CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

What is COPD?

Chronic Obstructive Pulmonary Disease (COPD) is a slowly progressive airway disease that produces a decline in lung function that is not fully reversible. The loss of lung function (airflow limitation) is associated with an abnormal inflammatory response of the lungs to noxious particles or gases. The characteristic symptoms of COPD, cough, sputum production and shortness of breath (dyspnea) on exertion, often precede the development of COPD by many years, although not all individuals with cough and sputum production develop COPD.

Is COPD a public health problem?

COPD is a major cause of chronic morbidity and mortality throughout the world. The World Health Organization estimates that it is the fourth leading cause of death worldwide (behind heart disease, cancer and stroke), causing an estimated 2.74 million deaths in 2000.

A World Bank/World Health Organization study estimated that COPD was the 12th ranked burden of disease in 1990 and is expected to rise to the 5th ranked burden of disease by the year 2020.

Of the top causes of mortality in the United States, only COPD continues to rise, with death rates increasing by 22% in the past decade. In the US, the number of patients with COPD doubled in the last 25 years, with the prevalence of COPD now rising faster in women than in men. The estimated cost of medical care in the US is $14.7 billion per year, far exceeding the costs from any other lung disease.

What causes COPD?

The most important risk factor for COPD is cigarette smoking. Pipe, cigar, and other types of tobacco smoking popular in many countries are also risk factors. Passive exposure to cigarette smoke also contributes to respiratory symptoms and COPD.

Other documented causes of COPD include occupational dusts and chemicals (vapors, irritants and fumes), and indoor air pollution from biomass fuel used for cooking and heating in poorly vented dwellings. The WHO estimates that there are 400,000 COPD deaths per year from exposure to biomass fuels.

Outdoor air pollution adds to the total burden of inhaled particles in the lungs, although the specific role of outdoor air pollution in causing COPD is not well understood. Respiratory infections in early childhood are associated with reduced lung function and increased respiratory symptoms in adulthood.

Why is COPD increasing?

In 1990, a study by the World Bank and the World Health Organization ranked COPD 12th as a burden of disease; by 2020, it is estimated that COPD will be ranked 5th. The substantial increase in the global burden of COPD reflects in large part the increasing use of tobacco worldwide, and the changing age structure of populations in developing countries. In

developing countries, some studies report a higher prevalence of COPD in women than men which is thought to reflect exposure to indoor air pollution from cooking and heating fuels.

How is COPD Diagnosed?

A diagnosis of COPD should be considered in any individual with a history of exposure to risk factors and symptoms of cough, sputum production and shortness of breath on exertion. However, the diagnosis should be confirmed by lung function tests, which are used for diagnosis, assessment of severity, and following the course of the disease. This is best done by spirometry performed in a health care clinic to measure forced vital capacity (FVC) and forced expiratory volume in one second (FEV_1). Before a treatment plan is prepared, severity of COPD (at risk, mild, moderate or severe) is determined by the extent of spirometric abnormality, the severity of symptoms and the absence of other lung diseases, such as asthma or pulmonary tuberculosis.

How is COPD treated?

An effective treatment program includes four components of care: (1) assess and monitor disease, (2) reduce risk factors, (3) manage stable COPD by both pharmacologic and non-pharmacologic interventions, and (4) manage acute exacerbations. Smoking cessation is the single most effective – and cost effective – intervention to reduce the risk of developing COPD and stop its progression. Stable COPD management includes use of bronchodilators for symptoms and influenza vaccines once (or twice) per year. Pulmonary rehabilitation programs, oxygen therapy and, in very limited situations, surgical treatments are among the non-pharmacologic treatments. COPD is often associated with acute exacerbations of symptoms that require medical attention in the home or hospital.

What can be done for COPD?

The US National Heart, Lung, and Blood Institute and the World Health Organization, recognizing the increasing importance of COPD as a public health problem in all countries in the world, collaborated to initiate the **G**lobal Initiative for Chronic **O**bstructive **L**ung **D**isease (GOLD) program. The program offers a framework for management of COPD that can be adapted to local health care systems and resources.

The goals of the **GOLD** program include: prevent disease progression; relieve symptoms; improve exercise tolerance; improve health status; prevent and treat complications; prevent and treat exacerbations; reduce mortality; and prevent or minimize side effects from treatment.

There are several publications in preparation based on a report *Global Strategy for the Diagnosis, Management, and Prevention of COPD*, that provides scientific information and program recommendations. The **GOLD** program is conducted by an Executive Committee, chaired by Professor Romain Pauwels, Gent Belgium. Members include representatives from several medical organizations interested in the care of patients with COPD.

For further information contact: [SPCs to enter appropriate contact name and telephone number]