SPECIAL ARTICLE



# Tobacco Addiction: Care and Services

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## Introduction

Tobacco addiction or smoking dependence is categorized as a chronic addictive disease in the most recent edition of the International Classification of Diseases (ICD-10) published by the World Health Organization in 1995. The code assigned to this drug addiction is F17. Research indicates that smoking is the leading avoidable cause of death in the developed world. Tobacco addiction is the cause of greater morbidity and mortality than any other chronic disease (hypertension, diabetes mellitus, hypercholesterolemia, etc). In Spain, smoking causes 56 000 deaths every year.[1] Despite all these facts and certainties, tobacco addiction is a highly prevalent disease among the general population in Spain. Data from the most recent national health survey (Encuesta Nacional de Salud) indicate that the addiction affects 31% of adults over 16 years of age. Although the incidence of smoking has declined somewhat among males, it continues to rise among women, adolescents, and young adults. The high prevalence of tobacco dependence in the Spanish population and the fact that smoking is the leading avoidable cause of death in the country should motivate all health professionals to take action against this disease in an effort to reduce the number of people taking up the habit and to help those who want to quit.[2]

All the research undertaken to date has clearly demonstrated that effective and efficient tobacco cessation therapies do exist. It is known that the cost-benefit and cost-effectiveness ratios of these therapies are appreciably higher than those of available treatments for other chronic illnesses.[3] It has also been established that the treatment of tobacco addiction must be structured and universal if it is to be effective and efficient. In other words, treatment must be offered to all smokers and adjusted in type and intensity to the individual characteristics of each patient.[4,5] Consequently, the Spanish national health system must implement a health care model for the smoker. A proposal for such a model, drawn up by the Assembly on Tobacco Addiction of the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR), will be explained here.

## Health Care Model for Smokers

The provision of tobacco cessation treatment services is a task requiring coordination, liaison, and agreement on the management of resources and programs between the different departments and bodies that make up the Spanish national health system. This was contemplated by the original National Plan for Smoking Prevention and Control and is also specified in the current legislation (the Health Measures For Smoking Addiction and Regulation of the Sale, Supply, Consumption, and Advertising of Tobacco Products Act).[6] However, what is required now is to turn these intentions into actions. The aim is to ensure that tobacco cessation services are accessible to everyone while taking into account the availability of resources as well as the need for quality and maximum effectiveness. To do this we must define a health care model that makes it possible to identify priorities and work accordingly. It should also take into account the magnitude of the problem, current legislation, and the availability of human, material, and financial resources.

The model proposed by SEPAR's Assembly on Tobacco Addiction for the organization of the prevention and treatment of tobacco addiction is based on assigning an appropriate role to each level of care and then providing each level with the necessary human resources and material means to carry out the assigned task. The proposal also makes suggestions regarding the measures that should be implemented bearing in mind the resources available, the differing degrees of complexity of the tasks, and the possibilities and resources of the institutions involved. The model proposes a 2-level structure for the delivery of tobacco cessation services and envisages different programs on each level ranging from primary prevention to more specialized treatments.

In short, the different types of programs that currently need to be implemented on different levels to implement a tobacco cessation program are not

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mutually exclusive. However, neither should the 2 levels be unrelated or work against each other. In the opinion of SEPAR's Assembly on Tobacco Addiction any tobacco cessation care model should include a basic intervention, that is, one that should be the duty of all doctors (and in fact of all health care professionals). This basic line of action is particularly appropriate for the primary care setting, which constitutes the ideal framework for a simple (level 1) intervention because of the accessibility and continuity of care at this level. In addition to this basic level of care, there should be a second more specialized program (level 2) to treat smokers with specific profiles for whom tobacco cessation is an absolute necessity. Owing to its complexity, this level-2 intervention requires more time and specialized training. This second level of care should be provided by tobacco cessation clinics and consultation services set up within the framework of specialized care and preferably managed by pulmonologists. However, under certain conditions, the specialized consultation services could, unlike specialized clinics, come under the framework of primary care. The following is a description of the structure and function of each of these 2 care levels.

