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Implementation of the WHO Strategy for Prevention and Control of Chronic Respiratory Diseases

**Meeting Report
11-12 February 2002**



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

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Background

Respiratory illnesses are of considerable importance as a cause of death and morbidity and this has in the past and currently, largely reflected the

1. The relative burden of non-communicable chronic respiratory diseases increases with Westernization.

prevalence of tuberculosis, pneumonia, lower respiratory tract infections and opportunist lung infections in those with HIV. However as control of these infectious diseases is hopefully achieved they will be replaced by a growing population of those with long term respiratory conditions which in many cases reflect current lifestyle changes.

2. COPD, Asthma, Occupational lung diseases, post-TB and post-pneumonia CRDs are an emerging public health problem in urbanised areas of Low- and Middle-income countries

These diseases include Chronic Obstructive pulmonary disease, Asthma, Occupational Lung Disease and the sequelae of respiratory infections such as occurs after tuberculosis, or for instance with bronchiectasis occurring after early

childhood infections. Whilst smaller in number other respiratory diseases include Cystic Fibrosis and diffuse interstitial lung disease. Obesity associated sleep related breathing disorders (which are associated with hypertension and excess cardio and cerebrovascular mortality) is also increasingly being recognised in South Asia and also probably has a higher prevalence amongst Afro Caribbeans.

WHO elaborated a Strategy for Prevention and Control of Chronic Respiratory Diseases (CRDs)¹ that was drafted after the expert consultation held in January 2001².

3. Goal of the WHO strategy against CRDs is to support Member States in their efforts to reduce the toll of morbidity, disability and premature mortality related to chronic respiratory diseases.

The advisory meeting in Montpellier, France on 11-12 February 2002 comprised the next step in the process of developing a comprehensive implementation programme of the WHO strategy against chronic respiratory diseases.

4. Then a comprehensive programme to implement at country level the WHO strategy against CRDs is needed, dealing with 3 aspects: A) surveillance, B) prevention, C) management.

Three strategic components have been identified as essential for meeting the goal; surveillance, primary prevention, and management. Position papers and brief presentations by participants addressing the strategic directions served as starting points for discussion in the meeting (available upon request from CRA).

¹ WHO strategy for prevention and control of chronic respiratory diseases, WHO/MNC/CRA/02.1

² WHO consultation on the development of a comprehensive approach for the prevention and control of chronic respiratory diseases, WHO/NMH/CRA/01.1

Purposes of the Meeting

The expected results of this advisory meeting were two-fold:

