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## Contents

Preface v  
Abbreviations vi  

**1 Associations between tobacco and tuberculosis**  
Introduction 1  
Does exposure to tobacco smoke increase the risk of tuberculous infection? 2  
Does exposure to tobacco smoke increase the risk of developing tuberculosis disease? 3  
Does exposure to tobacco smoke affect clinical manifestations of tuberculosis? 4  
Does exposure to tobacco smoke affect bacteriological conversion? 5  
Does exposure to tobacco smoke affect outcome of treatment? 5  
Does exposure to tobacco smoke increase the risk of relapse of tuberculosis? 5  
Is exposure to tobacco smoke associated with tuberculosis mortality? 6  
Is exposure to tobacco smoke associated with delay in the diagnosis and treatment of tuberculosis? 6  
Is exposure to tobacco smoke associated with anti-tuberculosis drug resistance? 6  
Conclusions 6  

**2 Tobacco use and tobacco control**  
What is tobacco? 9  
The smoking career 9  
How can tobacco smoking be controlled? 13  
What is the World Health Organization Framework Convention on Tobacco Control? 14  
Conclusions 16  

**3 Introducing brief advice in tuberculosis services**  
Establishing a base for brief advice in tuberculosis care 17  
Willing and informed staff 18  
Enabling infrastructure 21  
Wider policy support 22  
Conclusion 22  

**4 Tobacco cessation and brief advice**  
Introduction 23  
The content of brief advice 24
Exposure to tobacco smoke has been shown to cause or exacerbate a wide variety of cancers, infections, cardiovascular and respiratory diseases. Smoking is the most important risk factor for chronic obstructive pulmonary disease and lung cancer. Tobacco use and the health consequences resulting from it impose substantial financial and other burdens on health services and on communities. Tobacco control is crucial to reduce the incidence and consequences of all of these diseases, and interventions, such as tobacco cessation, to prevent them or reduce their impact should be a part of the normal routine of all health service providers. Tobacco cessation is only one element of a larger package to address the problem of tobacco use, but it is an essential component to help those individuals who are at risk due to tobacco use.

This Guide specifically addresses the association between tobacco smoke and tuberculosis, and will refer to how tuberculosis patients can be helped to discontinue tobacco use. It in no way implies that tuberculosis is primarily caused by tobacco smoking, or that only tuberculosis patients would benefit from a tobacco cessation intervention. While tuberculosis patients have been selected as the intervention target, the same principles apply to other patients and to tobacco users wherever they may be encountered. It has been written in particular because the association between exposure to tobacco smoke and tuberculosis has only recently captured wide-spread attention, and health care professionals working with tuberculosis patients have often been overlooked when information has been shared about techniques for aiding tobacco cessation. Moreover, tobacco prevention and tuberculosis control are key priorities of the International Union Against Tuberculosis and Lung Disease (The Union), and many Union members are actively involved in providing care for tuberculosis patients, a great number of whom are tobacco users. The information provided in this Guide should be useful to any health service providers, but has been prepared with those working in low-income countries in mind, where information about tobacco use and cessation, and medications for aiding cessation, are frequently not widely accessible.

This technical Union Guide was written to provide assistance to health service providers caring for tuberculosis patients to help their patients to stop using tobacco. It starts with an overview of the relationship between
tobacco smoking and tuberculosis and is followed by a general overview about tobacco use. Four chapters then look at the topic of tobacco cessation interventions: how to create the correct environment, possible methods to follow, more intensive cognitive behaviour strategies for patients and suggested monitoring documents and procedures.

We would like to thank Jacques Prignot, Natasha Herrera and Mira Aghi for their valuable comments on earlier drafts. The chapters in this Guide were initially prepared for an educational series published in the *International Journal of Tuberculosis and Lung Disease* from March to August 2007.

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**Abbreviations**

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<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tr>
<td>BCG</td>
<td>bacille Calmette-Guérin</td>
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<tr>
<td>CNS</td>
<td>central nervous system</td>
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<td>FCTC</td>
<td>Framework Convention on Tobacco Control</td>
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<tr>
<td>FTND</td>
<td>Fagerström Test for Nicotine Dependence</td>
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<td>HONC</td>
<td>Hooked on Nicotine Checklist</td>
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<tr>
<td>MDR-TB</td>
<td>multidrug-resistant tuberculosis (defined as resistance to both isoniazid and rifampicin)</td>
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<td>NRT</td>
<td>nicotine replacement therapy</td>
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<td>NTP</td>
<td>National Tuberculosis Programme</td>
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<tr>
<td>PPD-S</td>
<td>protein purified derivative of <em>Mycobacterium tuberculosis</em></td>
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<tr>
<td>SCI</td>
<td>Smoking Cessation Intervention</td>
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<tr>
<td>TU</td>
<td>tuberculin units</td>
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<td>The Union</td>
<td>International Union Against Tuberculosis and Lung Disease</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Associations between tobacco and tuberculosis

The association between tobacco smoking and tuberculosis has been investigated since 1918. Both passive and active exposure to tobacco smoke have been shown to be associated with tuberculous infection and with the transition from being infected to developing tuberculosis disease. The association between smoking tobacco and developing tuberculosis disease (without separating the risk of transition from exposure to infection and that from infection to disease) has been reported substantially. Smoking affects clinical manifestations of tuberculosis. It has been shown that people who at some time or other in their lives were regular smokers (ever smokers) are more likely to have cough, dyspnoea, chest radiograph appearances of upper zone involvement, cavities and miliary patterns and positive sputum culture, but are less likely to have isolated extra-pulmonary involvement, as compared with those who have never smoked regularly (never smokers). Smoking has been found to be associated with both relapse of tuberculosis and tuberculosis mortality. There is enough evidence to conclude that smoking is causally associated with tuberculosis disease. Patients with tuberculosis need and should receive counselling and assistance in stopping smoking.

Introduction

Studies that investigate the association between smoking and tuberculosis have been published since 1918. Two years after the preliminary publication of a ground-breaking study on the mortality of doctors in relation to their smoking habits, an article examining the sex differentials in the tuberculosis mortality rate in England and Wales noted that, in the period 1871–1880, mortality from pulmonary tuberculosis was similarly high in early adult life for both males and females, whereas, in 1941–1950, the tuberculosis mortality rate of males in middle and late life was much higher than that of females. Using a case-control study design, the author demonstrated that tuberculosis patients were more likely to be heavy smokers than control patients, but the study did not control for possible confounding variables. The same hypothesis regarding the sex differential in tuberculosis
is still being suggested, because the question is still unresolved. Other studies in 1961 and 1963 investigated both smoking and alcohol use, and found that alcohol drinking was the major factor associated with tuberculosis. These two studies greatly influenced many people working in tuberculosis control into thinking that smoking was in fact not associated with tuberculosis, but was a marker for poverty and/or alcohol abuse. Nevertheless, the associations between both active and passive exposure to tobacco smoke and tuberculosis disease, tuberculous infection, tuberculosis mortality and other tuberculosis-related issues have been found by several researchers, especially in the last decade.

**Does exposure to tobacco smoke increase the risk of tuberculous infection?**

Both passive and active exposures to tobacco smoke have been shown to be associated with tuberculous infection. In 1967, sociological factors of tuberculin sensitivity were investigated among 7,787 junior and senior high school students in the United States. Students with large reactions (≥11 mm) to 5-TU of PPD-S were more likely to live in poorer and more crowded conditions, to have had household exposure to tuberculosis and to have come from broken homes. For students whose parents both smoked, the frequency of large reactions was more than twice as high as for those with at least one non-smoking parent. The association between passive exposure to tobacco smoke and tuberculous infection has also been observed in India: among children in household contact with adults with pulmonary tuberculosis, passive exposure to tobacco smoke was significantly associated with tuberculous infection.

The association between smoking in the individual and tuberculin reactivity was shown by tuberculin testing in residential homes for the elderly in Liverpool. Significant reactions to tuberculin were directly related to the amount an individual smoked.

The association between the combination of amount and duration an individual smoked (pack-years) and a significant tuberculin skin reaction was observed in a cross-sectional population survey in a high tuberculosis incidence area in South Africa.

The association between duration of smoking and tuberculin skin test conversion was observed in a small case-control study carried out among adults in prisons in the United States. In the study, the proportion of smokers who regularly drank alcohol was significantly higher than among
non-smokers. However, regular consumption of alcohol was not significantly associated with tuberculin skin test conversion.

A significant association between the number of cigarettes smoked and tuberculous infection was observed in a cross-sectional study among prison inmates in Pakistan.

A cross-sectional study of tuberculin reactivity among Vietnamese migrants aged $>15$ years showed that those having quit for more than 10 years were significantly less likely to have a reaction size of $\geq 10$ mm, implying that stopping smoking reduced susceptibility to infection.

No cohort studies and only one case-control study have investigated the association between exposure to tobacco smoke and tuberculin reactivity. The possibility that exposure to tobacco smoke is associated with increased exposure to the source of infection of tuberculosis cannot be excluded with certainty. Thus, in a recent systematic review, the evidence of the association between exposure to tobacco smoke and tuberculous infection was judged to be limited.

Does exposure to tobacco smoke increase the risk of developing tuberculosis disease?

Developing tuberculosis disease involves two distinct transitions with their corresponding risk factors: the transition from exposure to infection and the transition from infection to disease.

The association between passive exposure to tobacco smoke and the transition from infection to disease has been investigated using a case-control study design. A study in Spain investigated passive smoking and risk of pulmonary tuberculosis in children immediately following infection. The cases were 93 household contacts who developed active tuberculosis, and controls were 95 household contacts who were tuberculin-positive without evidence of active disease. Passive exposure to tobacco smoke in children was a risk factor for the development of active pulmonary tuberculosis immediately following infection. Furthermore, there was a dose-response relationship between the number of cigarettes that family members smoked daily and the risk of developing tuberculosis in children. Another study from Spain investigated active cigarette smoking as a risk factor for tuberculosis in young adults. The cases were patients with active pulmonary tuberculosis and controls were persons with positive tuberculin reactions. In multivariate analysis, active smoking was associated with tuberculosis but passive smoking was not. There was a
dose-response relationship between the number of cigarettes smoked per day and the risk of tuberculosis.

The association between exposure to tobacco smoke and developing tuberculosis disease (without separating the risk of transition from exposure to infection and that from infection to disease) has been reported substantially. One study followed up a cohort of 42,655 elderly persons in Hong Kong and found that current smokers had an excess risk of pulmonary TB but not extra-pulmonary TB. Among the current smokers, the number of cigarettes smoked per day was significantly associated with developing tuberculosis. As the cohort involved elderly persons in the community and the majority of tuberculosis cases in Hong Kong were thought to arise from reactivation from infection in the distant past, the authors reasoned that the relationship between smoking and tuberculosis is likely to be causal. The dose-response relationship of the number of cigarettes smoked per day and tuberculosis was also demonstrated by a nested case-control study in Tamil Nadu, India.

The association between passive exposure to tobacco smoke and tuberculosis was investigated in Thailand among BCG-vaccinated children using a case-control study design. Cases were 130 children with tuberculosis and controls were 130 age- and sex-matched children who attended the orthopaedic department. Passive exposure to tobacco smoke was significantly associated with tuberculosis among children with a history of contact with a tuberculosis patient. The association between passive exposure to tobacco smoke and tuberculosis was also shown by a case-control study in Estonia.