*Level 1 (Basic Level)*

The primary aim of this level of care is to ensure that every patient seen by a physician receives a minimal tobacco cessation intervention. The primary care setting is the ideal framework for such an intervention because of the accessibility and continuity of primary care, although such interventions should, in fact, be the duty of all health care professionals including all clinicians working in specialized areas.[2] It should be remembered that 70% of all smokers come into contact with a primary care health professional at least once a year. Physicians working in this area are, therefore, ideally placed to advise and motivate smokers to stop smoking and to support them in their quit attempts with therapeutic measures that are easy to use and explain. Antismoking advice should not last more than 2 or 3 minutes. It should be given routinely and be based on the stages of change model, that is, it should be more intense when given to dissonant patients who are in the preparatory stage than when directed towards patients who do not wish to change their behavior. Furthermore, to increase effectiveness levels, smokers should be given written information in the form of leaflets and printed advice sheets.[7]

It should be the responsibility of all clinicians (doctors and nurses) working in the primary care setting to obtain adequate in-service training in the treatment of tobacco dependence. To ensure that their competency in tobacco dependence interventions is adequate at all times, both doctors and nurses should have access to training courses and skills updating programs imparted by experts in tobacco cessation. This would enable clinicians to keep their skills up to date and to obtain the pertinent personal certification that would allow them to advance in their professional careers and participate, in some cases, in tobacco cessation research or teaching programs.

*Level 2 (Specialized Level)*

The second level should be implemented in the specialized care setting, where tobacco dependence intervention is justified for various reasons: *a)* tobacco addiction is a chronic disease that in many cases calls for specialized treatment with specific clinical measures requiring the investment of more time than is usually available in the primary care context; *b)* specialized tobacco cessation interventions have been shown to be effective and efficient; and *c)* the financial cost of providing care for patients with smoking-related diseases is extremely high, and the treatment of this addiction is an essential component of the treatment of such diseases.[8]

Given the current structure of the Spanish national health system, the essential first step must be the creation of specialized consultation services and clinics set up specifically to provide comprehensive health care for smokers. The function of these consultation services and clinics should be to provide care, offer training, and conduct research.[9]

Care in this case is defined as the provision of tobacco cessation services. Consultation services and clinics should, preferably, be run by pulmonologists, who should also be responsible for the compilation of a dossier for each patient that should include a record of their smoking history and relevant test results (blood and urine analysis, cotinine levels, carbon monoxide assessment, spirometry, and others depending on the case) and for diagnosing the type and severity of each patient's tobacco addiction. It should, therefore, preferably be a pulmonologist who prescribes the treatment required in each case. It is, however, important to clearly differentiate between specialized smoking dependence consultation services, which would be more limited in scope and usually—although not always—located in pulmonology departments, and specialized tobacco cessation clinics, which would have a much more ambitious structure, function, and field of action.

The treatment of tobacco addiction can be either psychological (individual or group counseling) or pharmacological, and adequate follow-up for smokers in treatment is essential; all patients should be monitored for at least 6 months. In order to provide proper care for these patients, pulmonologists treating tobacco dependence must be able to prescribe the pharmacotherapies that have been shown to be effective by clinical trials fulfilling the criteria of grade A scientific evidence. Tobacco cessation treatments prescribed to smokers should be financed by the national health system provided that the prescription is issued by a specialized smoking addiction consultation service, a tobacco cessation clinic or a pulmonologist or health care professional working in a clinical, outpatient or hospital department. In this way, the national health authorities could ensure that the pharmaceutical

expense was carefully controlled and, what is more important, that the drugs prescribed to aid tobacco cessation were used properly. It would make it possible to maintain the necessary balance between the available resources, which are always limited, and the pressing need to provide pharmacological support to smokers who want to quit.

The pulmonologists working in specialized tobacco cessation clinics should preferably be employed full-time at the clinic and be trained in the treatment of tobacco dependence. The target population that should be treated in such clinics would be smokers with special characteristics. In a recent joint consensus document SEPAR, the Spanish Society of Family and Community Medicine (semFYC), the Spanish Society of Rural and General Medicine (SEMERGEN), and the Spanish Society of Tobacco Addiction Specialists (SEDET) established criteria for the referral of smokers from the primary care system to specialized tobacco cessation consultation services or clinics.[10] In view of the high level of consensus reached in this document by all the health professionals interested in the subject of tobacco addiction, SEPAR's Assembly on Tobacco Addiction proposes that these criteria should be adopted generally. In summary, the criteria defined are as follows:

*1.* Smokers who have made serious prior attempts to stop smoking and failed despite receiving proper treatment prescribed by a health care professional
*2.* Smokers recently diagnosed with ischemic cardiovascular disease (less than 8 weeks)
*3.* Smokers with poorly controlled cardiac arrhythmias or hypertension
*4.* Smokers with poorly controlled chronic diseases (renal, pulmonary, hepatic, cardiovascular, etc)
*5.* Pregnant or breastfeeding smokers
*6.* Smokers with mental illness

The educational role of the specialized tobacco cessation clinics is crucial and should address all levels: undergraduate, postgraduate, in-service training, nonphysician healthcare personnel, in-house, outsourced, etc. The future regulatory framework of the Ministry of Health and Consumer Affairs should even contemplate the creation of specific agencies (called Áreas de Capacitación Específica) to oversee such training. These agencies would be responsible for the certification of the personnel authorized to diagnose and treat smokers, and also for recognizing and certifying the tobacco cessation competencies obtained by health professionals who have undertaken the appropriate theoretical and practical training. The third competency of the specialized clinics should be to conduct research on different aspects of smoking dependence, which is an open and expanding field of investigation at the present time.

