

NATIONAL PROGRAMME OF PREVENTION AND CONTROL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

DIRECTORATE-GENERAL OF HEALTH



NATIONAL PROGRAMME OF PREVENTION AND CONTROL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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This document was carried out at the Directorate-General of Health by

Cristina Bárbara
Filomena Ramos
Manuela Almeida
Maria João Marques Gomes

Scientific co-ordination
António Segorbe Luis

Technical co-ordination
Alexandre Diniz

Editor

Directorate-General of Health
Al. D. Afonso Henriques, 45
1049-005 Lisbon
Tel. 21 843 05 00 • Fax 21 843 05 30
dgsaude@dgsaude.min-saude.pt
<http://www.dgs.pt>

Cover and Illustration
Vitor Alves

Informatic Support
Luciano Chastre

Translation
Margarida Serra, Jessica Jones

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INTRODUCTION

Chronic Obstructive Pulmonary Disease (COPD) is one of the main causes of chronic morbidity, loss of quality of life and mortality. Its increase is foreseen to the following decades.

COPD is still responsible for high number of visits to medical appointments and to emergency departments, as well as for a significant number of hospitalisations, often on a long-term basis, besides contributing to the consumption of pharmaceuticals, long-term oxygen and ventilation therapy at home.

Such scenarios make it that COPD is one of the health problems with high magnitude, being foreseeable that it will become one of the main causes of death at the end of the first decades of the XXI Century.

In view of the above, a public health intervention at a national level turned out to be crucial, being planned and specifically targeted at the fight against COPD.

Indeed, there is a significant increasing trend in the mid-term and long run of the active populations performance loss. There are also immediate costs that derive from COPD which must be contradicted due to the fact that more acute episodes, hospitalisations and an increase of pharmaceutical prescriptions are foreseen, not forgetting that rehabilitation, oxygen therapy and non-invasive domicile ventilation is more frequent.

Taking into account all of these facts, the Ministry of Health considered it necessary and urgent to establish and implement, in fulfilment with the National Health Plan 2004-2010, the current Chronic Obstructive Pulmonary Disease National Programme of Prevention and Control.

This Programme expects an enclosing approach to the primary care providing services regarding the population at risk or already disease carriers. Thus its purpose is to promote early diagnosis, adequate treatment and rehabilitation, in counterpart with the actions developed by the Programme of Integrated Intervention On Determinant Health Factors Related with Lifestyles, by the Tobacco Smoking Prevention Council and interception with the Continuous Health Care Network.

The investment to be made in the ambit of this Programme, not only in relation to the performance of primary prevention, but also in relation to secondary and tertiary prevention, determines a special appeal to bring together the efforts of all the health providing departments in order to obtain, swiftly, significant health gains in respiratory health and quality of life.

The National Programme for the Prevention and Control of the Chronic Obstructive Disease will be applied, fundamentally, through the development, across geographic scope of the Regional Administrations of Health, of strategies, such as: intervention, training and collection of information analysis.

The Directorate-General of Health will develop, at a national level, technical tools of support and aid to implement the Programme, which should undergo replication with advisable regional and local adaptations according to each location's specific characteristics.

The Chronic Obstructive Pulmonary Disease Prevention and Control National Programme, which is being presented with technical-normative character was inspired in the GOLD Project – Global Initiative for Chronic Obstructive Pulmonary Disease, of the World Health Organisation and US – National Heart, Lung and Blood Institute. It counts upon the scientific avail of the Portuguese Society of Pneumology.

BACKGROUND

The prevalence of COPD in Portugal, as far as airflow limitation is concerned in active adults, has been estimated in about 5,3%. Usually, this condition is progressive and characterised by reduced reversibility. Its pathogenesis is associated with an anomalous inflammatory response of the conducting airways, both small and large, to inhaled particles or noxious gas. The course of COPD is defined by exacerbations whose frequency increases with disease severity.

COPD prevalence increases with age. It is higher for males, although it has been increasing in women, due to the prevalence increase of smoking in the female sex.

In fact, tobacco smoking besides being the main cause of COPD keeps on contributing to the high prevalence of this disease in Portugal.

COPD causes disability, with relevant negative impact on the patients quality of life and on their family, professional and social environment. The World Bank has estimated that COPD is responsible for more than 29 million of disability adjusted life years (DALYs)¹ and for a million of years of life lost in the whole World.