The association between years of smoking and tuberculosis was demonstrated by case-control studies in India, the United States (persons who had smoked for \( \geq 20 \) years were 2.6 times more likely to have tuberculosis than non-smokers) and England (tuberculosis cases were 2.3 times more likely to have smoked for at least 30 years).

The association between active smoking and tuberculosis was also shown by case-control studies in Estonia, Mexico and a three-country study in Africa.

**Does exposure to tobacco smoke affect clinical manifestations of tuberculosis?**

A study in Hong Kong demonstrated that ever smokers were more likely to have cough, dyspnoea, chest radiograph appearances of upper zone involvement, cavities and miliary patterns and positive sputum culture, but
were less likely to have isolated extra-pulmonary involvement. A study in Spain revealed that among TB patients, those who were smokers were more likely to have developed pulmonary TB, had more cavitary lesions and were more likely to be smear-positive.

**Does exposure to tobacco smoke affect bacteriological conversion?**

Smoking has not generally been found to be associated with sputum smear or culture conversion after two months of anti-tuberculosis treatment. However, a clinical trial on immunotherapy with *Mycobacterium vaccae* in the treatment of pulmonary tuberculosis analysed time to sputum conversion using multivariate Cox’s proportional-hazards regression and showed that time to conversion was longer among smokers than among non-smokers.

**Does exposure to tobacco smoke affect outcome of treatment?**

A study investigating risk factors associated with default, failure and death among tuberculosis patients treated in a programme in India revealed that smoking was significantly associated with default as compared with success in univariate analysis but not in multivariate analysis. Among patients without MDR-TB, a significantly higher likelihood of failure, as compared with success, was associated with smoking in univariate analysis. Smoking was not associated with death in two studies, but a third study of a cohort in Hong Kong found that tuberculosis patients who smoked were more likely to die from any cause during follow-up than ex-smokers and never smokers. In general, tobacco smoking is not convincingly related to outcome of tuberculosis treatment.

**Does exposure to tobacco smoke increase the risk of relapse of tuberculosis?**

A study among pulmonary tuberculosis patients treated in a programme in India followed 503 cured tuberculosis patients for 18 months after treatment completion. Relapse was defined as a cured patient who had two sputum smears positive for acid-fast bacilli by direct smear, one smear and one culture positive from separate samples, or two cultures positive. Of the 503 patients, 62 (12%) relapsed during the 18-month period. Logistic regression analysis showed that a higher relapse rate was independently associated with irregular treatment, drug resistance and smoking.
Is exposure to tobacco smoke associated with tuberculosis mortality?

A cohort study published in 1950 measured mortality in relation to smoking among male British doctors and found that the relative risk of dying from pulmonary tuberculosis among smokers was 2.8 as compared with lifetime non-smokers. A more recent case-control study of men who had died in India found that the death rates from medical causes of ever smokers were twice as high as those of never smokers. A third of the excess mortality among smokers involved respiratory disease, mainly tuberculosis. Other studies from China, Hong Kong and South Africa have also found that smokers have a higher risk of tuberculosis mortality. The possibility of misclassification of the cause of death in these studies is nevertheless a serious limitation.

Is exposure to tobacco smoke associated with delay in the diagnosis and treatment of tuberculosis?

Smoking was not associated with delay in the diagnosis and treatment of tuberculosis in Catalunya, Spain or southern Taiwan, but having given up smoking was shown to be associated with a total delay of more than 60 days in Recife, Brazil.

Is exposure to tobacco smoke associated with anti-tuberculosis drug resistance?

A case-control study of risk factors for acquired MDR-TB revealed that both smoking and “alcoholism plus smoking” were associated with acquired MDR-TB in univariate analysis. “Alcoholism plus smoking” was associated with acquired MDR-TB in multivariate analysis. Smoking alone was not included in multivariate analysis.

A cross-sectional study from Russia to investigate both prevalence and risk factors of drug resistance found that smoking was associated with isoniazid resistance, but the authors concluded that more evidence is needed to explain this association.

Conclusions

There is enough evidence to conclude that smoking is causally associated with active tuberculosis. Patients with tuberculosis need and should receive counselling and assistance in stopping tobacco use. Health profes-
 tionals working in tuberculosis care can set up cessation counselling without elaborate or costly training; they can do this systematically within tuberculosis treatment services, and it should become as routinely performed as any of the other standard practices in patient management. The following chapters present some of the steps that can be taken to help people to stop smoking in the context of tuberculosis treatment.
Tobacco use and tobacco control

Smoking begins when tobacco is readily available and others smoke. It easily becomes something more than experimentation, as the symptoms of nicotine dependence can develop rapidly. The social and environmental encouragements to smoke, the personal perceptions and the physiological effects of nicotine create strong links that are difficult to break. Programmes should be put in place to help people to stop smoking, but they cannot reach their potential for success if the wider social and environmental factors are not also changed through strengthened anti-tobacco social values and tobacco control legislation, as exemplified in the WHO Framework Convention on Tobacco Control.

What is tobacco?

Tobacco products are made of the dried leaves of tobacco plants which people can chew, sniff, dip or smoke in a variety of forms. The origin of the tobacco plant, *Nicotiana*, probably lies in South America, from where it was dispersed to all other continents. Nicotine is the most important nitrogenous compound in tobacco, producing physiological changes in the human body. Nicotine is highly addictive, and people use tobacco regularly principally to obtain nicotine. People who discontinue using tobacco usually have withdrawal symptoms that produce strong urges to return to tobacco use.

Although most types of tobacco use cause addiction and are considered harmful, the most prevalent and potentially most harmful use of tobacco comes from smoking.

The smoking career

The pool of people in a community who smoke regularly is determined by both the number of non-smokers who become smokers and the number of
smokers who stop smoking. The prevalence of smoking is decreasing in some high-income countries but is increasing in many low-income countries, partly due to intensive marketing by multinational tobacco companies.

Starting smoking

The transition from being a non-smoker to being a regular smoker does not come abruptly. Children and young adults are usually exposed to tobacco either at home or in the community for a long time before they experiment with their first cigarette. Experimentation with tobacco often begins in adolescence, a stage of particular vulnerability to addiction. The pro-smoking environment is very influential. In addition to the wider social environment and the marketing strategies of the tobacco industry, friends and family influence uptake. Adolescents who perceive that their friends approve of smoking are more likely to become regular smokers, whereas perceiving that friends would not be supportive of smoking has been shown to be associated with a reduced likelihood of intending to smoke. Parental smoking behaviour or the absence of parental advice against smoking are associated with smoking in adolescence: adolescents who perceive strong parental disapproval of their smoking are less likely to smoke. Parental smoking cessation has been shown to be associated with a reduced risk of adolescent smoking.

Becoming dependent

It was initially thought that the onset of smoking includes a period of experimentation and irregular use prior to dependency and regular use. However, symptoms of nicotine dependence can develop quite quickly and can precede regular smoking. A substantial proportion of adolescents report at least one symptom of nicotine dependence at least once per month within 4 weeks of starting smoking. These adolescents find it hard to concentrate or feel more irritable if they are not able to smoke. They keep smoking because it is hard to stop, and fail if they try to stop. The development of one or more dependency symptoms strongly predicts continued smoking; this may support the theory that the loss of autonomy over tobacco use begins with the first symptom of dependence.

Nicotine is the main component in tobacco that causes tobacco dependence. Nicotine produces effects regarded as positive by smokers, such as a sense of relaxation or relief of anxiety, reduced hunger, decreased irri-
tability and increased alertness. Abstinence usually results in a period of discomfort, with recognised symptoms including irritability, anxiety, depressed mood, anger, restlessness, insomnia and difficulties in concentrating. These are withdrawal symptoms. Both the perceived positive effects of nicotine and the negative withdrawal symptoms create a huge barrier to quitting and result in tobacco dependence for the great majority of established smokers (see Table 2.1).

The nicotine in cigarette smoke is acidic and is mainly absorbed by inhaling it into the lungs. It takes less than 10 seconds for nicotine to reach the brain to produce its effects. The nicotine in both cigar and pipe tobacco smoke is alkaline and is mainly absorbed through the mucosa of the mouth, and thus takes slightly longer to reach the brain. The rapidity of a nicotine effect intensively reinforces tobacco use and leads to difficulty in stopping smoking.

However, nicotine is not the only factor leading to tobacco dependence. The acts of lighting, holding, inhaling and puffing on cigarettes, the taste and aroma of cigarettes, the sensation and stimulation in the mouth, throat and tracheo-bronchial tree probably all play important reinforcing roles in smoking. These are called sensory and behavioural cues. Tobacco behaviours are in many ways ritualistic and, as they develop over

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<th>Table 2.1</th>
<th>DSM-IV-TR diagnostic criteria for nicotine withdrawal</th>
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<tr>
<td><strong>A</strong></td>
<td>Daily use of nicotine for at least several weeks</td>
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<tr>
<td><strong>B</strong></td>
<td>Abrupt cessation of nicotine use, or reduction in the amount of nicotine used, followed within 24 hours by four (or more) of the following:</td>
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<tr>
<td></td>
<td>1 dysphoric or depressed mood</td>
</tr>
<tr>
<td></td>
<td>2 insomnia</td>
</tr>
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<td></td>
<td>3 irritability, frustration or anger</td>
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<tr>
<td></td>
<td>4 anxiety</td>
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<tr>
<td></td>
<td>5 difficulty concentrating</td>
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<td></td>
<td>6 restlessness</td>
</tr>
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<td></td>
<td>7 decreased heart rate</td>
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<td></td>
<td>8 increased appetite or weight gain</td>
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<tr>
<td><strong>C</strong></td>
<td>The symptoms in criterion B cause clinically significant distress or impairment in social, occupational or other important areas of functioning.</td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.</td>
</tr>
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time, become strongly associated with smokers’ habits in the routines of daily life. Moreover, these effects become associated with life events or emotions to create conditioned responses. Smokers who are attempting to quit feel the loss of these behaviours in their daily routine and may feel ill-equipped to deal with their life events or emotions. Smoking is also a social behaviour. Smokers often start smoking in the company of others, and share cigarettes with each other. Smokers who are attempting to quit are vulnerable to the influence of other smokers to smoke again. Thus, tobacco dependence involves not only the nicotine effect but also a mixture of psychological, behavioural, social and cultural factors.

**Quitting smoking**

Many smokers think of quitting from time to time. The proportion of people who want to quit is highly related to the extent of tobacco control activity in a country. For example, in the late 1990s, 70% of smokers in the US reported that they would like to quit smoking compared to 35% in Germany. A substantial proportion of smokers stop smoking temporarily, especially when they are sick. Most of them smoke again when they recover from illness. Many smokers may attempt to quit, but only a small proportion of smokers stop smoking successfully on their own. The transition from being an established smoker to initiating cessation can be described as corresponding to different degrees of readiness on a continuum from no desire to change to an intention of imminent cessation. Among those who stop, there is great variety in the difficulties encountered and the use of coping techniques to make non-smoking an established new behaviour. An ex-smoker who is successful in stopping smoking may lapse and take a puff of a cigarette. Most of those who lapse become regular smokers again. This is termed “relapse”.

Ex-smokers who start smoking again may make another attempt to quit. It is common that smokers try more than once to quit before they succeed.