## The Role of the Pulmonologist

We will now discuss why, in our opinion, specialized smoking consultation services and, to an even greater degree, tobacco cessation clinics should be coordinated or directly managed by pulmonologists.

*1. Institutional reasons.* A Spanish government body (the former Ministry of Science and Technology) recently identified the field of respiratory disease as a research priority for health care in the next 4 years. Smoking either directly causes or exacerbates many respiratory diseases, conditions that are generally treated by pulmonologists, who are the physicians officially considered by the health authorities to be the specialists and experts in this subject.

*2. Epidemiological reasons.* The importance of pulmonology as a specialty is determined by various factors: *a)* the high prevalence of respiratory diseases, *b)* the high level of morbidity associated with these diseases in the general population, *c)* the sure knowledge that in the coming years there will be a substantial increase in the incidence and prevalence of respiratory disease, and *d)* the elevated health care burden and social cost associated with the control of these diseases.

It is known that the prevalence of chronic obstructive pulmonary disease (COPD) in Spain is 9% in the population over 40 years old and as high as 20% in the population over 65 years old.[11] Moreover, the frequency of COPD has increased more than that of any other disease in the period between 1965 and 1998 (over 193%). COPD accounts for 12% of primary health care visits and 10% of hospital admissions. Furthermore, lung cancer is the most common neoplastic disease among Spanish men, and the incidence of this cancer is also growing exponentially in the female population in recent years. A direct and indisputable causal relationship has been scientifically established linking both processes—COPD and lung cancer—with smoking. The evidence is so clear as to make it incomprehensible that proper therapeutic care of patients with these 2 diseases is not always accompanied by an appropriate tobacco cessation intervention aimed at treating the addiction found in almost 100% of these patients. In view of these data, it is clear that 2 of the 3 diseases most closely associated with smoking (COPD, lung cancer, and cardiovascular disease) are managed and treated by pulmonologists. Neither should it be forgotten that there are other risk factors besides smoking associated with ischemic heart disease, making its relationship with tobacco dependence somewhat more ambiguous. Furthermore, the findings of Banegas Banegas and colleagues[1] indicate that over 70% of the deaths attributable to smoking in Spain are caused by respiratory diseases (out of a total of 55 613 smoking-related deaths per year, 39 768, [71.5%] were due to respiratory diseases). All these facts underscore the importance of the role of pulmonologists in the treatment of tobacco addiction.[8]

*3. Scientific reasons.* Over the last 40 years, Spanish pulmonologists have played a key role in the management and treatment of tobacco addiction. In the

first place, they were the first group to noticeably reduce their own consumption of tobacco. Secondly, up to 98% of them routinely advise all their patients to stop smoking, a figure much higher than that observed among doctors in other specialty areas.[12] Spanish pulmonologists were also the first group to publish evidence-based recommendations on the treatment of smoking dependence[13,14] and to make proposals concerning the organization and operation of specialized tobacco cessation clinics.[9] Moreover, pulmonologists have played an incontrovertible role in drawing up the joint consensus document on the diagnosis and treatment of tobacco addiction and supported by the most important scientific societies with an interest in this subject (SEPAR, semFYC, SEMERGEN, and SEDET).[10] Finally, the importance of pulmonologists in Spanish biomedical research has recently come to light. This trend is not solely related to the volume of the scientific work being undertaken, but also to the impact of the work carried out and published.[5,8,15,16]

*4. Reasons related to communication with the public.* Although this aspect might appear to be of slight importance, there is good reason for insisting on the importance of the fact that smoking is intuitively linked in the mind of the general public to the airways and lungs, a circumstance that influences their thinking. The fact that tobacco smoke enters the body through the airways is very relevant, and as this is the case it is not hard to grasp that the most common and severe smoking-related diseases are respiratory in nature. Consequently, the respiratory disease specialist—the pulmonologist—is the person best placed to undertake the specialized management and treatment of tobacco dependence. Furthermore, some respiratory diseases are caused directly and almost exclusively by smoking, and others (in fact, all others) are exacerbated to a greater or lesser degree by smoking. Conversely, since many of the respiratory diseases caused by smoking can be prevented or improved solely by giving up the habit, tobacco cessation is a key component of the treatment of any lung disease.