Globally, COPD as a disability cause ranked the 12th position in 1990, being foreseen that it will rank the 5th position in the year 2020, followed immediately by ischaemic disease, major depression, road accidents and cerebral-vascular disease. In fact, it is estimated that, at least 10% of the World population over the age of 40 may suffer from COPD, that means that this disease may become three times more frequent than what is estimated nowadays.

On the other hand, the direct costs in Portugal deriving from COPD within a period of 5 years and in what concerns hospitalisations increased significantly, as well as the intra-hospital lethality rate. Or better still, in only a 5-year intermission, the number of hospitalised patients due to COPD, in Portugal, increased 5%, having their costs raised in an disproportionate way, since they represent an additional of 10%.

Table I – Costs with Hospitalisations from COPD (1998-2002)

	No. of Hospitalised Patients	No. of Hospitalised Days	Intra-Hospital mortality (% hospitalised)	Costs
1998	12 342	107 786	5,5 %	23 992 371 €
2002	12 974	120 694	6,4 %	27 668 761 €

Source: GDH Data Base

¹ DALY s – disability-adjusted life-years – the sum of potential life lost due to premature mortality and the years of productive life lost due to disability, adjusted to the severity of the disability.

The costs with domicile oxygen therapy have doubled, in the Portuguese mainland, in the same time period.

Table II – Domicile Oxygen Therapy Costs (1998–2002)

	RHA North	RHA Centre	RHA LVT	RHA Alentejo	RHA Algarve	Total
1998	11 673 808 €	4 150 103 €	6 586 162 €	394 723 €	69 352 €	22 874 148 €
2002	22 564 739 €	10 114 753 €	11 728 635 €	2 027 229 €	683 889 €	47 119 245 €

Source: Regional Health Administrations

The accelerated increase of costs with domicile oxygen therapy, despite the stability of the individual cost of treatment reflects above all, a significant increase in the number of patients who undertake this therapeutical support.

As already said tobacco smoking is the main environmental risk factor of COPD, being present in more than 90% of cases.

Our country's scenario regarding tobacco smoking suggests that COPD should be considered as a public health problem tending to aggravate in the future, if one bears in mind the evaluation which is consensual and universally accepted, that over 20% of smokers, at least, will progressively develop obstructive airflow limitation.

GUIDING PRINCIPLES

DEFINITION OF COPD

Variable and imprecise definitions of COPD have either contributed to the difficulty of its morbidity and mortality quantification, or for its late diagnosis.

In the Prevention and Control National Programme of Chronic Obstructive Pulmonary Disease, COPD is understood to be the pathologic status that is characterised by airflow obstruction, which is not fully reversible. Airflow limitation is generally progressive and associated with an anomalous inflammatory response of the conducting airways to inhaled particles or noxious gas.

DIAGNOSIS OF COPD

The diagnosis of COPD should be taken into account in all the patients who show signs of chronic cough, chronic sputum production, dyspnea or an history of exposure to risk factors for the disease.

Spirometry must be performed on all patients to establish a diagnosis in order to confirm airflow obstruction. This obstructive limitation is not completely reversible after the administration of a bronchodilator.

One considers that there is bronchial obstruction and consequently COPD when after the administration of a bronchodilator the FEV1/FVC relation remains lower than 70%.

Patients suffering from chronic productive cough and have a history of exposure to environmental risk factors should be examined in order to assess the obstruction of the conducting airways, even in the absence of dyspnea.

Spirometry is fundamental in the diagnosis and assessment of COPD, owing to the fact that it is the most objective test, standardised and easily reproducible to measure the degree of airway obstruction.

CLASSIFICATION BY SEVERITY OF COPD

The classification of COPD, which is based on spirometric measurements, has shown to be very useful to infer the patient's health status, the management of health care resources, the risk of exacerbation and the prognosis of the disease.

The pulmonary pathological alterations lead to physiological changes that are characteristic of COPD, such as hypersecretion of mucus, dysfunction of cilia, limitation of the conducting airways, hyperinflation of the lung, anomalous gas exchanges, lung hypertension and Cor pulmonale. These alterations develop, generally, within the disease progression. The severity of COPD is classified in accordance with four stages:

FEV1 – Maximum Expiratory Volume in the 1st second
FVC – Forced Vital Capacity

Stage 0: Risk of COPD

Chronic cough and sputum production, in individuals with exposure to inhaled particles or noxious gas. Normal lung function whenever tested by spirometry.

Stage I: Mild COPD

Mild airflow limitation ($FEV_1/FVC < 70\%$ but $FEV_1 > 80\%$ predicted) and usually, but not always, chronic cough and increased sputum production.

