tobacco taxation rates were probably the single most effective measure to reduce levels of tobacco consumption among lower socio-economic groups [76, 95]. Increases in the real price of tobacco in England and Wales between 1975 and 1990 were found to be related to substantial reductions of the amount smoked by lower social classes, compared to a much smaller effect among upper classes [74]. Overall, however, the evidence of a differential impact on different socio-economic groups is mixed [22]. For example, in a study on smoking trends in several European countries between 1985 and 2000, we observed larger price responsiveness among lower education groups in England and Wales, but not such a differential effect in other countries [5]. Thus, even though tobacco taxation can have strongly influenced tobacco consumption

by lower socio-economic groups in many European countries, higher groups in some of these countries may have responded in similar ways, and inequalities in smoking may have remained undiminished.

### 4.3. Making specific tobacco control measures more effective in lower groups

Summary

- There are several ways to increase the effectiveness of specific tobacco control measures among lower socio-economic groups, including:
  - strict enforcement of laws and agreements
  - removal of financial and other barriers
  - geographic or social targeting of services
  - tailoring of communication approaches

Evaluations of trends in tobacco smoking in the past did not provide much encouraging evidence for a greater effect of tobacco control measures among lower groups as compared to higher groups (see section 4.2). Similarly, evaluations of most clinic trials and community interventions did not demonstrate larger effects among lower socio-economic groups. This lack of ample evidence on “good practices” prompts the question how future tobacco control measures can be implemented so as to increase their effectiveness among lower groups. Fundamental is the recognition that we

should abandon the idea that there is “one size that fits all”. Instead, tobacco control measures need to be targeted to disadvantaged social groups and tailored towards their needs.

Based on literature review and discussion with experts, we identified four general approaches to enhance the effectiveness of tobacco control measures among lower socio-economic groups.

1. Strict enforcement of laws and agreements. Enforcement issues are relevant especially to bans of smoking in workplaces. In the past years, these bans were applied more easily in white-collar workplaces, thus contributing to current class differences in active smoking and exposure to environmental tobacco smoke [78, 79]. Restrictions in smoking should therefore be applied consistently across all workplaces in order to make sure that workers on all levels benefit from their protection. Laws are to be preferred over voluntary agreements, and they should be enforced in such a way (e.g. also cover semi-open work places and small companies) that service or industry workers are as effectively protected as office workers. Similarly, a greater enforcement of supply-based measures such as age restrictions on tobacco purchase can have greater effects in poor

neighbourhoods, where such restrictions are often enforced less study [27].

2. Removal of financial and other barriers. Removal of financial barriers is of essential importance to the delivery of NRT and other cessation services to poor smokers [85]. Provision of free or subsidised services would help them overcome these barriers. Because smokers from low socio-economic backgrounds may be less likely to succeed at the first attempt to quit, these subsidies may be most successful if there would be no limits on the number of quit attempts funded. Removal of financial barriers is also a key element for the provision of telephone quit lines. Counselling provided by general practitioners and other health professionals should also aim to remove the financial and organisational barriers that may affect the utilisation of preventive health services.

3. Geographic targeting of services. A third approach is to offer services and interventions to the deprived neighbourhoods where most of the uneducated, unemployed or poor people tend to live [96]. One example is England and Wales, where the supply of free smoking cessation services is targeted to the most deprived areas [22, 65]. Considerable resources were made available at the national level for this geographical

targeting. At the local level, a range of approaches were applied, including basing smoking cessation advisers in primary care venues; advertising the services in these areas; using a range of community venues such as libraries and community centres; and training local people from poorer neighbourhoods to be advisers. In some deprived areas, considerable success was reported in reaching poor smokers. Even though relapse rates were high, the increased number of attempts to quit smoking by disadvantaged people local people showed that geographical targeting towards these people could make a difference [65].

4. Tailoring of communication approaches. Mass media and public education approaches may achieve greater effects among lower socio-economic groups by tailoring their messages, materials and channels according to the needs of these groups [91, 97]. This applies to national mass media campaigns, to school-based or area-based health promotion programs, to warning labels on cigarette packages, and to self-help materials for smoking cessation. Health warnings may have less impact on people from lower socio-economic groups because they may feel that these messages are not relevant to them, that they will “have to die of something anyway”, or that predicted health consequences are too far away to worry about now [90].