*5. Historical reasons.* In recent years, as a result of the work, voluntary effort, and initiative of pulmonologists, a series of specialized smoking dependence clinics and consultation services have been set up in hospitals belonging to the public health system. However, as this tobacco dependence treatment effort has not been planned in a systematic way, these clinics are currently attending all smokers who express a desire to quit and there has been little or no application of the recommended stepped care delivery procedure that would optimize available resources. This situation has hindered the main objectives of the specialized tobacco cessation consultation services and clinics, which should be overseen by respiratory specialists and should focus essentially, in addition to their research and training function, on the specialized treatment of tobacco addiction.[17]

As is the case with any other biomedical activity, if real excellence is to be achieved, the closely related tasks of caring for patients, research, and training demand the involvement of well-qualified and properly trained professionals. For all these reasons, SEPAR considers pulmonologists to be the most appropriate and best qualified health professionals, in general terms, to deal with the specialized treatment of tobacco addiction. Undoubtedly, respiratory specialists are the most appropriate professionals, in general, for carrying out this work and coordinating or managing specialized tobacco cessation consultation services and clinics.

## Financing the Treatment of Tobacco Addiction

In recent years a number of trials have studied the effectiveness, efficiency, and cost of the different types of interventions currently used to treat tobacco dependence. According to the results of various meta-analyses, the following evidence-based recommendations can be made.

*1.* All smokers who are trying to quit benefit from pharmacotherapies and psychological support (evidence level A).[3]

*2.* The pharmacotherapies that have been shown to be effective tobacco cessation aids are nicotine replacement therapy and bupropion (evidence level A).[3]

*3.* Pharmacological tobacco cessation treatments are highly cost effective and are, therefore, extremely advantageous (evidence level A).[3]

*4.* Tobacco cessation pharmacotherapies are more cost-effective than the treatment of other chronic diseases, such as hypertension and hypercholesterolemia (evidence level A).[3]

*5.* Smoking cessation interventions directed at hospitalized smokers are highly cost-effective as they reduce the length of stay in hospital and the number of future admissions. Such interventions also reduce short-term hospital costs (evidence level B).[3]

*6.* The treatment of smoking dependence in patients with COPD is the only intervention that has been shown to increase survival and optimize treatment in this disease. Furthermore, research has shown that such treatment is still effective up to 5 years after the intervention (evidence level A).[18-20]

*7.* When the tobacco cessation intervention is financed by a national health system, the cost-effectiveness ratio is higher than when such financing is not provided (evidence level B).[3]

*8.* In Spain, extending a consultation by more than 50% of its usual duration in order to have time to advise the patient to stop smoking would cost between €12000 and €15000 a year. However, this strategy would also lead to a gain of 13692 life–years and provide further benefits yearly: 1228 deaths prevented, 2284 cases of morbidity avoided, and €24000 saved in direct costs, and €650 in indirect costs for every patient.[21]

*9.* In Spain, extending a consultation by more than 50% of its usual duration in order to have time to offer patients pharmacological treatment for their tobacco

dependence would cost over €600 000 per year. However, such a strategy would also save 44 041 life-years and annually prevent 3952 deaths and 7345 cases of morbidity. Savings per patient and per year would amount to €78 000 in direct costs and €3000 in indirect costs.[21]

*10.* A 50% reduction in the smoking population would prevent 30 million deaths in the world in the coming 25 years, while a 50% reduction in the number of young people starting to smoke would "only" result in a reduction of 4 million deaths over the same period.[3]

## Recommendations on the Financing of Tobacco Dependence Treatments

In view of the evidence cited, the following recommendations can be made:

*1.* All smokers should receive a therapeutic intervention for their tobacco dependence, and these interventions should take into account the patient's current attitude to quitting.

*2.* All smokers should be offered appropriate tobacco cessation therapy when they are willing to make a serious attempt to quit.

*3.* Smokers with respiratory diseases attributable to smoking should be strongly advised to stop smoking and should receive help from their pulmonologist to achieve this end.

*4.* Financing universally available tobacco cessation treatments would generate a considerable drug bill for the National Health Service. In order to achieve more rational use of available resources, it is proposed that such pharmacotherapies should only be offered, at least initially, by respiratory medicine specialists. Moreover, all health care professionals should be made more aware of the need to always advise their patients to stop smoking and to refer to a pulmonologist any smokers who are willing to quit and require specialized treatment to achieve this aim. This recommendation is based on the epidemiological, scientific, and institutional evidence that has been discussed in this article.

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