**What happens when a person stops smoking?**

When a person stops smoking, the ex-smoker’s brain and body send signals that they want more nicotine. Withdrawal symptoms are not the same for everyone: some people hardly notice these symptoms at all, and others suffer a great deal. At the same time, contradictory thoughts occur about the benefits of smoking. Most people who quit must cope with a
strong desire to smoke again, known as craving. Craving can be very strong, and is difficult to resist if others in the environment are smoking, if the person is drinking alcohol or if the person is very unhappy. Some people feel a craving to smoke all the time, which is a source of suffering. Most physical withdrawal symptoms are gone after 7–30 days, but craving, particularly due to conditioning, can continue for much longer.

Abstinence from tobacco gives the body a chance to clean up: carbon monoxide is eliminated from the blood, the heart rate goes down and the organs get more oxygen. The lungs start to eliminate the build-up of tars, and any damage to organs, except current cancer, stops progressing.

What is passive smoking?

When a person smokes tobacco there are different sorts of tobacco smoke: mainstream smoke is what the smoker draws into the lungs, and sidestream smoke blows into the environment from the burning tobacco. Exhaled mainstream smoke and sidestream smoke are what constitute secondhand smoke. When people breathe in secondhand smoke, this is called passive smoking. Sidestream smoke contains the same chemicals as mainstream smoke, but in different proportions. Some of the disease-causing chemicals are more concentrated in sidestream smoke, and can cause damage to anyone who breathes it in—babies, children or non-smokers, the smoker closest to the source of environmental tobacco smoke (ETS) and other smokers as well. Passive tobacco smoke exposure occurs mainly in enclosed spaces.

The number of people who are passively exposed to tobacco smoke is determined both by the number of people who smoke and by the laws and customs in the community concerning when and where smoking is possible. Amounts of exposure vary according to the length of time indoors and the level of ventilation.

How can tobacco smoking be controlled?

The ultimate goal of tobacco control is to reduce tobacco-caused morbidity and mortality. To achieve this goal, tobacco control strategies aim at reducing the number of non-smokers who initiate smoking and increasing the number of smokers who quit smoking. Subsequent chapters will look at approaches within health services to aid smokers to stop smoking. However, the social and economic environments are strong influences on the success of such endeavours.
Tobacco is highly addictive, and stopping smoking is difficult. Furthermore, tobacco is a big and very profitable business. Many people in the world make their living from tobacco farming. Government revenues can come from manufacturing, exporting and selling tobacco. Jobs in manufacturing and sales are important to those who hold them; governments take in tax revenues from tobacco sales. Moreover, tobacco companies promote the growth of tobacco use. All of these make tobacco control complicated and difficult.

Consequently, tobacco control has to work on a number of fronts and develop allies in all aspects of society. For this reason, tobacco control consists not only of legislation and regulations to protect the population, but also activities 1) to reduce the social value and acceptability of smoking, 2) to counteract the tactics of the tobacco industry and 3) to provide specific programmes to help the most vulnerable.

Tobacco control can no longer be undertaken only in a community or a national context. The transnational tobacco companies are working to spread the use of tobacco to new markets and to keep people buying tobacco wherever they are in the world. The tobacco industry tries to use its influence to weaken tobacco legislation and other strategies for tobacco control. The development of an international instrument for tobacco control has the potential to counteract the tobacco industry by binding nations together for tobacco control. A treaty called The Framework Convention on Tobacco Control is now in operation, and has been ratified by 152* nations. The success of the treaty will depend on the strength of governments and civil society to enact and enforce the measures contained in its articles and to counteract the tactics of the tobacco industry and its allies to make trade issues take precedence over public health in government decision-making.

What is the World Health Organization Framework Convention on Tobacco Control?

The World Health Organization Framework Convention on Tobacco Control (FCTC) is the first treaty negotiated under the auspices of the World Health Organization. The FCTC underscores the importance of demand reduction strategies, but does not neglect supply issues.

* as of 01 February 2008.
The core demand reduction provisions in the WHO FCTC are:

1. Price and tax measures to reduce the demand for tobacco
2. Non-price measures to reduce the demand for tobacco:
   i. Protection from exposure to tobacco smoke
   ii. Regulation of the contents of tobacco products
   iii. Regulation of tobacco product disclosures
   iv. Packaging and labelling of tobacco products
   v. Education, communication, training and public awareness
   vi. Bans on tobacco advertising, promotion and sponsorship, and
   vii. Measures concerning tobacco dependence and cessation.

The core supply reduction provisions in the WHO FCTC are:

1. Controlling illicit trade in tobacco products
2. Eliminating sales to and by minors, and
3. Provision of support for economically viable alternative activities.

How are the WHO FCTC and other wider issues of tobacco control related to tobacco cessation for tuberculosis patients?

Social change can occur when one group in society influences other groups. This is the way tobacco use begins in populations, and it appears to be the way population trends in tobacco cessation and diminishing social approval of tobacco use occurs. The programmes developed to help people to stop smoking have been able to aid many people, but for many there is no long-term benefit because the social environment and biochemical addiction lead them back to smoking. In some countries, the environment pushes people back into smoking despite successful management of craving and physiological withdrawal. In countries where advertising of tobacco products is banned, where smoking in public places and worksites is forbidden by law and by the public and where taxes reduce the initial appeal of cigarettes among young people, treatments for smokers and other tobacco users produce more successful results than in countries where these tobacco control measures do not exist. The WHO FCTC opens the door for countries to work together to develop similar social environments. Clinicians are therefore more likely to achieve treatment success when the context encourages cessation, and they are greatly hindered when the context is supportive of tobacco use. If the ratifying countries seriously adopt the spirit and the provisions of the WHO FCTC,
the social environment will become more conducive to success and will motivate greater numbers of tobacco users to stop. The WHO FCTC works to limit the power and tactics of the tobacco industry, which is the main actor in the deadly spread and continuing importance of tobacco use. Anyone interested in reducing the health effects of tobacco must be aware of the wider social context and the need to lobby for a successful WHO FCTC.

Conclusions

Tobacco use is a complex phenomenon that is created by a social and economic environment and is maintained by individuals’ bio-behavioural responses to a psychoactive substance. Both smoking and passive exposure to tobacco smoke have been found to be associated with the development of tuberculosis. Strategies to limit and reduce smoking must include social and economic measures for populations as well as programmes to aid individuals to deal with bio-behavioural dependency. The next chapter will look at the fundamental steps necessary to create the appropriate environment both within and beyond the treatment setting for tuberculosis patients, and the following chapters will provide descriptions of cessation programmes that can be integrated into tuberculosis treatment.
Introducing brief advice in tuberculosis services

There are individual and contextual barriers to the adoption of new routines in health care. Health professionals providing tuberculosis care are unlikely to adopt smoking cessation interventions unless they understand the importance of such interventions, feel that doing them will produce results and are convinced that the interventions should be used. Health professionals need to know what they are expected to do and to feel they have the skills or tools necessary. But beyond informed, willing and ready health care providers, the health care service needs to provide an encouraging infrastructure. Tobacco cessation has to be included in standard practice guidelines on tuberculosis case management, and information about smoking should be included in the standard monitoring process, with appropriate forms. Programme managers and technical advisors need to ask about, encourage and support the inclusion of tobacco cessation interventions. It is advisable for one staff member to coordinate tobacco cessation activities to ensure that the necessary materials are available and to provide assistance and feedback to other staff.

Establishing a basis for brief advice in tuberculosis care

Exposure to active or passive tobacco smoke is associated with tuberculosis. Cautioning against continued smoking during tuberculosis treatment is an important part of health education for new patients. Nevertheless, for many health workers caring for tuberculosis patients, including tobacco cessation in tuberculosis treatment is a peripheral activity, and little attention is given to advising patients to avoid smoking in the presence of others. Faced with a high volume of work and few resources, health workers may be inclined not to incorporate tobacco advice into their care of tuberculosis patients, and may not see it as their responsibility. If there is also a sense that advice does not help patients, or that one is personally unequipped to provide such advice, this activity will not be adopted.
Indeed, for any new procedure, it does not matter how strong the evidence is of its usefulness, health professionals will not adopt it unless it is reframed in such a way as to make participation essential:

- They understand and are convinced that they should do it instead of someone else
- They are fully informed as to what exactly they should do
- They feel confident that they have the skills to do it.

But training is not enough. The environment and the people responsible for managing health services need to facilitate the adoption of the new procedure, and encourage all health professionals to continue to use it over time. Patient acceptance, external technical advisors, the health system and health ministry all influence whether or not trained and willing staff adopt brief tobacco cessation advice in their tuberculosis case management.

Thus, the preparation for adding brief advice to standard case management needs willing, trained staff, an enabling infrastructure and wider policy support.

**Willing and informed staff**

In rich countries, systematic brief tobacco cessation interventions show significant long-term population results, but small observable short-term results. In low-income countries, health service personnel generally have great credibility with sick patients. Tuberculosis patients who are starting treatment are much more likely to be emotionally affected and attentive to information about actions they can take to improve their health. This is considered an important teachable moment for change. As the patient has to assume a new role (as a sick person, as a patient), other aspects of his or her behaviour may be easier to change as well, including tobacco use.

**Focusing the patient’s thinking**

Using a brief intervention provides the means to help focus the patient’s own thinking at a critical moment. To be willing and ready to use cessation intervention in tuberculosis case management, health professionals need knowledge about the importance of stopping tobacco use or avoiding exposing others to tobacco smoke, understanding how and why people stop using tobacco, the correct procedure for proceeding with brief
advice intervention protocols and filling out the monitoring forms that are an integral part of that procedure. This information will be provided in subsequent chapters.

Tobacco use is a complex behaviour. Nicotine affects the central nervous system to produce changes in the body. As the strength of the effects wears off, a strong desire, or craving, to recreate those effects leads to further use. Because of the repetitive nature of tobacco use, strong ties are created between each episode of use with the circumstances surrounding it, and those circumstances can create similar craving. Tobacco use is thus identified as an addiction.

However, these effects are experienced by the tobacco user in various degrees at various times. They are interpreted in the light of the individual, social, environmental and legal context. They are affected by the way the individual understands tobacco use and interprets its effects. It is for this reason that addiction is not a complete loss of individual choice, but rather a condition whose benefits and harms are weighed, giving preference to the immediate effects over the long-term harm of tobacco use. Abandoning tobacco use is not impossible for most people, but it requires personal effort to overcome strong resistance to change.

Three necessary steps to give up tobacco use

_The first step_ in stopping all tobacco use is to be motivated to do so: individuals must be willing to stop using tobacco. People are generally influenced in this decision by one or more of the following factors:

- Information they pay attention to about why or why not to stop use
- Belief that they themselves can suffer health consequences from tobacco use
- Perceptions of what people around them are doing concerning cessation
- Laws and policies that discourage people from using tobacco
- Changing the way they define tobacco use and tobacco users
- Their view of themselves regarding what they should and can do
- The benefit and enjoyment they experience associated with tobacco use
- The sense of need and potential benefits of stopping smoking
- Their understanding of the ease or difficulty of making the change.
The second step in stopping tobacco use is to take action: individuals have to stop using tobacco. This may be stimulated by a number of internal or external factors that are interpreted by the tobacco user to indicate the need to change from user to non-user. One such factor is the presence of chest symptoms.