Class-sensitive approaches should take into account the troubles in life experienced by poor smokers, and understand that for many of them smoking means relief from stress [20, 98]. Anti-smoking messages should avoid referring to existing feelings of guilt and powerlessness, but instead highlight the possibility of success and instil a sense of optimism. Some recent media campaigns that were sensitive to the needs of lower socio-economic groups have been shown to be effective in reducing their tobacco consumption [94].

### 4.4. Applying an equity lens to comprehensive tobacco control policies

Summary

- Comprehensive strategies should give weight to tobacco control measures that have most potential to reduce smoking levels among lower socio-economic groups
- The optimal mix of measures strongly depends on the national and local context, and is likely to change over time
- Equity concerns can also guide the policy process, including target setting, advocacy and mobilisation, and the recruitment of tobacco control workers

Comprehensive and integrated tobacco control strategies are needed to effectively curb the smoking epidemic among

women as well as among men. These strategies need to be developed and fine-tuned in response to many factors, including a detailed assessment of the tobacco epidemiology and the policy context. These assessments need to be made at international, national as well as local levels. At each level, tobacco control strategies should aim to take into account the situation of lower socio-economic groups.

An essential step is to determine the appropriate mix of tobacco control measures, with particular attention to the five measures distinguished in section 4.1. Priority should be given to the tobacco control measures that have most potential to influence uptake and cessation of smoking by lower social groups. The optimal mix of policies may strongly depend on national and local contexts. We give two examples.

1. In countries where tobacco prices are still low, rising taxation rates is probably the most effective single measure to reduce tobacco consumption by lower socio-economic groups [76, 95]. On the other hand, in countries with high tobacco prices, further rises in taxes may have large side effects that would particularly affect the poorest smokers. Evidence from the United Kingdom shows that further rises in tobacco prices would stimulate the smuggling of cigarettes, which is viewed positively by low-income smokers as a way to deal with

high prices and cope with economic hardship. In addition, further increases in tobacco prices would decrease the amount of money that poor smokers have available to purchase the essentials of daily life [22, 99].

2. Banning of direct and indirect forms of tobacco marketing is important to counteract the industry's attempt to stimulate smoking among adolescents and thus to recruit new generations of dependent smokers. The measures needed to control tobacco advertisement strongly vary between European countries. While some countries have effectively banned most forms of tobacco promotion, in other countries the tobacco industry enjoys more freedom to promote smoking, often by violating newly adopted laws [23]. In many countries tobacco industry may be targeting its efforts to lower socio-economic groups and deprived areas [34]. Consequently, a country-specific approach is needed in order to detect and counteract different forms of tobacco marketing, and to ensure that all sections of the population are protected against the industry's efforts.

In addition, equity concerns are important to the policy process that supports the development and implementation of specific tobacco control measures. This may apply to different aspects of the policy process.

1. Setting of targets for tobacco control. Policy makers are increasingly more required to define targets for health improvement. In addition to “inspirational” targets, realistic targets may be used to steer and evaluate specific policies [100, 101]. In the field of tobacco control, targets may be set for the future reduction of smoking prevalence in the general population. In addition to these overall targets, targets may also be set for a (greater) reduction of tobacco exposure in lower socio-economic groups. The experience of the United Kingdom and the Netherlands shows that realistic and measurable targets can be formulated on the basis of the available evidence on past smoking trends and possibilities for tobacco control [102-104].

2. Publicity, de-normalisation and mobilisation. The strong links between smoking and poverty can be used in anti-tobacco campaigns to mobilise support for tobacco control. The fact that smoking dependence is not only due to nicotine addiction, but also intimately related to a life marked with social and economic problems, adds to the argument that smoking is not an issue of free choice. It should also be made clear that the burden of smoking-related diseases falls heavily on the most vulnerable groups of society, who already suffer more health problems, but whose problems are most likely to go unnoticed and be underrepresented. It is therefore

important to link up with stakeholders representing lower socio-economic groups, such a labour unions and organisations supporting the poor.