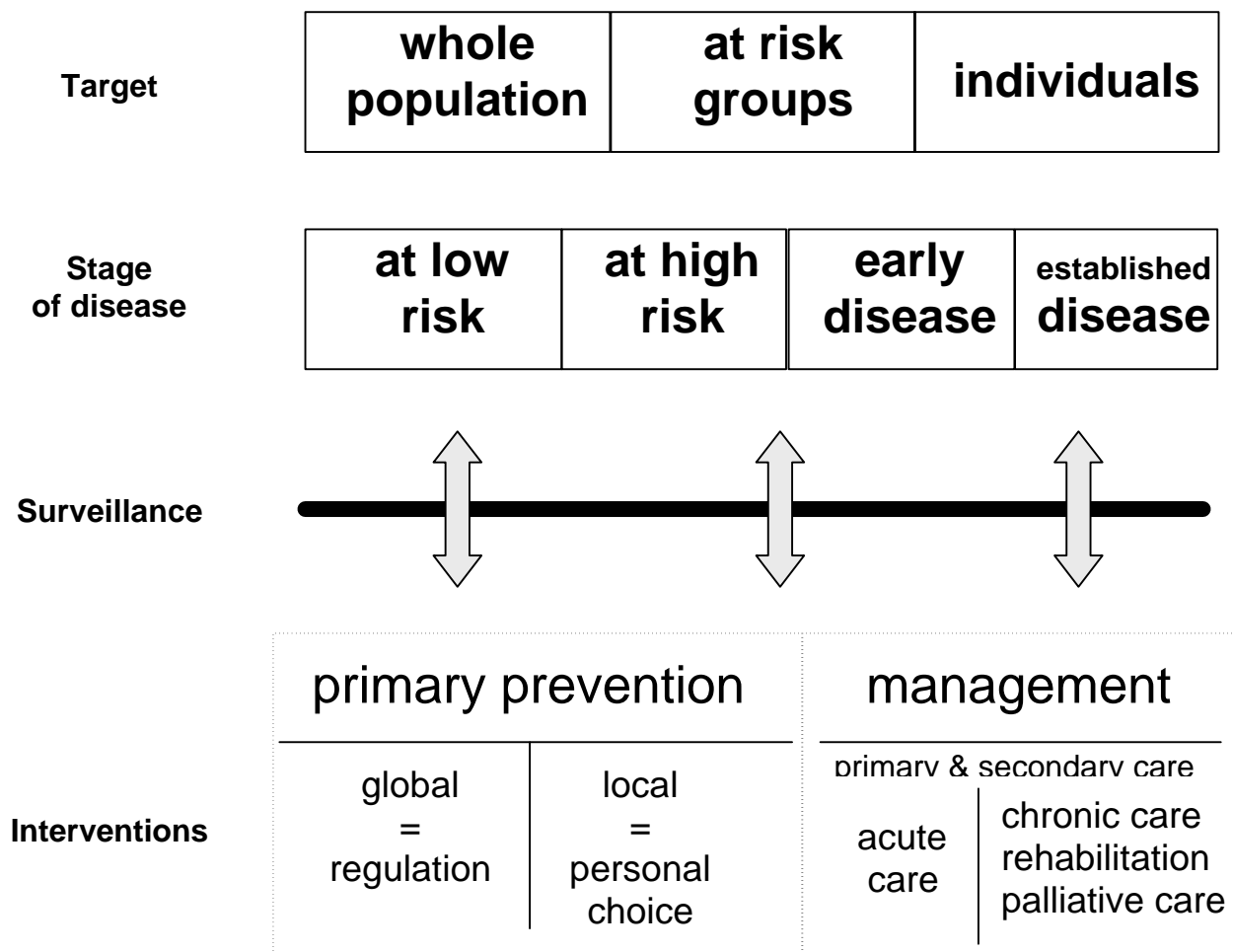
1. to delineate the elements that comprise each strategic component outlined in the global strategy;
2. to determine the implications of these for WHO in implementing a global strategy to prevent and control CRD with regard to its six core functions (see box).

1. *Articulation of policy and advocacy*
2. *Management of information (knowledge)*
3. *Provision of technical and policy support to countries*
4. *Development of national and global partnerships*
5. *Development of norms and standards*
6. *Stimulation of development of new technologies, tools and guidelines*

Achievement of the two goals in concert would form the basis for a comprehensive plan to implement the CRD strategy.

Schematic Representation

Over the course of the 2-day meeting the following diagram was used to visualize the task and plot the components which would fall within each of the strategic components.



Monitoring CRDs: Surveillance

Monitoring needs to be undertaken as part of a comprehensive plan to control and prevent CRDs. Success in control and prevention requires (box):

- 1. Knowledge of the causes of the disease**
- 2. Means to control either the cause, the exposure, or the effects**
- 3. Political will and resources to intervene**

Data collection needs to be feasible, affordable and robust

Burden Assessment for Priority Setting

The burden of CRDs relative to other diseases will vary from country to country. These will depend on the age structure of the local population, and local levels of exposure to risk factors. The data gathered via surveillance tools can inform local decision makers and provide the supporting evidence for priority setting.

Pre and Post Intervention Evaluation

Surveillance tailored to a programme or project guides programme development and service delivery. The surveillance information aims to monitor the impact a programme has on exposure to risks or on the incidence or prevalence of disease and monitors progress towards defined goals. Monitoring exposure to risks and incidence and prevalence of disease serves to monitor the effectiveness of a planned intervention and to trigger changes in the programme where these are appropriate.

Evidence Based Resource Management

Governments throughout the world seek to provide prevention and treatment programmes that are affordable, effective, and make best use of resources. Appropriate research including cost effectiveness studies and management audits can provide the information required by governments to meet their needs in this context.