The third step in stopping tobacco use is to maintain the change and not slip back into tobacco use. Addiction is sometimes thought of as a chronic relapsing condition because of the difficulty of maintaining the new behaviour. However, with tobacco use, there is often as much difficulty in taking the first step—being willing to abandon tobacco—as in the other steps. The individual’s ability to maintain abstinence is influenced by the following:

- The physical or emotional discomfort due to a lack of nicotine (intensity of withdrawal) and the strong desire to relieve distress or discomfort by re-using tobacco (craving)
- The way in which changes occur in the individual’s awareness and memories of the willingness to abandon tobacco
- The importance the individual places on undesirable side effects of abstinence from tobacco (such as weight gain) beyond the physical symptoms of withdrawal. The loss of an activity associated with many of life’s circumstances also creates a sense of mourning
- The degree to which others encourage or discourage someone in staying abstinent (social support)
- The general family environment: how much others perceive tobacco use as being harmful or not
- The frequency of environmental encouragement to use tobacco, such as tobacco advertising and frequent use of tobacco in public places
- Whether the individual views tobacco use as positive or negative
- What the individual thinks about people who use tobacco
- The perceived likelihood that treatment will succeed.

The role of health professionals

Treatments can thus be seen to play a role in all of the steps necessary for successful abandoning of tobacco use. Treatments clearly work better if they occur in a context where there are strong, enforced tobacco control policies and widespread social values that support non-use. For this rea-
son, policy and social support for tobacco control must be considered part of the objectives of tuberculosis services.

The role of the health worker dealing with tuberculosis patients thus encompasses:

1. the context, including policy on tobacco control and the value society places on giving up tobacco use, and
2. the services offered for tobacco cessation as part of the care of the tuberculosis patient.

A study of repeated brief advice in Sudan has shown that these steps do not diminish the quality of tuberculosis case management—they enhance the relationship between the medical assistants and the patients and, in this study, were associated with lower default rates.

Patients will not necessarily request information concerning their tobacco use, and health workers prefer to respond to patients’ questions rather than bring this up themselves. This is a major impediment to initiating brief intervention. Perhaps related to common sense associations between tobacco use and tuberculosis, tuberculosis patients are unlikely to be surprised if the issue is discussed.

**Enabling infrastructure**

To introduce and support tobacco cessation intervention within tuberculosis case management, it is useful to name a “stop-smoking coordinator”. This person (one among the health workers providing tuberculosis services) understands and can explain the correct completion of forms and records.

If materials (brochures, posters, etc.) are available on tobacco control, tobacco cessation, exposure to others’ tobacco smoke and smoke-free public places, these should be obtained. The stop-smoking coordinator should provide peer support and feedback to other health staff and liaise with the NTP. This person could also provide more intensive cessation assistance, depending on resources and need.

A health worker who is willing to provide the tobacco cessation intervention as part of tuberculosis case management and who knows the correct procedure for monitoring and completing the accompanying forms needs the support of the NTP and technical advisors to proceed. It is important that external technical advisors enquire about and support the intervention as part of case management. If the intervention is not given priority, nothing will be done, even if time is set aside to do it.
Wider policy support

The Framework Convention on Tobacco Control, the international tobacco control policy treaty that was created in response to the enormous cost to society of the health consequences of tobacco use around the world, recognises that for people to be able to stop using tobacco, a large number of measures need to be taken. Those that have shown the greatest impact on cessation rates are increased taxation, smoke-free policy, widespread health information, bans on tobacco advertising, promotion and sponsorship and adequate treatment.

People stop smoking for many reasons, including legislative or social barriers to use, increased cost and/or reduced access and support from friends and relatives. Tobacco control policy and social values for not smoking are important sources of support for individuals who are stopping smoking. One of the most important groups in obtaining such support is health workers. Health workers and their professional organisations are well-placed to take on advocacy and information leadership to influence the public and law-makers. They can also call attention to the need to train future health workers in tobacco control and to give them the skills for cessation intervention. Health service providers may nevertheless need to learn the procedures of brief intervention on the job while waiting for a new generation of tobacco control trained individuals to arrive.

Conclusion

Great strides have been made in creating a systematic approach to tuberculosis care. The main strategies are well known to all involved: health service personnel, technical advisors and programme managers. Other activities, such as advice about nutrition, hygiene and unhealthy lifestyle behaviours, are considered useful but are often not included in the busy schedule demands of low-income countries. It is therefore quite important that specific activities be adopted by all personnel to support and encourage the inclusion of information on tobacco use in patient records, and by repeated tobacco cessation advice over the course of treatment. This includes the training and information provided to health staff to win their approval and agreement, the special status given to a “stop-smoking coordinator” who can ensure that materials and information are available for everyone, and the important feedback and encouragement from programme managers and technical advisors.
Tobacco cessation and brief advice

Patients who are enrolled in tuberculosis treatment are often ill and are seeking ways to get better. They are more likely at that time to adopt risk-reducing health behaviours. Interventions that are neither complicated nor time-consuming are available to health service personnel to help patients undertake tobacco cessation. Brief advice to patients, repeated at various times throughout their tuberculosis care, can increase cessation rates. All tobacco use needs to be identified, and reasons for quitting spelled out. Patients are thus given a framework for considering smoking cessation. If patients then choose not to stop at the time they are counselled they can be asked to reconsider at a later visit, and can also be cautioned to avoid smoking in the presence of others. Smokers who want to stop can discuss strategies for avoiding craving and withdrawal, and pharmacological agents can be recommended if they are available. Because the brief advice is repeated, patients are reinforced either for having stopped or for their progress towards stopping.

Introduction

This chapter will explore the technique that can be used in any country, rich or poor—brief advice. Brief advice used whenever a patient is encountered in a health service has the potential to considerably reduce the number of tobacco users, potentially on a scale similar to reductions produced by tax increases and smoke-free public policy.

The simple technique of offering advice to each patient seen in a health service setting can influence unhealthy behaviour. Repeated advice produces even stronger results. One of the principles underlying behaviour change is that people’s readiness to actively try to change varies, and that illness is one of the “teachable moments”, so that they will heed advice more readily. Many people in society already associate tuberculosis with smoking. Beyond convincing the tobacco user of the benefits of stopping use, brief advice offered at intervals during tuberculosis treatment can influence the decision to stick with it and continue abstaining once a patient feels better as a result of treatment.
Modifying addictive behaviour requires changes in people's perceptions before they change their overt behaviour. A brief intervention that leads to cessation may work by encouraging movement towards change. If the tobacco user is already seriously considering stopping, brief advice can be the final push needed to make the attempt. Repeated brief cessation advice is one of the most important and cost-effective preventive services that can be provided in medical practice. The success of routine brief intervention has been demonstrated in many settings, and repeated brief cessation advice has been shown to be a feasible and inexpensive addition to routine tuberculosis case management in a low-income country.

The content of brief advice

When a smoker decides that the time has come to stop smoking, this is called readiness. Smokers can stay in this stage indefinitely, unless they have both the motivation and the confidence to take action. Health service personnel can help smokers move to action by routinely talking about stopping smoking each time they attend for health care.

The way society supports or does not support smoking and the way smokers think about smoking and not smoking have an important impact on how difficult it is to remain abstinent. In many countries, nicotine substitution devices can be purchased to use as an aid to stopping smoking. With these devices, smokers stop using tobacco but continue to provide nicotine to the nerve receptors that are stimulated, so that they feel less ill and deprived. Nicotine substitution devices are helpful, and increase the rates of stopping, but they do not help everyone, because the subjective need to smoke can come from how one thinks and from conditioning. Many of the countries that have a high burden of tuberculosis may not provide access to nicotine replacement. If a smoker wants to stop, it is possible to do so without nicotine substitution, even though there are physical or mental urges to smoke. Cognitive-behavioural techniques and how a health worker can use them with patients are described in Chapter 5.

The Union approach for low-income countries without access to medications

The Union proposes a simple format for brief advice, shown in Figure 4.1. It utilises a technique that facilitates full-scale adoption of brief tobacco
cessation interventions: it is extremely brief for the majority of patients, and may provide the health worker with a greater sense of achievement than just advising cessation. This approach has been tested in Finland, Sudan and Morocco. Asking about motivation and confidence gives the health worker a handle on the type of information and discussion most suited to each patient and a measure of progress over time, which is lacking if behavioural change alone is observed.

All smokers are identified and asked to think about stopping. As some patients associate tobacco with tuberculosis and stop using it (temporarily)
before coming for treatment, they should also be identified and encouraged to maintain cessation even when they feel better. The best way to use this intervention is by asking the questions in a respectful tone, showing sensitivity to the patient’s willingness to lead the discussion, understanding the patient as an individual and being supportive. The purpose of the open-ended questions is to reinforce the decision-making by the patient. There is not a unique “right way” of intervening. On the patient treatment card, “yes” or “no” is recorded to indicate whether quitting is discussed. If strategies for coping are identified and planned (by the patient), there is a record for the intervention provider so that he or she can refer to it in the following discussion. If the person is not interested in stopping at the present time, he or she should be informed of the danger caused to others by smoking in their presence—exposure to their smoke can increase people’s risk of tuberculosis infection as well as cause other illnesses. The intervention procedure is envisaged as an intervention followed by three follow-ups for reinforcing the intervention and taking repeated measures over the course of the tuberculosis case management period.

The 5As and 5Rs approach

The national guidelines for tobacco cessation treatments in the United States are the source of suggested procedures for providing brief advice in high-income countries. These consist of the following five steps, called the 5As:

Ask. Ask the patient if he or she uses tobacco. Sometimes people stop temporarily when they have chest symptoms. These people should also be identified for reinforcement and encouragement to maintain cessation.

Advise. Counsel the patient about the immediate and future gains in abandoning tobacco use. In many low-income countries, tobacco use may not be considered very harmful, so the intervention may be the only source of information concerning health risks of tobacco use.

Assess. Determine the readiness of the patient to continue using tobacco (or to continue abstaining). If the patient is not yet willing to stop, go to the 5Rs (see below).

Assist. If the patient is willing to try to stop, the health professional can provide assistance in the form of working with the patient to
find methods to avoid difficult situations and to cope with craving. If cessation medication is available and desired by the patient, the health professional should indicate the correct use and dosage. Medications are effective if the dosage is correct and the patient adheres to it. Nicotine replacement therapy for cessation is described below. Other medicinal aids that are becoming available require training in assessing compatibility with other drugs and dosage, so they are not described in great detail in this article.

Arrange. Follow-up should be arranged. If the patient feels that more intensive, specialist therapy is needed, the health professional can help the patient to find the most appropriate cessation programme available.

If the patient is unwilling to quit, apply the 5Rs to enhance the patient's motivation to quit:

Relevance. Encourage the patient to indicate why quitting is relevant to his or her disease.
Risks. Ask the patient to identify potential negative consequences of tobacco use and emphasise that smoking low-tar/low-nicotine cigarettes or use of other forms of tobacco will not eliminate these risks.
Rewards. Ask the patient to identify potential benefits of stopping tobacco use.
Roadblocks. Ask the patient to identify barriers or impediments to quitting and note elements that could address barriers (withdrawal symptoms, fear of failure, weight gain, lack of support, depression, enjoyment of tobacco).
Repetition. The motivational intervention should be repeated every time an unmotivated patient visits the clinic setting. Inform tobacco users who failed in previous quit attempts that most people make repeated quit attempts before they are successful.