Stage II: Moderate COPD

Worsening airflow limitation ($50\% < FEV_1 < 80\%$ predicted), and usually the progression of symptoms, with dyspnea typically developing on exertion.

Stage III: Severe COPD

Further worsening of airflow limitation ($30\% < FEV_1 < 50\%$ predicted), increased dyspnea, and repeated exacerbations which have a negative impact on patient's quality of life.

Stage IV: Very Severe COPD

Severe airflow limitation ($FEV_1 < 30\%$ predicted) or $FEV_1 < 50\%$ predicted often with chronic respiratory failure or right side heart failure. Patients may have very severe (stage IV) COPD even if the FEV_1 is $> 30\%$ predicted, whenever these complications are present.

CONTROL OF CIGARETTE SMOKING

There is scientific evidence that cessation of cigarette smoking represents the only measure that delays the progression of COPD and has a better cost/benefit ratio.

It is acknowledged that many of the current smokers are willing to stop smoking if given support and management of tobacco consumption is considered the golden rule of prevention strategies.

It is a priority of the health services to provide, at the levels of primary and secondary health care services, the setting up of medical appointments for cessation of cigarette smoking. These should be planned at a regional level, with the objective of promoting specific aid to stop cigarette smoking, in order to make its accessibility nationwide.

Short term routine measures and smoker's education, which have a low rate of success, should be associated with differentiated strategies in medical appointments for smoking cessation with a significantly higher rate of success. These include, among other measures, specific pharmacological management.

IMPROVING THE DIAGNOSIS OF COPD

The sooner the diagnosis of COPD is achieved, there exists more possibilities of delaying the natural progression of the disease.

Spirometry is the test that enables the diagnosis of COPD to be confirmed. It should be made as early as possible.

Spirometric testing enables assessment of disease severity and adequate medical prescription. Furthermore, it allows measures for the control of signs and prevention of exacerbations, with a decrease of medical appointments, hospitalisations and work absenteeism, which are associated with the decline of the patients quality of life.

Spirometry, at a primary health care level, must become common practice. It is vital that regional health administrations plan and provide the allocation, by groups of health centres, of specific equipment and qualified personnel to that task. A more detailed assessment of respiratory function should be made at hospital level.

IMPROVING THE FOLLOW UP OF THE COPD PATIENT

The periodic follow up of the COPD patient is fundamental in order to delay the progressive rate of lung function decline caused by disease development.

Taking into account that COPD has an insidious progressive course it is foreseeable that in the long run, lung function will decline.

Patients in 0 to II stages of the COPD Severity Classification should have follow up on a periodic basis in the primary health care, so as to achieve health gains at a long shot.

Patients in III and IV stages require periodic collaboration between the primary health care and hospital care, so as to achieve health gains and rational management, with direct and indirect reduction of costs.

At the health care unities the patients with COPD should be classified as belonging to a vulnerable group according to their severity stage, require appeal for a periodic medical surveillance.

Local measures for domicile monitoring of COPD patients classified in stage IV should be set up.

IMPROVING THE CONTROL OF COPD

The global approach of the control of COPD is characterised by the management according to disease progression.

The control strategy of COPD ought to be based upon an individualised assessment of tobacco smoking eviction, disease progression and the response to the pharmacological treatment prescribed.

Severity of COPD is determined by the signs and degree of airflow obstruction, as well as by other factors, such as the nutritional status, frequency and severity of exacerbations, existing respiratory insufficiency, cor pulmonale or other complications and co-morbidities.

Treatment of COPD depends directly upon the will and ability of the patient to put into practice the recommended control. In view of this, education management of patients with COPD is essential in order to improve their competencies and capability to deal with the natural course of the disease.

The patient's therapeutic education in relation to COPD monitoring should be managed within various frameworks of the different health care levels. Whether be it in medical appointments, home cares, or in rehabilitation programmes but always adapted to the needs and to the environment where the patient lives.

The process of managing education should be interactive, practical, with clear objectives to be fulfilled and adapted to the patients intellectual and social competencies, such as smoking cessation, basic notions about COPD and specific aspects of the treatment.

The educational process should also promote the acquisition of competencies for self-control of COPD, as self-help in order to minimise dyspnea and how to act in case of exacerbation.

The follow up of patients with COPD must contemplate the discussion of new symptoms or of symptoms that may have worsened.

Spirometric testing should always be done whenever there is a substantial increase of symptoms or the occurrence of complications.