Some etiological factors for disease development such as tobacco and air pollution will be central to other programmes, and the means to control these factors often exist outside the realm of the health sector. Therefore, direct or indirect control over these agents and monitoring in these areas may be independent of the CRD programme. Co-operative approaches with other project coordinators, agencies or sectors of a community will be required to ensure that the needs of the CRD programme are met in these areas.

Points of Future Action by WHO:

- ⇒ Review of current resources, tools
- ⇒ Development of tools where necessary
- ⇒ Technical assistance to implement tailored surveillance programmes
- ⇒ Development of co-operative surveillance networks

Preventing CRDs: ———▶ **information + integration**

A prevention strategy requires:

1. **information** to guide policy development and to prepare the different target groups for participation in the comprehensive strategy; and
2. **integration** which according to the “Proceedings of the Global Forum on Noncommunicable Disease Prevention and Control”³, entails the following.

INTEGRATION: "First, it means that programmes aim at interventions that bring about joint action on several risk factors by the health systems. Second, it calls for a comprehensive approach combining different strategies for implementation including policy development, capacity building, partnership, and information support at all levels. Third, integration calls for intersectoral action to implement health policies; this other aspect of integration is needed to address the major determinants of health that fall outside the remit of the health system. Fourth, integration also refers to efforts to combine population and high-risk approaches by linking prevention actions of various components of the health system including health promotion public health services primary care and hospital care ”

Creation of Collaborative Networks

Referring back to the schematic representation used to plot the necessary components of a comprehensive implementation plan (see page 4), note that 3 different groups are targeted throughout the plan (see box). The information component of a prevention strategy must then be generated keeping in mind the three target groups.

Targets:

1. **whole population**
2. **groups at high risk**
3. **individuals**

Development of policy requires the active involvement of many sectors including education health, agriculture, industry, transport and government.

Some examples of integration of policy at a national level:

- Updating medical and nursing curricula to incorporate the latest policy guidelines on health risks for CRDs into already existing programs
- Co-opting the support of health insurance groups and employers via national incentives
- Laws addressed to industry with standards for air quality and safe working conditions

Public policy, once formulated, must then be articulated to attract public support and in ways appropriate for different stakeholders, including individual citizens, patient and professional groups, corporations and government agencies. Winning support for policies from collaborating partners and integration of policies into parallel programmes are essential for their sustained implementation.

Points of future action by WHO:

- ⇒ Articulation of issues and advocacy for healthy public policy in order to create public support for action
- ⇒ Provision of technical support to integrate policies
- ⇒ Development of global and national partnerships

³ Global Forum for Health Research, The 10/90 Report on Health Research 2001-2002 c/o World Health Organization, 2002, pp.224

Risk Factors to be considered in Policy Development for CRD Risk Factors

In light of the evidence on the influences of the risk factors on the risk of CRDs several implications for policy and research have been identified and a set of recommendations have been made for the development of policy in this area. The major known risk factors include – tobacco use, pollution, occupational exposure, diet and physical activity. In most instances the risk factors for chronic respiratory diseases coincide with those for other important chronic diseases.

Policy Development for CRD Risk Factors (1)

<i>Whole population</i>	<i>Groups at high risk</i>	<i>Individuals</i>
1. Tobacco Prevention		
<p>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 priority NCDs: cardiovascular disease, cancer, and diabetes. Tobacco control policies aim to reduce tobacco consumption, reduce non-smokers' exposure to tobacco smoke, and prevent tobacco uptake.</p> <p>Legislative strategies, which are proven to be supportive of anti-tobacco policy, include:</p> <ul style="list-style-type: none"> • prohibition of the sale or advertisement targeting of tobacco to minors and pregnant women • Increasing taxation on tobacco products and ending subsidies • agricultural incentives to replace the production of tobacco with other cash crops • economic incentives to replace tobacco related employment that may be lost with other job opportunities • legislated tobacco-free zones, work places and public buildings such as hospitals, schools, airports, shopping areas, restaurants 	<p>Those at greatest risk would be current smokers, pregnant women, small children, young girls and groups targeted by the tobacco industry in advertising campaigns. For these at-risk populations, awareness building about the consequences to their health and that of their children, significant others and colleagues is of particular importance, together with strategies for avoidance. Groups comprised of similar constituencies must be co-opted to relay these health messages</p> <ul style="list-style-type: none"> • Obstetricians and Gynaecologists, paediatricians • Day care providers • Educators • Sports groups • Teen idols • Owners of establishments frequented by children 	<p>Providing treatment/services for smoking cessation is the single most cost-effective strategy for preventing or delaying the progression of CRDs. Smoking cessation services include but are not limited to the following:</p> <ul style="list-style-type: none"> • frequent health care provider reminders to smokers to quit and charting of smoking status on all patients • cessation counselling face to face or by telephone • pharmacotherapy