Medicinal support for cessation: nicotine replacement therapy

Nicotine replacement therapies work by reducing the severity of the physical symptoms of withdrawal so that all energies can be focused on breaking environmental, emotional and contextual ties with tobacco. However, success rates continue to be low because breaking those ties is difficult.
How do we measure tobacco dependence?

The Fagerström Test for Nicotine Dependence (FTND) has been widely used in evaluating tobacco dependence, but as it has marginal reliability and low ability to predict withdrawal, its main value is in determining dosage for nicotine replacement medications. The FTND consists of six items (Table 4.1). Of the six items, time to the first cigarette of the day and number of cigarettes per day are the two that appear to most accurately evaluate dependence. Because of the poor predictive value for quitting of

<table>
<thead>
<tr>
<th>Table 4.1 Fagerström Test for Nicotine Dependence</th>
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<tbody>
<tr>
<td><strong>Score</strong>*</td>
</tr>
<tr>
<td><strong>How soon after you wake up do you smoke your first cigarette?</strong></td>
</tr>
<tr>
<td>⩽5 min</td>
</tr>
<tr>
<td>6–30 min</td>
</tr>
<tr>
<td>31–60 min</td>
</tr>
<tr>
<td>⩾61 min</td>
</tr>
<tr>
<td><strong>Do you find it difficult to refrain from smoking in places where it is forbidden, e.g., in church, at the library, in a cinema?</strong></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td><strong>Which cigarette would you most hate to give up?</strong></td>
</tr>
<tr>
<td>The first in the morning</td>
</tr>
<tr>
<td>Any other</td>
</tr>
<tr>
<td><strong>How many cigarettes per day do you smoke?</strong></td>
</tr>
<tr>
<td>⩽10</td>
</tr>
<tr>
<td>11–20</td>
</tr>
<tr>
<td>21–30</td>
</tr>
<tr>
<td>⩾31</td>
</tr>
<tr>
<td><strong>Do you smoke more frequently during the first hours after waking than during the rest of the day?</strong></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td><strong>Do you smoke if you are so ill that you are in bed most of the day?</strong></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

* Total scores of 7 or more indicate high dependence, more severe withdrawal and difficulty stopping. Patients with high nicotine dependence may benefit from maximum dosages of nicotine replacement therapy.
Other tests have been suggested. The Hooked on Nicotine Checklist (HONC), originally developed for measuring adolescent dependence, may prove to have predictive value for adults as well (Table 4.2).

Nicotine patches lower background craving by providing a steady-state level of nicotine (about half of the level supplied by smoking). However, this steady-state level does not protect smokers from acute peaks in craving; the other forms of nicotine delivery can provide that extra nicotine needed in special circumstances. A combination of delivery types tends to produce better results, probably because the individual can increase delivery at times of high craving. Nicotine gum, lozenges, inhalers or spray have greater dose control, but as they require more effort, adherence to prescribed dosage is more difficult to achieve. Most people can use these products, but patients who have unstable cardiac disease, pregnant women and adolescents should be under medical supervision if they use them.

Other cessation medications

Other types of medications that are on the market in some countries, such as bupropion, generally have anti-depressant features, but their mode of action may be independent of their anti-depressant effect. The most
promising new drugs work on the adrenergic and dopaminergic systems, or inhibit in some way the nicotinic acetylcholine receptor function (e.g., varenicline). Nicotine vaccines coming on to the market may help smokers who are quitting by removing any reinforcement value of the nicotine, by blocking its access to receptors. These products cannot be used by people taking mood alteration medications, and all use should be under medical surveillance.

Conclusion

Tobacco creates dependence (addiction), which means that cessation can only occur at moments when the individual finds both a reason and the desire to stop smoking. As attitudes and desires can be changeable, stopping needs to be reinforced regularly. Health workers should provide cessation advice systematically to all smoking patients encountered in health services. It is the constancy and regularity of brief advice that gives it effectiveness.
5
Helping patients to stop smoking

Cognitive-behavioural strategies can be used for smokers who request assistance in stopping smoking. These strategies are based on social learning theory, which defines smoking cessation as a process of breaking all of the emotional and situational ties that have been established with the act of smoking. To do this, the quitting smoker needs to understand the addiction process as well as the conditioned responses to it in dealing with withdrawal symptoms and craving. The health worker can help the quitting smoker by providing techniques to understand how smoking reinforces itself, to enhance and maintain the motivation to remain abstinent, to encourage using a social support system and to plan the coping techniques that might be used. Both acts (behaviours) and thoughts (cognitions) can be powerful tools in persevering to cope with craving and to manage undesirable side effects of cessation. These include identifying the antecedents (cues to use tobacco) and consequences of using tobacco to identify critical emotions and situations where coping is most necessary, finding activities to replace the act of lighting a cigarette, mentally preparing for craving and keeping at bay unhelpful thoughts (such as “I’ll just take one last puff”). Mental preparation is also necessary to understand and to avoid or limit the side effects of cessation.

Introduction

Brief advice takes little time, can reach a lot of patients who smoke, and may be the only way health service providers can aid cessation, as described in the previous chapters. If the possibility exists to establish more intensive support to stop smoking, best evidence points to medications and cognitive-behavioural treatments. There is a great deal of information available concerning the use of medications, but much less about cognitive-behavioural treatment. This chapter will describe some cognitive-behavioural strategies that can be offered by health workers to help patients overcome addiction. The strategies are presented as a package, but selected strategies can be offered.
Changing behaviour

To begin, let us briefly examine how a person goes about changing behaviour, as hypothesised in social learning theory, the basis of cognitive-behavioural strategies. People learn various behaviours principally by imitating what other people do or teach them, by associating a certain behaviour with a desired consequence, or by associating the behaviour with a signal or cue to act in that way. In order to change a well-established behaviour, particularly one such as tobacco use, which also has physical dependence-producing characteristics, the person must unlearn what was previously learned. Changed behaviour is considered to be unstable, which means that it is very easy to slip back into old patterns of behaviour. Thus, anyone wishing to change an old behaviour must learn a number of skills to help maintain a new behaviour.

Signs of conditioning

As a learned behaviour, tobacco use is regularly reinforced by numerous internal or external cues to smoke (situations, moods, desired consequences). Each time a person practises the behaviour (using tobacco) it leads to a ritual of automatic and repeated actions. This ritual quickly becomes associated with particular circumstances, such as having a cup of coffee, answering the telephone, working or getting out of bed. For some, smoking is associated with pleasant moments in life. For others, smoking is used to help deal with personal or professional problems. For still others, smoking becomes automatic, cigarettes are smoked mechanically, one after the other, sometimes continually. In all cases these acts become firmly fixed in the person’s sense of what has to be.

Tobacco use creates a strong incentive to re-use, and it is then associated with all of the situations, moods and environments of each time it is used. As a result, it becomes a highly stable activity or habit. To abandon tobacco use, in addition to dealing with physical withdrawal, all of the associations have to be unlearned so that other behaviours can take the place of tobacco use and be maintained over time without a return to tobacco use (relapse). Smoke-free policies have proven important in creating an environment that facilitates cessation by allowing the new learning to be more often unchallenged by environmental cues.
Dependence

The mechanism of the pleasure or mood control smokers get from a cigarette is the effect of nicotine on the central nervous system, especially on the brain. Each time people smoke, they feel something and define it as a relief or a pleasure. All smokers do that, but the degree of pleasure or relief varies between smokers. Once receptors are no longer stimulated, they create a sense of loss, which is called withdrawal. When a smoker does not smoke, there is no relief, no pleasure and many manifestations of loss—irritability, sadness, inability to concentrate, obsession about not smoking—and thus is created the sense that people have to resolve problems by smoking: the cigarette becomes the solution. The body therefore reacts to the effects of nicotine on the brain. The importance of these effects comes from the interpretation that we give to them, and this interpretation gives power to the dependence that develops.

Relapse and its prevention

Relapse is a process within the transition from being a smoker to being a non-smoker. Relapse occurs at particular moments in particular circumstances, when coping is not adequate to the challenge of craving. Most lapses lead to relapse, even though the road from the lapse to the relapse can be long and complicated. Interventions might be able to help break the forward progression from lapse to relapse. Indeed, any treatment concerning behaviour is limited in that assistance is usually not present in the moments when help is most needed. Behavioural treatments therefore try to prepare patients for those moments with skills to assess, avoid and respond to crisis situations.

People around quitting smokers can be of great benefit in helping them succeed, or, on the contrary, they can play an important role in making quitting more difficult. Nothing is more stimulating than being a part of a group (friends, family, work colleagues) that stops smoking at the same time. The same is true for a spouse who undertakes to stop at the same time as the smoker.

Behaviour change is thus an active process that requires considerable conscious effort and benefits from a supportive environment. If patients passively receive an intervention for change, they are unlikely to act. Ambivalence is a part of behaviour change; if the health worker takes a side,
the patient can fall into defending the other (contrary to change); this can also lead to the patient failing to act. Measuring readiness to change focuses on the person rather than the message. Patients who are unsure about their decision to stop need an opportunity to weigh up the advantages and disadvantages of changing their behaviour. The consultation should therefore be a forum for discussion to help the patient articulate disparities and discrepancies between values and life goals and using tobacco. A collaboration with the patient should be sought so that the patient takes on and acts on informed decision-making.

**Tasks to support the patient**

The critical tasks for someone who attempts to help another person who wants to stop using tobacco include:

1. providing techniques to help the individual to understand the underlying reinforcements that make it difficult to change. This consists of aiding the individual to identify those things that come before and those that follow tobacco use, and discover new ways to respond to the circumstances that encourage tobacco use or to obtain the pleasures that follow without using tobacco
2. reinforcing the patient’s motivation and emphasising benefits to be gained by stopping all tobacco use
3. developing a social support network for the difficult transition period, and
4. helping the person to recognise and avoid or resist the situations, moods and thoughts that might lead to relapse.

**Steps in behaviour therapy**

The form that behaviour therapy takes generally consists of several sessions on a face-to-face basis or in groups, and covers all of the aspects of change: ambivalence, withdrawal, relapse and the role of the outside world. Follow-up should be provided, and medications if available. Table 5.1 proposes steps in a treatment session.

The steps in cognitive behavioural therapy include helping the patient

1. to understand his or her own personal situational and emotional associations (antecedents and consequences) with smoking,
2 to use this knowledge to devise coping strategies for craving, and
3 to devise strategies to maintain the new non-tobacco use be-
haviours.

Recognition of the antecedents (cues to use tobacco) and consequences of using tobacco

To understand these cues and consequences, behavioural therapy uses what is called functional analysis, which asks the patient to find the answers to these questions:

1. How much do I really want to change?
2. What happens to make me feel craving to use tobacco? (What are the cues? What are the desired consequences?)
3. Have I ever experienced abstinence and relapse before?
4. When I crave tobacco, can I envisage any other response?

Table 5.1 Description of a cognitive-behavioural session for smoking cessation

In the first part of the session, the patient talks about his/her ambivalence about abandoning tobacco, particularly in terms of the feelings that are involved in discussing the costs and benefits of stopping or remaining a tobacco user. The role of the health worker is to listen and to repeat the sentiments of the smoker for verification, but in a way that calls attention to the patient’s positive attitudes and feelings towards stopping. Remember, this is a patient who is voluntarily asking for cessation aid.