In order to adjust management in an appropriate manner to the progression of COPD, the patients' follow up must include the discussion of the therapeutic regime. Moreover, the frequency, severity and probable causes of the exacerbation should be assessed, as well as accounting the number of hospitalisations caused by them.

It is through the intervention in stages 0 and I that more substantial health gains are ensured.

The patients that present stages II and III, require a periodic articulation without any gap between the primary and secondary health cares, in order to obtain health gains in the short and medium term as well as of rationalisation of direct and indirect costs.

The Medicare-therapy for COPD should only be used to decrease the symptoms and the complications of the disease. However, there is not any evidence that it will change the inexorable decline of lung function on a long term basis.

The bronchodilator drugs should be the elected ones for the symptomatic control of COPD.

The long-term treatment of the patient with COPD with inhaled glucocorticoids has a particular indication for stages III and IV because it decreases the incidence of exacerbations.

IMPROVING THE ACCESS TO REHABILITATION

There exists scientific evidence that the patients with COPD benefit from physical exercise programmes, which improve the symptoms of dyspnea and reduce the degree of fatigue.

Regarding the fact that there is the possibility of intervention in the sense of improving these patients' quality of life, conditions of accessibility of the patient with COPD to rehabilitation cares should be set up in a progressive way, to be carried out in accordance with referral criteria established between health units in the geographic area of each Regional Health Administration.

The articulation with the National Network of Continuous Health Care is considered fundamental.

IMPROVING THE ACCESS TO LONG-TERM OXYGEN THERAPY

Long-term oxygen therapy is the second measure, after smoking cessation, which delays the natural course of COPD.

There is scientific evidence that long-term oxygen therapy of patients with chronic respiratory insufficiency, over a 15 hour-a-day period, will improve their length and quality of life.

RESTRUCTURING THE CARE NETWORK TO PATIENTS WITH COPD

Building up conditions that allow putting into practice the principle of continuous cares between levels and types of health cares is fundamental in order to be able

to reduce the complications of COPD, to improve the patients performance and obtain health gains.

Achieving this goal, the definition of a national referral network regarding the area of pulmonology becomes indispensable.

OBJECTIVES

The National Programme for the Prevention and Control of the Chronic Obstructive Pulmonary Disease seeks, as general objectives:

1. To invert the growth trend of the prevalence of COPD.
2. To improve the health status and the performance of the patient with COPD.

Nevertheless, it is considered essential that the National Programme for the Prevention and Control of the Chronic Obstructive Pulmonary Disease attains the following specific objectives:

1. To reduce hospitalisation episodes that are due to COPD.
2. To reduce referral to hospital emergency services due to exacerbation or complications of COPD.
3. To rationalise the prescription and consumption of pharmacological therapy to be used in COPD.
4. To contradict the progressive trend of COPD into severe disease stages.
5. To reduce mortality due to COPD.

TARGET POPULATION

The target population of the action of the National Programme for the Prevention and Control of the Chronic Obstructive Pulmonary Disease are the patients, of both sexes, with confirmed COPD.

Moreover, to be considered as population with additional risk, the one that shows the following characteristics:

1. Age > 40 years, with a smoking history over a 10 year period..
2. Professional activity with confirmed respiratory risk with exposure to occupational dusts and chemicals.
3. Chronic cough, chronic sputum production or exertion dyspnea.
4. Alpha-1-antitrypsin deficiency.

DEVELOPMENT TIMETABLE

The National Programme for the Prevention and Control of the Chronic Obstructive Pulmonary Disease comprises, in accordance with the National Health Plan, will develop up to 2010. This will occur with eventual corrections which may be advisable according to periodical assessments to which the programme will be submitted.

The development of the Programme will be carried out in two phases:

- a) The implementation phase corresponding to the period that will go until the end of 2007.
- b) The consolidation phase corresponding to the period that will go from 2008 to 2010.

STRATEGIES OF INTERVENTION

The strategies of intervention include actions of organisation nature, as well as of the professionals' performance improvement. These aims do not only intend the enhancement of the entire identification process and follow up of the population with additional risk, but also the diagnosis, treatment, recovering and control of patients with COPD. Moreover, the improvement of the results obtained, quantified in terms of health gains is also contemplated.

Primary prevention and risk reduction, opportunistic scanning and precocious detection made with the intervention of the primary health, are indispensable measures for the incidence and morbidity reduction rates of COPD.