Policy Development for CRD Risk Factors (2)

<i>Whole population</i>	<i>Groups at high risk</i>	<i>Individuals</i>
2. Occupational Health		
<p>Globally agents known to induce respiratory diseases must be identified along with information about the concentrations and the duration of exposure required to produce ill health effects. Complete avoidance of these agents via replacement with more suitable substances would be the strategy of first choice. When this is not feasible, a strategy of reduction of exposure and follow-up of exposed workers is employed.</p>	<p>Those at risk of developing CRDs related to occupational health hazards are those who work in settings where agents are known to induce respiratory diseases and their family members. Those who may be at particular risk in some instances include those with low lung function and people with rhinitis, or other atopic diseases. Important exposure related diseases include:</p> <ul style="list-style-type: none"> • Pneumoconiosis in coal miners • Allergic and non allergic occupational lung disease in grain mill workers • Asbestosis in shipyard workers • Byssinosis in cotton workers • Silicosis in hard rock miners • Allergic alveolitis in farmers 	<p>Early detection of occupational pulmonary diseases is vital. Once the diagnosis is established, complete avoidance of the relevant exposure is the ideal prevention. Reduction of exposure through substitution and adequate occupational hygiene measures could be an alternative approach.</p> <p>Redeployment to less harmful processes of those injured by their work, and adequate compensation are important.</p>

Policy Development for CRD Risk Factors (3)

<i>Whole population</i>	<i>Groups at high risk</i>	<i>Individuals</i>
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3. Diet, Nutrition and Physical Activity

<p><i>Diet and Nutrition</i> Associations have been reported between chronic respiratory disease and the intake of fruit, fish, whole grain, antioxidant vitamins, fatty acids, sodium, magnesium and alcohol. Obesity has also been associated with an increased risk of asthma and lower lung function. It is therefore feasible that dietary strategies could be developed for the primary and secondary prevention of CRDs which would be compatible with existing dietary guidelines for the control of coronary heart disease, diabetes and cancer.</p> <p><i>Physical Activity</i> There is some evidence that exercise maintains lung function apart from its other beneficial affects on cardiovascular morbidity. Maintenance of levels of activity are likely to be useful in limiting respiratory morbidity.</p>	<p><i>Diet and Nutrition</i> Although there is no direct evidence of effectiveness it is likely that those with early disease would benefit from a diet associated with good lung health and from maintenance of an appropriate body weight.</p> <p><i>Physical Activity</i> Adequate control of asthma may increase exercise capacity. This is important for maintaining both general and respiratory fitness. Exercise limitation is common in early COPD and exercise tolerance can be improved even in patients with fixed structural abnormalities. Pulmonary Rehabilitation programmes are of proven benefit in improving quality of life and exercise tolerance and reducing use of health service resources.</p>	<p><i>Diet and Nutrition</i> Nutritional status, body mass index, and, if possible, dietary intake should be assessed and/or monitored in patients with CRD. Involuntary weight loss in COPD must be considered as well as nutritional supplementation for underweight patients (BMI<21 kg/m²). In obese (BMI>30) or very obese (BMI>40) CRD patients, intensive weight reduction and maintenance programmes should be considered.</p> <p><i>Physical Activity</i> Walking, cycling, stepping and combination of these modes of exercise can be used to increase exercise performance in patients with COPD. Leg exercise may also be included in training programmes and are beneficial in improving exercise tolerance. Asthmatic children should be helped to participate in sports and physical activities. Pre-medication shortly before physical activity or training and prophylactic treatment should be considered in management of exercise-induced asthma.</p>
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Policy Development for CRD Risk Factors (4)