In the second part of the session, the therapist helps the patient to find a personal style to change perceptions about tobacco, the responses to cues to smoke and other ways to obtain the desired consequences previously associated with tobacco use. Strategies are devised for difficult times, if they should occur. The role of the health worker is again to listen intently, to repeat for clarification and to synthesise the discussion.

The last part of the session is used to analyse how to stop and stay away from tobacco. The patient recounts his/her functional analysis, describes the strategies that seem the most adapted to his/her own pattern of smoking and plans for avoiding and resisting craving. This can be done with the health worker’s assistance if necessary. Finally, the patient discusses past experiences with stopping and relapse to reinterpret them for understanding and aid for the future. The health worker proposes topics for the next session, if there is to be one, such as tobacco industry activities to incite and normalise use, the prevalence of tobacco use among young people or current news concerning tobacco control.

Some of the techniques for behaviour change assume that the patients are literate. The most frequently used techniques for the patient to understand his or her own tobacco use include:

- A daily log (Table 5.2) in which the person can indicate where, when, why, mood or feelings at the time and the importance of each smoking incident
- A decisional balance sheet, where the person can list the advantages and disadvantages of continuing tobacco use or abandoning it
- A mental or written log of the techniques that seem to work the best to avoid or resist craving.

In many low-income countries, tuberculosis patients who are not literate can nevertheless use these strategies. They can be asked to notice and remember when they most wanted to smoke and what they did to resist the urge so that they can recount these events at the next meeting.

**Table 5.2  Example of a daily log**

<table>
<thead>
<tr>
<th>Time</th>
<th>Place</th>
<th>Level of craving*</th>
<th>Emotion</th>
<th>Why smoke?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5</td>
<td>☺☺☺☺☺</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3 4 5</td>
<td>☺☺☺☺☺</td>
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* 1 = none; 2 = light; 3 = medium; 4 = strong; 5 = imperative.
Avoiding and resisting craving

Avoiding and resisting craving is a highly personal exercise. Using information from the analysis of the circumstances of one's own tobacco use, the person then identifies the situations and moods that are most likely to increase craving. Ways of resisting craving have to be found, using a sort of trial and error approach. Most people find that craving is easier to resist when they are busy, and particularly when they are using their hands. Another important issue is to develop new problem solving skills, as tobacco use is often the first response to a problem. The tools described above can be used to plan ways to react to craving and to develop a thought pattern to keep going towards change, i.e., to maintain an internal dialogue about the why of change, to watch how easily one puts coping in place, to identify oneself not as a smoker going through change but already as an ex-smoker. If needed, specific instructions can be suggested to help patients stay away from tobacco.

Maintaining an ex-smoker behaviour

Rather than treating tobacco use as a loss of control (while understanding the pharmacological effects of nicotine), tobacco use can be seen as dysfunctional behaviour that can be changed by taking control of oneself. The individual changes self-definition through a better understanding of the act of tobacco use. The individual also redefines what is provided by using tobacco, and responds to cues to smoke by doing something else, such as drinking a glass of water or digging a hole. As those stances are maintained, all of the associations and links that bind an individual to tobacco use become progressively weaker. These associations never totally disappear, which explains a sudden return to tobacco after many years of abstinence. People who have recently stopped smoking may need to solicit support from the people around them, as social support is an important buffer to difficulties of change.

Cognitive strategies

It is very important to aid the patient to redefine tobacco use in the context of personal life goals. This is important to maintain the motivation necessary to acquire a non-smoker identity and stable behaviour. The health professional can accompany the patient towards specific objectives concerning coping with craving. In this sense, it is useful to talk about how people change. It is important that the patient discovers appropriate
responses and a support system for tackling the difficulties involved in the cessation attempt. This is why the health worker should elicit the plan that the patient has devised to manage the transition period. Finally, the health worker can provide follow-up and encouragement for the patient.

Keeping unhelpful thoughts at bay

Sometimes in our thinking, we let ourselves go in the opposite direction of our avowed purpose—in this case, stopping smoking. This occurs when we let ourselves think some of the following:

- I’ll just have a puff (for the last time).
- Smoking is a part of what I am.
- I’m not going to make it anyway, so why not smoke again now?
- Nothing else makes me happy.
- I deserve to give myself a little pleasure.
- I cannot be myself with my friends or family.
- I don’t care.
- I’ve got problems more important than this, so I need to smoke.
- I’ll give it up later.

Preparing for craving

Craving can be easier to deal with if we already know how we are going to respond to it. Some of the responses that have proved to be helpful to quitting smokers include:

- Keep in mind what you do not like about tobacco use.
- If the urgency to stop dissipates, re-envisage the positive outcomes that you are aiming for by quitting.
- Think of the negative consequences of tobacco use.
- Plan to congratulate yourself when you cope successfully in high-risk situations that you cannot avoid.
- Plan to assess how well you respond to cues to smoke, to identify the best ones.

Managing undesirable side effects of cessation

Negative side effects

Withdrawal is disagreeable and can be immensely difficult to live through. However, it is easier to cope with withdrawal symptoms if we know what
they are, and if we keep in mind specific ways to deal with them. It is im-
portant to tell the patient that withdrawal lasts only a few weeks. The ma-
jor negative side effects of cessation are negative mood, lack of concentra-
tion, hunger, irritability and constipation; plans should be made ahead of
time to deal with them if they occur. In addition, plans should be made
for dealing with a lapse, a one-time re-use of tobacco. There is no inevita-
bility of returning to smoking after a lapse; it is a question of the percep-
tion of the individual. It is of course preferable to avoid lapses, but they
do not fatally doom the person to full relapse if they can be defined as a
need to reinforce one’s coping mechanisms.

Table 5.3  Information about feared side effects of stopping smoking

<table>
<thead>
<tr>
<th>Side Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Craving</td>
<td>Craving (urges to smoke) can be related to withdrawal, to the way a smoker thinks about smoking, or to the way a smoker uses smoking in association with the environment through conditioning. Strong urges to smoke occur frequently and can occur for several years after abstinence, but with greatly reduced frequency. The reasons frequently evoked for giving in to craving (relapsing) are: social situations where others smoke, to mark relaxation, feeling anxious, stressed or bored, being involved in an unpleasant situation with another person. It is useful to imagine ways to deal with situations relevant to the individual quitter.</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>The main symptoms of nicotine withdrawal (irritability, anxiety or sadness, constipation, headache, increased appetite, lower concentration) can appear almost at once and seem to be most intense 3-7 days after abstinence, but then dissipate gradually, and for most people do not last beyond 21 days. There is, nevertheless, variability between smokers in the duration of symptoms. Smokers can be reassured that each symptom is temporary and that being forewarned will help them to live with these symptoms.</td>
</tr>
<tr>
<td>Negative emotions</td>
<td>Negative emotions are not resolved by smoking, but smokers have come to define smoking as a way to cope with these emotions. In industrialised countries, negative emotions are an important factor in relapse.</td>
</tr>
<tr>
<td>Weight gain</td>
<td>Weight gain does not occur automatically, but it can affect about half of all quitters. Nicotine has an appetite suppression effect that smokers appreciate. In many low-income countries with malnutrition, this effect of nicotine increases the disease vulnerability of smokers, and weight gain accompanying cessation and TB treatment may be experienced positively.</td>
</tr>
</tbody>
</table>
Reassurance about fears of side effects

Commonly feared side effects in industrialised countries are craving, withdrawal, negative emotions and weight gain. The health worker can encourage the patient to identify their fears and discuss them, and generally prepare patients to deal with craving and other side effects, as suggested in Table 5.3.

A partnership for change

Finally, this cessation aid should be seen as a partnership. The health service provider and the quitting smoker are working together to find the best strategies to enable change. Any of these cognitive-behavioural strategies can be adopted for cessation support if there is demand for additional aid following brief advice.
Providing and monitoring quality service for smoking cessation in tuberculosis care

All tuberculosis patients who are tobacco smokers should be identified and provided with smoking cessation interventions during tuberculosis treatment. To ensure that this occurs, the intervention process should be recorded and monitored. Monitoring is the best guarantee that care is standardised and offered equitably to all patients. It allows for the evaluation of processes and outcomes so that population needs can be identified and appropriate techniques added or updated. In this section, we propose steps for brief intervention as a part of the monitoring process using model forms and suggested procedures for filling them in. The suggested forms are a modified tuberculosis treatment card that includes information about tobacco use, a smoking cessation intervention (SCI) patient card to be added to patients’ tuberculosis treatment folders, SCI registers and SCI quarterly report forms and a tobacco use questionnaire for evaluation of services.

Why should smoking cessation interventions be recorded and monitored?

It is important to give patients good quality standardised smoking cessation interventions for a number of reasons:

1 A systematic, standardised approach is necessary due to the chronic nature of the problem.
2 If interventions are provided selectively, many patients will be left out of the intervention; a systematic approach is more equitable and has more chance of success because health professionals are poor at judging which patients will change their behaviour as a result of an intervention.
3 If care is not standardised and the results are not recorded and evaluated, problems cannot be easily identified and solved.
How can the quality of cessation interventions in tuberculosis services be guaranteed?

The only method that ensures monitoring of the quality of services is the collection and evaluation of information about the care of each patient. Recording the number of patients who use tobacco on entering treatment for tuberculosis and then determining whether or not they stop smoking or stop using other forms of tobacco is the only way to evaluate the results of the intervention, identify training needs, plan patient recruitment strategies, evaluate the context and revise the management strategy if the results are not satisfactory. While the target of this exercise is tobacco smokers, the intervention can be used with people who use any form of tobacco.

The recording process should be systematic and complete, using the cohort approach. This means that all patients targeted by the health intervention are registered and evaluated, and none is omitted or excluded from the evaluation. To do this, all smokers must be identified and registered for regular, ongoing surveillance. Those who have high motivation and confidence scores are most likely to commit to stopping smoking within the month, and for these people a Smoking Cessation Intervention (SCI) card will be added to their files.

What are the elements to monitor?

Identification of tobacco smoking among tuberculosis patients

The indicator to monitor in identifying smokers is the proportion of tuberculosis treatment cards in which the information is complete.

Outcomes of smoking cessation intervention among tuberculosis patients

Indicators for monitoring the success of the intervention include:

- The proportion of smokers who decide to quit and receive an SCI card
- The proportion of smokers receiving an SCI card who continue follow-up for the full period planned
- The trend over time in the proportion of patients who intend to quit smoking
- The trend over time in motivation
- The trend over time in confidence to stop smoking
- The proportion of smokers who are able to quit smoking
- The proportion of those who quit who maintain abstinence up to final follow-up.
Impact of the smoking cessation intervention provided to patients

By establishing a permanent service for smoking cessation, it is possible to monitor trends. The most important indicators are:

- The proportion of the target group (TB patients) who are smokers when they start treatment
- The proportion of smokers among TB patients who quit smoking.

If services are of good quality and messages are conveyed within and outside the health services, a climate will be created where people are more easily able to quit smoking. This will impact on others either to stop smoking or not to take up smoking.

What tools do we use to carry out the monitoring?

Within the health centres providing the smoking cessation intervention service, the following documents are recommended:

For the patient’s file:
- The tuberculosis treatment card modified to include questions about smoking
- The SCI patient card
- The tobacco use questionnaire (for evaluation of services or research).

