



# **WHO strategy for prevention and control of chronic respiratory diseases**



**World Health Organization**  
Management of Noncommunicable Diseases Department  
Chronic Respiratory Diseases and Arthritis

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## 1. Introduction

Respiratory conditions impose an enormous burden on society. According to the WHO World Health Report 2000, the top five respiratory diseases account for 17.4% of all deaths and 13.3% of all Disability-Adjusted Life Years (DALYs). Lower respiratory tract infections, chronic obstructive pulmonary disease (COPD), tuberculosis and lung cancer are each among the leading 10 causes of death worldwide. Based partly on demographic changes in the developing world, but also on changes in health care systems, schooling, income, and tobacco use, the burden of communicable diseases is likely to lessen while the burden of chronic respiratory diseases (CRDs) including asthma, COPD, and lung cancer will worsen because of tobacco use and population ageing.

So far, estimates of COPD have been based primarily on mortality statistics. These provide misleading figures because COPD is underdiagnosed and often not listed either as a primary or contributory cause of death. Estimates of prevalence require measurement of airflow obstruction. Consequently, few countries have good population-based data on COPD prevalence. Nevertheless, estimates show death and disability due to COPD are increasing across most regions for males and females.

Asthma, having a relatively low fatality rate, draws less attention than other respiratory conditions, despite the fact that it affects about 150 million people world-wide and is the most prevalent chronic disease in childhood. High prevalence of childhood asthma observed during the last decades predicts the growing prevalence of asthma in the nearest future unless appropriate preventive measures are undertaken.

The Global Strategy for the prevention and control of noncommunicable diseases, developed in direct response to the global threat posed by noncommunicable diseases and endorsed by the Fifty-Third World Health Assembly, cites chronic respiratory disease as one of the four priority disease groups to be addressed.

## 2. Factors contributing to the burden of CRDs

- Multiple determinants serve to increase the burden of CRDs. The direct and indirect exposure to tobacco smoke is the principal risk factor for its development. Other important factors include heavy exposure to air pollution derived from indoor and outdoor sources, occupational related disorders, malnutrition and low birth weight, and multiple early lung infections.
- Studies undertaken over the last three decades provide growing evidence of an increase in atopic diseases and sensitisation to common allergens. Prevalence of asthma is increasing, most rapidly among children, especially where urbanisation is taking place. Such factors as exposure to tobacco smoke, housing with poor ventilation, indoor allergens, viral infections, outdoor air pollution, and chemical irritants are under investigation. Conversely, there exists evidence that cleaner environments present in modern cities understimulate post-natal immune systems, leading to over-sensitization.
- Because of other priorities, CRDs are not receiving the attention and services necessary in many developing countries to prevent and manage them appropriately. Failure to take action results in increasing magnitude.
- Poverty, which engulfs a large portion of the worlds' population, determines the type of affordable housing, the level of nutrition, the level of education and the types of occupations available to people, all of which can impact negatively on health status. Socio-economic factors play an important role in increasing disease prevalence and severity through environmental determinants and may also result in adverse health outcomes caused by the lack of access to appropriate health care.

### 3. Goal of the strategy

The goal is to support Member States in their efforts to reduce the toll of morbidity, disability and premature mortality related to Chronic Respiratory Diseases, specifically COPD and asthma.

### 4. Objectives of the strategy

Based on the Global Strategy for the Prevention and Control of NCDs, the objectives of the WHO strategy on CRDs are:

- *Better surveillance* to map the magnitude of Chronic Respiratory Diseases and analyse their determinants with particular reference to poor and disadvantaged populations, and to monitor future trends.
- *Primary prevention* to reduce the level of exposure of individuals and populations to common risk factors, particularly tobacco, poor nutrition, frequent lower respiratory infections during childhood, and environmental air pollution (indoor, outdoor, and occupational).

*Secondary and tertiary prevention* to strengthen health care for people with Chronic Respiratory Diseases by identifying cost-effective interventions, upgrading standards and accessibility of care at different levels of the health care system.

### 5. General principles

Major barriers exist in establishing effective prevention and control programmes. Experience has shown that in order to overcome these barriers, the following measures need to be addressed:

- Strengthening partnerships among health care systems and other sectors of society (governmental and nongovernmental organizations

in the area of respiratory medicine, international institutions, environment protection agencies, industry, and schools);

- Developing globally accepted criteria for the diagnosis of CRDs;
- Integrating CRD prevention into a comprehensive noncommunicable diseases prevention programme based on the commonality of risk factors and preventive approaches;
- Development and evaluation of reproducible and inexpensive methodologies to monitor COPD suitable for use in developing countries;
- Identifying and addressing barriers to drug and essential device accessibility, developing approaches to improve accessibility to essential drugs in low income countries, designing and implementing a study of CRD drug and device availability and pricing in low and middle income countries;
- Identifying gaps in existing guidelines, using methodologies for guideline development that are evidence-based and take into account public health considerations like cost-effectiveness and feasibility specially in developing countries, using the newly developed guidelines as the rational basis for inclusion of drugs into the Essential Drugs List;
- Strengthening research on primary and secondary prevention interventions of CRD;
- Identifying research priorities, which should include in addition to prevention strategies, therapeutic regimens, alternative drug delivery systems, traditional medicine and alternative therapeutic approaches;
- Establishment and promotion of partnerships with professional, scientific, and educational institutions to promote and implement the initiative. Initiating cost-effectiveness studies related to risk factor reduction and secondary prevention interventions for CRDs with emphasis on extending the capacity of health professionals beyond



the traditional focus on acute care of communicable respiratory diseases;

- Adapting existing guidelines for the prevention and management of CRDs to the needs of developing countries and adapting them into primary health care. The use of single disease guidelines may become impractical in primary care settings characterised by a heavy daily workload. The feasibility of the syndromic approach addressing common respiratory symptoms should be explored;
- Improving the capacity of health systems in responding to the health care needs of CRDs. Affordable standards of health care for people with CRDs should be accessible to all populations. Health care providers should have access to equipment and supplies needed for diagnosis and management, and patients need access to essential drugs. The role of care providers in promoting prevention measures like tobacco cessation, immunisation, and management of acute lower respiratory tract infection and tuberculosis should be strengthened.