<i>Whole population</i>	<i>Groups at high risk</i>	<i>Individuals</i>
<i>4 Indoor & Outdoor Air quality and Allergen Avoidance</i>		
<p><i>Indoor and Outdoor Air Quality</i> Air pollution has well documented effects on acute respiratory exacerbations as well as acute cardiovascular events. There is emerging evidence on the effects of chronic exposure to pollutants on the development and maintenance of lung function and the development in some instances of asthmatic symptoms. Control of exposure is largely through control of sources of emissions including domestic heating, traffic and industrial sources. Other important considerations include the ventilation of homes.</p>	<p><i>Indoor and Outdoor Air Quality</i> Exposure of vulnerable groups is difficult without overall control of the environment. Some particular exposures may be controlled independently such as domestic and occupational sources, and exercise can be reduced at times of high pollution.</p> <p><i>Allergen Avoidance</i> Assessment of exposure and reduction of indoor allergen levels, especially during the first year of life in children at high risk for allergic diseases, and in patients whose symptoms are triggered by these allergens is under review.</p>	<p><i>Allergen Avoidance</i> There is a link between mite and cockroach allergen exposure and asthma. The potential of allergen reduction in the management of asthma is suggested by studies in the low-allergen environment of hospitals or high-altitude sanatoria. However, a conclusive answer on the feasibility and effectiveness of low cost domestic aeroallergen avoidance in asthma is unclear yet.</p>

Policy Development for CRD Risk Factors (5)

Whole population

Groups at high risk

Individuals

5. Early Life and Lower Respiratory Tract Infections

There is evidence that children's health in the first year of life affects their subsequent respiratory health. Although the precise nature of these associations is still unclear children who have lower respiratory tract infections in the first year of life or who have low body weight at one year also have low lung function and a higher risk of death from COPD in later life. Lung function at birth is also adversely affected by maternal smoking. Whatever the precise nature of these associations it is likely that good infant welfare will be important in establishing good lung health in later life. The role of specific infections is an area of active investigation.

The association of chronic and acute lower respiratory tract infections with subsequent poor lung health imply that the prompt and effective treatment of these conditions, including tuberculosis, may be important for maintaining subsequent good lung health.

Managing CRDs

The core functions most relevant for WHO in managing CRDs would include provision of technical and policy support to countries (health care system

reform, capacity building via networking and preparing and equipping health care teams), development of norms and standards (development and integration of guidelines), and stimulation of development of new technologies, tools and guidelines.

WHO will facilitate countries to obtain:

- 1. Technical & Policy support***
- 2. Norms & Standards***
- 3. Know-how, tools, guidelines***

Health Care Systems must change to respond better to Chronic Illnesses

Premise.

It is recognised that CRDs like other noncommunicable diseases which share aspects of chronicity and risk factors, are increasing dramatically and the burden they place on governments, health care systems and families are enormous. While the global burden of disease has been shifting from acute communicable illnesses to one of chronic illnesses, the systems designed to deliver treatment and care have not kept pace with the shift. At the same time there exists the scientific knowledge and experience to both prevent and manage CRDs and other NCDs.

Present status.

The majority of patients are seen at the primary health care level presenting with an acute problem needing treatment. The patient faces one of two fates. A diagnosis is made, treatment given, patient returns home without follow-up until the next episode. Or preliminary diagnosis is made, referral to another level of care with greater expertise and diagnostic tools for further examination of the problem, the patient is treated, patient returns home and may receive follow-up but rarely is information about the patient's condition relayed to the patient or back to the primary care level.

New models.

It is agreed therefore that new models are required which will integrate both the acute care response, as well as the long term response. Research indicates the following elements as being key to improvement in outcome for chronic conditions: communication, continuity, co-ordination, comprehensiveness and community linkages.