In the centre records:
- The SCI register of patients enrolled in the intervention
- The quarterly report on new patients enrolled (filled out by the coordinator)
- The quarterly report on treatment results (filled out by the coordinator).

How do we inform and engage others?

Pre-service training in schools for health services personnel

All of the country’s medical and nursing schools should provide adequate training so that health services personnel are competent to assume the responsibility of patient management in tobacco cessation. The training programme for tobacco cessation in the context of tuberculosis care should be developed after consultation with the National Tuberculosis Programme and should respect the national guidelines for tobacco cessation interventions.
In-service training through continuing education

Ongoing training of health services personnel involved in the management of smoking cessation interventions is essential to ensure that patients are managed correctly. When the intervention is first introduced in a country, it is useful to select a few districts as “pilot areas” to launch the services. This introduction should begin with a training programme including:

- The scientific basis of the intervention
- Practice offering brief advice interventions
- Training in the use of available medications used in treatment and cognitive-behavioural strategies
- Knowledge of technical and organisational aspects
- Familiarity with the recording and reporting system used: individual patient files, registers and reports.

From the start of the programme, the most important element of ongoing training consists of regular supervisory visits to ensure that patients are managed correctly and that data collection and analysis are correctly carried out.

Regular (at least annual) meetings of the health services personnel involved in SCI should be organised to discuss the progress made and problems encountered.

What should we consider in adapting to local conditions and situations?

The cessation intervention and the recording and reporting forms used to organise its management should be adapted to the local situation in each country. In particular, the organisation of the health services and national policies or recommendations should be taken into account. The adoption of recording systems is of fundamental importance for the ongoing evaluation of the results of the intervention.

The intervention should be implemented in stages:

1. Implementation in a few pilot locations
2. Analysis of the results
3. Possible modification of the intervention based on the analysis
4. Progressive expansion of the intervention into other localities, with ongoing analysis of the results
5. Scale-up to cover the entire population within a defined period of time.
What is the role of research?

Research is an important aspect of all health services. Systematic, rigorous research provides insights into the ways health services can be improved. Research that is in-built into the health system is usually conducted using the evaluation component of each programme. Information collected in routine practice is used as the starting point and allows questions to be asked for which research must find the responses.

The International Committee on the Development of Health Research recommends that a fixed percentage (5%) of the budget of any health programme should be attributed to research. This recommendation is logical, as research provides new knowledge that is a powerful tool for change.

As a result, operational research within the programme is the most suitable. This type of research involves the personnel responsible for patient management, provides them with new knowledge and helps them to learn to resolve problems that they confront on a regular basis. The distribution of tobacco smoking in groups of patients at risk, in the community, the efficacy of various strategies and the cost-effectiveness of the different interventions are the most appropriate subjects for this type of research.

Model forms

All of the forms shown in the Appendix are suggested for initiating tobacco cessation services. They have been prepared keeping in mind the heavy caseload characteristics of tuberculosis health care services in low-income countries, and they represent the minimum of what could be provided.

Modified tuberculosis treatment card

The modification to the treatment card (Appendix, Form 1, bottom of side 1) is to indicate current tobacco use (yes or no), whether the patient is willing to try to stop smoking in the next month (yes or no) and whether the patient has been registered in an SCI. For patients who are not willing to try to quit, these questions are to be repeated three times over the course of treatment. This addition to the tuberculosis treatment card is made so that all smokers among those in treatment for tuberculosis receive repeated brief interventions.
The SCI patient card

An SCI card (Appendix, Form 2) is filled in for every smoker who is willing to try to stop smoking within the next month, either at the beginning of tuberculosis treatment or during the course of treatment.

Side 1

Top of the card, first box:
- **Name**: patient’s first and last name
- **Address**: patient’s full address, sufficient to trace the patient if necessary.

Information in this box is confidential. If it is to be used for any purpose other than clinical care, the information in this box must be removed or obscured.

Top of the card, under the box:
- **Name of centre**: record the name of the centre
- **Registration number**: record the registration number sequentially as the patient presents to the service
- **Age**: patient’s age in years
- **Sex**: male or female.

Second box:
- **Age at starting smoking**: enter the age at starting smoking indicated by the patient
- **Type of smoking**: if the patient smokes cigarettes, tick “yes” and indicate the number of cigarettes smoked per day, on average, over the entire time of smoking. If the patient smokes occasionally (less than daily), this is indicated by <1. If the patient does not smoke cigarettes, indicate type of tobacco and how much is used
- **Type of case**: indicate whether the patient is willing to quit at the beginning of tuberculosis treatment (month 0) or becomes willing to do so at month 2 or 5 of tuberculosis treatment.

Bottom box, left:
- **Motivation**: ask the patient, on a range* of scores from 1 to 10 (10 being highest), to rate his/her motivation to quit smoking

* The range can be amended according to the specificities of the local systems for counting. It is suggested that a visual tool be constructed to ensure patient understanding
• **Confidence to quit:** ask the patient, on a range of scores from 1 to 10 (10 being highest), to rate his/her confidence in being able to quit smoking

• **Dependence:** this is simply a measure of the patient's perception of dependence. If the patient feels dependent, the answer is Y (yes); if the patient does not feel dependent, the answer is N (no). If nicotine replacement is to be prescribed, ask the patient to answer the questions on the Fagerström test to determine dosage

• **Target date:** record the date (day, month and year) of quitting

• **Nicotine substitution:** specify type and dosage

• **Strategies:** briefly note any specific plans.

**Side 2: Follow-up**

• **Date of initiation of intervention:** enter the date the intervention was started (day, month and year). *This is the date when the patient decides to quit within one month and is given an SCI card*

• **Planned frequency of follow-up:** enter the months following initiation at which follow-up visits are planned

• **Follow-up box to be completed at each visit:** enter the date of the follow-up visit and indicate the months since initiation

• **Status at follow-up:** The following definitions are used to determine status at follow-up:
  - **Sustained quitter/ex-smoker (ExS):** has not smoked at all for last 3 months
  - **Quit (Q):** has not smoked at all since previous visit
  - **Continuing (C):** has smoked since previous visit
  - **Relapse (R):** smoking again after quitting for at least 3 months
  - **Died (D):** died from any cause
  - **Not seen (N):** did not attend follow-up appointment

• **Motivation:** ask the patient, on a range of scores from 1 to 10 (10 being highest), to rate his/her motivation to quit smoking

• **Confidence to quit:** ask the patient, on a range of scores from 1 to 10 (10 being highest), to rate his/her confidence in being able to quit smoking.

**Discharge**

When the patient has completed 24 months of follow-up, the patient is discharged from further follow-up.
The SCI patient register

Each new patient who smokes cigarettes, expresses a willingness to quit smoking within the next month and has received an SCI card should be entered into the register (Appendix, Form 3).

Part 1 of the register

- **Number**: record the registration number sequentially as the patient presents to the service. This number is the same as that on the SCI form.
- **Date**: date of registration (day, month and year)
- **Age**: patient’s age, in years
- **Sex**: M for male, F for female
- **Age at starting smoking**: enter the age at which the patient started smoking (from the SCI card)
- **Number of cigarettes smoked**: Record the number of cigarettes smoked per day, from the SCI card. For those using other types of tobacco, record NA (not applicable)
- **Readiness**: indicate if the patient is willing to quit at the beginning of tuberculosis treatment (month 0) or becomes willing to do so at month 2 or 5 of tuberculosis treatment
- **Motivation**: record the patient’s response, on a range of scores from 1 to 10 (10 being highest), to the question on motivation to quit smoking.
- **Confidence to quit**: record the patient’s response, on a range of scores from 1 to 10 (10 being highest), to the question on confidence to quit smoking
- **Dependence**: indicate the patient’s perception of dependence as Y (yes) or N (no). Record the score of the Fagerström test if nicotine replacement therapy is to be prescribed.

Part 2 of the register

This page is used for the annual follow-up of the patient. For each annual evaluation, several columns are provided.

- **Status at follow-up**: the following definitions are used to determine status at follow-up. Enter only one:
  - **Sustained quitter/ex-smoker (ExS)**: has not smoked at all for last 3 months
  - **Recent quitter (Q)**: has not smoked at all for less than 3 months
  - **Relapse (R)**: relapsed after quitting for 3 months or more
Continuing (C): current smoker

Died (D): died from any cause

Not seen (N): did not attend follow-up appointment

- **Motivation**: record the patient’s response, on a range of scores from 1 to 10 (10 being highest), to the question on motivation to quit smoking

- **Confidence to quit**: record the patient’s response, on a range of scores from 1 to 10 (10 being highest), to the question on confidence to quit smoking

- **Follow-up**: the procedure is repeated at the second year of follow-up.

The SCI quarterly report on identified smokers

The SCI quarterly report provides a table format of the relationship of sex and age according to readiness to quit, for all tuberculosis patients identified as smokers in the preceding quarter, and according to perceived dependence, for all patients registered in the SCI register in the preceding quarter (Appendix, Form 4).

The SCI quarterly report on outcome of SCI at one year

This form reproduces the outcome data from the SCI register at quarterly intervals one year after enrolment into the cessation programme, according to age, perceived dependence and sex (Appendix, Form 5).

Tobacco use questionnaire

This questionnaire (Appendix, Form 6) can provide baseline data for evaluation or research.

- **Age**: the patient’s age in years
- **Sex**: M for males, F for females
- **Residence**: this item allows differentiation of the socio-economic status of the patient according to rural, semi-urban or urban neighbourhood
- **Education level**: education is marked according to the number of years of formal education completed by the patient. “None” means that the patient has had no formal education
- **Marital status**: categories include single, married, divorced and widowed
• **Occupation:** tick the appropriate box. The categories provided can be amended to suit the national situation

• **Q1: Identification of smoking:** In richer countries, 100 cigarettes is considered the threshold for identifying smokers. Tick yes or no. (According to the definition in standardised questionnaires used in respiratory health surveys, ‘No’ applies to those who have never in their lifetime smoked as many as 20 packs of cigarettes or one cigarette per day for one year.)

• **Q2: Self-reported smoking:** daily, occasionally or not at all
  – If the patient answers “no” to Q1 and “not at all” to Q2 there are no more questions
  – If the patient answers “yes” to Q1 or answers “daily” or “occasionally” to Q2, proceed to Q3 and Q4

• **Q3: Quantity:** this is recorded for either current or past use; record the number per day for each type of tobacco use. Occasional use is indicated by <1

• **Q4: Age at starting:** age should be entered in years.

After Q4, those who are current smokers go on to Q5; those who are ex-smokers, who do not smoke now but answered “yes” to Q1, go to Q11.

Questions 5–10 are for **current smokers**.

• **Q5:** This is an open-ended question for people to give their reasons for smoking. The response should be recorded

• **Q6: Desire to stop:** this is not time-dependent. People are asked to specify “yes” or “no”

• **Q7: When:** This question asks the patient if he or she will try to stop in the next month, “yes” or “no”

• **Q8:** This is another open-ended question, particularly important for those who answer “no” to Q7

• **Q9: Motivation:** the patient is asked to indicate a number from 1 to 10 that represents the level of motivation he or she has to stop smoking. The score should be noted

• **Q10: Confidence:** the patient is asked to indicate a number from 1 to 10 that represents the level of confidence that he or she can stop and remain abstinent.