3. Recruitment of professionals and workers for tobacco control. Reaching lower socio-economic groups can be facilitated by appropriate recruitment of workers for tobacco control [86]. For example, the English national program to deliver smoking cessation services to deprived areas offered training to practice nurses, health visitors and midwives who often originated from the target areas themselves [65]. In a similar way, interventions aimed at ethnic minority groups may involve nurses and community workers originating from these ethnic communities themselves. Finally, because general practitioners are often found to be fairly accessible to people from lower classes, they may be effective in giving anti-smoking advice and propagating use of smoking cessation aids [105].

In the next chapters, we discuss in more detail two other ingredients of a comprehensive tobacco control policy: inter-sector approaches (chapter 5) and research and development (chapter 6).

## 5. Reducing inequalities through linking up with other policies

The previous section discussed tobacco control actions directed at smoking and its immediate determinants, such as anti-smoking attitudes and motivation to quit. However, because smoking is intimately related to the social position of people, tobacco control measures directed at smoking alone may have a limited effect among people in disadvantaged positions. When the deeper social roots are not resolved, it may be too difficult to stop smoking, while those who do stop might recur to other health hazards such as alcohol abuse or excessive eating. Similarly, as long as children and adolescents continue to grow up in poor living conditions, the tobacco industry may find its way to a large number of victims in each new generation. Therefore, specific tobacco control measures alone may not be sufficiently effective, and their effects are likely to be larger when combined with policies that aim to improve the living conditions of lower socio-economic groups.

This section will discuss a number of possibilities for inter-sector action at local, national and international levels. Within deprived neighbourhoods, programs aimed to improve people's social resources, physical environment and economic position can help to increase the effectiveness of tobacco control measures directed at residents of these

areas. There are several possibilities to include tobacco control as an integral part of community-based programs. At national and international levels, tobacco control may give further stimulus to measures in the fields of education, employment, income, taxation and social welfare. Tobacco control can be included as an integral part or outcome of some of these policies.

In short, if risks of smoking are influenced by poor living conditions, then policies aimed to improve these living conditions can also be regarded as tobacco-control policies.

## 5.1. Integrating tobacco control into community development programs

Summary

- In countries with mature smoking epidemics, the prevalence and amount of smoking is highest in deprived neighbourhoods
- Community-based programs of tobacco control can help to increase the effectiveness of tobacco control among residents of these neighbourhoods
- Larger effects may be achieved through linking up with local measures aimed to create a more favourable social and physical environment.

In countries with mature smoking epidemics, tobacco consumption levels are higher in the most socio-economically deprived areas. For example, in Scotland, the prevalence of smoking is about 50 percent in most deprived areas, compared to 25 percent in least deprived areas [10]. Approximately one third of all smokers lived in the most deprived areas, mainly due to the concentration of population groups at high risk, such as low educated and unemployed men or women. In addition to these 'compositional' effects, there are some 'contextual' effects [106-108]. Living in a deprived neighbourhood increases tobacco consumption due to environmental stresses such as higher crime rates, limited opportunities for recreation, and an unpleasant physical environment. Chances to successfully quit smoking are lower in areas with a culture of smoking, easy access to cheap cigarettes, and poor social support services.

Area differences in smoking imply that the neighbourhood may be an efficient setting for tobacco control, especially among lower socio-economic groups [22]. Community programs may reach a large number of persistent smokers with similar socio-economic profiles. In addition, the effectiveness of tobacco control measures may be increased when they are backed up by community-based policies aimed to create a supportive environment for socially disadvantaged people. Examples of such broader

community-based actions include (a) actions to improve the financial situation of poor people, e.g. by improving the uptake of social benefits, (b) environmental policies aimed to increase (perceived) safety and opportunities for recreation and (c) urban renewal and similar housing schemes.

Local tobacco control initiatives can be integrated with other community-based programs in order to create synergy within all fields [22]. For example, successful smoking cessation programs may instil a sense of cohesion, optimism and confidence among members of local communities. Recreational facilities may be created for local communities with the explicit aim to provide the residents with alternative means (i.e. other than smoking or excessive drinking or eating) to cope with daily stress. Similarly, community-based programs can support poor women to organise mutual help with the aim of reducing the day-to-day stress that induces smoking, such as the recurrent troubles associated with combining paid work and child care.