## **6. Strategic Directions**

### ***Surveillance***

To quantify and track CRDs and to improve comparability across member states, there is a need to standardize epidemiological methods and to develop a uniform set of diagnostic criteria/tools.

National surveillance systems should primarily focus on monitoring the following, bearing in mind the importance of developing and implementing simple methodologies for providing objective measures of *trends*:

- cause specific mortality;
- risk factor prevalence;
- certain morbidity data like hospital admissions and consultations due to common respiratory conditions, as well as therapeutic trends.

Standard indicators should be adopted. These may include lung function measurements, disease progression, absenteeism from school or work, and hospitalisations.

Elements of health care structure that can also be monitored to evaluate the quality of care include drug availability, cost and quality, existence of local guidelines and policies, and level of training of health professionals.

### ***Primary prevention***

Primary prevention of CRDs requires the reduction or avoidance of personal exposure to common risk factors, to be started during pregnancy and childhood. Avoidance of direct and indirect exposure to tobacco smoke is of primary importance not only for healthier lungs, but as a preventative measure for the other 3 priority NCDs (cardiovascular disease, cancer, and diabetes) identified in the Global Strategy for NCD prevention and control. Other shared risk factors that should be addressed include low birth weight, poor nutrition, acute respiratory infections of early childhood, indoor and outdoor air pollutants, and occupational risk factors.

For primary prevention to be effective, other sectors within a community must be actively engaged. It is beyond the scope of work and ability of any health care system to achieve changes in environmental standards, which are essential, if one intends to reduce the population's exposure to disease determinants and pollution risks. Additionally, the population must be fully informed about what constitutes a healthy lifestyle, such as healthy nutritional habits, regular exercise and avoidance of tobacco, airway irritants and allergens.

For asthma, primary prevention implies the prevention of sensitization to factors that might subsequently induce disease. In addition to those mentioned, there is increasing evidence that allergic sensitization, which is the most common precursor to the development of asthma, can occur antenatally. As such, current knowledge on primary prevention requires emphasis on the health, nutrition and environment of the pregnant woman

and newborn child. However, more research is needed before effective strategies for primary prevention of asthma can be established.

### ***Secondary and tertiary prevention***

Early detection of occupational asthma is vital to prevent further progression and to ensure cost-effective management. Programmes for early detection of COPD have been suggested but their cost-effectiveness have yet to be fully evaluated. Although long term decline in lung function may not be reversible, effective management including smoking cessation, pulmonary rehabilitation and reduction of personal exposure to noxious particles and gases can reduce symptoms, improve quality of life, and increase physical fitness. Further, evidence indicates influenza vaccination is a cost-effective intervention for patients with COPD.

Asthma, although not curable, is a treatable disease with preventable morbidity. It is also a known risk factor for COPD. Secondary and tertiary prevention involves avoidance of allergens and non-specific triggers. Optimal pharmacological treatment, including the use of anti-inflammatory medication, has been shown to be cost-effective in controlling asthma, preventing the development of chronic symptoms, and reducing mortality.

## **7. Priorities for WHO**

### ***Priorities for WHO include:***

- Development and evaluation of reproducible and inexpensive methodologies to monitor COPD suitable for use in developing countries;
- Identifying and addressing barriers to drug and essential device accessibility, developing approaches to improve accessibility to essential drugs in low income countries, designing and implementing a study

of CRD drug and device availability and pricing in low and middle income countries;

- Identifying gaps in existing guidelines, using methodologies for guideline development that are evidence-based and take into account public health considerations like cost-effectiveness and feasibility specially in developing countries, using the newly developed guidelines as the rational basis for inclusion of drugs into the Essential Drugs List;
- Strengthening research on primary and secondary prevention interventions of CRD;
- Identifying research priorities, which should include in addition to prevention strategies, therapeutic regimens, alternative drug delivery systems, traditional medicine and alternative therapeutic approaches;
- Establishment and promotion of partnerships with professional, scientific, and educational institutions to promote and implement the initiative.

## **8. Role of Member States**

Effective measures for the prevention and control of CRDs should be integrated into health systems of all countries. National programmes should:

- be comprehensive, covering all three components- surveillance, prevention and management;
- integrate the primary prevention of CRDs with prevention initiatives for other common NCDs like CVDs, diabetes and certain cancers;
- involve public and private health systems;
- establish a connection between health care providers and schools to educate children about the dangers of tobacco smoke and the importance of minimizing lower respiratory tract infections;

- ensure the involvement of all levels of health care providers, universities, patients, patients support groups, third party payers, and non-governmental organizations;
- provide proper training and continuing education on prevention and management of CRDs;
- promote and implement research for better understanding of molecular and cellular pathogenic mechanisms of CRD;
- implement mechanisms for promoting access to basic drugs and adherence to long-term therapy particularly for poor and disadvantaged people;
- include a rigorous method of evaluation and audit of health systems to ensure implementation and to test local effectiveness.