Questions 11–12 are for **ex-smokers**.

• **Q11: Time since stopping:** this is the duration of time since the last cigarette or other tobacco product was smoked; tick the appropriate answer

• **Q12: Age at stopping:** This should be noted in years.
Chapter 1


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Appendices

Form 1  Modified Tuberculosis Treatment Card
Form 2  Smoking Cessation Intervention (SCI) Card
Form 3  Smoking Cessation Intervention Register
Form 4  SCI quarterly report on identified smokers
Form 5  Quarterly report on outcome of smoking cessation intervention at one year
Form 6  Tobacco use questionnaire
District TB No. ____________

Name: __________________________________________________________________________

Address: __________________________________________________________________________

Treatment centre: ____________________________________________________________________

Age: ________ Sex (check one): M [ ] F [ ]

Date: __________________________________________________________________________

Disease site (check one):

Pulmonary [ ] Extra-pulmonary [ ] Site (specify) ________________

Category of patient (check one):

New [ ] Treatment after failure [ ]

Relapse [ ] Treatment after default [ ]

Transfer in [ ] Other [ ] (specify) ________________

I. INITIAL INTENSIVE PHASE

Prescribed regimen and number of tablets:

<table>
<thead>
<tr>
<th>RHZE</th>
<th>SRHZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>{RH}</td>
<td>Z</td>
</tr>
<tr>
<td>E</td>
<td>S</td>
</tr>
<tr>
<td>{RH}</td>
<td>Z</td>
</tr>
<tr>
<td>E</td>
<td></td>
</tr>
</tbody>
</table>

(RH) = rifampicin/isoniazid; Z = pyrazinamide; E = ethambutol; S = streptomycin

Month | Date / Lab no. | Smear result | Weight (kg) | Date next appointment

| 0    |              |              |             |                        |
| 2    |              |              |             |                        |
| 5    |              |              |             |                        |
| 7    |              |              |             |                        |
| >7   |              |              |             |                        |

Patient uses tobacco? Yes [ ] No [ ]

If yes, willing to quit in next month? Yes [ ] No [ ]

Month 0: Yes [ ] No [ ]

If not willing to quit at month 0, is the smoker willing at

Month 2? Yes [ ] No [ ]

Month 5? Yes [ ] No [ ]

Registered in SCI? Yes [ ] No [ ]

Registered in SCI? Yes [ ] No [ ]
| Day Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|-----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|           |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|           |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Enter X on day when medications were taken under direct observation.

Please turn over
TUBERCULOSIS PROGRAMME  

SMOKING CESSTATION INTERVENTION (SCI) CARD

| Name: ____________________________________________ | Registration number: ____________________________________________ |
| Address: __________________________________________ | __________________________ |

Treatment centre: ____________________________________________
Age: ________  Sex: Male [ ] Female [ ]

At what age did you start smoking? ______ years
Type of tobacco: Cigarette Yes [ ] No [ ] If Yes: no. per day _____
Other: Yes [ ] No [ ] If Yes: specify type __________ no. per day_____
Readiness: Willing to quit at month 0 of tuberculosis treatment [ ]
Willing to quit at month 2 [ ] Willing to quit at month 5 [ ]

Motivation (at first visit):
- Motivation score to quit smoking [1-10] [ ]
- Confidence score to quit [1-10] [ ]
- Perceived dependence: Y/N [ ]

<table>
<thead>
<tr>
<th>Other condition:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1--Tuberculosis 2--Asthma 3--Other (specify)</td>
</tr>
<tr>
<td>No [ ] Yes [ ] No [ ] Yes[ ] __________________________</td>
</tr>
<tr>
<td>If yes, District TB If yes, Registration __________________________</td>
</tr>
<tr>
<td>Number _________ Number ______________</td>
</tr>
</tbody>
</table>

Treatment:
- Target date set: dd [ ] mm [ ] yy [ ]
- Nicotine substitution (specify type, dates): __________________________

Fagerström test score: ______
Strategies for dealing with urges to smoke (specify): __________________________

Please turn over
**SMOKING CESSATION INTERVENTION (SCI) CARD**

**FOLLOW-UP**

Date of initiation of the SCI: dd [  ] mm [  ] yy [  ]

Planned frequency of follow-up (specify months registered in SCI): ________________

Status at follow-up:

<table>
<thead>
<tr>
<th>Follow-up period</th>
<th>Date (dd/mm/yy)</th>
<th>Months since enrolment</th>
<th>Status*</th>
<th>Motivation to quit score (1–10)</th>
<th>Confidence to quit score (1–10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
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<td>12</td>
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</tbody>
</table>

* Enter one of: ExS = quit smoking for at least 3 months; R = relapsed after quitting for 3 months or more; Q = quit smoking since last visit; C = continuing smoker; D = died; N = not seen.
SMOKING CESSATION INTERVENTION REGISTER

Centre: ________________________________

<table>
<thead>
<tr>
<th>Registration number</th>
<th>Date</th>
<th>Age (years)</th>
<th>Sex (M/F)</th>
<th>Age at starting smoking</th>
<th>Number of cigarettes smoked/day</th>
<th>Readiness to quit</th>
<th>Motivation to quit score (1-10)</th>
<th>Confidence to quit score (1-10)</th>
<th>Perceived dependence at intake (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Month 0</td>
<td>Month 2</td>
<td>Month 5</td>
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</tbody>
</table>
# SMOKING CESSION INTERVENTION REGISTER
## FOLLOW-UP

<table>
<thead>
<tr>
<th>Registration number</th>
<th>One year</th>
<th>Two years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If currently smoking</td>
<td>If currently smoking</td>
</tr>
<tr>
<td></td>
<td>Status*</td>
<td>Amount</td>
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</tbody>
</table>

* Enter one of: ExS = quit smoking for at least 3 months; R = relapsed after quitting for 3 months or more; Q = quit smoking since last visit; C = continuing smoker; D = died; N = not seen.
SCI QUARTERLY REPORT ON IDENTIFIED SMOKERS

Name of centre: ___________________________ Cases registered in _____ quarter of 20___

Centre Coordinator Name: ________________________________________________________________

Signature:  Adam Smith

Date: ____________________________

**PERSONS IDENTIFIED AS SMOKERS IN THE QUARTER**

<table>
<thead>
<tr>
<th>Readiness to quit †</th>
<th>Sex</th>
<th>Age, years</th>
<th>Totals ‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td>&lt;15</td>
<td>15−24</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals ‡</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Including those not registered in SCI.
 † Readiness to quit at month 0 of tuberculosis treatment.
 ‡ Obtained from the tuberculosis treatment card.

**ALL SMOKERS REGISTERED IN THE SCI REGISTER IN THE QUARTER**

<table>
<thead>
<tr>
<th>Perceived dependence †</th>
<th>Type of case: Readiness to quit at month</th>
<th>Sex</th>
<th>Age, years</th>
<th>Totals ‡</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt;15</td>
<td>15−24</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals ‡</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Including only those registered.
 † Dependence: Yes, the patient feels dependent; No, the patient does not feel dependent.
 ‡ Totals of readiness to quit at month 0 should correspond to those for all smokers identified in the preceding quarter and should correspond to the number recorded as ‘Yes’ in the above table.

Definitions to use to fill out the form:

**Quarters**
- 1\textsuperscript{st} quarter: 1 January to 31 March
- 2\textsuperscript{nd} quarter: 1 April to 30 June
- 3\textsuperscript{rd} quarter: 1 July to 30 September

**Readiness to quit at month:**
- 0: those who are willing to quit smoking in the next month at month 0
- 2: those not willing to quit smoking in the next month at month 0 but became willing at month 2
QUARTERLY REPORT ON OUTCOME OF SMOKING CESSION TENTION

Name of centre: ________________________ Cases registered in _____ quarter of 20____

Centre Coordinator Name: __________________________________________________________

Signature: _______________________________________________________________________

Date: __________________________________________________________________________

PERSONS REGISTERED IN THE QUARTER

<table>
<thead>
<tr>
<th>Age, years</th>
<th>Perceived dependence*</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sustained quitter/ex-smoker</td>
</tr>
<tr>
<td>&lt;15</td>
<td>Yes</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>15–24</td>
<td>Yes</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>25–44</td>
<td>Yes</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>45–64</td>
<td>Yes</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>No</td>
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<tr>
<td>&gt;65</td>
<td>Yes</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Totals†</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Dependence: Yes, the patient feels dependent; No, the patient does not feel dependent.
† Totals should correspond to those for cases registered in the quarter one year previously.

Definitions to use to fill out the form:

Quarters
1\(^{st}\) quarter: 1 January to 31 March
2\(^{nd}\) quarter: 1 April to 30 June
3\(^{rd}\) quarter: 1 July to 30 September
4\(^{th}\) quarter: 1 October to 31 December

Outcome
Sustained quitter/ex-smoker: quit smoking for at least 3 months
Recent quitter: stopped for >7 days, <3 months
Relapsed: relapsed after quitting for 3 months or more
Current smoker: smoked at all in the previous 7 days
Died: died from any cause
Not seen: did not attend follow-up in the previous 3 months
TOBACCO USE QUESTIONNAIRE

Age: _____ years  Sex: M [ ] F [ ]

Residence:* Rural [ ] Semi-urban [ ] Urban [ ]
Specify residential area: _____________________________

Educational level: None [ ] Some [ ]: number of years _____ Diploma _______________

Marital status: Single [ ] Married [ ] Divorced [ ] Widowed [ ] Other [ ]: ________________

Occupation: None [ ] Manual/farming [ ] Skilled manual/white collar [ ] Student [ ]
Military [ ] Civil servant [ ] Professional [ ] Other [ ]: ________________

Q1 Have you ever smoked in your lifetime? (‘No’ applies to those who have never smoked as many as 20 packs of cigarettes or one cigarette per day for one year)  Yes [ ] No [ ]

Q2 Do you now smoke daily [ ] occasionally [ ] or not at all [ ]?

Q3 If you have ever smoked, which of the following items do/did you use?
(include only the items commonly used in your locality)
Cigars/cheroots/cigarillos [ ] Goza/hookah [ ] Manufactured cigarettes [ ] Bidis [ ]
Hand-rolled cigarettes [ ] Pipefuls of tobacco [ ] Smokeless tobacco [ ] Other [ ]

Q3.1 Of Q3, how much do/did you use daily? ________________

Q4 At what age did you start smoking? _______ years

______________________________

For current smokers:
Q5 Why do you smoke? ________________

Q6 Do you want to stop? Yes [ ] No [ ]

Q7 Do you intend to stop completely in the next month? Yes [ ] No [ ]

Q8 What could make you want to stop? ________________

Q9 On a scale of 1 = not at all, to 10 = very much, rate your motivation to stop _____________

Q10 On a scale of 1 = not at all, to 10 = very much, rate your confidence that you can stop ________________

______________________________

For ex-smokers:
Q11 If you have stopped smoking completely, how long has it been since you last smoked?
[ ] less than one month
[ ] one month or longer but less than six months
[ ] six months or longer but less than one year
[ ] one year or longer

Q12 At what age did you stop smoking completely? _______ years

*or any other marker of socio-economic status.

________

This form is an example of the information you should add to the records of all your patients. There may be other questions that you may wish to add.