There is a long tradition in tobacco control of interventions within specific communities [96]. Most interventions had a strong behavioural and motivational focus. Even though evaluations of these studies report reductions in levels of tobacco consumption by their target populations, the effects were generally small, and these effects did not substantially

differ between high and lower socio-economic groups [73]. Larger effects may be achieved in these programs by focussing on socio-economically deprived areas, and by linking up with local measures aimed to create a more favourable social and physical environment. For example, in England, a three-year 'poverty and smoking' project was set up for low-income communities, with close partnership with local residents. The preliminary results, suggesting cessation rates higher than 20 percent, were encouraging to further work in this field [22, 109].

### 5.2. Linking up tobacco control with policies at national and international levels

Summary

- Comprehensive policies to reduce inequalities in smoking can be extended to include measures in the fields of education, employment, income and social assistance.
- Tobacco control can be included as an explicit part or purpose of some social, economic or fiscal measures
- These inter-sector actions should be taken at both national and international levels

National social and economic policies have important effects on the position of disadvantaged social groups. Re-distributive welfare policies have the potential to diminish the size of income inequalities, and improve the financial

situation of specific disadvantaged groups such as lone mothers. For example, thanks to such policies, only 5 percent of lone mothers in Sweden live below the poverty level, compared to 30 percent in England [110]. As economic and social policies can improve the living conditions of lower socio-economic groups, they may also create conditions for a more effective reduction of tobacco consumption by these groups.

There is a parallel with the comprehensive national programs for tackling health inequalities that were designed for the United Kingdom, Sweden and the Netherlands [104, 111, 112]. These programs did not only include actions on specific risk factors, such as smoking and overweight, but also aimed to influence social and economic policies with the aim to improve the living conditions and resources of disadvantaged people. For example, the Dutch program included recommendations for the following inter-sector actions: (a) reinforcement of policies aimed at improving the education attainment of children from lower socio-economic backgrounds, (b) prevention of further increases in income inequalities and (c) sustained financial support of chronic patients and poor families [112].

Inter-sector actions directed at children and adolescents may be of particular importance, given the persistence of high levels of tobacco consumption among adolescents,

especially among those from lower socio-economic backgrounds. Investment in the living conditions and personal resources of children and adolescents may set the pathway towards a healthy and smoke-free life [49]. There are many possibilities for 'pathway' policies. For example, in England, policies have been developed recently with the aim to improve the health, wellbeing and education prospects of children born into disadvantage ("Sure Start"), to offer education and training to teenage mothers at the risk of long-term poverty ("Teenage Pregnancy Strategy"), and to provide training and work experience to young people with long-term unemployment ("New Deal").

Stakeholders other than tobacco control professionals exert a decisive influence on social and economic policies. None the less, health concerns and tobacco control can often be included as an integral part or explicit purpose of some policies or interventions. This applies, for example, to fiscal policies. Increased tobacco tax revenues may be earmarked for tobacco control or more general public health programs [23, 76, 113]. Given the fact that the health and financial burden of tobacco heavily falls on lower socio-economic groups, allocated funds should benefit these groups in particular. Funds may be dedicated to subsidise the free and population-wide supply of smoking cessation services such as NRT and telephone help lines.

Whereas most social and economic policies are formulated and implemented at the national levels, actions at the European level are important as well. For example, employment policies are determined at both national and international levels. In 2003, the European Commission adopted the European Employment Strategy (EES), consisting of three main targets and 11 priority areas of interest. The guidelines of the EES were translated into national employment action plans for each member state separately. These action plans contained several initiatives that aimed to improve the social and financial situation of employed or unemployed people from low socio-economic background. For example, the national action plan formulated by the Dutch government included measures to improve the labour market prospects of low educated young people, young mothers with children, and the long-term unemployed [114]. Effective implementation of these measures would alleviate the social and financial problems faced by these vulnerable groups, and thus enhance the opportunities for an effective reduction of their tobacco consumption.

