

## Management and Treatment of Reversible Airway Disease

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Reversible airway diseases, such as asthma and some forms of chronic obstructive pulmonary disease (COPD) that have a reversible obstructive component, have increased in prevalence and burdened the healthcare system with additional attributable costs in recent years. According to the Centers for Disease Control and Prevention, the prevalence of asthma and COPD has been increasing steadily since the 1970s.<sup>1,2</sup> It is estimated that 17 million American adults have been diagnosed with asthma<sup>1</sup> (10.8% of the adult population) and another 10 million American adults (5%-6% of the adult population) have been diagnosed with COPD.<sup>2,3</sup> These estimates are generally considered low as data from the National Health and Nutrition Examination Surveys (NHANES III) estimate that approximately 24 million American adults (12% of the adult population) have evidence of impaired lung function but are not diagnosed.<sup>4</sup>

### Asthma

Asthma is a long-term lung disease characterized by inflammation of the lower airways and episodes of airflow obstruction. Asthma severity ranges from intermittent mild symptoms, such as coughs and wheezing, to severe, life-threatening attacks that require immediate hospital treatment. Obstruction of the airway in asthma is generally considered reversible, meaning that the obstruction of the lung can generally be resolved with treatment and in some cases can resolve spontaneously.<sup>5,6</sup>

In 2001, 4268 deaths, 11.3 million physician office visits, and 1.3 million outpatient hospital visits were attributable to asthma.<sup>7</sup> In 2002, 1.9 million hospital emergency department visits were caused by asthma. The estimated direct and indirect monetary

costs for this disease totaled \$11.3 billion in 1998.<sup>8</sup> Direct costs accounted for \$7.5 billion and indirect costs were \$3.8 billion. Medications accounted for the single largest portion of the cost of care for asthma.<sup>9</sup>

### COPD

COPD refers to a group of diseases that cause airflow blockage and breathing-related problems. These diseases include emphysema, chronic bronchitis, and, in some cases, asthma. COPD is a progressive condition in which the airways narrow and become obstructed, making it difficult to breathe, eventually leading to a long-term disabling breathlessness. The World Health Organization and US Strategy for the Diagnosis, Management, and Prevention of Chronic Pulmonary Disease (referred to as the "GOLD Guidelines") have described COPD as "a disease characterized by airflow limitation that is not fully reversible."<sup>10,11</sup>

Prevalence, incidence, and mortality rates of COPD increase with age. In 2001, 123 013 deaths, 726 000 hospitalizations, and 1.5 million emergency department visits were caused by COPD.<sup>12</sup> An additional 8 million cases of hospital outpatient treatment or treatment by personal physicians were linked to COPD in 2000. The National Heart, Lung, and Blood Institute estimated that total COPD costs were \$32.1 billion in 2002 (\$18 billion in direct medical costs and \$14.1 billion in indirect medical costs).<sup>10</sup>

While improved understanding of the underlying pathophysiology of reversible airway diseases has advanced new treatment alternatives, the overall burden of these diseases and the healthcare costs associated with their treatment and management are rising. Clearly, a need exists to update and disseminate clinical guidelines

for these diseases. However, whether such guidelines impact cost savings and lead to a decline in overall healthcare resource utilization has not yet been determined.

This supplement to *The American Journal of Managed Care* will focus on the management and treatment of reversible airway disease and analyze the management of asthma and COPD from several different points of view, enabling the reader to gain a broader understanding of the overall treatment and management implications for reversible airway disease.

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