In order to attain the National Programme for the Prevention and Control of the Chronic Obstructive Pulmonary Disease objectives, the following are considered as the main strategies of intervention:

E1

To create and promote smoking cessation medical appointments.

E2

To set up and issue norms of good practice in the approach of smoking cessation.

E3

To set up and ensure norms of good practices in the diagnosis of COPD.

E4

To promote at the level of primary health cares, the use of spirometry to be carried out in a systematic and annual basis in target populations with additional risk outlined in the current Programme.

E5

To set up and promote norms of good practice in primary health care, in the follow up of the COPD patient presenting 0 to II stages of the severity classification.

E6

To set up and promote norms of good practice in the follow up of the patient with COPD in stages III and IV of the Severity Classification, based upon the link between primary health and hospital cares.

E7

To set up and promote technical norms for home monitoring COPD patients in stage IV of the Severity Classification.

E8

To set up and promote norms of good practice in education management, for the self-control of the COPD patient.

E9

To set up and promote technical norms regarding the access to rehabilitation cares by COPD patients.

E10

A proposal to set up a national register for patients with respiratory insufficiency.

E11

A proposal to set up a commission of rationalisation regarding the access to home oxygen therapy and the monitoring of its use.

E12

To set up and promote a referral network in respiratory care

STRATEGIES OF TRAINING

The training strategies include information actions directed to the population, either in general or in specific groups, which aim a better ability to the individual management of COPD. Besides, they must also contain training actions and normative guidelines, targeting the health professionals in order to promote the improvement of their practice in the approach to COPD.

To attain the objectives of the National Programme for the Prevention and Control of the Chronic Obstructive Pulmonary Disease, main training strategies will be developed as follows:

E13

To promote the adjustment of the number of vacancies in the Pulmonology Internship, according to the needs that have not yet been fulfilled in specialized respiratory care, within the National Commission of Medical Internship and Hospital Administrations.

E14

To promote respiratory care training in the Internship of General and Family Medicine.

E15

To set up and promote pedagogical tools to be used in training activities targeting health professionals as far as the diagnosis and treatment of COPD are concerned.

E16

To promote and develop training measures in the practice of spirometric testing and ventilotherapy.

E17

To promote and develop training strategies in order to organise and put into practice smoking cessation medical appointments.

E18

To develop multiple partnerships for the promotion to the general population and also to specific groups of information on:

- a) prevention of COPD;
- b) education for the control of COPD.

STRATEGIES OF COLLECTING AND INFORMATION ANALYSIS

The collecting and data analysis strategies aim at actions to improve the epidemiological knowledge of COPD, as well as how to obtain relevant information on its impact on people's performance attained by them.

In order to accomplish the objectives of the National Programme for the Prevention and Control of the Chronic Obstructive Pulmonary Disease the main strategies considered for collecting and analysing information, are the following:

E19

To develop partnerships to build up an observatory for COPD, which involves data collecting routes that enable data achievement and analysis on the prevalence and incidence of COPD, as well as the burden of disability and labour absenteeism caused by this disease or by its complications.

E20

To promote partnerships that may develop basic and clinical research in COPD.

E21

To monitor the health gains obtained from the National Programme for the Prevention and Control of the Chronic Obstructive Pulmonary Disease.

CHRONOGRAM

Strategy	2005 Trimestrial				2006 Trimestrial				2007 Trimestrial				2008 Trimestrial				2009 Trimestrial			
	1 st	2 nd	3 rd	4 th	1 st	2 nd	3 rd	4 th	1 st	2 nd	3 rd	4 th	1 st	2 nd	3 rd	4 th	1 st	2 nd	3 rd	4 th
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FOLLOW UP AND ASSESSMENT

The co-ordination of the National Programme for the Prevention and Control of the Chronic Obstructive Pulmonary Disease, as well as the follow up of its execution and annual appraisal is under the responsibility of the Directorate-General of Health, through a Co-ordinating National Commission to be set up by Dispatch of the Minister of Health.

The periodic monitoring of health gains, obtained by the action of the National Programme for the Prevention and Control of the Chronic Obstructive Pulmonary Disease, is carried out based upon the following differential indicators, according to sex and age:

1. Prevalence of tobacco smoking.
2. Prevalence of COPD.
3. Prevalence of COPD in stage III.
4. Prevalence of COPD in stage IV.
5. Incidence of patients with COPD who will be submitted to long-term home oxygen therapy.
6. No. of hospitalisations due to COPD.
7. Labour absenteeism rate due to COPD.
8. Mortality rate due to COPD.

