White paper on expanding the role of pharmacists in chronic obstructive pulmonary disease

American Pharmacists Association Foundation

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Abstract

Objectives: To (1) generate discussion about the role of the pharmacist in supporting patients with chronic obstructive pulmonary disease (COPD), (2) provide practical recommendations on how pharmacists can work with employers and other health care providers to improve patient outcomes, and (3) develop a pharmacist-based service offering for patients with COPD.

Data sources: Literature review and survey information provided by a group of national stakeholders who participated in a roundtable discussion.

Summary: COPD is currently the fourth leading cause of death in the United States, and incidence rates have been increasing. COPD is estimated to affect 24 million American adults, with almost one-half remaining undiagnosed. If current trends continue, COPD is predicted to become the third leading cause of death and fifth leading cause of morbidity in the United States by 2020. This will cause a dramatic increase in use of health care resources, which is projected to reach annual total costs of $49.9 billion in 2010. Roundtable participants uniformly agreed that based on current and projected statistics, COPD is a major health concern. To address this growing concern, emphasis should be placed on the collaborative efforts of the health care community to become active in the detection, assessment, treatment, and management of patients with COPD and that pharmacists can contribute to each of these areas considerably.

Conclusion: Access in the community (often 24 hours a day, 7 days a week) combined with extensive clinical knowledge makes pharmacists uniquely capable of helping those with chronic disease, especially patients with COPD who require monitoring and encouragement throughout their lifelong treatment.

Keywords: Chronic obstructive pulmonary disease, pharmacy services, medication therapy management, collaborative practice, American Pharmacists Association Foundation.

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The American Pharmacists Association (APhA) Foundation invited a group of national stakeholders to a roundtable discussion on the collaborative role of community pharmacists in managing chronic obstructive pulmonary disease (COPD) (Appendix 1). The group convened on October 22–23, 2009, in Arlington, VA, with participants including representatives from patient advocacy, health plans, and academia, as well as health care providers. The meeting was supported by Boehringer Ingelheim Pharmaceuticals. This white paper is intended to serve as a starting point for involving pharmacists more fully into the care and education of individuals with COPD, with a goal of improving their productivity, quality of life, and overall health care costs.

Scope of the problem

The Global Initiative for Chronic Obstructive Lung Disease (GOLD) issued an updated report in 2009, Global Strategy for the Diagnosis, Management, and Prevention of COPD, which defines COPD as a preventable and treatable disease characterized by irreversible airf ow limitation that is usually progressive and associated with an abnormal inf ammatory response of the lung to noxious particles or gases. COPD is suspected when a person, usually older than 40 years, presents with symptoms including chronic cough, chronic sputum production, or dyspnea. The latter is the most typical reason for presentation for care, and spirometry showing a forced expiratory volume in 1 second (FEV_1)–to–forced vital capacity (FVC) ratio less than 0.70 is the only way to establish a diagnosis of COPD.[1]

COPD also is linked to considerable extrapulmonary effects, including nutritional abnormalities, weight loss, and skeletal muscle dysfunction, which may contribute to severity in individual patients. Myocardial infarction, angina, osteoporosis, respiratory infection, bone fractures, depression, diabetes, sleep disorders, chronic anemia, and glaucoma often are seen at higher rates among individuals with COPD.[1] Whether these comorbidities are a result of COPD or develop secondary to smoking or aging is unclear. Regardless of the origin, all comorbid conditions amplify the disability associated with COPD and can complicate disease management.

COPD is currently the fourth leading cause of death in the United States, and incidence rates are increasing.[2] Of the six leading causes of death in the United States, only COPD has been steadily increasing since 1970.[3] Decreases or steady rates of occurrence have been observed for heart disease, cancer, stroke, and diabetes from 1950 to 2006, but COPD death rates sustained a steadily increasing incidence until they reached a plateau in the late 1990s.[2] COPD is estimated to affect 24 million American adults, with almost one-half of those remaining undiagnosed.[2] If current trends continue, COPD is predicted to become the third leading cause of death and fifth leading cause of morbidity in the United States by 2020.[1] This will cause a dramatic increase in use of health care resources, which is projected to reach annual total costs of $49.9 billion in 2010.[2]

Increased exposure to major modifiable risk factors such as tobacco smoke, occupational exposures, and air pollution have led to changes in COPD population demographics that may be linked to the increased incidence of the disease.[1] Although COPD often is stereotyped as an "old man's disease," current statistics show that more than one-half of patients are younger than 65 years and that the COPD death rate is increasing more quickly for women than for men.[4,5] In 2000, the number of women dying from COPD surpassed men dying from COPD.[6] Tobacco smoke, specifically an increase in cigarette smoking, is deemed the most important contributing factor for these trends.[5] With at least 15–20% of smokers diagnosed with COPD and many more remaining undiagnosed, that tobacco smoke accounts for almost 85% of all COPD cases is not surprising.[1,4]

COPD also is caused by a genetic condition related to deficiency of alpha-1 antitrypsin.[1] At least 100,000 people in the United States are believed to have alpha-1 antitrypsin deficiency.[7]

COPD is an irreversible and progressive disease. However, minimizing risk factors and properly using medications can slow the progression and give individuals with COPD a better quality of life.[1] Chronic airway disease has been described as "10% medication and 90% education."[8] Pharmacists are named in the GOLD report as key health care professional collaborators in decreasing patient risk and are well positioned to assist in the management of COPD through initiatives such as delivering smoking cessation messages and intervention.[1] A major challenge faced by individuals with COPD is that only 17% of patients with chronic disease achieve perfect medication adherence.[9] This degree of adherence decreases when patients are required to master a specific technique (e.g., inhaler use) and as the amount of time they live with the disease increases.[10] Individuals with COPD face both of these barriers, which seem to magnify the potential role of pharmacists as COPD patient educators.

To help minimize both the human and economic costs of COPD, the roundtable participants were asked to assess need and explore strategies for integrating pharmacists into community-based, collaborative efforts to improve the care and outcomes for patients with COPD. General ideas on potential roles included screening, performing early detection and frequent monitoring through spirometry, educating about medication therapy, discussing the importance of medication adherence and appropriate medication-taking behavior, assessing and teaching appropriate techniques for inhalation devices used to deliver medication, and presenting realistic expectations about the disease and its treatment. The full results of this discussion and the panel's innovative ideas have helped shape the contents of this white paper.

Review of COPD

COPD is defined as "a preventable and treatable disease with some significant extrapulmonary effects that may contribute to the severity in individual patients. Its pulmonary component is characterized by airf ow limitation that is not fully reversible. The airf ow limitation is usually progressive and associated with an abnormal inf ammatory response of the lungs to noxious particles or gases."[1]

Clinical guidelines do not define COPD in terms of chronic bronchitis or emphysema. Chronic bronchitis is the long-term swelling of the bronchioles and is defined as the presence of cough and sputum production for at least 3 months in each of 2 consecutive years and is often associated with airf ow limitation. Emphy-

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