## 6. Further research and development

Summary

- Although the empirical evidence is fragmentary, there is sufficient evidence to undertake actions to tackle socio-economic inequalities in smoking
- Equity concerns need to be integrated in both the monitoring of tobacco trends, the search for determinants of smoking, and the development of tobacco control measures
- International co-operation and exchange is essential to the development of a European evidence base for equity-oriented tobacco control policies

Firstly we must issue an “evidence warning”. Even though a large number of studies have been carried out on socio-economic inequalities in smoking, the evidence base for policy making in this area is still highly fragmentary [22, 73]. As a result, most recommendations cannot yet be exclusively based on ‘hard’ scientific evidence derived from studies that meet high scientific standards. However, gaps in the current knowledge do not justify inactivity in this field. Instead, we feel there is sufficient basis for starting to undertake actions to tackle socio-economic inequalities in smoking.

Our recommendations were developed on the basis of scientific evidence of various degrees of strength, using both qualitative and quantitative information. Where the evidence base was weak, our recommendations were formulated at a general level only, and we had to accept that there is a gap between the general strategic vision formulated in this document, and the concrete actions that need to be taken on the ground.

The “evidence warning” above implies that there is a strong need for a more comprehensive program of research and development that aims to support future equity oriented tobacco policies. An equity lens can be applied to at least four fields of research and development.

1. Monitoring of socio-economic inequalities in tobacco consumption. Until recently, surveillance of trends in tobacco consumption was usually carried out for national populations at large, often with only a distinction by age and sex. Future surveillance should also distinguish, on a systematic basis, subgroups of the population defined in socio-economic terms such as education, income or occupation class. This surveillance system should also be attentive to the high or rising levels of tobacco consumption within specific social groups such as lone mothers or ethnic minority groups. When operative, this system may also be used to monitor the effects of new tobacco control measures, such as price

increases, on trends in smoking within different social groups. This extension requires the integration of new socio-economic and demographic categories in measurement and reporting of tobacco trends. Thereby, it may build upon the experiences with monitoring of socioeconomic inequalities in other fields of public health [25].

2. Identification of determinants of tobacco consumption. In the search for determinants of smoking initiation and cessation, too little attention has been given to the situation of lower socio-economic groups. The determinants that are identified in mainstream literature may be more relevant to upper and middle socio-economic classes than to men and women at the bottom of the social hierarchy. A shift in focus towards lower socio-economic groups may lead to a greater attention to factors such as the environmental and structural determinants of smoking continuation among adolescent and adult smokers. Such changes in causal research may finally guide the formulation of more effective strategies to reduce tobacco consumption in European populations at large, and in disadvantaged social groups in particular.

3. Development and implementation of tools for equity oriented tobacco control. Scientific knowledge on the determinants of smoking by lower social groups can be used to develop tobacco control measures for these groups. However, concrete tools to reach these groups can only be

developed in practice, during the development and implementation of specific interventions. These interventions will have to address a number of potential barriers for tobacco control among lower groups, and develop new ways of communication, service delivery, or inter-sector action. Much experience has been accumulated in some types of tobacco control, especially in community based intervention programs. Concerted actions are needed to combine and integrate these experiences, in order to optimally learn from the lessons from different countries.

4. Evaluation of tobacco control measures. While the evidence has grown for the effectiveness of tobacco control measures targeted at whole populations, more efforts should be made to determine their effectiveness among lower socio-economic groups in particular. Evaluations of tobacco control measures therefore need to assess systematically whether they have had larger effects among lower socio-economic groups and, if so, which features of these interventions may have contributed to their success. A good example is the evaluation of smoking cessation services delivered to deprived communities in England and Wales, which illustrates the need for a careful use of new analytical approaches focussed on both process measures and smoking outcomes [65]. Similar evaluations need to be carried out in different policy fields including work place regulations, health promotion activities, and tobacco taxation.

Finally, we would like to stress the importance of international co-operation. As the evidence basis for equity-oriented policies is growing only slowly, international co-operation and exchange is needed to stimulate the accumulation of knowledge. Within Europe, there is a wealth of data, both from observational and intervention studies, that is not yet analysed from an equity perspective. Even though there are important differences between European countries, all countries share the same basic trends as they pass through the smoking epidemic, and all countries work within the international policy frameworks created by the European Commission and other international organisations [23]. Thus, European countries have sufficient in common to learn from each other's experiences. Future international projects should aim to combine the experiences from all countries, including the non-EU countries, to create a European evidence base on tackling inequalities in smoking.

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