Key factors for chronic conditions

- 1. Communication***
- 2. Continuity***
- 3. Co-ordination***
- 4. Comprehensiveness***
- 5. Community linkages***

HCS & chronic conditions: 4 problems – 4 solutions

Lack of communication.

There are inherent problems in a system designed to recognise acute problems only. Many of the acute illnesses presenting at the level of first patient contact are actually an exacerbation of a chronic condition. The lack of communication of patient history from one visit to the next or from one level of care to another is a major gap in the continuity of care which can lead to misdiagnosis, inadequate care, and further progression of illness.

Alternative methods for follow-up and feedback need to be devised to ensure continuity.

Passive patients.

Patients are not encouraged to be active participants in their own long term care. CRDs often require daily self management, i.e. monitoring their condition, self medicating, and controlling for their environmental risks over a period of years if not a lifetime.

Patients must be educated about best practice regimens and prepared to act on their own behalf. Patient education and self-management advice given to those with asthma has been conclusively shown to reduce symptoms, use of hospital facilities and time off work or school. The benefits are greatest in those receiving written personal asthma action plans. They may work by enhancing compliance. Evidence of benefit from self-management education in those with COPD is less clear but this probably reflects the reduced efficacy of therapy for this condition. Lifestyle advice is still likely to be of importance.

Lack of integration.

Many of the management tools for CRD patients involve the services of people in the community, family members/home care provider, rehabilitation services, educators of young children, employers who enforce smoke free work zones, etc.

Synergistic linkages need to be created between health care systems and communities for patient well being.

Improper training.

Primary health care providers may be inadequately trained to recognize the multiple manifestations of chronic illness, which can result from common risks. Because NCDs commonly share risk factors, a patient who presents with symptoms may be suffering from both a CRD as well as another NCD such as cardiovascular which may have both developed as a result of smoking tobacco.

Providers must be prepared to address illness with integrated guidelines, appropriate diagnostic tools and correct treatment options.

HCS & Chronic Respiratory Diseases: specific aspects

Among the problems listed above, two are of major and specific relevance for CRDs: proper training and equipment of Health Care Teams dedicated to CRDs and education of the patient with CRDs. Specific solutions have been identified.

Prepared and Equipped Health Care Teams requires:

1. Integration of public policies into the medical and nursing curricula and training
 - a) Education in the prevention and management of tobacco related diseases with particular attention given to CRD patients and pregnant women
 - b) Education on Diet and Nutrition over the life cycle
2. Adaptation of management guidelines for various CRDs appropriate for local services
3. Training in the use of management guidelines such as:
 - a) algorithms or symptom based guidelines at the level of first contact
 - b) specialist use of individual guidelines
 - ◆ Global Initiative for Asthma (GINA)
 - ◆ Global Initiative for Chronic Obstructive Lung Disease (GOLD)
 - ◆ Recommendations for the Prevention of Allergy and Asthma (PAA)
 - ◆ Allergic Rhinitis and its Impact on Asthma (ARIA)
4. Availability, affordability and regular maintenance of diagnostic equipment and emergency equipment and services

Motivated and Informed Patients

Adherence to long-term care notably in stable conditions is the weak link of CRDs.

Improvement in adherence requires that:

1. Patients are informed and trained to monitor and manage their own daily care via self-management guidelines
2. Treatment options are accessible and affordable, including:
 - ◆ Pharmaceuticals
 - ◆ Domiciliary oxygen for use in the home and
 - ◆ Portable oxygen for use whilst exercising
 - ◆ Counselling services
 - ◆ Acute care emergency services (including appropriate availability of non-invasive ventilatory support)

Points for future Action by WHO:

- ⇒ Technical support for health system assessment and reform
- ⇒ Self management advice for CRDs
- ⇒ Guideline development, integration, dissemination, implementation and evaluation.
- ⇒ Development and implementation of feasible, affordable, and available technology and treatment options

**Meeting for implementation of the WHO Strategy for Prevention and Control of
Chronic Respiratory Diseases**
Montpellier (France) 11-12 February, 2002

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